



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA, 95814-2922

Environmental Resources Branch

AUG 28 2009

TO ALL INTERESTED PARTIES:

The draft Environmental Assessment (EA) for the City of Yerington Water and Sewer Project, Lyon County, Nevada, is enclosed for your review. The City of Yerington proposes to improve the city's water supply system and extend the wastewater collection system to the developing industrial park areas of the city. The proposed improvements would include installing new underground water and sewer pipelines; connecting these lines to the city's existing water supply and wastewater collection systems; and constructing a lift station, water storage tank, and domestic well. This draft EA evaluates the potential effects of the proposed action on the environmental resources in the project area.

The public review period for the draft EA will end on September 23, 2009. All comments received on the draft document will be considered and incorporated into the final EA, as appropriate. Please send any comments to U.S. Army Corps of Engineers, Sacramento District, Attn: Ms. Lynne Stevenson (CESPK-PD-R), 1325 J Street, Sacramento, California 95814. If you have any questions, Ms. Stevenson may be reached at (916) 557-6774 or email: Lynne.L.Stevenson@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Francis C. Piccola".

Francis C. Piccola
Chief, Planning Division

Enclosure

**DRAFT
ENVIRONMENTAL ASSESSMENT**

**CITY OF YERINGTON WATER AND SEWER PROJECT
LYON COUNTY, NEVADA**

August 2009



**US Army Corps
of Engineers** ®
Sacramento District

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FINDING OF NO SIGNIFICANT IMPACT
City of Yerington Water and Sewer Project
Lyon County, Nevada

I have reviewed and evaluated the information presented in this Environmental Assessment (EA) for the City of Yerington Water and Sewer Project, Lyon County, Nevada. This project would improve the city's water supply system and extend the wastewater collection system to the developing industrial park areas of the city. The proposed improvements would include installing new underground water and sewer pipelines; connecting these lines to the city's existing water supply and wastewater collection systems; and constructing a lift station, water storage tank, and domestic well.

During this review, the possible consequences of the work described in the EA have been studied with consideration given to environmental, economic, social, and engineering feasibility. In evaluating the effects of the proposed project, specific attention has been given to significant environmental conditions that could potentially be affected. I have also considered the views of other interested agencies, organizations, and individuals concerning the project. The effects and mitigation measures have been reviewed by the U.S. Fish and Wildlife Service and the Nevada State Historic Preservation Officer.

Based on my review of the EA and my knowledge of the project area, I am convinced that the proposed project is a logical and desirable alternative. Furthermore, I have determined that the project would have no significant effects on the environment. All construction will be implemented in compliance with applicable Federal, State, and local laws, regulations, and policies. Based on the results of the environmental evaluation and completion of interagency coordination, I have determined that the EA and Finding of No Significant Impact provide adequate documentation and that no further environmental document is required.

Date

Thomas C. Chapman, P.E
Colonel, U.S. Army
District Engineer

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1.0 PURPOSE AND NEED

1.1 Proposed Action

The City of Yerington in Lyon County, Nevada, is proposing to (1) improve the city's water supply system and (2) extend the wastewater collection system to the developing industrial park areas of the city. This would provide additional water for residential, commercial, and industrial uses, and allow existing septic systems to be closed. The new systems would also increase fire protection, help to ensure public health and safety, and allow continued growth and development in the northern part of the city.

1.2 Location of the Project Area

Yerington is located in the Mason Valley approximately 68 miles southeast of Carson City in the western part of Nevada (Plate 1). Part of the project area is a sparsely populated area north and northwest of the city center. The Walker River flows from south to north through this area, and the Yerington Municipal Airport is located east of the river. The project area also includes a developed area on the east side of the city center. The work areas include dirt and/or gravel maintenance and farm roads, open undeveloped areas, several earthen agricultural ditches, concrete and barren areas near the existing City water tank, paved city streets, and a concrete well site (Plate 2).

1.3 Need for Proposed Action

Several industrial park areas are developing just west of the municipal airport and along Highway 95A to the west. Several properties have already been developed, and several more projects are planned, including a business park owned by the City. While limited water service is provided to the industrial parks, a key system loop with connections to a new storage tank and new production well is needed to ensure a sufficient water supply for existing and planned residential and industrial uses, and for fire protection.

In addition, there is no City wastewater collection service to the industrial park areas. As a result, the first properties to be developed were required to install individual septic systems. Due to the Walker River and use of irrigation, relatively shallow groundwater characterizes parts of the area. The combination of septic systems and shallow groundwater increases the potential for contamination of the groundwater. A wastewater collection system loop with connections to the existing sewer system is needed to ensure public and environmental health as the industrial park areas develop.

The proposed water supply and wastewater collection systems would provide sufficient water supply, and replace the existing septic systems in the industrial park area. Once constructed, the new systems would improve water supply and wastewater service, reduce potential groundwater contamination, increase fire protection, ensure public health and safety, and allow continued growth and development in the northern part of the city.

1.4 Project Authorization

This project was authorized by the Water Resources Development Act of 1999 (Public Law 106-53), which authorized the U.S. Army Corps of Engineers (Corps) to participate in environmental infrastructure projects in rural Nevada and Montana. The Corps is the Federal lead agency, and the City of Yerington is the local sponsor for the project.

1.5 Purpose of the Environmental Assessment

This Environmental Assessment (EA) discusses the environmental resources in the project area; evaluates the effects of the alternatives (including the proposed action) on the resources; and proposes measures to avoid, minimize, or mitigate any adverse effects to less than significant. This EA is in compliance with the National Environmental Policy Act and provides full public disclosure of the effects of the proposed action.

2.0 ALTERNATIVES

Initially, the City considered a variety of possible locations and sizes for the water supply system improvements and wastewater collection system extension. Criteria for the development of the project design included existing system connections, projected area water supply and sewer needs, land ownership, flood plain zoning, potential adverse environmental effects, operation of the airport, and cost factors. The City selected the final design because it would:

- Minimize encroachment onto private property.
- Connect with the City's existing water supply and wastewater collection system.
- Avoid adverse effects on the Walker River, wetlands, and high-value habitats.
- Avoid adverse effects on Yerington City Airport operations.
- Have the lowest cost while still meeting the purpose and need of the project.

2.1 No Action

Under the no action alternative, the City's existing water supply system would not be improved, and the wastewater collection system would not be extended to the developing industrial park areas in Yerington. Additional water for existing and planned residential and industrial uses including fire protection would not be available. In addition, the existing septic systems would continue to collect and treat waste from individual properties in the area. As a result, the potential adverse effects on public and environmental health and safety, and limits on the growth and development in this part of the city would continue.

2.2 Water Supply and Sewer Improvement (Preferred Alternative)

The preferred alternative consists of installing new underground water and sewer lines along the same or separate alignments in both undeveloped and developed parts of the city of Yerington. These new pipelines would connect with the City's existing water supply and wastewater collection systems. The alternative also includes construction of a lift station, water storage tank, and domestic well. These features, as well as the staging, stockpiling, and disposal areas, are shown on Plate 3.

2.2.1 Pre-Construction Activities

Permits and Utilities. Prior to initiation of construction, the contractor would be required to obtain all Federal, State, and local permits and approvals necessary to perform the work, including those related to stormwater discharge, fugitive dust, and traffic safety. Specific permits and approvals related to environmental resources are discussed in Section 3.0.

The contractor would also be required to verify the depths and locations of all existing utilities in the project area. Potentially affected utility companies would be notified and coordinated with concerning the timing and scope of the proposed work. These utilities could include Sierra Pacific Power Company, Southwest Gas Company, Verizon, and Charter Communications.

Mobilization and Staging. The main staging area for the project would be located on City property just northeast of the City's wastewater treatment facility (Plate 3). The staging area would encompass approximately 4.6 acres of open disturbed area with scattered vegetation. The area is crossed by several dirt roads providing access for maintenance of the ditches and airport runway.

During mobilization, construction equipment would be moved to this main staging area, along with piping, gravels, and other construction materials. Types of equipment would include a hydraulic excavator, front end loaders, compactor, drill rig, directional boring unit, dump trucks, haul trucks, and water trucks. In addition, areas would be provided for an administrative trailer and parking of worker vehicles.

Because of the distances between the main staging area and the new water tank, water well, and parts of the pipeline alignment, equipment and materials would also be staged temporarily at the work sites during construction of these features, as needed. All such areas used for staging would be limited to highly disturbed areas devoid of vegetation or covered in concrete, asphalt, or gravel within the construction footprint.

Test Pits. During project design, the contractor would excavate five exploratory test pits to determine the type and suitability of the soils for foundation and construction materials. All work would be conducted in highly disturbed areas devoid of vegetation or currently covered in concrete, asphalt, or gravel. The locations of the test pits are listed below.

- North end of the existing concrete pad at the new tank site.
- North shoulder of the existing paved road approximately 40 feet west of Campbell Ditch.
- Northwest portion of the existing gravel pad at the new lift station.
- East shoulder of N. Oregon Street approximately 125 feet north of the intersection with Reyes Way.
- Approximately 80 feet east of California Street in the center of the existing water tower parcel (site of new water well).

Work at each test pit would involve clearing the surface material and then using a backhoe to excavate a pit about 5 feet wide by 6 feet long by 5 to 10 feet deep. Excavated soil material would be stockpiled in an adjacent area. Once the underlying soil or groundwater conditions are determined, the pit would be backfilled with the stockpiled soil material and compacted.

Dewatering. The depth to ground water in the Yerington area increases with ground-surface elevation and distance from the Walker River. In the project area, the depth to groundwater varies from approximately 3-5 feet near the river to 130 feet at the tank site and 140 feet at the well site. Since the installation depth of the new pipelines would vary from approximately 3.5 to 15 feet, dewatering would likely be needed along the alignment near the river prior to construction. To determine the groundwater depth, a sixth test pit would be excavated at a location along the alignment approximately 270 feet east of the Walker River and 80 feet west of the Nichol-Merrit Ditch.

Prior to any dewatering, the contractor would be required to obtain a temporary dewatering permit from the NDEP. All dewatering activities would be conducted in accordance with the conditions in this permit. Dewatering would involve installing well points and a pump to dewater the work area. The removed groundwater would be removed and disposed offsite away from the Walker River. To protect the aquatic environment, this water would not be pumped back into river.

2.2.2 Construction Details

Storage Tank. The City's existing water supply system includes a 2-million gallon (mg) water storage tank and connecting pipeline located on a hill northwest of the city center. Maintenance access to this tank is via a dirt roadway, which intersects with Highway 95A to the east. Adjacent and slightly southeast of the tank is an old concrete slab and asphalt apron that previously provided the foundation for an old tank that was removed when the 2-mg tank was constructed. Adjacent areas are covered in sparse ruderal vegetation or gravel. A chain link fence with a locked gate provides security.

To increase the storage capacity of the City's water supply system, the project would include constructing a new storage tank on the site of the existing old concrete slab (Plate 4). The new tank would be 31 feet high and 76.4 feet in diameter, and have a storage capacity of slightly more than 1 mg. The design would be a ground supported,

welded steel structure with a flat bottom and slightly v-shape roof. Access to the tank site during construction would be via the existing maintenance road from Highway 95A. Any temporary staging of equipment and materials would be within the construction footprint or nearby barren or gravel areas.

Work would include (1) removing existing fencing, concrete slab, asphalt apron, and subgrade; (2) clearing and shaping the new tank site and drainage swale; (3) installing various connections to the larger tank; (4) laying the foundation; (5) installing the new tank and associated equipment; (6) shaping the berm; (7) placing riprap for the overflow area and drainage swale; and (8) replacing the security fencing. Any excess soil material suitable for reuse would be used onsite while the concrete, asphalt, unsuitable soil, and other debris would be removed and disposed offsite via haul trucks. Access to the new tank for maintenance would be via the existing dirt maintenance road.

Water Well. The City's existing water supply system relies on groundwater obtained from four active wells within the service area. To increase water supply for residential, commercial, and industrial uses, the project would include development of a new well on City property located along S. California Street just south of Broadway Avenue. The parcel encompasses approximately 0.7 acre of highly disturbed area covered in gravel, dirt, and scattered ruderal vegetation. Existing structures on the site include a water tower, public works garage, and small equipment shed. A 6-foot-high chain link fence with some open sections in need of repair surrounds the parcel. Current access onto the property is through an open section of fence via the City's alley on the east side of the property.

The new well would be located in the southeast corner of the property near the existing water tower (Plate 5). The well would be 350 feet deep, with depth to groundwater in this area being approximately 140 feet. The estimated production of the new well would be 1,200 gallons per minute. The well and pump would be connected to a new 14-foot-long 8-foot-wide by 6-foot-deep underground connection vault located about 10 feet from the well. The new well would also include an adjacent back-up generator on a concrete pad. Any temporary staging of equipment and materials would be within the construction footprint or nearby gravel or barren areas.

Work would include (1) demolishing the existing equipment shed and garage, and then backfilling the foundation areas; (2) drilling the new well and installing the casing; (3) installing the pump and other associated equipment; (4) constructing the new connection vault; (5) installing the piping connecting the well and vault to the existing water supply system; (6) constructing the back-up generator pad; and (7) repairing the surrounding fencing by installing new sections of fencing and a gate. Any excess soil material suitable for reuse would be used onsite, while the demolished mason blocks and roofing, unsuitable soil, and other debris would be removed and disposed offsite via haul trucks. Access to the new well for maintenance would be via a new gate along California Street and several new gates along the City's alley on the east side of the property.

Lift Station. The City's existing wastewater collection system includes three lift stations, including one located east of Highway 95A opposite the existing water storage tank. These lift stations collect and pump wastewater against gravity through force mains either to the next lift station for similar pumping or into a wastewater treatment plant where the wastewater is treated. The project would include construction of a new lift station along the new sewerline east of the Campbell Ditch crossing. Access to the work area would be via existing dirt and/or gravel farm and maintenance roads.

The components of the new lift station would be underground except for the top slab, vent, and some control and communication equipment (Plate 6). The underground components would include a wetwell, pumps, inflow and discharge piping, meter vault, and various connections. The cylindrical wetwell would be approximately 16 feet long and 8 feet in diameter, while the rectangular meter vault would be 15 feet long by 10 feet wide by 6 feet deep. Both structures would be pre-cast concrete. Any temporary staging of equipment and materials would be within the construction footprint or nearby barren or gravel areas.

Work would include (1) clearing the site of any surface vegetation and debris; (2) excavating an area approximately 30 feet wide by 16 feet long by 15 feet deep, (3) laying drain rock, (4) installing the wetwell and vault, piping, and other connections; (5) backfilling and compacting around the structures; and (6) installing the pre-cast top slab and control panel. Piping from the lift station would be connected to the new adjacent sewerline. Once the work on the lift station is completed, the adjacent disturbed areas would be restored.

Any excess soil material suitable for reuse would be used onsite while the unsuitable soil and other debris would be removed and disposed offsite via haul trucks. Access to the new lift station for maintenance would be via the existing dirt and/or gravel farm and maintenance roads.

Water and Sewer Pipelines. The City's existing water supply and wastewater collection systems include two networks of underground pipelines that provide water and sewer service to residential and commercial users in the developed city center. The existing water service area also extends south along Highway 95A to the community of Mason and north along Highway 95A to a small residential area. These pipelines are managed and maintained by the City's Public Works Department. Access for maintenance is via Highway 95A, other City paved roadways, and dirt and/or gravel roads along farm fields and open areas.

To improve and extend the City's water supply and wastewater collection systems, the project would include the underground installation of approximately 4.5 miles of new water and sewer pipeline, primarily in the developing industrial park areas north and northwest of the city center. This pipeline would total approximately 12,871 feet of 12-inch-diameter waterline, 9,722 feet of 8-inch sewer force main, and 1,391 feet of 12-inch gravity sewerline. These new pipelines would connect with existing pipelines to create complete "loops" in both the water supply and wastewater collection systems.

As shown on Plate 3, the sections of new pipeline would include approximately 6,734 feet of 12-inch waterline from the west edge of the airport runway south to Pearl Street, west on Pearl Street, and then south on California Street to Broadway Avenue; 6,137 feet of 12-inch waterline and 5,633 feet of 8-inch force main sewerline from near the wastewater treatment facility west across Walker River to near the onion warehouses; 2,517 feet of 8-inch force main sewerline from onion warehouses south to the City's existing sanitary lift station; 1,572 feet of 8-inch force main sewerline from just northeast of the wastewater treatment facility southwest along the boundary of facility to the inflow into the facility; and (5) 1,391 feet of 12-inch gravity sewerline from the new sanitary lift station west to the onion warehouses.

The basic installation process for all sections of new pipeline would be the same for both water and sewerlines. However, the types and sizes of the pipeline, connections, bends, and other associated equipment such as valves and manholes would vary because of the differences in function and operation of the two systems. In addition, the width and depth of the trenches would vary according to the type, size, and number of pipelines to be installed. In particular, the trench to install the parallel water and sewerlines would be larger to ensure adequate distance between the two pipelines as required by State law.

Installation work would include (1) clearing the surface of vegetation, gravel, concrete, asphalt, aggregate base, or other debris; (2) excavating trenches ranging from approximately 4 to 8 feet wide by 200 feet long by 4.4 to 15 feet deep; (3) laying bedding material; (4) placing and connecting the pipeline(s) and associated equipment in the trench; (5) covering the pipeline(s) with bedding material; and (6) backfilling with soils and compacting the surface of the excavated area (Plate 7). Excavated soil material suitable for reuse would be used for onsite backfill, while surface material, excess soil, unsuitable soil, and any other debris would be removed and disposed offsite via haul trucks.

Once the installation of the pipeline is completed, any open areas previously covered in vegetation would be restored via reseeding with native species; the unpaved dirt and gravel farm roads would be replenished with additional gravels; and the disturbed sections of City paved roadway would be resurfaced with aggregate base and asphalt. Access to the new pipelines for maintenance would continue to be the existing paved roadways, as well as the dirt and replenished gravel roads. In addition, a new 12-foot-wide gravel maintenance road would be constructed directly over the 1,298-foot section of new water and sewer pipeline and culverts from the west edge of the airport runway west to the Walker River (Plate 9).

Ditch and River Crossings

Ditch Crossings. Several agricultural ditches, including the Nichol-Merrit Ditch, WRID Ditch, and Campbell Ditch, cross the project area. These ditches are unlined, have intermittent flows, and carry irrigation water and agricultural runoff to and from cultivated areas and pastures. Water for irrigation is diverted from the Walker River

under existing water rights. To maintain flows, the WRID removes accumulated excess sediment, debris, and vegetation in and along the ditches several times a year, as needed.

The water and sewer pipeline alignments would cross these three ditches. Table 1 shows the owner, approximate location, and the type of work at each ditch. All work would be done under dry conditions; that is, there would be no flow in the ditches during construction. Work at the Nichol-Merrit and WRID Ditches would consist of clearing the area of vegetation and debris; excavating a trench; dewatering, if necessary; placing bedding material and laying pipes; partially backfilling the trench; installing a precast concrete box culvert; completing the backfilling; and constructing a section of gravel maintenance roadway over the culvert.

Table 1. Ditches and Ditch Crossings

Ditch	Owner	Location of Crossing	Work at Crossing
Nichol-Merrit	Nichol-Merrit Ditch Company	Northwest of the City's WWTF about 800 feet.	Trench across open ditch and construct box culvert.
WRID	Walker River Irrigation District	Northwest of the City's WWTF about 900 feet.	Trench across open ditch and construct box culvert.
Campbell	Campbell Ditch Company	Northeast of the onion warehouses about 500 feet.	Directional bore under ditch and existing culvert.

WWTF = wastewater treatment facility

Currently, there is a paved roadway and underlying box culvert at the Campbell Ditch crossing. As a result, a directional boring method of horizontal drilling would be used under the Campbell Ditch to avoid affecting this existing roadway and culvert (Plate 8). Work would consist of using a directional boring machine to simultaneously drill a horizontal hole under the culvert and install a sleeve and then place a pipe through the sleeve. The area of disturbance would be approximately 5 feet by 5 feet by 5 feet, and the depth of the new pipeline would be approximately 12 feet. This work would be conducted in previously disturbed areas on or along the roadway to minimize any effects on vegetation or wildlife habitat. Prior to boring, a biologist would be required to survey the proposed area of disturbance to ensure that all mature riparian vegetation would be avoided and that no trees would be damaged.

Walker River Crossing. The new water and sewer pipeline alignment would cross the Walker River just west of the proposed crossings of Nichol-Merrit and WRID Ditches. To avoid any effects on the river and its aquatic habitat, directional boring similar to the Campbell Ditch crossing would be used to cross under the river. Depth of the new pipeline would be 21 feet, approximately 10 feet below the river bottom at this location. The directional boring unit would be placed approximately 70 feet from the riverbank in an area that would minimize any effects on existing riparian vegetation and wildlife habitat. No mature trees would be disturbed or removed. Prior to boring, a

biologist would be required to survey the proposed area of disturbance to ensure that all mature riparian vegetation would be avoided and that no trees would be damaged.

Airport and Highway Crossings

Yerington Municipal Airport Crossing. The new water line alignment would cross the airport runway and taxiway just northeast of the City's wastewater treatment facility. To avoid any effects on the airport and airport operations, the pipeline would be installed under the runway and taxiway surface using the directional bore method of horizontal drilling similar to the Campbell Ditch and Walker River crossings. Depth of the new pipeline would be approximately 7.5 feet below the bottom of the runway and taxiway. This work would be conducted in previously disturbed areas along the runway and taxiway to minimize any effects on vegetation and wildlife habitat.

Highway 95A Crossing. The new water pipeline alignment would cross Highway 95A at the intersection of N. Oregon Street with the highway. To avoid any effects on the highway and ongoing traffic, the pipeline would be installed under the highway surface using the jack and bore method and steel sleeve casing as required by the Nevada Department of Transportation (Plate 8). Depth of the new pipeline would be approximately 7 feet below the bottom of the roadway.

Work would consist of excavating working and receiver pits; shoring the walls of the pits, if necessary; laying the boring machine in the pit; setting up tracks; and using the machine to push an auger and steel sleeve casing while turning a cutting head through the ground. Once the boring is complete, the machine and tracks would be removed, and the pits would be backfilled and restored to pre-project conditions. This work would be conducted in previously disturbed areas along the highway to minimize any effects on vegetation and wildlife habitat.

2.2.3 Borrow, Stockpiling, and Disposal

Borrow Materials and Sources. Borrow materials would include drain rock, aggregate base, gravel, and sand to be used as layering materials for trenches or maintenance road surfaces. Concrete and asphalt would also be needed for the new water tank pad and asphalt apron, as well as to resurface or repair local paved roadways and curbs and sidewalks, as needed. These materials would be obtained and transported to the staging area via trucks from local commercial sources in Yerington. Sufficient suitable soil material needed for the project would be available from the soils excavated during trenching, as well as excavation at the new well and lift station sites.

Stockpiling Areas. The main stockpiling area for the project would be located on city property just northwest of the main staging area opposite the new water and sewer pipeline alignment (Plate 3). The stockpiling area would encompass approximately 2 acres of open disturbed area with scattered vegetation. Similar to the staging area, the area is crossed by several dirt roads providing access for maintenance of the ditches and airport runway.

During construction, excess excavated soil material would be moved and placed in the stockpiling area. Based on testing, soils found to be suitable for reuse would be retained while unsuitable soils would be moved offsite for disposal. Because of the distances between the main stockpiling area and the new water tank, water well, and parts of the pipeline alignment, suitable excavated soils would also be stockpiled temporarily at the work sites for reuse during construction of these features, as needed. All such areas used for stockpiling would be limited to highly disturbed areas devoid of vegetation or covered in concrete, asphalt, or gravel within the construction footprint.

Disposal Areas. All excess suitable soil material would be transported from the stockpiling area to the disposal area located just east of the stockpiling area (Plate 3). This disposal area encompasses approximately 2 acres of open disturbed area with scattered vegetation. Similar to the staging area, the area is crossed by several dirt roads providing access for maintenance of the ditches and airport runway. The suitable soil material would be reused in other areas of the developing industrial park, as needed.

All cleared brush, unsuitable soil material, concrete and asphalt waste, and other debris would be transported offsite via trucks and disposed of at an approved disposal site, depending on the type of material. The cleared brush and soil material would likely be transported to a regional landfill. The closest landfill to the project area is the Lockwood Landfill, which is located in Lockwood about 5 miles west of Reno.

2.2.4 Construction Schedule

The project is anticipated to begin in October 2009 and be completed by October 2010 unless severe winter weather delays construction. Work would begin with construction of the new water storage tank, followed by development of the water supply well, and then construction of the lift station and installation of the underground pipeline concurrently.

Work during most of the year would be conducted in 10-hour shifts from 7:00 a.m. to 5:30 p.m., Monday through Thursday. During the winter months, work would be conducted in 8-hour shifts from 7:00 a.m. to 3:30 p.m, Monday through Friday. No work would be conducted on weekends or during late evening or night hours.

2.2.5 Post-Construction Activities

Demobilization and Clean Up. After all construction and restoration work is completed, all construction equipment, administrative trailer, unused materials, and debris would be removed from the main staging area. Then the area would be returned to pre-project conditions, including reseeded of disturbed areas with native species to minimize erosion and encourage revegetation, if necessary.

In addition, all work areas would be cleaned of all rubbish, excess soils, and materials, and all parts of the work would be left in a neat and presentable condition.

This would include work areas at the storage tank, well site and lift station, and along the pipeline alignments.

Operation and Maintenance. After completion of construction, the project would be operated and maintained by the City of Yerington as part of the City's existing water supply and wastewater collection systems. The new water storage tank, lift station, and water well would be integrated into the City's radio-operated Supervisory Control and Data Acquisition (SCADA) system designed to remotely monitor the operation of the water supply and wastewater collection systems. City staff would make regular inspections and repairs, as needed, to ensure the integrity of the systems.

3.0 AFFECTED RESOURCES AND ENVIRONMENTAL EFFECTS

This section describes the resources in the project area, as well as any effects of the alternatives on those resources. When necessary, mitigation measures are also proposed to avoid, reduce, minimize, or compensate for any effects determined to be significant.

3.1 Resources Not Considered in Detail

Because of the nature of the work, the project would have little to no effect on several resources in the project area. These resources are discussed in Sections 3.1.1 to 3.1.9 to add to the overall understanding of the project area.

3.1.1 Climate

Located in the Mason Valley, Yerington has a more temperate climate than other communities in Lyon County. Average temperatures range from the winter lows in the 20's (degrees Fahrenheit) to summer highs in the mid-80's. Total precipitation averages about 5 inches annually, with peak periods during the winter and spring months. Snowfall averages about 6.5 inches annually, with most snow falling between December and February (Western Regional Climate Center, 2006). Most winds are from the west to southwest (Resource Concepts, Inc., 2004). The project would have no effect on climate.

3.1.2 Geology and Seismicity

The Mason Valley is located in the Great Basin, which is a part of the Basin and Range Geologic Province of North America (Fiero, 1986). The geology of the region is very complex due to millions of years of movement and uplift in the earth's crust. Formation and weathering of mountains resulted in the movement of eroded material into valley areas. As a result, rock debris is thousands of feet deep in the Mason Valley (USGS, 2004). The near-surface geology in the project area is a combination of flood plain deposits from the Walker River Basin and playa deposits from the hillsides to the east.

Seismic maps of Nevada show that there are many geologically young faults located throughout Lyon County (NBMG, 2000). Recent seismic activity in the county has ranged from less than 4.0 to over 7.0 Richter in intensity. The city of Yerington lies within earthquake zone 4, which further denotes the area as a potential earthquake area and indicates that major damage could occur during an earthquake (City of Yerington, 2005a). However, most of the seismic activity is concentrated in the mountains to the west and southeast of the city (NBMG, 1999). The project would have no effect on geology or seismic conditions.

3.1.3 Topography and Soils

Yerington is located in the Mason Valley, with the Singatse Range to the west and the Wassuk Range to the east of the valley. Elevations range from 4,390 feet in Yerington to peak elevations of 6,365 feet and 7,352 feet in the Singatse and Wassuk Ranges, respectively (MountainZone.com, 2009; 2009a). The valley area is mostly flat, typical of Basin and Range valley topography. Slopes in Mason Valley are generally less than 2 percent (Resource Concepts, Inc., 2004). The land in the project area has a flat to slightly rolling terrain except for the new tank site, which is located on a hill west of Highway 95A.

The soils in the project area are deep and well drained soils typical of those formed in mixed alluvium. The soil series consist mainly of Dithod loam, East Fork clay loam, and Orizaba sandy loam. Dithod loams are pH neutral, very deep, and moderately well drained. East Fork clay loams are also deep and moderately well drained, and moderately to strongly alkaline. Orizaba sandy loams are strongly alkaline, deep, and poorly drained (NRCS, 2003; 2008; 2008a). The project would have no effect on valley topography or soils.

3.1.4 Fisheries

Yerington is located within the Lahontan Basin river system, which includes the Humboldt, Truckee, Carson, and Walker River Basins. Fish species native to the Lahontan Basin include mountain whitefish, Tahoe sucker, Lahontan mountain sucker, Lahontan tui chub, Lahontan speckle dace, Soldier Meadows desertfish, Belding sculpin, and Lahontan cutthroat trout (La Rivers, 1994).

The section of Walker River that flows through the project area supports a variety of aquatic life, including both native and nonnative fish species. The river is regularly stocked with rainbow trout and tiger trout (NDOW, 2009). The intermittent ditches in the project area provide no suitable habitat for fisheries or other aquatic species. Directional boring would be used to install the pipeline at least 10 feet below the bottom of the Walker River. The boring unit would be located approximately 70 feet away from the river bank so riparian vegetation along the river bank would not be affected. As a result, the project would have no effect on fisheries or aquatic habitat.

3.1.5 Land Use and Zoning

The City of Yerington completed a Master Plan in 2005 to help guide and manage the growth in the area. The Master Plan identified current and future infrastructure developments and updated the City's zoning to reflect these developments. The area north of Highway 95A is zoned for agricultural and light industrial (M-1) use, while the developed area south of the highway is zoned for single and multiple family residential (R-1, R-2, R-3, R-8), and residential-commercial (R-C) (City of Yerington, 2005b).

The land in the project area is currently being used for industrial parks, agricultural fields and ditches, and City recreational facilities and residences. The City's existing storage tank, wastewater treatment facility, Yerington Municipal Airport, and water tower are also located in the project area. These current land uses would not change, and the City has also determined that the project would require no changes in current zoning.

While the project would have no effect on current land use or zoning, one purpose of the project is to provide the infrastructure needed for continued growth and development in the northern part of the city. As a result, the project is consistent with the City's 2005 Master Plan, and planned development of the industrial parks would continue, consistent with needs of the City and elements of the plan.

3.1.6 Prime Farmland

Prime farmland is defined as land with the best combination of physical and chemical characteristics for producing food, feed, forage, and other agricultural crops with minimum input of fuel, fertilizer, and labor. Farmland of statewide importance is other farmland designated as such by the State (NRCS, 2007). The project would have no effect on prime farmland or farmland of statewide importance because there is no such farmland at the new storage tank, lift station, or well sites, or along the pipeline alignment.

3.1.7 Socioeconomics and Environmental Justice

Lyon County is a sparsely populated rural county in western Nevada. Yerington, the only incorporated city, is the County seat for local government. The population of the city was 2,883 in 2000 (U.S. Census Bureau, 2000) and has since increased to 3,319 (NDEP, 2009). In 2000, the ethnic makeup of the city was 75.1 percent white, 12.5 percent Latino of any race, 12.3 percent African American, 0.9 percent American Indian, 3.6 percent Asian, 0.1 percent Pacific Islander, and 7.9 percent from other races (U.S. Census Bureau 2000, 2000a).

The local economy is based largely on irrigated agriculture, with principal crops including alfalfa, onions, garlic, grains (oat, wheat, barley, and other hays), and potatoes. Most of the workers in Yerington are employed in educational, health, and social

services, as well as recreation, accommodations, and food services. In 1999, the median household income in Yerington was \$31,151 per year; the poverty rate was 17.9 percent; and the unemployment rate was 4.2 percent (U.S. Census Bureau, 2000a).

The project would have no effect on the current population, ethnic makeup, income, or poverty rate of the city. However, one purpose of the project is to provide the infrastructure needed for continued growth and development in the northern part of the city. The City is especially interested in attracting new industry to this area, which could provide new jobs, increase local revenues, and support new services to current and future residents (City of Yerington, 2005). The project would have no disproportionate effects on any minority or low-income populations in Yerington.

3.1.8 Odor Control

The only potential source of unpleasant odors in the project area is the existing wastewater treatment plant north of the City center. Construction of the project would have no effect on odors in the area. Above-ground parts of the new lift station would include appropriate equipment to control any release of unpleasant odors during operation.

3.1.9 Hazardous, Toxic, and Radiological Waste

The Corps completed a Phase I Environmental Site Assessment (ESA) for the City of Yerington Water and Sewer Project in September 2008 (Corps, 2008). The purpose of the ESA was to identify the presence or likely presence of any hazardous waste that may affect construction of the project. A comprehensive records review and site visit were conducted to compile information for the ESA. This assessment did not include sampling for analysis of soil or groundwater.

The records review showed 14 sources of potential contamination near Yerington, Nevada. However, none of these sources are within the proposed construction areas for the project. In addition, site reconnaissance revealed no evidence that HTRW contamination would affect the project (Corps, 2008).

Construction of the project would involve use of substances that could be considered hazardous, such as fuels, lubricants, and oils. Inadvertent spills or leaks of these substances could enter surface waters via runoff or percolate into the groundwater. However, all spills or leaks would be cleaned up immediately. In addition, construction of the project would follow the regulatory requirements of the Nevada Department of Environmental Protection NPDES permitting process. As a result, the project would have no effect on any existing HTRW nor would it create any new HTRW.

3.2 Vegetation and Wildlife

3.2.1 Existing Conditions

Vegetation. The plant communities in and near the project area include Fremont cottonwood riparian forest, willow shrub riparian, shrub-steppe, and ruderal. There are also large fields with irrigated agricultural crops, and City areas with ornamental trees and landscaping.

Fremont Cottonwood Riparian Forest. This riparian forest develops along rivers and streams in low-gradient areas. This plant community is dominated by Fremont cottonwood trees, and in a desert riparian forest, associated plants are typically coyote willow, buttonbush, California sycamore, mulefat, and saltgrass (Sawyer and Keeler-Wolf, 1995). In the project area, this plant community is found on the pipeline alignment from the west side of the Nichol-Merrit Ditch to the Walker River crossing and along the pipeline alignment parallel to the west side of the Walker River.

Willow Shrub Riparian. Willow shrub vegetation develops along small streams, unlined canals, and agricultural ditches with at least intermittent flows. The plant community is typically dominated by coyote willow, and associated plants are buttonbush, mulefat, and saltgrass. In the project area, this plant community is found at the Campbell Ditch crossing and along the pipeline alignment parallel to the west side of the Campbell Ditch.

Shrub-Steppe. Shrub-steppe vegetation develops in upland desert areas with limited precipitation. The plant community is typically dominated by sagebrush, usually big sagebrush, and associated plants are antelope bitterbrush and rabbitbrush (Sharpe et al. 2008). Greasewood and saltgrass are also very common in the upland areas near the Walker River. In the project area, this plant community is found on the pipeline alignment from just west of the airport runway to the southeast edge of the Nichol-Merrit Ditch.

Ruderal. Ruderal vegetation develops in repeatedly disturbed areas such as along paved roadways, parking lots, and equipment storage yards. The plant community is typically dominated by weedy species such as pineapple weed, red sand spurrey, mustard, filarees, and nonnative annual grasses (Corps, 2006). In the project area, this plant community is found at the storage tank site, well site, and pipeline alignment along dirt and/or gravel roadways, airport runway, Highway 95A, and some City streets.

Agriculture. Principal field crops grown and harvested in the Yerington area include alfalfa, onions, garlic, grains (oat, wheat, barley, and other hays), and potatoes. In the project area, agricultural fields are found north of the lift station site, as well as adjacent to parts of the pipeline alignment west of the Walker River.

Ornamental Trees and Landscaping. Nonnative trees, shrubs, grasses, and flowers are planted at residences, businesses, parks, and along roadways in Yerington to provide shade and enhance the quality of life. In the project area, this type of landscaping along the pipeline alignment in the developed areas adjacent to N. Oregon, Pearl, and California Streets.

Wildlife. The habitat provided by Fremont cottonwood riparian forest, willow shrub riparian, and shrub-steppe plant communities can support diverse wildlife species such as raptors, songbirds, waterfowl, rodents, bats, large mammals, and assorted reptiles (NDOW, 2009b). Birds sighted and identified during field visits by Corps biologists on September 18-19, 2008, and July 15-16, 2009, included swallowtails, red-tailed hawk, and turkey vulture. Rabbit and deer scat were noted, while mule deer and mallards were spotted in the Walker River riparian forest area. Several lizards, most likely western fence lizards, were observed, and there were many mounds and small rodent holes throughout these communities. Yellow-billed cuckoo, mourning dove, swallowtails, and migratory birds can also use the Fremont cottonwood and willow shrub riparian habitats for nesting from March to August.

In contrast to the riparian and shrub-step plant communities, the habitat provided by the ruderal, agriculture, and ornamental trees and landscaping vegetation can support only a few types of wildlife. Typical species include rodents, reptiles, and occasional birds. During the field visits, the Corps biologists saw many mounds and small rodent holes in the ruderal and agriculture areas. Migratory birds are unlikely to use the ornamental trees in the City for nesting because of the close proximity of human activities and domesticated cats.

3.2.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on vegetation and wildlife if it would (1) result in the substantial loss or degradation of any plant community providing high quality wildlife habitat or (2) permanently displace substantial numbers of resident or migratory wildlife species.

No Action. This alternative would have no effects on existing vegetation and wildlife, including migratory birds in the project area. The plant communities and associated wildlife species would be expected to remain the same.

Water and Sewer Improvement.

Vegetation. This alternative would have both short-term and long-term effects on several plant communities in the project area. Depending on the location of the work, the type, amount, habitat value, and significance of the removed vegetation would vary as discussed below. The pipeline installation work on farming roads and City streets would be limited to the dirt, gravel, or asphalt surfaces. Thus, there would be no effects on nearby agricultural fields, or ornamental trees and landscaping.

Ground clearing and grubbing at the storage tank, water well, lift station, and water and sewer pipeline alignment would have short-term effects on vegetation. In addition, work at the staging, stockpiling, and disposal areas could remove or disturb existing vegetation. However, the affected plant community in all of these work areas except parts of the water and sewer pipeline is ruderal, composed of scattered weedy species. Since this community has very low value as wildlife habitat, the effects would be considered less than significant. In addition, weedy species would be expected to revegetate frequently disturbed areas after construction is completed.

Ground clearing and grubbing along the pipeline alignment from just west of the airport runway to the Walker River crossing and then parallel to the west side of the river would have short-term effects on shrub-steppe and Fremont cottonwood riparian forest plant communities. Both of these communities have a diversity of plant species and offer medium to high habitat value, especially the riparian forest along the river. To minimize effects on both communities, the alignment of the pipeline has been designed to avoid these communities, when possible. In addition, the directional boring unit would be placed approximately 70 feet away from riverbank to minimize effects of the crossing on riparian vegetation. No mature trees would be disturbed or removed. As a result, there would be no substantial loss of high quality wildlife habitat, and the effects on riparian forest and shrub-steppe would be less than significant.

Ground clearing along the pipeline alignment at the Campbell Ditch crossing and clearing and grubbing along the west side of the ditch could have short-term effects on the willow shrub riparian plant community. This community has a diversity of plant species and offers medium to high habitat value. To minimize any effects on this community, the alignment of the pipeline has been designed to avoid this community both at the crossing and along the west side. The directional boring unit would be operated from the existing paved roadway to avoid riparian vegetation along the ditch. In addition, the pipeline along the west side would be installed on the outside of the dirt roadway away from the ditch. As a result, there would be no substantial loss of high quality wildlife habitat, and any effects on willow riparian shrub riparian would be less than significant.

Construction of the new 12-foot-wide gravel maintenance road directly over the 1,298-foot section of new water and sewer pipeline and culverts from the west edge of the airport runway to near the Walker River would result in the permanent loss of approximately 0.36 acre of primarily shrub-steppe with a small amount of non-woody riparian forest. This road is required to ensure access for regular inspections and repair, if needed, of the water and sewer pipelines. While 0.36 acre of potentially medium to high quality wildlife habitat would be lost, this fraction of an acre would not be considered to be substantial as compared to the total number of acres of these habitats in the Yerington area. As result, loss of shrub-steppe and non-woody riparian forest would not be considered significant.

Wildlife. This alternative could have short-term effects on wildlife species in or near the project area during construction. These effects would include disturbance and/or

displacement of the species by noise and construction activities. Depending on the available wildlife habitat at the work site, the type and number of affected species and significance of the effects would vary as discussed below. Because of the distance from the construction activities, any wildlife species using the nearby agricultural fields or ornamental trees and landscaping would not be affected.

Construction of the storage tank, water well, lift station, and parts of the water and sewer pipeline alignment could have short-term effects on any wildlife in the area. In addition, work at the staging, stockpiling, and disposal areas could also affect wildlife. However, the ruderal plant community in all of these work areas has very low value as wildlife habitat so use by small species such as insects and lizards would be expected to be infrequent. As a result, any effects of the work would be considered less than significant.

Construction of the pipeline alignment from west of the airport runway to the Walker River crossing and along the west side of the river could have short-term effects on any wildlife in the area. The shrub-steppe and Fremont cottonwood riparian forest plant communities both have medium to high value as wildlife habitat, and these communities are used frequently by diverse wildlife including large and small mammals, resident and migratory birds, and reptiles. As discussed under *Vegetation*, however, there would be no substantial loss of medium to high quality wildlife habitat in this area, and no trees would be removed. In addition, once construction is completed and conditions are restored, any displaced wildlife species would be expected to return to the area. As a result, any effects of the work would be considered less than significant.

Construction of the pipeline alignment at the Campbell Ditch crossing and along the west side of the ditch could have short-term effects on any wildlife in the area. The willow shrub riparian plant community has medium to high value as wildlife habitat, and this community is used often by small mammals, resident and migratory birds, and reptiles. As discussed under *Vegetation*, however, there would be no substantial loss of medium to high quality habitat in this area. In addition, once construction is completed and conditions are restored, any displaced wildlife species would be expected to return to the area. As a result, any effects of the work would be considered less than significant.

Construction of the section of new gravel maintenance road would result in the permanent loss of approximately 0.36 acre of primarily shrub-steppe with a small amount of non-woody riparian forest. Use is mainly by small mammals, a few birds, and reptiles, who would be displaced to other areas by the work. As discussed under *Vegetation*, however, this loss of medium to high quality habitat would not be considered to be substantial as compared to the total number of acres of these habitats in the Yerington area. In addition, the number of wildlife displaced would not be expected to be substantial because of lack of trees. As a result, any effects of the work would be considered less than significant.

3.2.3 Mitigation

Since there would be no significant effects on vegetation and wildlife, no mitigation would be required. However, prior to boring at both the Walker River and the Campbell Ditch, a biologist would be required to survey the proposed area of disturbance to ensure that all mature riparian vegetation would be avoided and that no trees would be damaged. In addition, if construction occurs within the nesting season for migratory birds (March to August), a qualified biologist would be required to survey for nesting birds in the riparian areas along the Walker River and Campbell Ditch prior to construction. If active nests are located, construction in the riparian area would not be initiated until the young birds have fledged.

3.3 Threatened and Endangered Species

3.3.1 Existing Conditions

In a letter dated March 11, 2009, and reconfirmed in an email dated June 16, 2009, the U.S. Fish and Wildlife Service (USFWS) indicated that the only Federally listed, proposed, or candidate species that could occur in the project area is the threatened Lahontan cutthroat trout (LCT) (Appendix A). In addition, the list of sensitive species for Lyon County from the Nevada's Natural Heritage Program website was obtained and reviewed on June 18, 2009 (DCNR, 2004).

The LCT (*Oncorhynchus clarkii henshawi*) is native to the drainages of the Truckee, Humboldt, Carson, Walker, and Quinn Rivers, and several smaller rivers in the Great Basin. The LCT occurs in cool flowing water with available shaded riverine aquatic cover from well vegetated and stable stream banks. They prefer areas where there is stream velocity breaks and relatively silt free, rocky riffle-run areas (USFWS, 2006). Starting in the late 19th century, irrigated agriculture development and diversion of water from these rivers severely disrupted the quality of LCT habitat. In addition, nonnative salmonids were introduced into the rivers, further jeopardizing the species.

In 1970, the USFWS classified the LCT as an endangered species due to "destruction, drastic modification, or severe curtailment of their habitat," and hybridization with introduced trout species, especially the brook and rainbow trout (35 FR 16047). Subsequent Federal and State recovery programs successfully cultured and reintroduced LCT populations and reduced hybridization by eliminating nonnative species. As a result, the USFWS downlisted the LCT from endangered to threatened in 1975 (40 FR 29863). The reach of the Walker River in the project area currently provides suitable habitat for the LCT, which is known to occur in the Walker River Basin.

According to the USFWS, the project area is located within a "potential and existing metapopulation for LCT, and as such, the area is necessary for the species' recovery. Under the Endangered Species Act (16 U.S.C. 1531 et seq.), completed projects should not preclude future recovery and survival of this species, including any

effects on riparian and aquatic habitats as they relate to this species” (Haworth pers comm., 2009). However, the Walker River is not designated critical habitat for the LCT.

3.3.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect if it would (1) result in the take of a Federally listed threatened or endangered species, or (2) adversely affect a species designated critical habitat.

No Action. This alternative would have no effect on Federally listed threatened or endangered species or their habitat. Conditions for the listed Lahontan cutthroat trout would be expected to remain the same.

Water Supply and Sewer Improvement. The only Federally listed species in the project area is the threatened LCT, known to inhabit the waters of the Walker River. The intermittent irrigation ditches do not provide suitable habitat for fish species. The only work activity with the potential to affect the LCT or its habitat would involve installing the new water and sewerlines across the river just west of the proposed crossings of Nichol-Meritt and WRID Ditches.

To avoid any effects on the LCT or its habitat, directional boring would be used to cross underneath the river. Depth of the new pipelines would be 21 feet, approximately 10 feet below the river bottom at this location. The directional boring unit and receiving areas would be located approximately 70 feet away from the riverbank in areas that would disturb only grasses and a few small shrubs. All mature riparian vegetation along the riverbanks would be avoided, and no trees would be trimmed, damaged, or removed.

As a result, this alternative would have no effect on the Federally listed threatened LCT or its habitat. In accordance with the Endangered Species Act (16 U.S.C. 1531 et seq.), the completed project would not preclude future recovery and survival of this species.

3.3.3 Mitigation

Since there would be no effects on Federally listed species or their habitat, no mitigation would be required. Prior to boring, a biologist would be required to survey the proposed area of disturbance to ensure that all mature riparian vegetation would be avoided and that no trees would be damaged.

3.4 Water Resources and Water Quality

3.4.1 Existing Conditions

Water Resources.

Surface Water. The only natural source of surface water in the project area is the Walker River, located less than a mile to the west and northeast of the City center. The river is formed approximately 7 miles south of Yerington by the confluence of the East Walker and West Walker Rivers. The Walker River then flows north past the City into central Lyon County, where it turns sharply to the southeast, flowing through the Walker River Indian Reservation, past the town of Schurz, and then into the northern end of Walker Lake (UNR, 2009).

The State has designated the beneficial uses of the Walker River flowing through the project area as irrigation, watering of livestock, recreation involving contact with the water, recreation not involving contact with the water, industrial supply, municipal and/or domestic water supply, propagation of wildlife, and propagation of aquatic life with a focus on increasing channel catfish and largemouth bass (BWQP, 1999).

Groundwater. The City of Yerington relies on pumping groundwater for its municipal water supply. The City has water rights to pump up to 1.7 billion gallons annually. However, the system pumped only 487 million gallons in 2006 and 562 million gallons in 2007 (City of Yerington, 2008). The water system holds water rights that will allow growth well into the future.

In accordance with their water rights, the City uses four active wells to pump groundwater from the underlying basin-fill aquifer to supply water to its residents and businesses. The volume of groundwater varies seasonally; that is, greater volume in the spring and summer months due to recharge from snow melt runoff and irrigation, and less volume during the fairly dry fall and snowy winter. Under State law, the State Engineer is responsible for ensuring that groundwater withdrawals do not exceed the perennial yield for each basin (NDWR, 2009).

Water Quality.

Surface Water. The quality of the water in the Walker River is determined by seasonal flows, amount and timing of agricultural diversions and runoff, and past and ongoing development along the river. The primary water quality concerns are the amount of total dissolved solids (TDS) and water temperature because of their potential adverse effects on fish and other aquatic life. Both TDS and temperature tend to increase downstream with increasing inflow of surface runoff and agricultural return flows, as well as slower water velocity (Sharpe, et al., 2008).

Based on the water quality thresholds for the beneficial use, the State has determined that this reach of the Walker River is an “impaired” water body requiring action to achieve water quality standards. An impaired water body has contaminants that exceed the thresholds to support its beneficial uses. In this reach, the pollutants that exceed the threshold to support its beneficial uses are TDS and iron (BWQP, 2005).

Groundwater. Based on well monitoring by the City of Yerington, the groundwater meets Federal drinking water standards for all physical and chemical parameters except arsenic, which occurs naturally in many parts of Nevada (City of Yerington, 2009). Weathering and dissolution of rocks, minerals, and ores bearing arsenic are the causes of this contaminant in the groundwater. Arsenic is known to be associated with skin damage or problems with circulatory systems, and may increase the risk of developing cancer .

The current U.S. Environmental Protection Agency’s Arsenic Rule has established a maximum contaminant level for arsenic at 10 parts per billion (ppb), and arsenic has been detected at levels up to 22 ppb at one of the City wells. The City is currently designing a plan to construct an arsenic treatment plant in order to comply with this rule (City of Yerington, 2008). This plant would be operated to ensure that the City’s water supply meets the 10 ppb level. The City intends to construct this plant once the water and sewer improvement project is completed.

3.4.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on water resources if it would (1) substantially reduce natural surface or groundwater resources, (2) interfere with groundwater recharge, or (3) exceed or interfere with existing water rights.

An alternative would be considered to have a significant effect on water quality if it would (1) substantially degrade the quality of natural surface water resources, (2) contaminate a public water supply, or (3) substantially degrade the quality of groundwater resources.

No Action. This alternative would have no effect on surface water resources, groundwater recharge, or existing water rights in the project area. In addition, the quality of natural surface water resources would not be affected. However, no action could have an adverse effect on groundwater quality due to leaks from existing septic systems in the developing area north of the City center. While leaks would be small, they would still contaminate the groundwater, which is the public water supply for the City.

Water Supply and Sewer Improvement.

Water Resources. This alternative would have no effect on surface water resources, groundwater recharge, or existing water rights in the project area. Effects on the flows in the Walker River would be avoided by using directional boring to install the water and sewer pipelines underneath the river. Although operation of the new water

well would reduce the groundwater resources under the City center, this reduction would not be significant as compared to the total groundwater in the Mason Valley. In addition, the City already has water rights to the additional groundwater that would be pumped by the new water well (City of Yerington, 2005a).

Water Quality. This alternative would have no effects on the quality of natural surface water in the project area. Effects on the Walker River would be avoided by using directional boring to install the water and sewer pipelines underneath the river. After construction is completed, the initial flows in the Nichol-Merrit and WRID Ditches could have increased turbidity from disturbed sediments. However, this decrease in water quality would not be considered significant because it would be short term and would not substantially degrade the quality of any water resource.

Per the project purpose, the project could improve the groundwater quality by decreasing the potential for small leaks from existing septic tank systems to move into the groundwater, thus contaminating the public water supply for the City.

3.4.3 Mitigation

Although the project would have no significant effects on water resources, the City would be required to obtain any permits and comply with State statutes and codes intended to protect water resources and quality as discussed below.

Construction of the project could disturb a total of approximately 14 acres of ground surface. As a result, the NDEP would require that the City obtain an NPDES permit in accordance with the Clean Water Act, as amended. This permit is required for construction activities that disturb 1 or more acres of land and involve possible storm water discharges to surface waters. Prior to construction, the City would prepare a Storm Water Pollution Prevention Plan, which would identify best management practices (BMP's) to avoid or minimize any adverse effects of construction on surface waters and to protect channels from sediment input during construction. The contractor would be required to implement these BMP's during construction in accordance with the NPDES permit.

In addition, the project would be required to comply with all provisions of the Nevada Revised Statutes (NRS), Chapter 533, "Adjudication of Vested Water Rights; Appropriation of Public Water," and Chapter 534, "Underground Water and Wells." Compliance with Nevada Administrative Code (NAC) 445A.6715 to 445A.6718, inclusive, "Regulations for Public Water Systems," would also be required. As a result, no additional mitigation would be required.

3.5. Waters of the U.S. and Wetlands

3.5.1 Existing Conditions

On September 19, 2008, the Corps conducted a wetland delineation in accordance with the Corps of Engineers' Wetlands Delineation Manual, 1987. The purpose of the delineation was to confirm the presence of Waters of the U.S. in the project area and to identify any jurisdictional wetlands along the alignment of the water and sewer pipelines. The Clean Water Act requires that potential adverse effects on jurisdictional waters be avoided, minimized, or compensated (33 U.S.C. 1251 et seq.)

Waters of the U.S. The delineation confirmed that as a navigable waterway, the Walker River is considered a Waters of the U.S. Any area within the ordinary high water mark of the river is considered to be jurisdictional. The three agricultural ditches in the project area (Campbell, WRID, and Nichol-Meritt Ditches) are also considered Waters of the U.S. since they either remove water from, or drain into, the Walker River. These ditches are manmade and regularly maintained (cleared of vegetation and excess soils) each season.

Wetlands. Since the pipeline alignment would cross the three agricultural ditches, they were further evaluated for the presence of wetlands. Three parameters must be present to meet the criteria for existing wetlands: (1) hydrophytic (water loving) plants, (2) hydric soils, and (3) frequency of flooding (saturated with water or covered by shallow water at some time during the growing season of each year) (Cowardin et al., 1979).

During the field visit on September 19, 2008, hydric soils were identified in some areas of interest near the river and ditches, as well as positive indicators for flooding due to a probable 3- to 5-foot water table near the river. Some wetland plants were also identified. However, there were no strong indicators for all three parameters in one particular area outside of the ordinary high water mark of the river. Other areas were dominated by riparian forest, willow shrub, or upland shrub-steppe plant communities, which are not considered wetlands according to the Corps Wetlands Delineation Manual (Corps, 1987). Based on the evaluation, the Corps has determined that there are no wetlands in the project area.

3.5.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect if it would substantially degrade the quality of a Waters of the U.S. or jurisdictional wetlands.

No Action. This alternative would have no effect on any Waters of the U.S. or jurisdictional wetlands in the project area. Conditions in the Walker River and the three agricultural ditches would be expected to remain the same.

Water Supply and Sewer Improvement. Since there are no wetlands in the project, area this alternative would have no effect on wetlands. In addition, effects on both the Walker River and Campbell Ditch (Waters of the U.S.) would be avoided. Directional boring would be used to install the water and sewerlines underneath both the river and the ditch. The boring unit would be placed away from the both the river and streambanks so there would be no movement of soils or other materials into the water.

The installation of the water and sewer pipelines would involve trenching across the WRID Ditch and Nichol-Merrit Ditch, laying the pipeline, constructing a culvert at each crossing, and constructing a section of gravel maintenance roadway over the new culvert. This work would involve excavating and then refilling these ditches with bed material and excavated soils. Since these ditches are also considered Waters of the U.S., a Section 404(b)(1) analysis was prepared to “state and evaluate information regarding the effects of discharge of dredged or fill material into the waters of the U.S.” (Appendix B).

The Section 404(b)(1) analysis determined that (1) the placement of the fill material represents the least environmentally damaging practicable alternative; (2) the activity does not appear to (a) violate Federal or State water quality standards or (b) jeopardize the existence of Federally listed endangered or threatened species; (3) the activity would not significantly degrade waters of the U.S.; and (4) appropriate and practicable steps have been taken to minimize potential adverse effects of the placement of fill material on the aquatic ecosystem. The analysis also indicated that implementing the measures in the SWPPP would prevent or reduce the effects of earth moving, handling of toxic materials, and other disturbances in and adjacent to the river or ditch channel to less than significant.

3.5.3 Mitigation

As discussed in Section 3.4.3, the NDEP would require that the City obtain an NPDES permit in accordance with the Clean Water Act, as amended. As part of the permit process, the City would prepare a SWPPP, which would identify BMP’s to avoid or minimize any adverse effects of construction on surface waters and to protect channels from sediment input during construction. The contractor would be required to implement these BMP’s during construction in accordance with the NPDES permit to reduce any effects to less than significant.

3.6 Air Quality

3.6.1 Existing Conditions

The Nevada Bureau of Air Pollution Control (BAPC) and Nevada Bureau of Air Quality Planning (BAQP) are responsible for ensuring compliance with Federal and State air quality regulations in all Nevada counties except Washoe and Clark Counties (BAPC, 2009; BAQP, 2009). Among other activities, the Nevada BAPC issues emission and

surface area disturbance permits while the Nevada BAQP monitors and manages ambient air quality throughout the rest of the State.

The State has adopted the U.S. Environmental Protection Agency's (EPA) National Ambient Air Quality Standards in determining compliance. According to the U.S. EPA (2008), the project area is classified as an "attainment" area (meets standards) for all required pollutants, including carbon monoxide, ozone, and particulate matter (PM₁₀). The primary sources of hydrocarbon emissions and fugitive dust in and near the project area are vehicles, small aircraft, and agricultural activities.

Air quality sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in air quality due to emissions and fugitive dust from the project. Air quality sensitive land uses in the project area include residences, parks, and schools in the developed areas; and sensitive receptors include residents, visitors, and recreationists. In the open areas north of the City center, the sensitive receptors are limited to occasional wildlife.

3.6.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on air quality if it would (1) violate any ambient air quality standard, (2) contribute on a long-term basis to an existing or projected air quality violation, (3) expose humans or sensitive species to substantial pollutant concentrations, or (4) not conform to applicable local standards.

No Action. This alternative would have no effect on existing air quality in the project area. Air quality would continue to be influenced by climatic conditions, wild fires, and local and regional emissions from vehicles and agriculture.

Water Supply and Sewer Improvement. This alternative would have short-term effects on air quality during construction of the project. The operation of vehicles and heavy equipment including front end loaders, trenchers, backhoes, and water trucks would produce emissions as hydrocarbon exhaust and PM₁₀. In addition, there would be short-term increases in PM₁₀ as fugitive dust during soil excavation and operation of vehicles and heavy equipment.

However, these short-term emissions are not expected to violate any Federal ambient air quality standards or expose any sensitive receptors to substantial pollutant concentrations. Once the project is completed, air quality would return to pre-project conditions so there would be no long-term effects on air quality in the region.

3.6.3 Mitigation

Although the project would have no significant effects on air quality, the City would be required to obtain any permits and comply with State statutes intended to protect air quality as discussed below.

Construction of the project could disturb a total of approximately 14 acres of ground surface. As a result, the BAPC would require the City to obtain a Surface Area Disturbance (SAD) permit in accordance with State statutes. This permit is required for construction activities that disturb 5 or more acres of land and involve generation of fugitive dust into the atmosphere. Prior to construction, the City would prepare a Fugitive Dust Control Plan identifying BMP's to minimize the amount of emissions and PM₁₀ generated during construction. These practices could include water trucks, sprinklers, fences or windbreaks, and speed limits. The contractor would be required to implement these BMP's and maintain ongoing dust controls during construction in accordance with the SAD permit.

In addition, the project would be required to comply with all provisions of the NRS Chapter 445B, "Air Pollution," and NRS Chapter 486A, "Alternative Fuels: Clean-Burning Fuels." Compliance with NAC Chapter 445B, "Air Controls," would also be required. As a result, no additional mitigation would be required.

3.7 Vehicular and Aircraft Traffic

3.7.1 Existing Conditions

Vehicular Traffic

Regional and Local Roadways. The major roadways in and near the project area are U.S. Highway 95A (Goldfield Avenue) and Nevada Highway 208 (Main Street). These roadways have two paved lanes and provide two-way traffic movement. Both highways run through the City of Yerington, providing access to other parts of Lyon County and the State. The proposed water line would cross under U.S. 95A at the intersection with N. Oregon Street.

The local roadways in the project area include paved City streets; paved, dirt, and/or gravel access roads; and dirt and/or gravel farming roads. The City streets are N. Oregon Street, Pearl Street, California Street, and Broadway Avenue. The City streets are paved, and some have concrete curbs and sidewalks. The paved access road to the airport changes to dirt nearer the runway. There are dirt and/or gravel access roads to the existing water storage tank, as well as similar farming roads between fields and along irrigation ditches. Sections of pipeline would be installed along all of these types of local roadways.

Traffic Types and Volumes. The types of traffic on the highways include cars, recreational vehicles, small utility vehicles, semi- and pickup trucks, buses, and motorcycles. City traffic includes primarily cars, small utility vehicles, and pickup trucks, while pickup trucks, small utility vehicles, and farming equipment use the dirt and/or gravel access and farming roads.

The Nevada Department of Traffic (NDOT) records and compiles annual average daily traffic (AADT) volumes along the highways and many roadways in Nevada. Table 2 shows the 2008 AADT at locations nearest the project area (NDOT, 2009). The dirt and/or gravel access and farming roads would have only occasional use by maintenance and agricultural vehicles.

Aircraft Traffic

Regional and Local Service. The Yerington Municipal Airport is located approximately 1 mile north of the City center. Open to the public, this airport was activated in 1945 (AirNav, LLC, 2009) and serves the general aviation needs of southern Lyon County. The airport has a taxiway and one asphalt runway (runway 1/19), which is

Table 2. Traffic Volumes on Roadways near the Project Area in 2008

Roadway	Location	AADT ¹
Main Street	200 feet south of U.S. 95A (Goldfield Ave)	5,700
Main Street	150 feet north of Bridge St	5,400
U.S. 95A	0.2 mi east of Oregon St and 0.6 mi east of Main St	3,500
U.S. 95A (Goldfield Ave)	0.1 mile east of Highway 339	4,900
U.S. 95A (Goldfield Ave)	West of Main Street	5,600
Pearl Street	117 feet west of Oregon Street	1,200

¹AADT = Annual average daily traffic.

Source: Nevada Department of Transportation, 2009.

5,800 feet long and 75 feet wide. There is no control tower. In addition to general aviation, the airport serves as the base for the local Civil Air Patrol (search and rescue), Continental Air Care (ambulance), Matthews Aviation (aircraft painting), and other aircraft-related businesses (City of Yerington, 2005a).

The proposed waterline would cross under the airport runway. The City of Yerington has obtained a determination from the U.S. Federal Aviation Administration (FAA) that they do not object to the project as long as the City complies with FAA requirements regarding operational safety at the airport during construction (Tapia pers comm., 2009). This determination is included in Appendix C.

Aircraft Types and Volumes. The types of aircraft using the City’s airport range from small private single-engine planes to medium-sized commercial business jets. Currently, there are 38 single-engine and 6 multi-engine aircraft based at the airport (City-Data.com, 2009). Data from the FAA (2009) regarding the types and number of aircraft using the airport are shown on Table 3.

Table 3. Types and Volume of Aircraft at Yerington Municipal Airport¹

Type	Volume
Air carrier	0
Air taxi	100
General Aviation (local	7,000
General Aviation (itinerant)	18,500
Military	300
Total	25,900

¹Period from April 30, 2006, to April 30, 2007.

Source: FAA, 2009.

3.7.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on traffic if it would cause (1) an increase in vehicular traffic that is substantial in relation to the existing traffic on a roadway; (2) an increase in safety hazards on area roadways, airport runway, or surrounding air space; or (3) substantial deterioration of the physical condition of area roadways or airport runway.

No Action Alternative. This alternative would have no effects on existing roadway or airport traffic in the project area. The volume of traffic on roadways and at the airport would likely increase as the City continues its planned development of the industrial parks north of the City center (City of Yerington, 2005a).

Water Supply and Sewer Improvement

Vehicular Traffic. This alternative would have short-term effects on vehicle traffic and traffic volumes in and near the project area during construction. The project would affect the types of traffic, volume of traffic, and physical conditions of some of the roadways. However, there would be no long-term effects on traffic once the project is completed.

Construction equipment and worker vehicles would use existing local paved roadways, as well as dirt and gravel roads, to access the staging and work areas. In addition, haul trucks would use Highway 95A and other major roadways to transport construction materials to the work areas, as well as remove and dispose of any unsuitable soils and other waste materials. However, since this short-term increase in traffic would not be substantial as compared to existing traffic volumes as shown in Table 2, it would be considered less than significant.

Traffic congestion could increase along N. Oregon, Pearl, and California Streets since sections of the roadways would be restricted to one lane during installation of the pipeline. In addition, driveways along this lane would be inaccessible for short time periods during pipe installation and road repair. However, access for emergency vehicles and personnel along these streets would be maintained at all times. The City would notify residents and coordinate with local police, fire, and emergency services prior to all

work to minimize inconvenience and ensure public safety along these streets. As a result, any effects would be reduced to less than significant.

This alternative would have short-term effects on the physical condition of N. Oregon, Pearl, and California Streets during installation of the pipelines. However, after the pipeline work is completed, the disturbed roadways would be repaired by resurfacing with asphalt, and the streets would be returned to pre-project conditions. Directional boring would be used to cross underneath both the runway and Highway 95A. As a result, there would be no significant effects on the physical conditions of area roadways or airport runway.

Aircraft Traffic. This alternative would have no effect on aircraft traffic, operations, or surrounding airspace in or near the project area during construction. To avoid any effects, the proposed waterline would cross underneath the airport runway and taxiway using directional boring. No construction vehicles or activities would be allowed within 100 feet of the runway to ensure aircraft safety. In addition, because of the distance between the new storage tank and the airport, the above-ground tank would not pose a threat to low-flying aircraft entering and exiting the airport. The City would coordinate with the FAA and airport personnel during construction near the airport to further ensure aircraft and public safety.

3.7.3 Mitigation

Although the project would have no significant effects on vehicular or aircraft traffic, the City would be required to ensure public safety on roadways and comply with FAA requirements intended to minimize any effects and ensure aircraft and public safety as discussed below.

Prior to initiation of construction, the City's construction contractor would be required to prepare a traffic management plan and have it approved by the City. This plan would identify those measures that the contractor would implement during construction to minimize any effects on traffic and ensure public safety. Depending on the work location, these measures could include signs, flaggers, cones, barricades, traffic delineation, designated detours.

In compliance with FAA's determination, the construction contractor would also be required to implement those requirements in FAA Advisory Circular 150/5370-2E, "Operational Safety on Airports During Construction," and Chapters 3, 4, 5, 12 of Advisory Circular 70/7460-1K, "Obstruction Marking and Lighting," that apply to the project. As a result, no additional mitigation would be required.

3.8 Noise

3.8.1 Existing Conditions

Noise can be defined as unwanted sound and noise levels, and effects are interpreted in relationship to its effects on the City residents. The City of Yerington manages excessive noise that is injurious to health or interferes unreasonably with the comfortable enjoyment of life or property within the city. Per the City Code (1973 Code 8.12.010), excessive noise in the developed areas of the City is considered to be a nuisance (City of Yerington, 2009b).

The primary sources of ambient (background) noise in the project area are operation of vehicles, aircraft, agricultural equipment, and natural sounds such as wind and wildlife. City noise is mainly from vehicles and also occasional human activities such as recreational or school activities. Noise near the airport is dominated by aircraft and airport operations, while noise west of the river is limited to occasional vehicles, agricultural equipment, and natural sounds.

The levels of noise in the project area varies, depending on the time of day, the number and types of sources of noise, and distance from the sources of noise. Levels of noise during the day are highest at and near the airport, and along city streets during the commute hours because of the use of vehicles and aircraft. In the area west of the river, noise levels would be lowest due to only occasional sources of noise during the day. Typical noise levels in decibels range from the 30's in rural areas to 60's on busy streets to 80's at construction sites (Coolmath.com, 2009).

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. Noise-sensitive land uses in the project area include residences, parks, and schools in the developed areas; sensitive receptors include residents, visitors, and recreationists. In the open areas north of the City center, the sensitive receptors are limited to occasional wildlife.

3.8.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on noise if it would (1) substantially increase ambient noise levels or (2) constitute a nuisance as defined in the Yerington City Code (1973 Code 8.12.010). The significance of noise effects is evaluated with reference to the distance from the noise source and the number of sensitive receptors affected.

No Action Alternative. This alternative would have no effects on existing noise in the project area. Existing sources and levels of noise would be expected to remain the same. The City would continue to manage excessive noise per the City Code.

Water Supply and Sewer Improvement. This alternative would have short-term effects on noise during construction of the project. The operation of vehicles and heavy equipment including front end loaders, trenchers, backhoes, and water trucks would generate intermittent or constant noise, increasing ambient noise levels in the project area. In addition, there would be short-term increases in noise from worker activities such as moving supplies, installing pipe connections, and area cleanup.

The effects of noise decrease as the distance from the source increases due to attenuation of sound. At the same time, the effects increase as the number of sensitive receptors increases. The effects of noise in the project area would vary, depending on the location of the work site. In the area north of the City center, there are no sensitive land uses, and sensitive receptors are limited to only occasional wildlife. As a result, the increase in ambient noise levels in the this area would be less than significant.

However, the increases in ambient noise levels could be considered substantial along N. Oregon, Pearl, and California Streets during installation of the water pipeline. Both sensitive land uses and sensitive receptors are located along these streets, and the new well site is surrounded by a residential area. Residents, recreationists, and school children and personnel could be disturbed by the construction noise, especially when the work is being conducted nearby.

The City does not consider this construction noise as a nuisance per the City Code because the project is short term and is intended to improve service to the City residents. However, the City would require that the contractor minimize the effects of construction noise on sensitive receptors by implementing the mitigation measures identified in Section 3.8.3. In addition, the City would notify the residents prior to the work along those streets. Once the project is completed, ambient noise levels would return to pre-project conditions so there would be no long-term effects on noise in the project area.

3.8.3 Mitigation

The construction contractor would implement the following measures to minimize short-term adverse effects on noise: (1) equip construction equipment with mufflers; (2) limit days and hours of construction near residential areas, parks, and schools; and (3) limit haul truck speeds on roads adjacent to residences. When possible, the work along N. Oregon, Pearl, and California Streets would also be scheduled to avoid the summer recreation season, including community events at the ball fields and parks. As a result, any adverse effects on noise would be considered to be less than significant.

3.9 Recreation

3.9.1 Existing Conditions

Lyon County offers Yerington residents many opportunities for outdoor recreation (Mason, 2009). Topaz Reservoir and Walker Lake offer fishing, boating, camping, swimming, and waterskiing. The Lahontan State Recreational Area offers

swimming, picnicking, camping, boating, fishing, and nature study centered around the Lahontan Reservoir (NDSP, 2009). The scenic Wilson Canyon offers fishing, camping, picnicking, and wildlife viewing along the scenic Walker River (City of Yerington, 2009a). The Mason Valley Wildlife Management Area, located just 7 miles north of Yerington, also offers horseback riding, hiking trails, educational activities, and hunting (NDOW, 2009a).

The City of Yerington offers numerous local recreational facilities and opportunities for residents and visitors. The City owns three parks: Mt. View Park, Soroptimist Park, and Veterans Park. All of these parks provide shaded, grassy areas; walking paths; and picnic tables. The Veterans Park also has a gazebo with 100 seats, kiddy play area, horseshoe pit, and fishing pond. The City has an outdoor swimming pool; tennis, basketball, and volleyball courts; four ball fields; and an 18-hole golf course (City of Yerington, 2005a; 2009a).

There are no developed recreational facilities at the water storage tank, lift station, or well sites, or along the pipeline alignment north of Highway 95A or west of the Walker River. However, occasional recreationists could access the Walker River for fishing or wildlife viewing although there is no developed public access to the river in the project area. Veterans Park and the four ball fields are located along the west side of N. Oregon Street in the project area. Residents and visitors use these facilities primarily during the late spring, summer, and early fall. Recreationists include both adults and children, and use is heaviest on the weekends during the summer.

3.9.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on recreation if it would (1) result in loss of recreational facilities, (2) cause a substantial disruption in a recreational opportunity or activity, or (3) substantially diminish the quality of the recreational experience.

No Action Alternative. This alternative would have no effect on existing recreation in the project area. Recreational facilities, activities and opportunities, and quality of experience would be expected to remain the same.

Water Supply and Sewer Improvement. This alternative would have no effect on the existing recreational facilities or opportunities in the project area. Any recreationists using the Walker River could be affected by the construction activities and noise at the river crossing. However, since this use is only occasional due to lack of developed public access, any disruption in recreational activities or reduction in quality of recreational experience would be less than significant.

This alternative could have substantial short-term effects on recreation in the developed area of the City, specifically in Veterans Park and the ball fields along N. Oregon Street. These effects could include reduced access, disruption in recreation activities, and/or a reduction in the quality of the recreational experience for users.

Access from N. Oregon Street would be unavailable for short periods during installation of the water pipeline. Construction activities and noise could also disrupt activities where the ability to hear voices or whistles is needed, as well as reduce the quality of the recreational experience for those users enjoying the peaceful areas of the park.

To minimize these effects, the City would require that the contractor implement the mitigation measures identified in Section 3.9.3. In addition, the City would post signs in the ballparks and park, informing the public of the construction schedule. They would also coordinate with community groups to avoid construction during scheduled public events. Once the project is completed, recreational activities and the quality of the recreation experience would return to pre-project conditions so there would be no long-term effects on recreation in the project area.

3.9.3 Mitigation

The construction contractor would implement the following measures to minimize short-term effects on recreation: (1) equip construction equipment with mufflers to reduce noise; (2) post signs indicating alternative access to the ball fields and park; (3) and limit days and hours of construction near the ballparks and parks. When possible, the work along N. Oregon Street would also be scheduled to avoid the summer recreation season, including community events at the ball fields and parks. As a result, any effects on recreation would be considered to be less than significant.

3.10 Esthetics

3.10.1 Existing Conditions

Esthetic resources are those natural resources, landforms, vegetation, and manmade structures in the regional and local environment that generate one or more sensory reactions and evaluations by viewers. The regional landscape in the Mason Valley is dominated by long flat expanses of open areas or agricultural fields with trees and shrubs along the Walker River and other waterways, including agricultural ditches and canals. Foothills and mountains are seen in the distance both to the west and east. Views from the storage tank site include the existing adjacent tank and wide views of the valley and city.

Local views in other parts of the project area include both rural landscape and developed City areas. Views at the lift station site and pipeline alignment west of the Walker River include agricultural fields and onion warehouse buildings. Along the pipeline alignment west of the Walker River are grassy open areas, asphalt airport runway, wastewater treatment plant buildings, and airport facilities. Views along the pipeline alignment south from Highway 95A and at the well site include residences and landscaping, ball parks, City park, school buildings, and other City structures.

Potential viewers include residents, visitors, recreationists, and motorists along N. Oregon Street, Pearl Street, and California Street. Viewers along the other parts of the

pipeline alignment would include treatment plant and airport staff, City maintenance staff, aircraft pilots and passengers, and farmers. Viewers at the storage tank site would be limited to City maintenance staff. The number of viewers would be higher in the residential City areas than in the less developed City areas north of Highway 95A and west of the Walker River.

3.10.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on esthetics if long-term changes in landform, vegetation, or structural features substantially increase levels of visual contrast as compared to surrounding conditions. The significance of esthetics effects is evaluated with reference to the number of viewers affected.

No Action Alternative. This alternative would have no effect on existing esthetics in the project area. The landscape and views in the City would be expected to remain the same. The open landscape north of Highway 95A would likely continue to change as the City continues its planned development of the industrial park area (City of Yerington, 2005).

Water Supply and Sewer Improvement. This alternative would have both short-term and long-term effects on esthetics. The short-term effects would include changes in the existing natural landscape and local views by the presence of construction equipment, vehicles, and activities. These changes in local views would be apparent to viewers at all the work areas, as well as the staging areas, stockpiling areas, and disposal area. However, since these construction effects would be short-term, they would be considered less than significant.

The long-term effects on esthetics would include changes in local views due to the new section of gravel maintenance road, concrete culverts across Nichol-Merrit and WRID Ditches, renewed gravel on roadways west of the Walker River, above-ground lift station equipment, above-ground storage tank, and removal of public works garage and small equipment shed at the well site. Of these changes, only the presence of the new storage tank and removal of two buildings at the well site would affect more than just the occasional viewer.

The new storage tank and removal of buildings would likely be noticed by numerous viewers, especially the storage tank on the hill northwest of the City center. However, the levels of visual contrast would not be considered substantial because both changes would be similar to surrounding views. That is, there is currently a similar storage tank adjacent to the new tank, and the well site is a disturbed area with other structures. As a result, the project would have no significant effects on esthetics.

3.10.3 Mitigation

Since effects on esthetics would be less than significant, no mitigation would be required.

3.11 Cultural Resources

3.11.1 Existing Conditions

Ethnography. Yerington is located within the area originally inhabited by the Northern Paiute (Stewart, 1939). This group occupied parts of northwestern Nevada, as well as parts of southwestern Idaho, southeastern Oregon and eastern California. The word "Paiute", as used for the Native Americans of this area, has been explained as a combination of the Paiute words *pa* (water) and *ute* (direction) (Stewart, 1939). The Paiute call themselves *nomo* (people).

Research by Omer Stewart in the mid-1930's led him to divide the Northern Paiute into 21 separate bands (Stewart, 1939). Yerington appears to have been within the *Tövusidökadö* territory, which included the Mason and Smith Valleys, an area of 2,100 square miles. The adjacent *Aga'idökadö* "trout eaters" occupied the Walker Lake and vicinity, an area of 1,750 acres, and used the resources of Walker Lake and Walker River.

In general, the Northern Paiute followed a gathering/hunting life style based on seasonal use of plant resources, especially seeds, berries, and roots; hunting and trapping of game such as antelope and rabbits; occasional to intensive fishing; and hunting of waterfowl, where possible. Although little data are available on the seasonal round, it was probably similar to that known for *Kidutokado* group of Surprise Valley where several families wintered together and then broke up into individual family resource groups in the spring to follow a seasonal round until the next winter encampment (Kelly, 1932).

The *Tövusidökadöt* territory now includes the Yerington Reservation/Yerington Colony located approximately 1.5 mile north of the project area. The Paiute Tribe of the Yerington Colony & Campbell Ranch, Nevada, a Federally recognized Indian Tribe, had 155 individuals in 1950, 290 in 1970, and 342 in 1980. The total land area of the Yerington Reservation and Colony is 1,156 acres (Fowler and Liljeblad, 1986; USDI/BIA, 2002).

The *Aga'idökadö* territory now includes a reservation on the lower Walker River and north end of Walker Lake, which was initially set aside in 1859, but not formally established until 1984. The Walker River Paiute Tribe of the Walker River Reservation, Nevada, is also a Federally recognized Indian Tribe. The population of this group has varied from 371 in 1950, 385 in 1970, to 862 in 1980. The total land area of the Walker River Reservation encompasses 320,512 acres.

Historic Context. Originally part of the Utah Territory, Lyon County was one of the original nine Nevada territories admitted to the Union in 1864. The importance of Yerington as a regional center is underscored by the transfer in 1911 of the county seat, which had initially been established at Dayton. The still prominent Lyon County Courthouse is located on Main Street (Goddard, 1857; Thompson and West, 1881/1958; Elliot, 1973; Moreno, 2000).

Until 1879, the town of Yerington was known as Pizen Switch, mainly because of homemade liquor serviced in the saloon (Carlson, 1974; Moreno, 2000). Greenfield, the town's successor name, alluded to the "its location in the green fields of Mason Valley" (Carlson, 1974). By 1880, Greenfield had a population of 200, five stores, three hotels, two saloons, two restaurants, three livery stables, and three blacksmith shops (Thompson and West, 1881/1958). The post office of Yerington was established on February 6, 1894 (Gamett and Paher, 1983). The growth of Yerington depended first on irrigated agriculture and later mining with rail transport.

Agricultural water rights date to the late-1800's and were encouraged by the Federal Government's Homestead Acts (beginning in 1862), the Desert Land Entry Act (1877), and the Carey Act (1894). Agricultural ditches diverting flow from the Walker River in the Yerington area include the Campbell Ditch, Spragg-Woodcock Ditch, WRID Ditch, Sand Ridge Ditch, and Nichol-Merrit Ditch.

The Yerington Mining District included all of the Singatse Range, towns and camps in the Mason Valley, and a small part of the Wassuk Range. In addition to copper - the district was the second largest copper producer in Nevada - gold, silver, lead, gypsum, turquoise, iron, and nickel were extracted (Lincoln, 1923; Carlson, 1974; Tingley, 1992). This copper mining resulted in demand for a branch railroad servicing the mines as well as Mason Valley farms. Construction of the Nevada Copper Belt Railroad (NCB) was started in 1909, and the first passenger train to the Yerington Station arrived on January 14, 1910. The mines were the principal users of the NCB. The line was operated until the mid-1940's, with abandonment in March 1947 (Myrick, 1962; Robertson, 1986).

Records Search. The area of potential effect (APE) is located in portions of Sections 10 and 11 and a small portion just into Section 15 of Township 13 North, Range 25 East (T13N R25E). The APE includes the areas with the potential to be directly or indirectly affected by the project features.

Prior to fieldwork, a record search was performed by Ms. Maggie Brown, Anthropology Archives, Nevada State Museum. It was determined that no historic or prehistoric sites had been recorded and that no previous cultural resource surveys had occurred within or adjacent to the project alignments. An additional search was undertaken using the Nevada Cultural Resources Information System due to project alignment changes on July 13, 2009. It was determined that no historic or prehistoric sites had been recorded within or adjacent to the alignments.

Two cultural resources reports were identified within or near the pipeline alignments. Report 10-154, Cultural Resource Survey of the Yerington Municipal Airport, Lyon County, Nevada, by California State College, Stanislaus, was completed in 1983 of a portion of a runway extension of the airport. The results were negative for cultural resources. Report 10-193, NDOT Cultural Resources Report: SR-339 Right-of-Way Betterment, WO 20727, Lyon County, by the Nevada Department of Transportation was completed in 1987. The project alignment crosses the route at N. Oregon Street and Highway 95A; no resources are known within and adjacent to the alignment.

Mr. Robert Harmon, Basin Research Associates, conducted a review of historic maps in the W.M. Keck Earth Sciences and Mining Research Information Collection, University of Nevada, Reno. In addition, he reviewed General Land Office maps on file with the U.S. Bureau of Land Management, State Office, Reno. Minor historical research was also conducted at the Nevada State Historical Society in general references to Yerington and the Walker River (Horton, 1996; Kersten, 1961; Pahl, 2000).

Field Survey. An archaeological field survey of the APE was conducted by Basin Research Associates archaeologist Mr. Robert Harmon on December 16-17, 2008. Changes to the APE necessitated an additional survey on July 24, 2009. The survey covered a 100-foot-wide corridor centered on the proposed pipeline alignments. The survey transects included each side of the project right-of-way and an inventory of the lift station and well house near Yerington's water tower. No evidence of prehistoric resources was observed during the project inventory. Three historic irrigation ditches are each crossed at one location by the proposed pipeline alignments. One building, the well shed on California Street, is outside the proposed alignments, but will be demolished as part of the proposed project.

Individually, the three ditches have been determined not eligible for listing in the National Register of Historic Places (NRHP). However, collectively the three ditches represent a form of water conveyance for agricultural irrigation dating from the 1880's to the present in the Mason Valley and are probable contributors to an as yet undefined historic agricultural irrigation district, i.e., the Walter River Irrigation District (WRID). The well shed appears to lack sufficient integrity and does not appear eligible for inclusion in the NRHP.

3.11.2 Effects

Basis of Significance. An alternative would be considered to have a significant adverse effect on cultural resources if it would adversely affect any properties listed, or eligible for listing, on the NRHP. Types of potential effects include physical destruction, damage, or alteration; isolation or alteration of the character of the setting; introduction of elements that are out of character; neglect; and transfer, lease, or sale.

No Action Alternative. This alternative would have no effects on existing cultural resources in the project area. The cultural resources and historic structures would be expected to remain the same.

Water Supply and Sewer Improvement. The Corps has determined that a finding of no historic properties affected is applicable (36 CFR Part 800.4(d)(1)) since the proposed pipeline installation would not affect any of the qualities that appear to qualify the Nichol-Merrit and WRID Ditches eligible for the NRHP. The Campbell Ditch would not be affected because the proposed construction technique would avoid effects to the ditch. The well house does not appear eligible for the NRHP, and no further management is recommended.

3.11.3 Mitigation

Since there would be no significant effects on any properties listed, or eligible for listing, on the NRHP, no mitigation would be required. If buried or previously unidentified cultural resources are located during project activities, all work in the vicinity of the find would cease and the Nevada SHPO's office would be contacted for additional consultation per NRS 383.150-383.190 and 36 CFR 800.13(b)(3), Post Review Discoveries.

4.0 CUMULATIVE EFFECTS

Cumulative effects are effects of the project considered with other past, present, or reasonably foreseeable projects in the area. These projects in Yerington include the Airport Industrial Park and the Yerington Municipal Airport Expansion. These projects are intended to improve the existing airport infrastructure and attract more business to the airport area.

The City of Yerington plans to construct the Airport Industrial Park on a parcel of land between the airport and the West Walker River. The City would own the park and lease lots to interested businesses. Businesses would have close access to the adjacent airport. The Airport Industrial Park project would involve grading the lots, extending utilities, and extending road access. The City has purchased the parcel, and the project is in the planning and design stages. Currently, the City is waiting for the Federal Emergency Management Agency to complete its definition of the base flood elevations in the area (Lyman, pers comm., 2009).

The City's Yerington Municipal Airport Expansion project is also in the planning stages. The project would develop and lease new lots so that hangars can be constructed in the future; the construction of a beacon tower and a new taxiway is also planned. As a part of runway maintenance, the airport also intends to re-stripe the runway and repair the aging asphalt with slurry seal. Currently, negotiations to purchase the land are ongoing. The City plans to construct the access road and extend the utilities in late 2010 (Lyman, pers comm, 2009).

These industrial park and airport projects will likely be completed within the next 2 to 4 years. This future development could have long-term cumulative effects on land use, noise, and esthetics in the region. However, both projects would be required to

comply with all applicable Federal, State, and local environmental laws and regulations. When the effects of the proposed project are considered with other past, present, and reasonably foreseeable projects in the area, there are no significant cumulative effects found at this time.

5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Clean Air Act, as amended and recodified (42 U.S.C. 7401 et seq.).

Compliance. The project is not expected to violate any Federal or State air quality standards, or hinder the attainment of air quality objectives in the local air basin. The Corps has determined that the proposed project would have no significant adverse effects on the future air quality of the area.

Section 176(c) of this act requires that Federal agencies ensure that their activities are in conformance with Federally approved State Implementation Plans for areas designated as “non-attainment” and “maintenance.” This project would not be located in either type of designated area and therefore is not subject to this provision of the act.

Clean Water Act (33 U.S.C. 1251 et seq.). *Compliance.* Since the project would include work in Waters of the U.S., a Section 404(b)(1) analysis was prepared to “state and evaluate information regarding the effects of discharge of dredged or fill material into the waters of the U.S.” (Appendix B). The analysis determined that the proposed action represents the least environmentally damaging practicable alternative. The project would also require an NDPEs permit from the State since it would disturb 1 or more acres of land and involve possible stormwater discharges to surface waters.

Endangered Species Act (16 U.S.C. 1531 et seq.). *Compliance.* In a letter dated March 11, 2009, and reconfirmed in an email dated June 16, 2009, the USFWS indicated that the only Federally listed species that could occur in the project area is the threatened Lahontan cutthroat trout (Appendix A). The new pipelines would cross under the Walker River using directional boring to avoid any adverse effects on the river and aquatic species. As a result, the project would have no effect on this Federally listed fish species or its habitat.

Executive Order 11988, Floodplain Management. *Compliance.* This order directs all Federal agencies to avoid to the extent possible the adverse effects associated with the modification of floodplains, and to avoid support of floodplain development wherever there is a practicable alternative. According to the local floodplain manager, the project would have no effect on the existing floodplain of the Walker River because there would be no new above-ground structures in the floodplain and all disturbed surfaces would be restored to pre-project conditions (including elevation) once construction is completed. In addition, the project would not encourage development in the floodplain and would not enter or change the river (Newell pers comm., 2009).

Executive Order 11990, Wetlands. *Compliance.* This order directs all Federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and

enhance the natural and beneficial values of wetlands. The project would have no effects on wetlands.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Compliance.* The order directs all Federal agencies to identify any disproportionate human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The project would have no such effects on any minority or low-income populations.

Farmland Protection Policy Act (7 U.S.C. 4201). *Compliance.* The project would have no effect on prime farmland or farmland of statewide importance because there is no such farmland in the work areas for the project.

Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). *Compliance.* The project would modify the infrastructure of existing water supply and wastewater collection systems to provide additional domestic water, help to ensure public health and safety, and allow continued growth and development in the northern part of the city. Since construction would not divert, modify, impound, or otherwise control the Walker River or another waterway, this act does not apply to this project.

Migratory Bird Treaty Act (15 U.S.C 701-18h). *Compliance.* This act requires that the project avoid destruction of active bird nests or young of migratory birds that breed in the area from March to August. Prior to boring and other construction activities, a qualified biologist would be required to survey the proposed areas of disturbance in the riparian areas along the Walker River and Campbell Ditch to ensure that there are no active nests or young of migratory birds. If active nests or young are located, construction in those riparian areas would not be initiated until the young birds have fledged.

National Environmental Policy Act (42 U.S.C. 4321 et seq.). *Partial compliance.* Comments received during the public review period will be considered and incorporated into the final EA, as appropriate. The final EA and either signed FONSI or determination of need to prepare an EIS will result in full compliance with this act.

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.). *Partial Compliance.* A letter will be sent to the Nevada SHPO, requesting concurrence with the Corps' determination of no historic properties affected in accordance with 36 CFR Part 800.4(d)(1). Letters dated July 23, 2009, have been sent to potentially interested Native Americans, requesting information regarding traditional cultural sites or concerns (Appendix D). The response from the Nevada SHPO and any responses from Native Americans will be included in the final EA.

6.0 PUBLIC INVOLVEMENT

The public involvement for this project has included public attendance and participation at Yerington City Council meetings where the need to improve the water

supply system and extend the wastewater collection to the airport area has been discussed. The public and other interested/affected parties have been encouraged to comment on the proposed plans, funding decisions, and City Council decisions.

In addition, the City of Yerington provides information on completed and ongoing capital improvement projects on the City's website. Contact information is provided, and the public can obtain additional information or make comments during the design and construction process.

7.0 COORDINATION AND REVIEW OF THE FINAL EA

The draft EA and FONSI will be circulated for 21 days to agencies, organizations, and individuals known to have an interest in the project (Appendix E). All comments received will be considered and incorporated into the final EA, as appropriate. This project is being coordinated with the following agencies:

U.S. Federal Aviation Administration
U.S. Fish and Wildlife Service
U.S. Federal Emergency Agency
Nevada Division of Environmental Protection
Nevada Bureau of Safe Drinking Water
Nevada Bureau of Air Quality Planning
Nevada State Historic Preservation Officer
Nevada Division of Wildlife
Lyon County
City of Yerington

8.0 CONCLUSIONS

Based on the information in this EA, the proposed project would have no significant adverse effects on the environment. No mitigation beyond avoidance, best management practices, measures proposed in this EA, and permit requirements would be required. Following the public review period, a determination will be made whether a FONSI is warranted or whether preparation of an EIS is necessary.

9.0 LIST OF PREPARERS

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Aimee Kindel
Engineering Student, U.S. Army Corps of Engineers

Melissa Montag
Historian, U.S. Army Corps of Engineers

Lynne Stevenson
Environmental Manager, U.S. Army Corps of Engineers

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10.2 Personal Communications

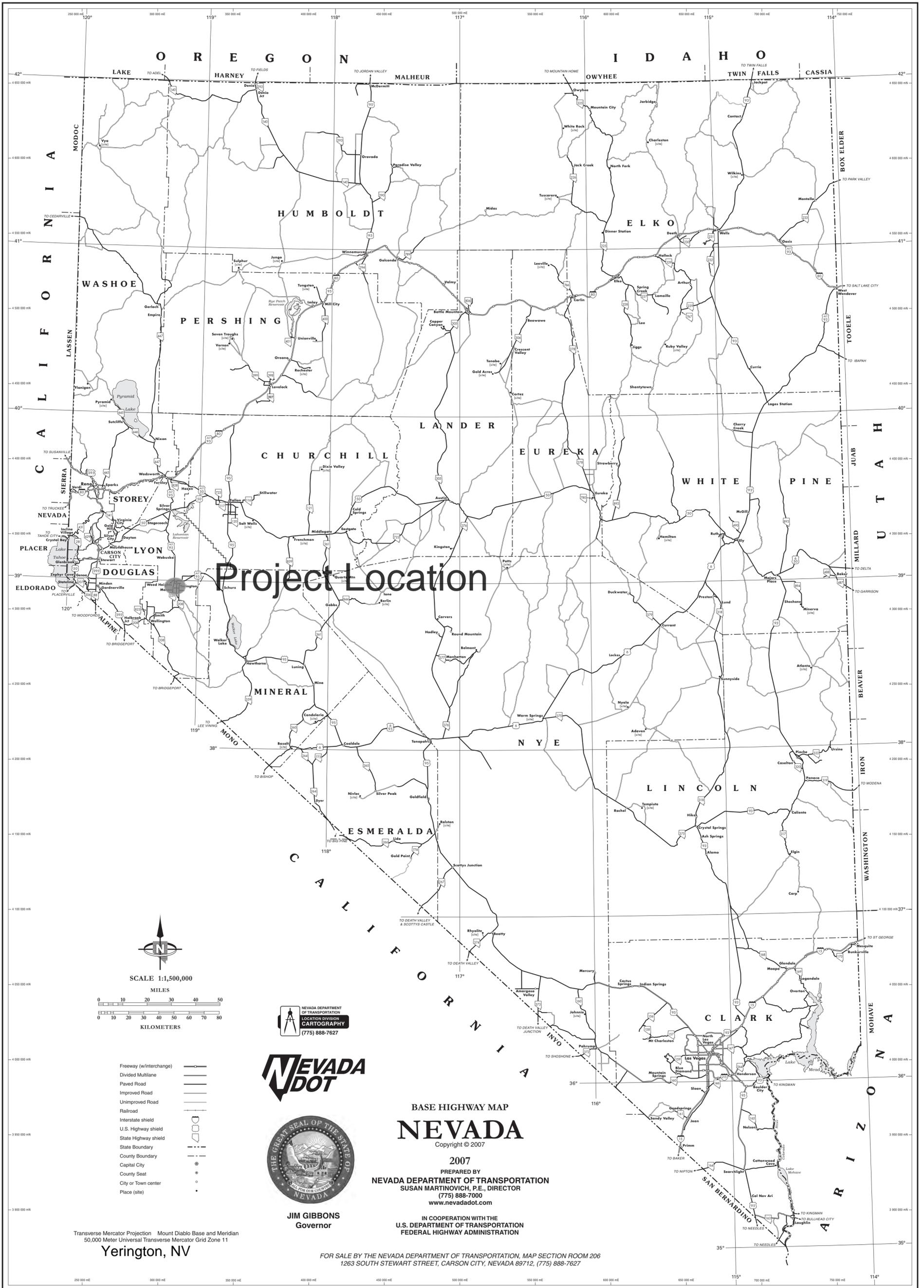
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PLATES

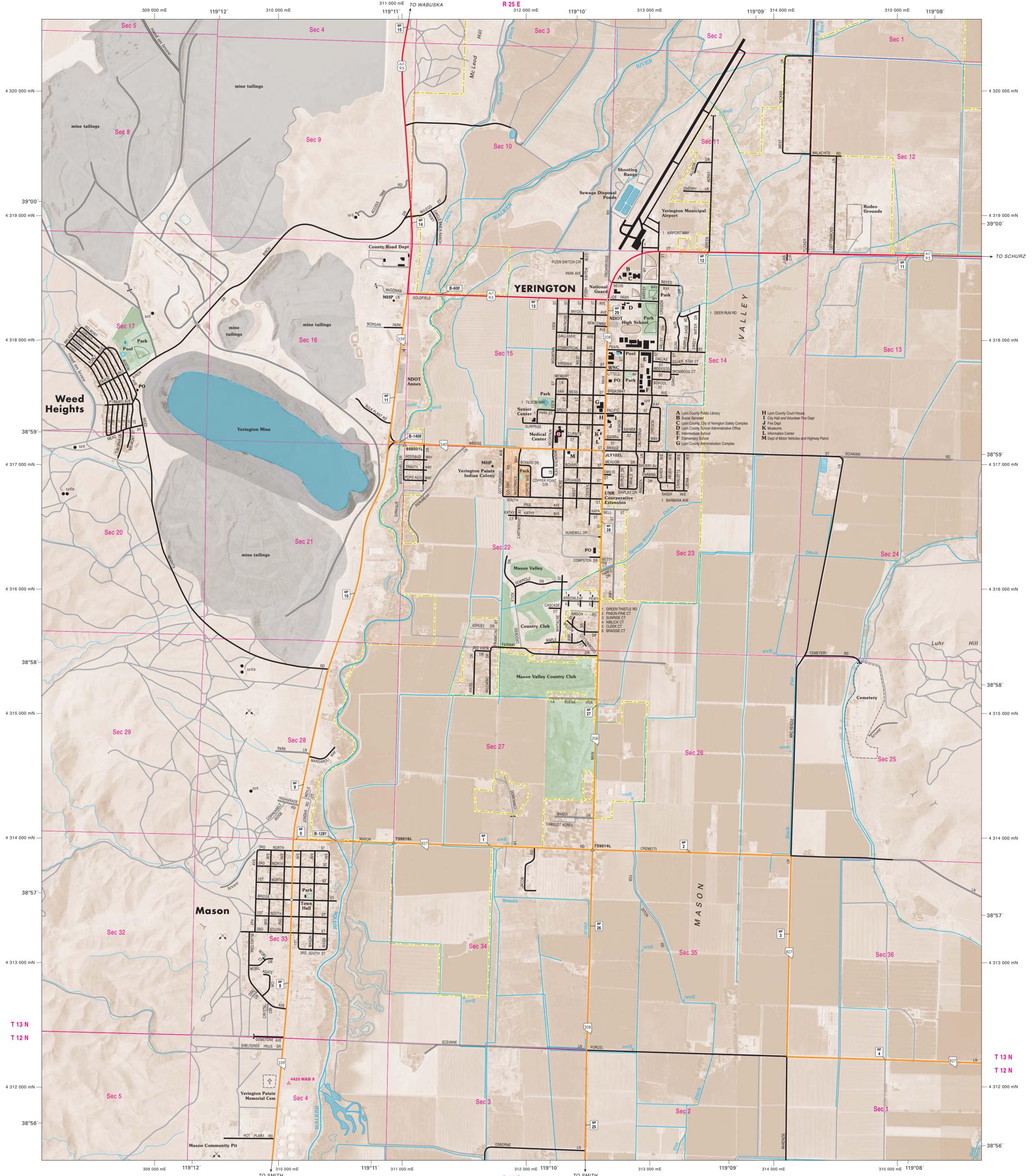


Transverse Mercator Projection Mount Diablo Base and Meridian
50,000 Meter Universal Transverse Mercator Grid Zone 11

Yerington, NV

FOR SALE BY THE NEVADA DEPARTMENT OF TRANSPORTATION, MAP SECTION ROOM 206
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Plate 1. Project Location



YERINGTON, MASON AND WEED HEIGHTS AREA
2007

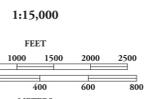
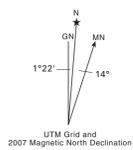
Population* 3,257
Mean Elevation 4,378'
*2006 Nevada State Demographer

Transverse Mercator Projection 1983
Mount Diablo Base and Meridian
1,000 Meter Universal Transverse Mercator Grid Zone 11
North American Datum 1983
Horizontal and vertical control data on file at Carson City, Nevada.

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Nevada Department of Transportation

Orthophoto courtesy of USDA NAIP
Photography date: 2006

- Freeway, Federal
- Highway, Federal
- Highway, State
- Frontage Road
- Other Paved Road
- Improved Surface
- Unimproved
- Interchange Number
- Interstate Milepost Marker
- Interstate Milepost Marker (by County)
- US or State Route Milepost Marker (by County)
- NDOT Bridge Number
- Nevada Historical Marker

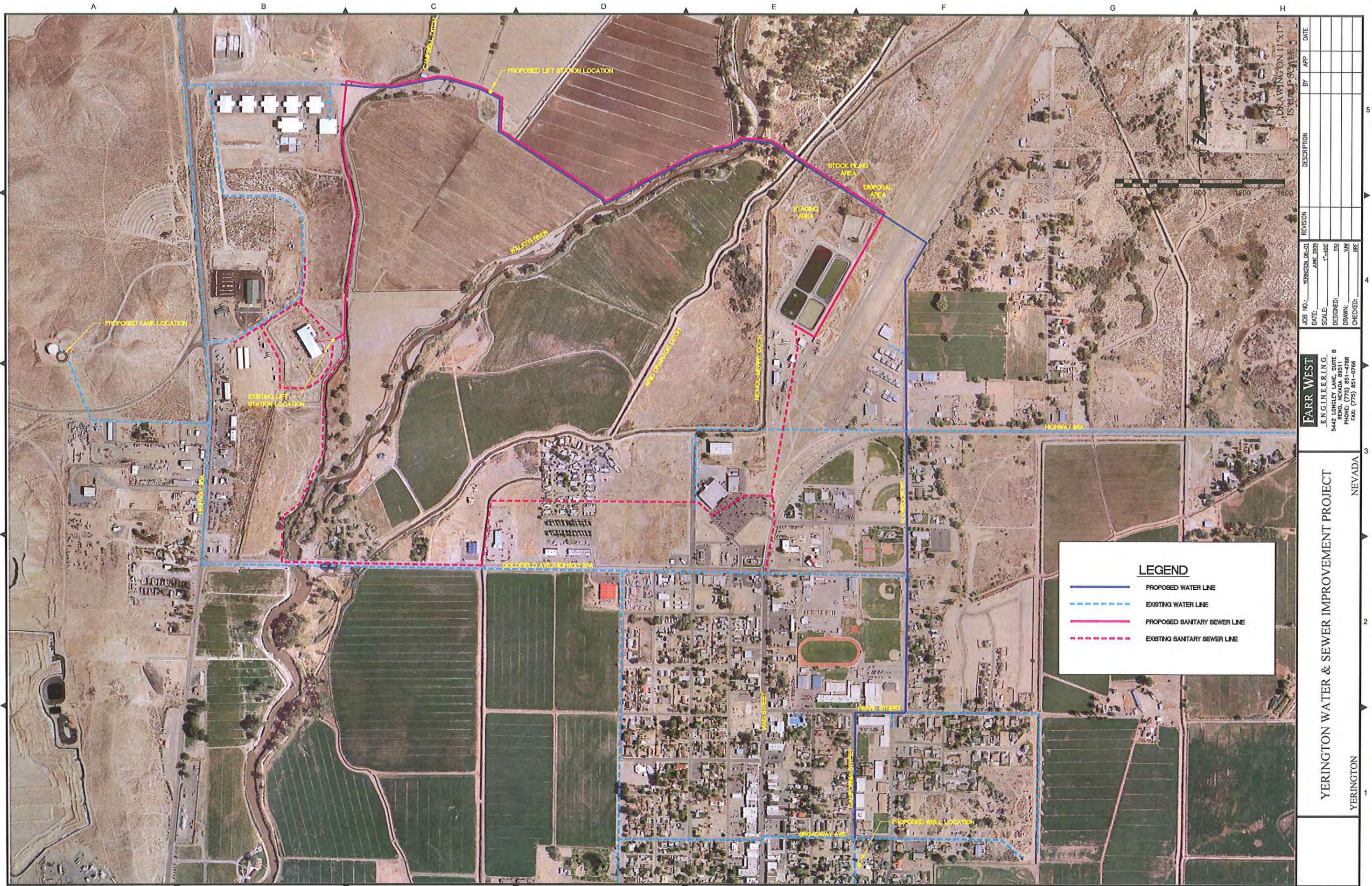


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In cooperation with the
U.S. Department of Transportation
Federal Highway Administration

Plate 2. Vicinity Map

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LEGEND

- PROPOSED WATER LINE
- - - EXISTING WATER LINE
- PROPOSED SANITARY SEWER LINE
- - - EXISTING SANITARY SEWER LINE

JOB NO.: YERINGTON 08-01		REVISION	DATE
DATE: JUNE 2009		BY	APP
SCALE: 1"=400'		DESCRIPTION	DATE
DESIGNED: ERJ			
DRAWN: VM			
CHECKED: BRE			

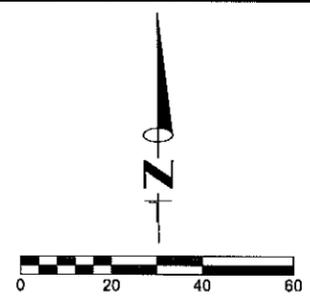
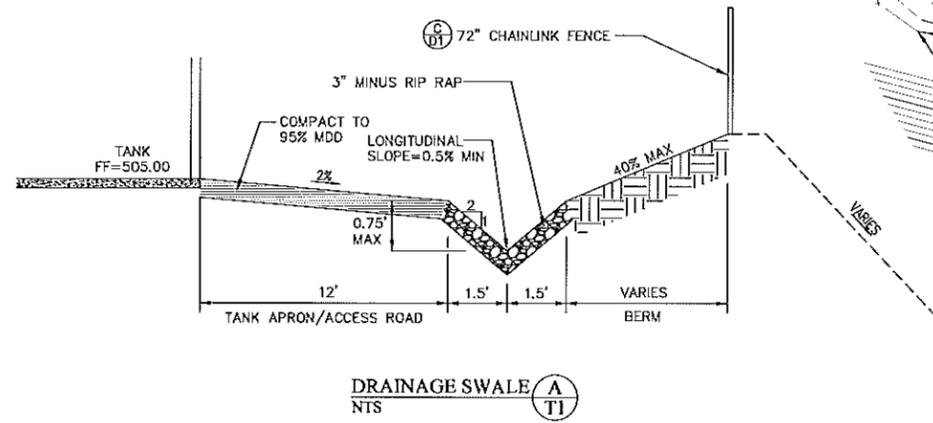
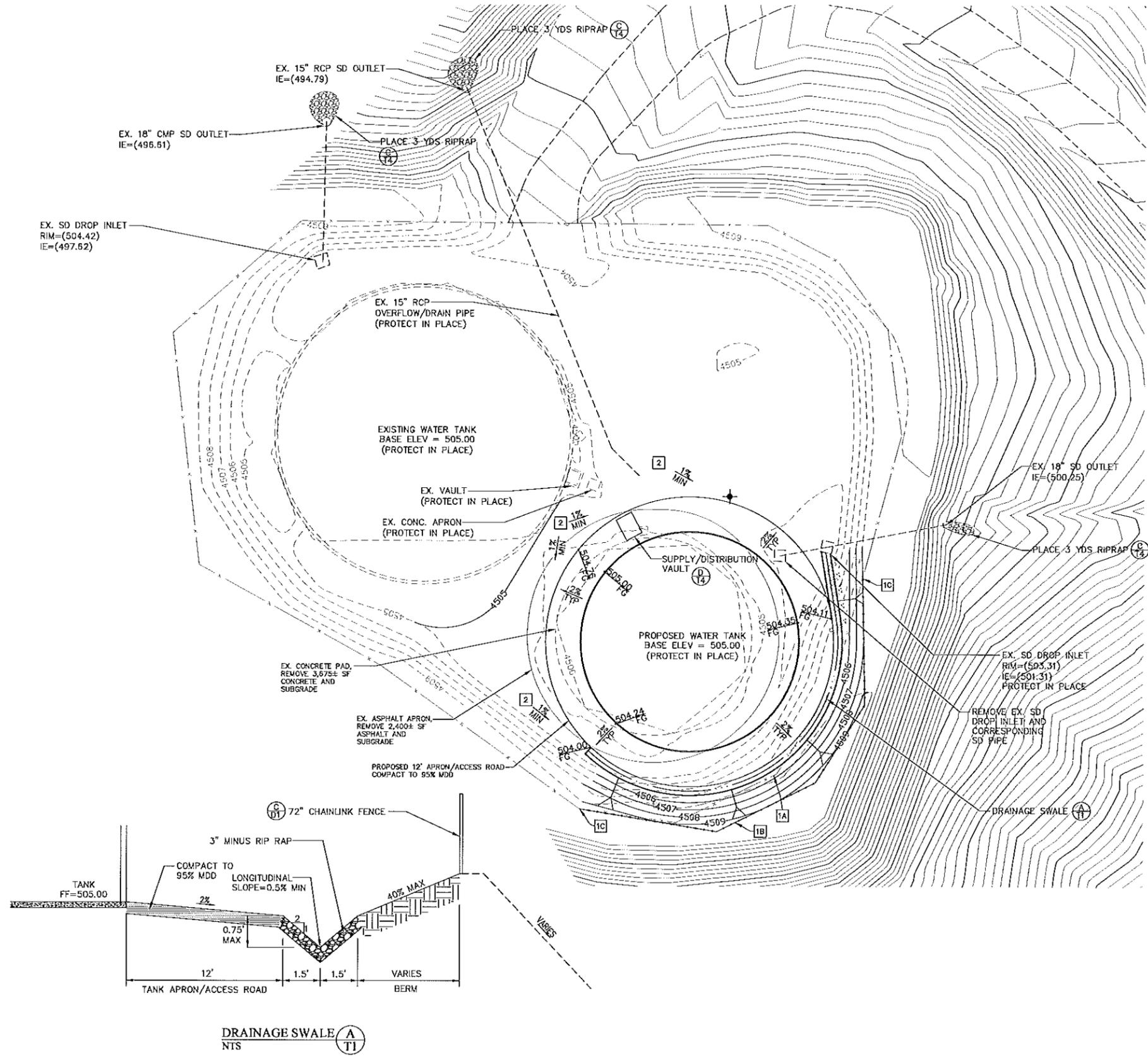
FARR WEST
 ENGINEERING
 5442 LONGLEY LANE, SUITE B
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0786

YERINGTON WATER & SEWER IMPROVEMENT PROJECT
 NEVADA

YERINGTON

Plate 3. Project Area and Features

P:\Projects\0208 YERINGTON 08-01 COE PROJECT\6.0 DRAWINGS\DWG\C30_TANK_Y-08-01 COE_T1.dwg, 7/17/2009 1:34:40 PM



DRAWING ON 11"x17"
IS HALF SCALE

REVISION	DESCRIPTION	BY	APP	DATE

FARR WEST
ENGINEERING
5442 LONGLEY LANE, SUITE B
RENO, NEVADA 89511
PHONE: (775) 851-4788
FAX: (775) 851-0766

GENERAL NOTES THIS SHEET
• ADD 4000 FT TO ALL SPOT ELEVATIONS

- CONSTRUCTION NOTES THIS SHEET**
- 1 CHAINLINK FENCE:
A. REMOVE 148± LF OF EX. CHAINLINK FENCE
B. INSTALL 163± LF OF NEW CHAINLINK FENCE
C. CONNECT NEW FENCE TO EXISTING
 - 2 GRADE TO DRAIN, 1% MINIMUM.

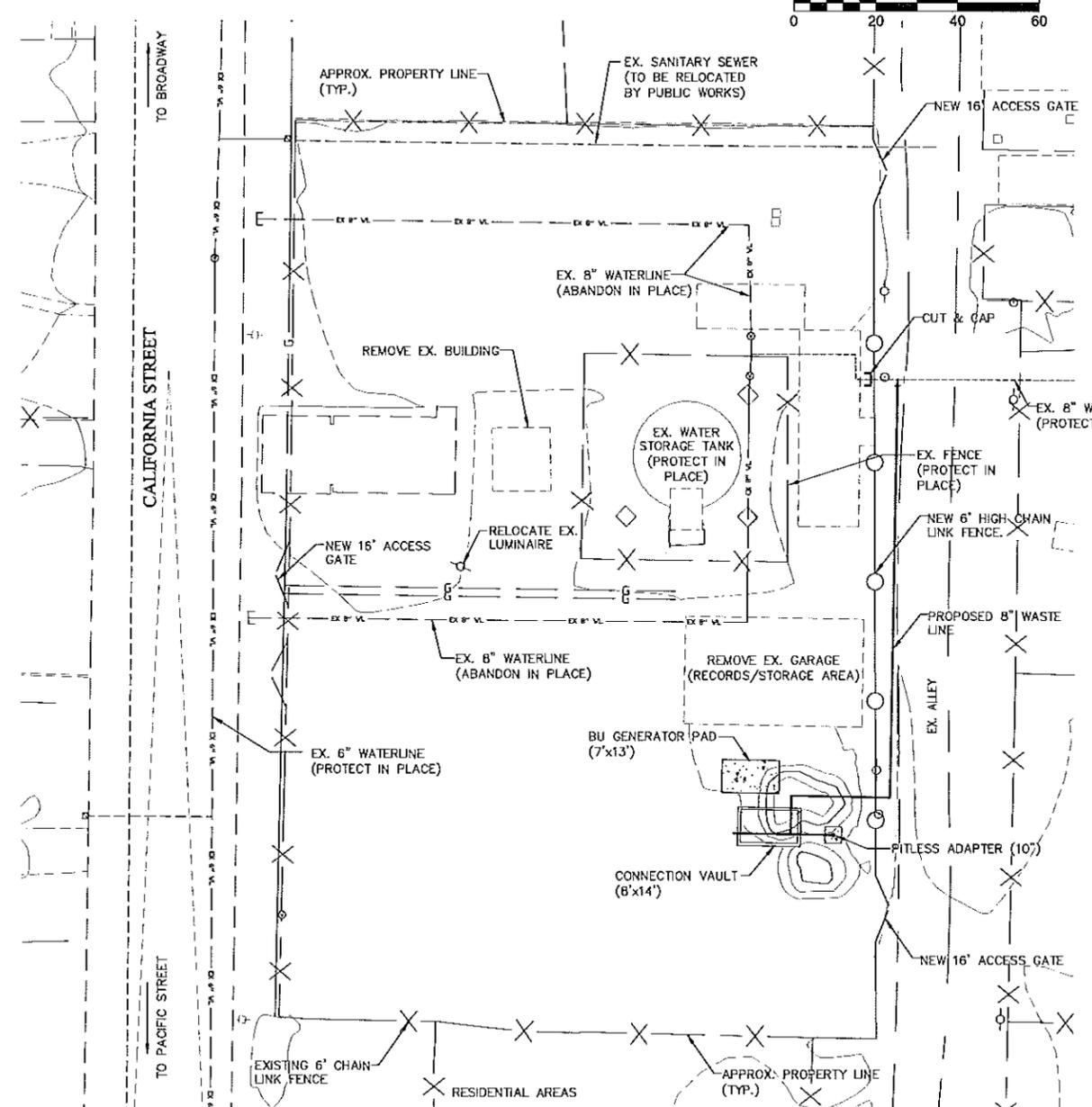
IMPROVEMENT PLANS
 YERINGTON WATER AND SEWER
 WATER TANK GRADING PLAN
 YERINGTON NEVADA

60% SUBMITTAL
PRELIMINARY
NOT FOR CONSTRUCTION

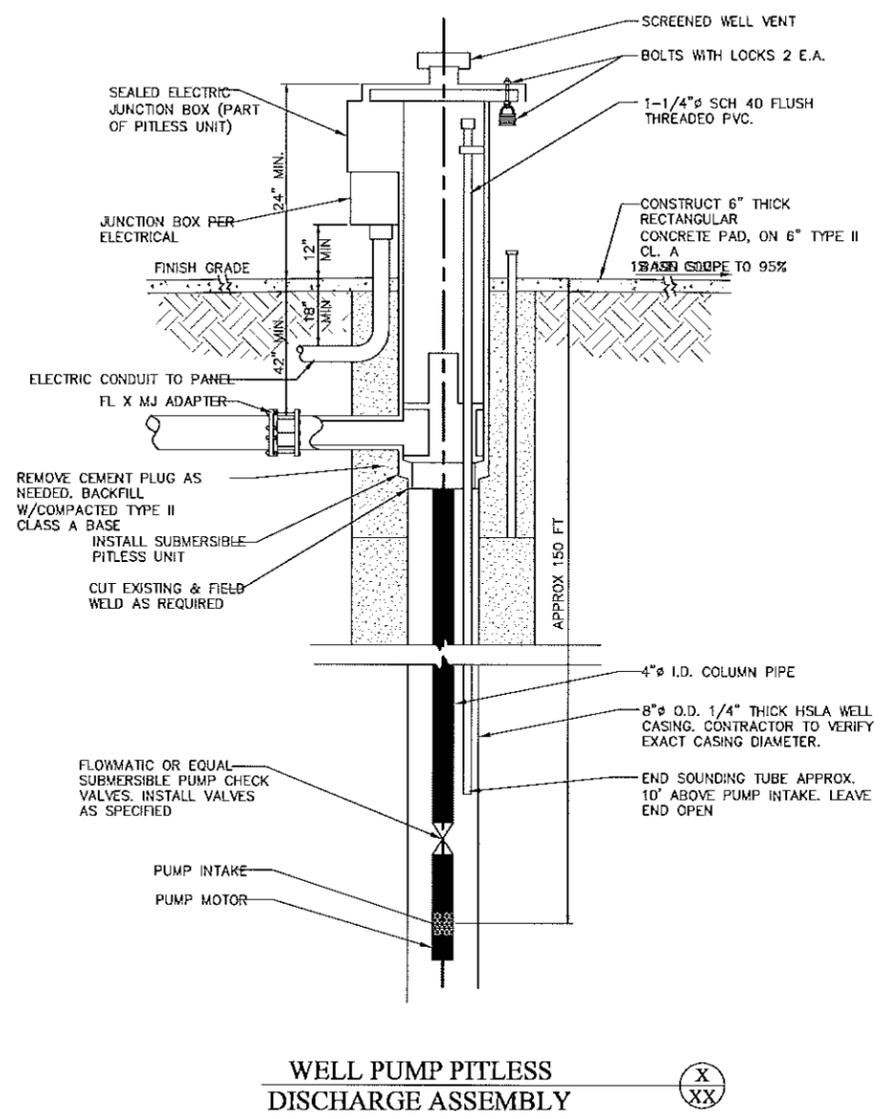
Plate 4. Water Storage Tank

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DRAWING ON 11"x17"
IS HALF SCALE



**WELL SITE PLAN
CALIFORNIA SITE**



**WELL PUMP PITLESS
DISCHARGE ASSEMBLY**

60% SUBMITTAL
PRELIMINARY
NOT FOR CONSTRUCTION

JOB NO.	DATE	DESCRIPTION	BY	APP	DATE
08-01	JULY 2009	AS SHOWN			

FARR WEST		NEVADA	
ENGINEERING		YERINGTON	
5442 LONGLEY LANE, SUITE B		YERINGTON, NEVADA 89511	
PHONE: (775) 851-4788		FAX: (775) 851-0766	

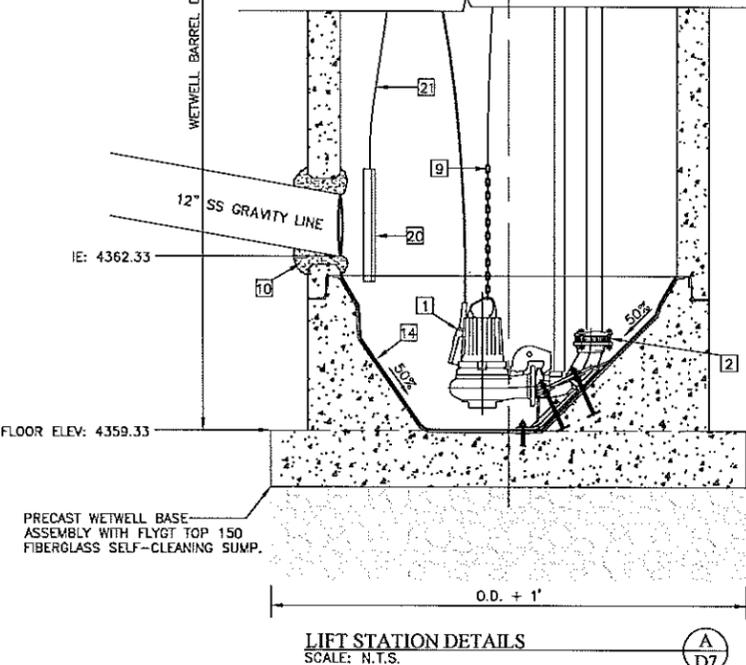
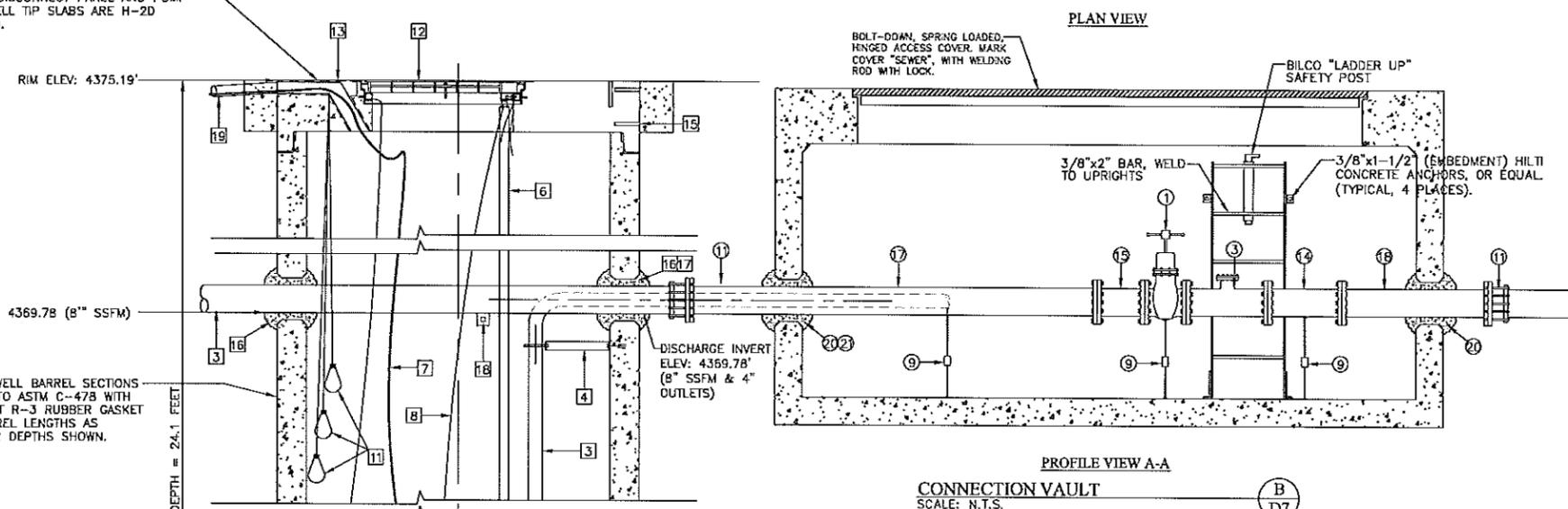
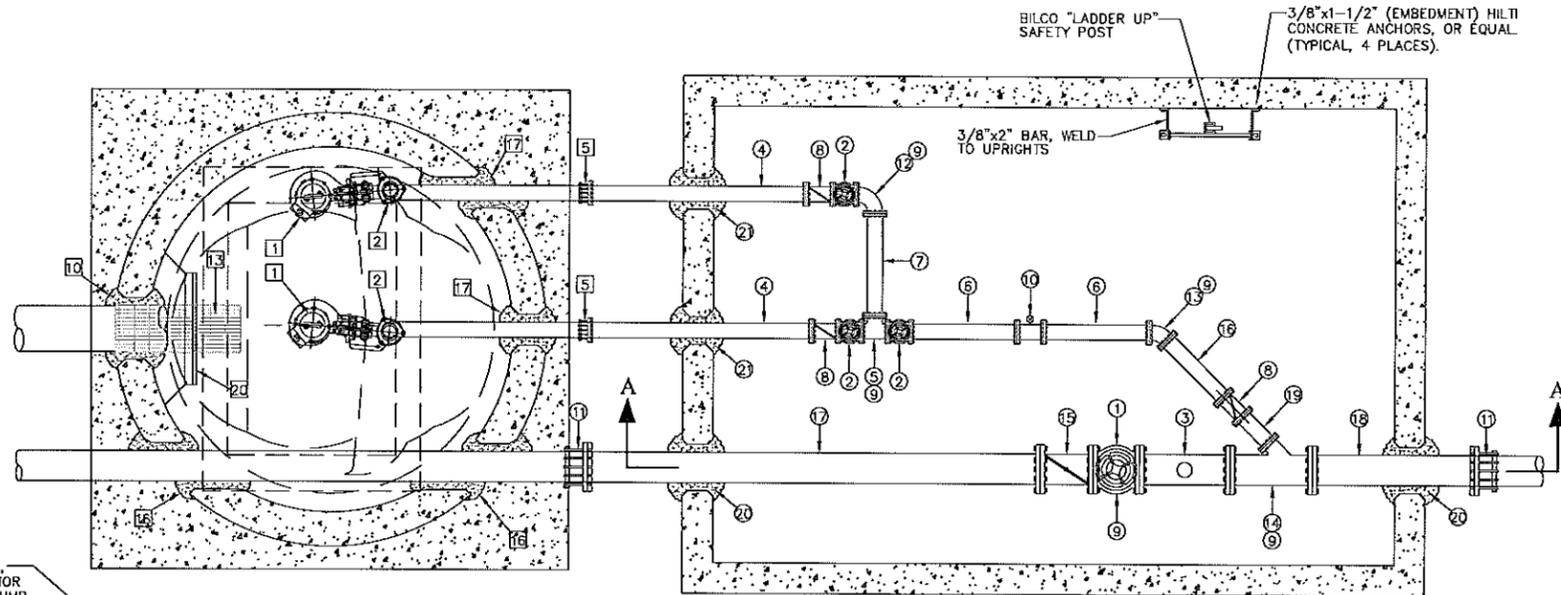
MATERIAL LIST FOR LIFT STATION:

PROVIDE THE FOLLOWING OR PRE-APPROVED EQUAL.

- 1 (2) SUBMERSIBLE NON-CLOG SEWAGE PUMPS, FLYGT MODEL NP3127.090 MT IMPELLER 215 MM Ø. PROVIDE ONE PUMP WITH MIX FLUSH VALVE.
- 2 (2) 4" FLYGT DISCHARGE ELBOW.
- 3 (2) 4" STAINLESS STEEL DISCHARGE PIPING (SCHD 40) FACTORY TESTED. PROVIDE ALL PIPE PENETRATION(S) WITH RUBBER BOOTS (KDR-N-SEAL).
- 4 (2) STAINLESS STEEL DISCHARGE PIPE ANCHOR BRACKET.
- 5 (2) 4" DI SLEEVE COUPLING, STAINLESS STEEL TO DI PIPING.
- 6 (2) 2" SCHEDULE 40 STAINLESS STEEL GUIDE BARS FOR EACH PUMP (FULL HEIGHT). ATTACH TO HATCH UNI-STRUT WITH FLYGT UPPER GUIDE BAR BRACKET.
- 7 (2) PUMP POWER CABLE WITH QUICK CONNECT COUPLING AT PUMP DISCONNECT PANEL. PROVIDE EACH CABLE WITH A STAINLESS STEEL BASKET CABLE GRIP ATTACHED TO HOOK ON UPPER GUIDE BAR BRACKET.
- 8 (2) STAINLESS STEEL CHAIN SLING FOR PUMP RETRIEVAL USING FLYGT GRIP-EYE. ATTACH TO PUMP LIFTING HANDLE.
- 9 (2) 1/4" STAINLESS STEEL CHAIN (S-4 ATTACHED TO PUMP HANDLE. PROVIDE CHAIN WITH 3/8" & 1/2" STAINLESS STEEL BOW SHACKLE WITH SCREW PIN ATTACHED TO PUMP HANDLE. ATTACH UPPER END OF CHAIN TO HOOK ON UPPER GUIDE BAR BRACKET.
- 10 (1) 14" KNOCK-OUT SEAL WITH LINK SEAL, Z LOK OR EQUAL WITH STAINLESS STEEL HARDWARE.
- 11 (1) REDUNDANT CONTROL SYSTEM. THREE MECHANICAL SWITCHES, FLYGT ENM-10 LIQUID SENSORS. REDUNDANT SYSTEM TO PROVIDE REDUNDANT HIGH LEVEL ALARM, PUMPS START AND STOP CONTROL. PUMPS OFF ELEV. XXXX.XX PUMP 1 ON ELEV. XXXX.XX PUMP 2 ON ELEV. XXXX.XX HIGH WATER ALARM XXXX.XX
- 12 (1) FLYGT ALUMINUM ACCESS HATCH PRECAST INTO WETWELL TOP SLAB. PROVIDE WITH SAFE-HATCH SAFETY GRATE BY FLYGT WITH LOCK.
- 13 (1) ALUMINUM CABLE HATCH AND WETWELL VENT PRECAST INTO WETWELL TOP SLAB. PROVIDE WITH STAINLESS STEEL HINGES AND SLAM-LOCK.
- 14 (1) FLYGT TOP 150 FIBERGLASS SELF-CLEANING SUMP. INSTALL PER MANUFACTURER'S SPECIFICATIONS OR APPROVED EQUAL.
- 15 (1) STAINLESS STEEL ANCHOR INSERTS FOR PUMP DAVIT CRANE BASE.
- 16 (2) 10" KNOCK-OUT SEAL WITH LINK SEAL, Z LOK OR EQUAL WITH STAINLESS STEEL HARDWARE.
- 17 (2) 6" KNOCK-OUT SEAL WITH LINK SEAL, Z LOK OR EQUAL WITH STAINLESS STEEL HARDWARE.
- 18 (1) STAINLESS PIPE SUPPORT BRACKET FOR 8" SSFM.
- 19 (1) 2" PVC CONDUIT WITH WIRE TO METER VAULT AND METER.
- 20 (1) HDPE INFLUENT DEFLECTOR WITH FULL SIZE INSPECTION HOLE AND GUILLOTINE COVER.
- 21 (1) 1/8" STAINLESS STEEL LIFTING CABLE FOR INFLUENT DEFLECTOR INSPECTION HOLE COVER. PERMANENTLY ATTACH UPPER END OF CABLE TO HATCH UNI-STRUT.

GENERAL NOTES:

- 1. ALL CONNECTION VAULT PIPE SHALL BE DUCTILE IRON AND SHALL BE DOUBLE-WRAP IN PLASTIC WHERE BURIED.
- 2. MINIMUM CONNECTION VAULT SIZE TO BE 15' BY 10'. CONTRACTOR TO DETERMINE IF LARGER VAULT IS NEEDED BASED ON PIPING LAYOUT, AND SHALL PROVIDE SUCH VAULT AT NO ADDITIONAL COST.
- 3. EQUIP CONNECTION VAULT WITH 48" X 78" TORSION SPRING ASSISTED COVER, TRAFFIC RATED WITH LOCK. VAULT SHALL HAVE A LADDER AND A KNOCKOUT FOR DRAINAGE (PROVIDE DRAIN ROCK).
- 4. CONNECTION VAULT TO BE PLACED ON 12" OF DRAIN ROCK, COMPACTED TO 95% MDD.
- 5. CONTRACTOR TO PROVIDE PIPE SUPPORTS AS SHOWN.
- 6. PROVIDE WET WELL AND UNDERSIDE OF TOP OF SLAB WITH AMERON T-LOCK PVC SHEET LINING OR VERSAFLEX POLYUREA DC45 EPOXY COATING OR APPROVED EQUAL.
- 7. ALL PIPE FITTINGS WITHIN LIFT STATION SHALL BE STAINLESS STEEL PRESSURE FITTINGS.
- 8. WRAP JOINTS AND PLACE BUTYMASTIC COATING TO WET WELL EXTERIOR THROUGHOUT FOR WATER PROOFING.
- 9. USE RAMNEK WET WELL JOINT SEALANT OR APPROVED EQUAL, ON ALL SECTION JOINTS.



MATERIAL LIST FOR CONNECTION VAULT:

ITEM NO.	QUANTITY	DESCRIPTION	ITEM NO.	QUANTITY	DESCRIPTION
1	(1)	8"ø FLGxFLG PLUG VALVE	16	(1)	4"ø SPOOL FLGxFLG
2	(3)	4"ø FLGxFLG PLUG VALVE	17	(1)	8"ø SPOOL FLGxFLG
3	(1)	8"x8"x4" FLGxFLG TEE W/BLIND FLGG	18	(1)	8"ø SPOOL FLGxFLG
4	(2)	4"ø SPOOL FLGxFLG	19	(1)	4"ø SPOOL FLGxFLG
5	(1)	4"x4"x4" FLGxFLG TEE	20	(1)	10" KNOCK-OUT SEAL WITH LINK SEAL, Z LOK OR EQUAL WITH STAINLESS STEEL HARDWARE. (TYP., BOTH ENDS)
6	(2)	4"ø SPOOL FLGxFLG (15" MIN.)	21	(2)	6" KNOCK-OUT SEAL WITH LINK SEAL, Z LOK OR EQUAL WITH STAINLESS STEEL HARDWARE. (TYP., BOTH ENDS)
7	(1)	4"ø SPOOL FLGxFLG			
8	(3)	4" VALMATIC 504A AMI MIBF SWING CHECK VALVE (WITH MECHANICAL INDICATOR & BACKFLOW ACTUATOR).			
9	(5)	ADJUSTABLE PIPE SUPPORTS WITH FLOOR FLGANGE, GRINNELL #264 OR APPROVED EQUAL.			
10	(1)	4" FLOW METER SIEMENS SITRANS MAGFLOW WITH TRANSMITTER, NO EQUAL. TO INCLUDE: A. SIEMENS 4" S10DW FLOW SENSOR W/ 150 LB FLGANGES B. SIEMENS MAG 600D TRANSMITTER			
11	(2)	RESTRAINED 8" COUPLING ADAPTER MJ FLGxPE			
12	(1)	4"ø FLGxFLG 90° BEND			
13	(1)	4"ø FLGxFLG 45° BEND			
14	(1)	8"x8"x4" FLGxFLG 45° WYE			
15	(1)	8" VALMATIC 508A AMI MIBF SWING CHECK VALVE (WITH MECHANICAL INDICATOR & BACKFLOW ACTUATOR).			

60% SUBMITTAL
PRELIMINARY
NOT FOR CONSTRUCTION

DRAWING ON 11"x17" IS HALF SCALE

DATE	BY	APP	DESCRIPTION
JULY 2008 <td>AS SHOWN <td></td> <td></td> </td>	AS SHOWN <td></td> <td></td>		

REVISION

NO.	DATE	DESCRIPTION
1	JULY 2008	AS SHOWN

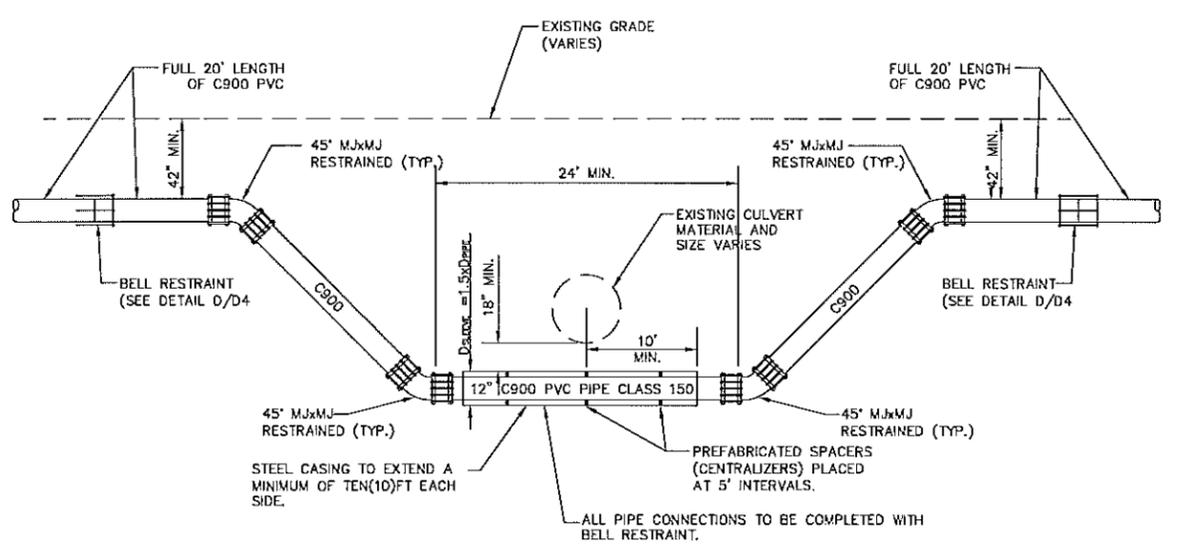
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DATE: JULY 2008
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FARR WEST
ENGINEERING
3442 LONGLEY LANE, SUITE B
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PHONE: (775) 851-4780
FAX: (775) 851-0766

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YERINGTON WATER AND SEWER
DETAIL SHEET - LIFT STATION

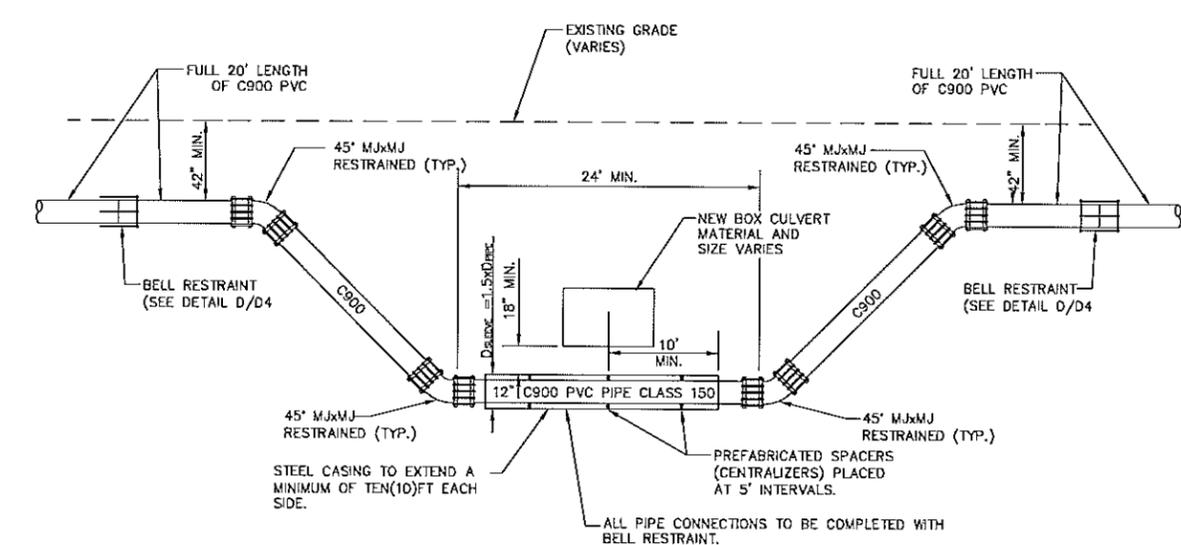
YERINGTON

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GENERAL NOTES:
 1. AIR RELEASE VALVE LOCATIONS AS SHOWN ON PLAN SET.

EXISTING CULVERT CROSSINGS (TYP.) (A/D1)

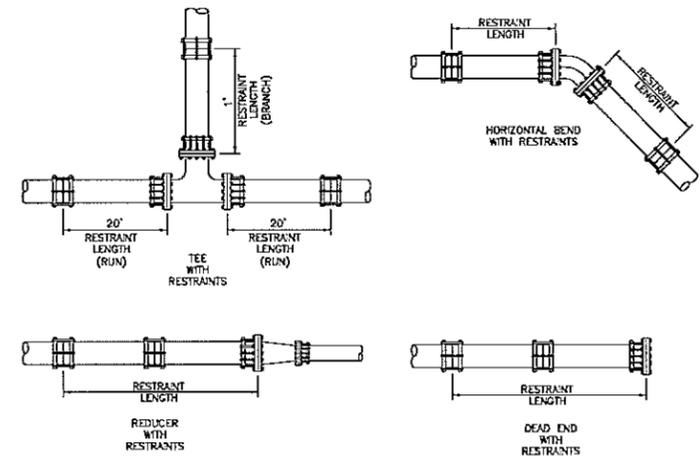


GENERAL NOTES:
 1. AIR RELEASE VALVE LOCATIONS AS SHOWN ON PLAN SET.

BOX CULVERT CROSSINGS (TYP.) (B/D1)

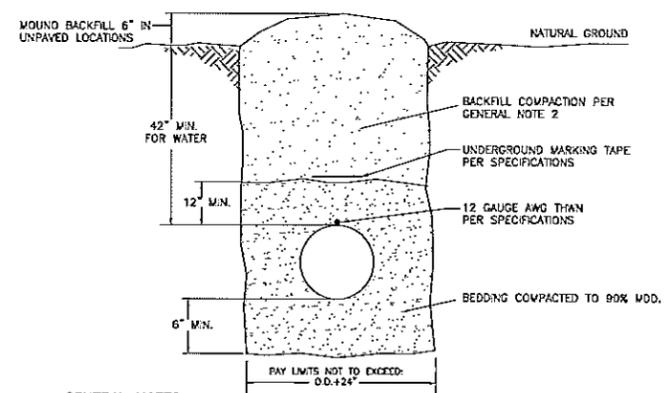
PVC PIPE - JOINT RESTRAINT LENGTH CHART (FT)						REDUCERS (RESTRAINT LENGTH IS ON LARGER PIPE Ø SIDE)				
PIPE Ø (IN)	TEE (BR/RUN)	HORIZONTAL BENDS				DEAD END	10" x PIPE Ø	8" x PIPE Ø	6" x PIPE Ø	4" x PIPE Ø
		90°	45°	22.5°	11.25°					
4"	1/20	19	19	19	19	30				
6"	1/20	19	19	19	19	43				22
8"	1/20	21	19	19	19	58			24	40
10"	1/20	25	19	19	19	68		23	42	
12"	1/20	30	19	19	19	80	24	43	58	

RESTRAINT LENGTH CALCULATION ASSUMPTIONS:
 • SOIL TYPE="CL" INORGANIC CLAYS, ETC.
 • SOIL COVER="3"
 • RUN LENGTH="20"
 • FACTOR OF SAFETY="1.5"
 • TRENCH="90% COMPACTION"
 • TEST PRESSURE="150 PSI"



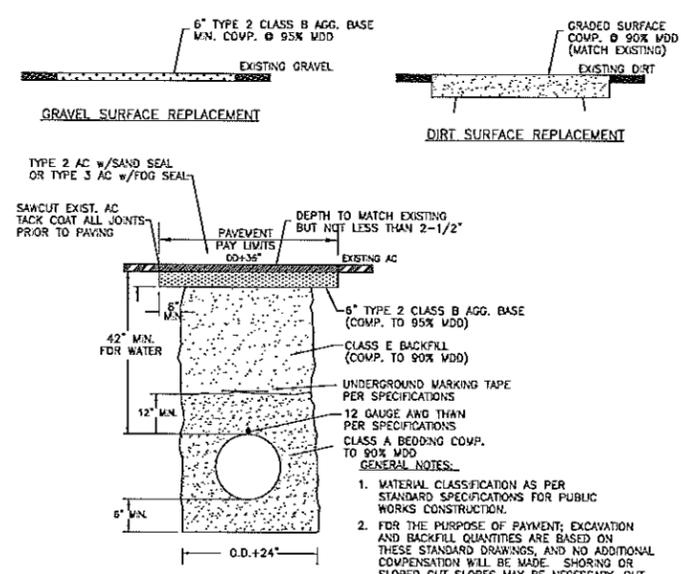
NOTES:
 1. IF BELL RESTRAINTS ARE USED ACCORDING TO THIS CHART, THRUST BLOCKS ARE NOT REQUIRED ON BENDS, TEES, HYDRANTS, VALVES OR OTHER AREAS.
 2. CONTRACTOR SHALL SUBMIT RESTRAINT CAPABILITY OF THE BELL RESTRAINT SUPPLIED FOR APPROVAL BY ENGINEER PRIOR TO USE.

JOINT RESTRAINT CHART-PVC PIPE (C/D1)



GENERAL NOTES:
 1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL BE BY SPECIAL PROVISION ONLY.
 2. BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL AS SHOWN IN SUBSECTION 200.03.06 OF THE STANDARD SPECIFICATIONS. MATERIAL SHALL BE PLACED IN LIFT THICKNESSES SPECIFIED IN SUBSECTION 305.10 OF THE STD. SPECS. AND DENSIFIED TO 90% RELATIVE COMPACTION.
 3. BEDDING SHALL MEET THE REQUIREMENTS FOR CLASS "A" BACKFILL AS SHOWN IN SUBSECTION 200.03.02 OF THE STANDARD SPECIFICATIONS MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
 4. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.

TRENCH EXCAVATION & BACKFILL (UNPAVED) (D/D1)



GENERAL NOTES:
 1. MATERIAL CLASSIFICATION AS PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 2. FOR THE PURPOSE OF PAYMENT, EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE SHOULD OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
 3. COMPACTION VALUES CAN BE MODIFIED BY ENGINEER.

TRENCH EXCAVATION & BACKFILL (TRAVELWAYS) (E/D1)

60% SUBMITTAL
 PRELIMINARY
 NOT FOR CONSTRUCTION

DRAWING ON 11"x17" IS HALF SCALE

DATE	BY	APP	DATE
JULY 2008 <td>AS SHOWN <td>BY <td></td> </td></td>	AS SHOWN <td>BY <td></td> </td>	BY <td></td>	
SCALE:	DESIGNED:	DRAWN:	CHECKED:

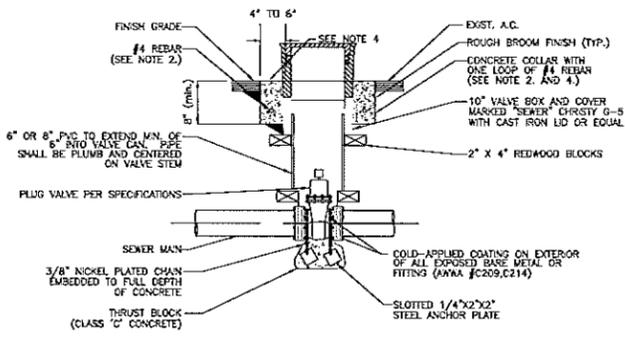
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 PHONE: (775) 851-4788
 FAX: (775) 851-0786

IMPROVEMENT PLANS
 YERINGTON WATER AND SEWER
 DETAIL SHEET

YERINGTON

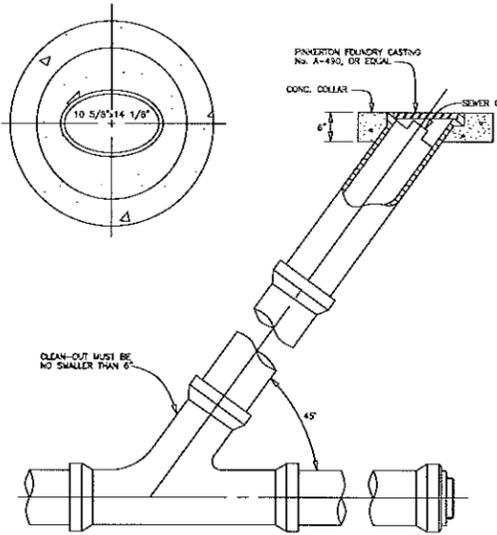
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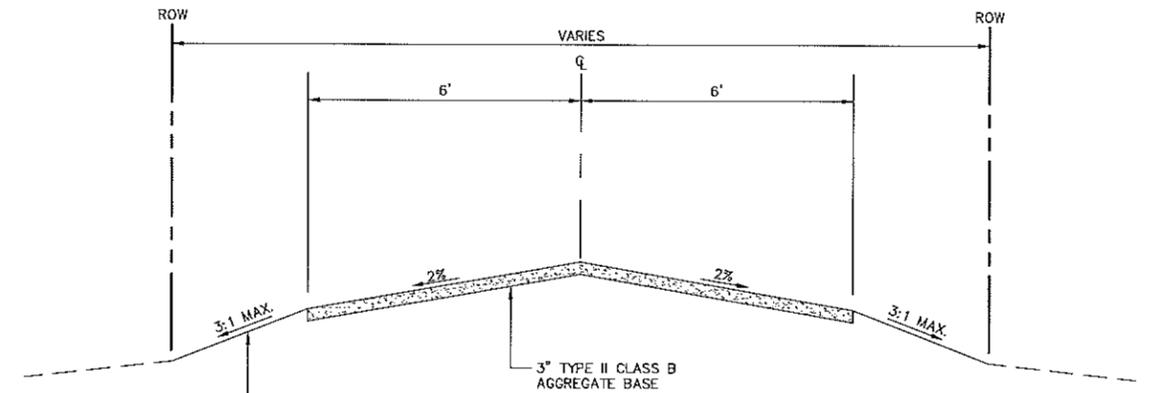


- GENERAL NOTES**
- SEE DETAIL I-C22 FOR THRUST BLOCK SIZE. (MATERIAL USED FOR THRUST BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY).
 - CONCRETE SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE PAVED AREAS.
 - IN ALL AREAS, LIDS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
 - THE CONCRETE COLLAR SHALL BE LEFT 2-1/2" - 3" BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 A.C. PAVING, CHP, OR FOG SEAL PAVED SURFACE. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE. ALL CUTS IN A.C. SHALL BE STRAIGHT & EVEN.

PLUG VALVE & BOX
SCALE: N.T.S. (A) (D6)

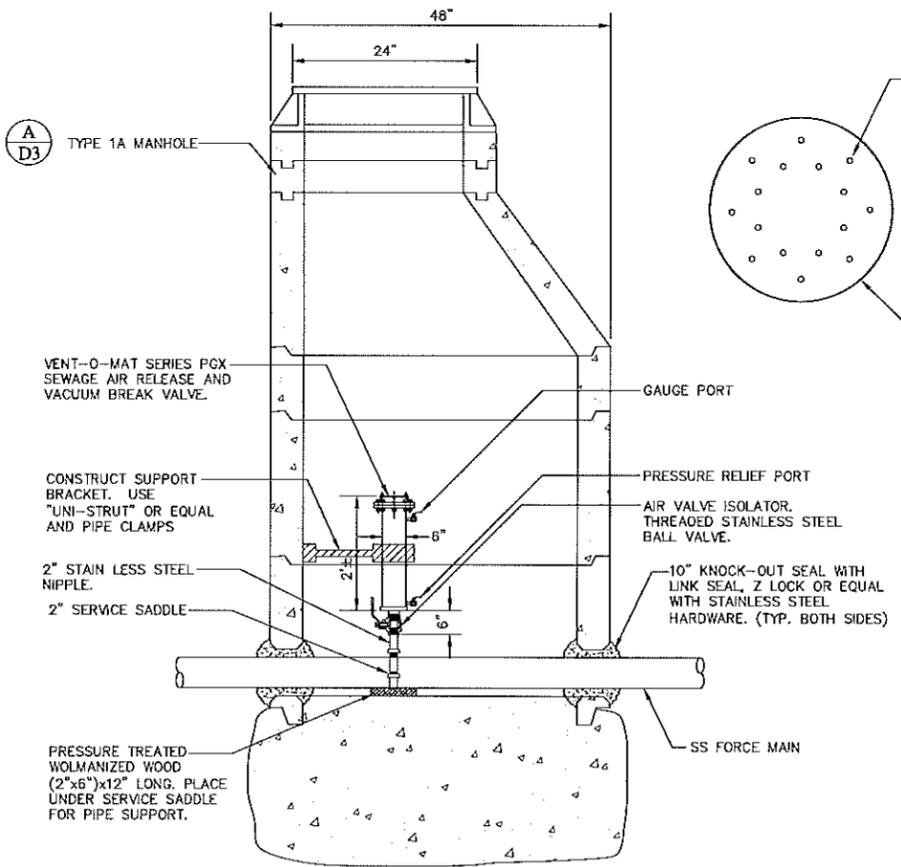


SEWER MAIN CLEANOUT
SCALE: N.T.S. (B) (D6)

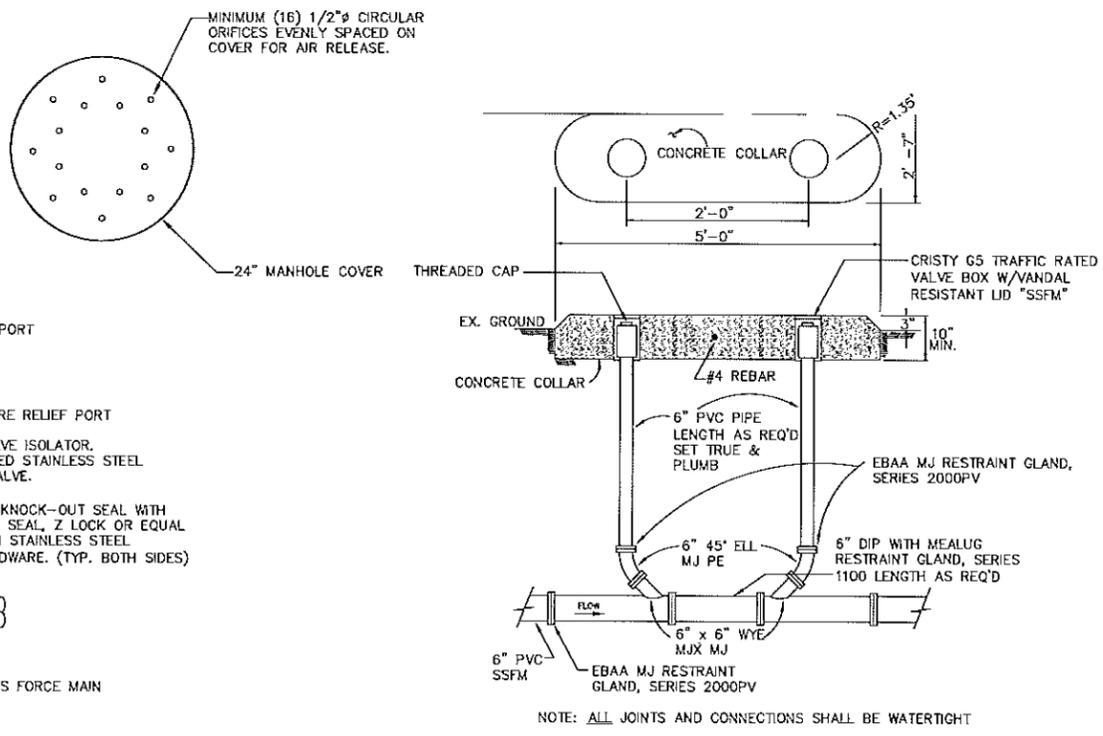


TYPICAL GRAVEL SERVICE ROAD SECTION (C)
SCALE: N.T.S. (D6)

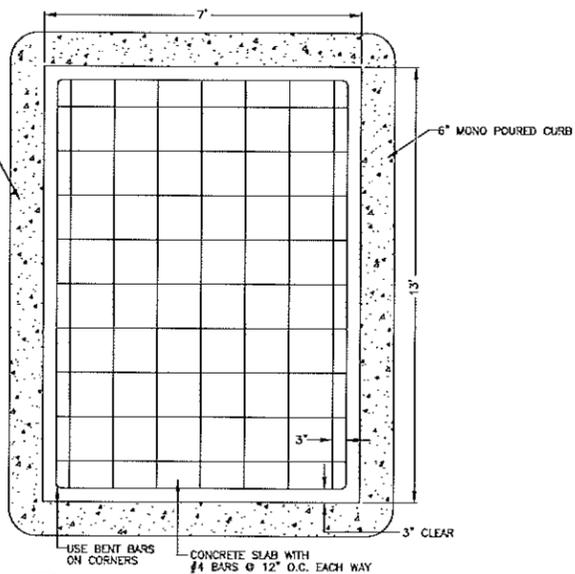
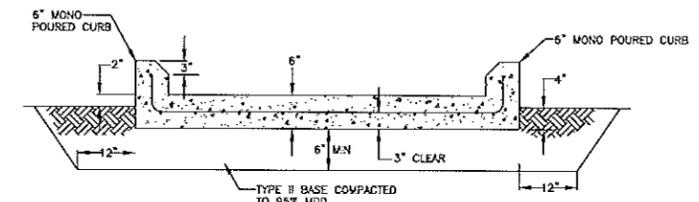
- NOTES:**
- PROVIDE GRAVEL SERVICE ROAD ALONG PIPE ALIGNMENT.
 - PROVIDE TURN-AROUND/PASSING AREAS AS SHOWN ON PLANS.



SS FORCE MAIN PASS-THROUGH MANHOLE WITH AIR RELEASE VALVE
SCALE: N.T.S. (D) (D6)



FORCE MAIN CLEAN OUT
SCALE: N.T.S. (E) (D6)



CONCRETE PAD FOR GENERATOR
SCALE: N.T.S. (F) (D6)

- NOTES:**
- BOLT GENERATOR TO SLAB AS RECOMMENDED BY MANUFACTURER. ANCHOR BOLTS SHALL BE SIZED FOR THE EQUIPMENT LOAD PLUS SEISVIC LOADS.

DRAWING ON 11"x17" IS HALF SCALE

REVISION	DESCRIPTION	BY	APP	DATE

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YERINGTON

60% SUBMITTAL
PRELIMINARY
NOT FOR CONSTRUCTION

APPENDIX A

Correspondence Regarding Threatened and Endangered Species

Stevenson, Lynne L SPK

From: James_Harter@fws.gov
Sent: Tuesday, June 16, 2009 10:28 AM
To: Stevenson, Lynne L SPK
Subject: Re: List for Yerington

Lynne,
No species status has changed and since there are no changes to the project, the letter dated March 11, 2009 (File No. 2009-SL-0118) is still considered current.

James

"Stevenson, Lynne L SPK" <Lynne.L.Stevenson@usace.army.mil>

06/16/2009 08:54 AM To
<James_Harter@fws.gov>
cc
<Marcy_Haworth@fws.gov>
Subject
List for Yerington

Hello James,

On April 1, 2009, you were kind enough to FAX me a copy of your agency's updated species list for the Corps' Yerington Water and Sewer Project, Lyon County, Nevada. The letter was dated March 11, 2009 (File No. 2009-SL-0118). Unfortunately, work was temporarily suspended on the project until this week due to my reassignment to another project.

Nothing has changed on the project. Do I need to submit another letter requesting yet another updated list, or could your agency just confirm in an email that there have been no changes to the March 11 letter? Please advise.

Thank you!

Lynne



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Nevada Fish and Wildlife Office
1340 Financial Blvd., Suite 234
Reno, Nevada 89502
Ph: (775) 861-6300 ~ Fax: (775) 861-6301

March 11, 2009
File No. 2009-SL-0118

Mr. Francis C. Piccola
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814

Dear Mr. Piccola:

Subject: Species List Request for Yerington Water and Sewer Project, Lyon County,
Nevada

In response to your letter received on February 27, 2009, the following Federally-listed species may occur in the subject project area:

- Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), threatened

This list fulfills the requirement of the Fish and Wildlife Service (Service) to provide information on listed species pursuant to section 7(c) of the Endangered Species Act of 1973 (Act), as amended, for projects that are authorized, funded, or carried out by a Federal agency.

Your proposed project is located within a potential and existing metapopulation for Lahontan cutthroat trout (LCT), and as such, the area is necessary for the species' recovery. The LCT Walker River Recovery Implementation Team (WRIT) has finalized a *Short-Term Action Plan* (2003) for the species in the Walker River basin (http://www.fws.gov/nevada/protected_species/fish/documents/lct/final_writ.pdf). This *Short-Term Action Plan* identifies priority areas with current or potential opportunities to support LCT or important habitats that would sustain various life history stages. Under the Act, completed projects should not preclude future recovery and survival of this species. We recommend that projects be reviewed for all direct and indirect impacts that they may have on riparian and aquatic habitats as they relate to LCT, and that you consult with the Service accordingly under section 7 of the Act.

TAKE PRIDE
IN AMERICA 

The Nevada Fish and Wildlife Office no longer provides species of concern lists. Most of these species for which we have concern are also on the sensitive species list for Nevada maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we are adopting Heritage's sensitive species list and partnering with them to provide distribution data and information on the conservation needs for sensitive species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. Consideration of these sensitive species and exploring management alternatives early in the planning process can provide long-term conservation benefits and avoid future conflicts.

For a list of sensitive species by county, visit Heritage's website at www.heritage.nv.gov. For a specific list of sensitive species that may occur in the project area, you can obtain a data request form from the website or by contacting Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the Act. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address. Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (see <http://www.leg.state.nv.us/NAC/NAC-503.html>). Before a person can hunt, take, or possess any parts of wildlife species classified as protected, they must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (visit <http://www.ndow.org> or call 775-688-1500).

Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703 *et seq.*), we are concerned about potential impacts the proposed project may have on migratory birds in the area. Given these concerns, we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Mr. Francis C. Piccola

File No. 2009-SL-0118

Please reference File No. 2009-SL-0118 in future correspondence concerning this species list. If you have any questions regarding this correspondence or require additional information, please contact me or James Harter at (775) 861-6300.

Sincerely,



 Robert D. Williams
State Supervisor

APPENDIX B

**Clean Water Act
Section 404(b)(1) Analysis**

**SECTION 404(b)(1) EVALUATION
CITY OF YERINGTON WATER AND SEWER PROJECT
LYON COUNTY, NEVADA**

August 2009

I. INTRODUCTION

The following is provided in accordance with Section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (CWA) (Public Law 95-217, 33 U.S.C. 1251 et seq.). The intent is to succinctly state and evaluate information regarding the effects of discharge of dredged or fill material into the waters of the U.S. As such, it is not meant to stand alone and relies heavily on information provided in the environmental document to which it is appended.

Section 230.10(a) of 404(b)(1) guidelines states: “an alternative is practicable if it is available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.” Pursuant to the Section 404(b)(1) Guidelines (40 CFR 230), the least environmentally damaging practicable alternative (LEDPA) must be practicable in terms of technology, cost, and logistics in light of the overall project purpose, and produce the least environmental damage. Per 33 CFR 320-330, the proposed action must also not be contrary to the public interest. The proposed action is the LEDPA, and it is not contrary to the public interest. Effects to aquatic and terrestrial habitat would be avoided where possible, minimized where avoidance is not possible, and compensated for when they occur.

II. PROJECT DESCRIPTION

a. Location

Yerington is located in the Mason Valley approximately 68 miles southeast of Carson City in the western part of Nevada. Part of the project area is north of Highway 95A in a sparsely populated area north and northwest of the city center. The Walker River flows from south to north through this area. The project area also includes an area south of Highway 95A through a developed area of the city. The work areas include dirt and/or gravel maintenance and farm roads, open undeveloped areas, several earthen agricultural ditches, concrete and barren areas near the existing city water tank, paved city streets, and a concrete well site.

b. General Description

The City of Yerington in Lyon County, Nevada, is proposing to (1) improve the city’s water supply system and (2) extend the wastewater collection system to the developing industrial park areas of the city. This would provide additional water for residential, commercial, and industrial uses, and allow existing septic systems to be closed. The new systems would also increase fire protection, help to ensure public health and safety, and allow continued growth and development in the northern part of the city.

c. Background

Several industrial park areas are developing just west of the municipal airport and along Highway 95A to the west. Several properties have already been developed, and several more projects are planned, including a business park owned by the city. While limited water service is provided to the industrial parks, a key system loop with connections to a new storage tank and new production well is needed to ensure a sufficient water supply for existing and planned residential and industrial uses, and for fire protection.

In addition, there is no city wastewater collection service to the industrial park areas. As a result, the first properties to be developed were required to install individual septic systems. Relatively shallow groundwater characterizes parts of the area, due to the Walker River and irrigation. The combination of septic systems and shallow groundwater increases the potential for contamination of the groundwater. A wastewater collection system loop with connections to the existing sewer system is needed to ensure public and environmental health as the industrial park areas develop.

d. Authority and Purpose

(1) Authority. This project was authorized by the Water Resources Development Act of 1999 (Public Law 106-53), which authorized the U.S. Army Corps of Engineers (Corps) to participate in environmental infrastructure projects in rural Nevada and Montana. The Corps is the Federal lead agency, and the City of Yerington is the local sponsor for the project.

(2) Purpose. This evaluation assesses the effects of the alternatives (including the LEDPA) on the resources. The purpose of the project is to provide sufficient water supply and replace the existing septic systems in the industrial park area. Once constructed, the new systems would improve water supply and wastewater service, reduce potential groundwater contamination, increase fire protection, ensure public health and safety, and allow continued growth and development in the northern part of the city.

III. Description of the Proposed Discharge Sites

a. Water Supply and Sewer Improvement

The proposed project consists of installing new underground water and sewer lines along the same or separate alignments in both undeveloped and developed parts of the city of Yerington. The project alignment will cross several agricultural ditches and the Walker River, each a single time. The ditches, the Nichols-Meritt Ditch, Walker River Irrigation District (WRID) Ditch, and Campbell Ditch, are unlined, have intermittent flows, and carry irrigation water and agricultural runoff to and from cultivated areas and pastures. As a navigable waterway, the Walker River is considered Waters of the U.S. Any area within the ordinary high water line of the river is considered jurisdictional. The three agricultural ditches within the

project area are also considered Waters of the U.S. as they either remove water from or drain into the Walker River.

i. General Description and Quantity of Dredged or Fill Material

(1) *General Characteristics of Material.* The majority of the soils within the project area where any potential fill might occur are described as loam by the Natural Resources Conservation Service Soil Survey (2009). Table 1 describes these soil types and their features.

Table 1. Soils within the Yerington Project Area

Soil Type	Landform	Parent Material	Depth to Water Table (inches)	Frequency of Flooding	Ecological Site Description	Typical Profile
Dia loam	Stream terraces	Mixed alluvium	~ 36 to 60	Rare	Moist Floodplain	0 to 20 inches: Loam 20 to 24 inches: Stratified sandy loam to silty clay loam 24 to 60 inches: Sand
Dia-Sagouspe complex	Stream terraces	Mixed alluvium	~ 36 to 60	Rare	Moist Floodplain	0 to 16 inches: Sandy loam 16 to 60 inches: Stratified coarse sand to silt loam
Dithod loam	Stream terraces	Mixed alluvium	~ 36 to 60	Rare	Moist Floodplain	0 to 11 inches: Loam 11 to 20 inches: Silt loam 20 to 60 inches: Stratified sandy loam to clay loam 60 to 64 inches: Loamy fine sand
Fallon fine sandy loam	Stream terraces	Mixed alluvium	~ 42 to 60	Rare	Moist Floodplain	0 to 10 inches: Fine sandy loam 10 to 60 inches: Stratified sand to silt loam
Orizaba sandy loam	Alluvial flats	Mixed alluvium	~ 30 to 42	Rare	Dry Floodplain	0 to 3 inches: Sandy loam 3 to 60 inches: Stratified sand to silty clay loam
Wabuska loam	Alluvial flats	Mixed alluvium	~ 30 to 42	Rare	Saline Bottom	0 to 9 inches: Loam 9 to 60 inches: Stratified sand to silt loam

(2) *Source of Material.* Work at the Nichols-Merrit and WRID Ditches would consist of clearing the area of vegetation and debris; excavating a trench; dewatering; placing bedding material and laying pipes; partially backfilling the trench; installing a precast concrete box culvert; completing the backfilling; and constructing a section of gravel maintenance roadway over the culvert. Any potential fill into these systems would occur during the backfilling of the trenches. The soils at the Nichols-Merrit Ditch are Wabuska loam, which are somewhat poorly drained soils consisting of stratified sand and silty loam. The soils at the WRID Ditch are Dithod loam, somewhat poorly drained silt loam, stratified sandy to clay loam, and loamy fine sand. The material used to backfill the trenches would be the native soil initially removed from the ditches, avoiding the use of imported material. This activity would be conducted during the dry

season only, thus circumventing the placement of fill material into flowing water. By the time the maintained ditches flow again, the culverts would be in place and any erodible materials secured, avoiding any discharge of materials into the water column.

The crossings at both the Campbell Ditch and the Walker River would be conducted via directional boring under the water systems, avoiding any effect or placement of fill into the active waterways. The soils at the Campbell Ditch crossing are Dithod clay loam, which is somewhat poorly drained clay loam, silt loam, stratified sandy loam, and loamy fine sand. The soils at the Walker River crossing are Fallon fine sandy loam, which is somewhat poorly drained soil, consisting of fine sandy loam, stratified sand, and silt loam.

Description of Proposed Discharge Site(s). The Nichols-Merrit Ditch is approximately 4 feet across and 8 feet deep, while the WRID Ditch is approximately 4 feet across and 6 feet deep. The trench needed to lay the pipeline would be an additional 4 feet in depth from the base of the ditches, needing approximately 11,727 cubic feet of soil backfilled before the placement of the two 45-foot-long, 4-foot-deep, and 10-foot-wide culverts. The fill material will be composed of native material for the subgrade (10,664 cubic feet) and aggregate base for the finish grade (1,063 cubic feet).

(1) *Location.* Both the Nichols-Merrit Ditch crossing and the WRID Drain crossing are located slightly northwest of the city of Yerington. Plate 1 is a location map marking the location of potential discharge sites (scale 1:24,000).

(2) *Size.* Each crossing area is approximately 180 square feet.

(3) *Type of Site.* Both the Nichols-Merrit and WRID Ditches are confined waterways.

(4) *Type(s) of Habitat.* The Nichols-Merrit Ditch contains emergent aquatic vegetation (broadleaf cattail [*Typha latifolia*] and smartweed [*Polygonum* spp.]), floating aquatic vegetation (predominantly duckweed [*Lemna* spp.]). While there is some willow growth, ruderal vegetation is the dominant plant community on the banks of the canal. The WRID Ditch contains emergent aquatic vegetation (broadleaf cattail and smartweed) and floating aquatic vegetation (duckweed). There are no trees or mature shrubs on the banks of the canal; the bank vegetation is predominantly ruderal weeds (e.g. mustard, *Brassica* spp.) and annual grasses.

(5) *Timing and Duration of Discharge.* As the work will be conducted and completed within the dry season, the Nichols-Merrit and WRID Ditches will both be waterless. There would be no discharge of fill material into flowing water. By the time the ditches maintain flow again, the culverts will be in place and any erodible materials secured, avoiding any discharge of materials into the water column.

ii. Description of Disposal Method. Any excess soil material would be removed and disposed offsite.

IV. FACTUAL DETERMINATIONS

a. Physical Substrate Determinations

(1) *Substrate Elevation and Slope.* The elevation of the relevant section of the study area ranges from 4,374 feet to 4,376 feet above sea level, with a slope of 0 to 2 percent.

(2) *Sediment Type.* The soils at the Nichols-Merrit ditch crossing are Wabuska loam, consisting of stratified sand and silty loam, formed from mixed alluvium parent material. The soils at the WRID Ditch crossing are Dithod loam, consisting of silt loam, stratified sandy to clay loam and loamy fine sand, formed from mixed alluvium parent material.

(3) *Dredged/ Fill Material Movement.* As the work is to be conducted during the dry season within waterless ditches, there will be no discharge of fill material within the water column. However, construction activities would disturb the natural hydrologic regime, resulting in incidental movement of local soils and sediment into downstream areas during runoff events. In addition, surface runoff after construction could pick up loose soils and transport them downstream. However, significant effects would be avoided by developing and adhering to a storm water pollution prevention plan (SWPPP) to prevent or reduce the effects of earth moving, handling of toxic materials, and other disturbances in and adjacent to the channel that may cause accelerated erosion, scouring, and water contamination. The SWPPP would describe and show features that may contribute pollutants to storm water, including areas designed for the storage of soil or waste; vehicle storage and service areas; construction material loading, unloading, and access areas; and equipment storage, cleaning, and maintenance areas. The SWPPP would also show best management practices (BMP's) for control of discharges from waste handling and disposal areas; methods of onsite storage and disposal of construction materials and construction waste; and methods to minimize or eliminate the exposure of stormwater to construction materials, equipment, vehicles, waste storage areas, or service areas. A comprehensive erosion control plan would be included as part of the SWPPP.

(4) *Physical Effects on Benthos.* As the work is to be conducted during the dry season within waterless ditches, there will be no movement of fill material within the water column. However, if any discharge should occur post-construction, sediment transported downstream of the action is not expected to substantially alter the benthos for the long-term in this area. Direct and indirect effects to the estuary, inter-tidal zone, and marine plants and algae due to sediment transport are not expected as (1) the sediment would be stored in upland sections of the waterways, and (2) the ditches are closed systems and do not reach the ocean or lakes. There would be no extension of the outflow channel downstream into the natural channel due to the proposed alternative.

(5) *Actions Taken to Minimize Effects.* Any effects to the Waters of the U.S. are temporary. In-channel effects would be short-term and would be necessary to achieve the project purpose. A SWPPP would be prepared for project construction, which would describe and identify BMP's that would minimize effects during onsite and offsite construction activities.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) *Water*. The recommended plan would not involve the discharge of wastes into the surface water or groundwater such that the project could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality. Short-term adverse effects on water quality due to construction activities would be minimized by adherence to the SWPPP described above. There would be no long-term effects on salinity, water chemistry, water clarity, water color, odor, taste, dissolved gas level, nutrient levels, or eutrophication.

(2) *Current Patterns and Circulation*. The recommended plan would not substantially adversely affect the surface water hydrology or drainage pattern.

(3) *Normal Water Level Fluctuations*. Normal water level fluctuations would not be affected over the long term.

(4) *Salinity Gradients*. The recommended plan would not have any effects on the salinity gradients.

(5) *Actions That Will Be Taken to Minimize Effects*. As there would be no effects to water circulation, fluctuation, and salinity determination, no actions are needed to minimize effects. In addition, a SWPPP would be prepared for project construction, which would describe and identify BMP's that would minimize effects during onsite and offsite construction activities.

c. Suspended Particulate/Turbidity Determinations

(1) *Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site*. No short- or long-term effects are anticipated as the work is to be conducted during the dry season within waterless ditches.

(2) *Effects (degree and duration) on Chemical and Physical Properties of Water Column*. Project construction and restoration activities could result in accidental spills of fuel or other toxic materials associated with the operation of construction equipment (e.g., gasoline, oils, lubricants, and solvents). Hazardous substances that enter the river channel could have temporary adverse effects on water quality and aquatic organisms. Physical properties of the water column would not be affected over the long term, including light penetration, dissolved oxygen, toxic metals and organics, pathogens, and esthetics.

(3) *Effects on Biota*. Soil discharged into the river channel may increase turbidity and adversely affect aquatic organisms. However, as the work is to be conducted during the dry season within waterless ditches, there will be no movement of fill material within the water column and have no effect on biota, including primary production or photosynthesis, suspension or filter feeders, or sight feeders.

(4) *Actions Taken to Minimize Effects*. As there would be no effects from suspended particulate/turbidity, no actions are needed to minimize effects.

d. Dewatering and In-water Construction. Any dewatering operations during construction do not represent a discharge into Waters of the U.S. If a dewatering system should be used, the system would continuously maintain the ground water below the lowest elevation of the excavation until all activities within the excavation are completed and fill levels have exceeded an appropriate elevation. Any water pumped out during the process will be removed and disposed of offsite

e. Contaminant Determinations. There are no known contaminated sites in or near the study area.

f. Proposed Disposal Site Determinations

(1) *Mixing Zone Determination.* As the work is to be conducted during the dry season within waterless ditches, there will be no movement of fill material within the water column and thus no work within the mixing zones.

(2) *Potential Effects on Human Use Characteristics.* As the work is to be conducted during the dry season within waterless ditches, there will be no human use of the ditches or water during the proposed action.

g. Determination of Cumulative Effects on Aquatic Ecosystem. With implementation of mitigation measures, this project would not significantly contribute to adverse cumulative effects on the aquatic ecosystem of the Walker River.

h. Determination of Secondary Effects on Aquatic Ecosystem. There are no adverse secondary effects.

V. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH RESTRICTIONS ON DISCHARGE

No significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.

A review of the proposed project indicates that:

1. The discharge represents the least environmentally damaging practicable alternative, and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem.

 X Yes No

2. The activity does not appear to (1) violate applicable State water quality standards or effluent standards prohibited under the CWA or (2) jeopardize the existence of Federally listed endangered or threatened species or designated marine sanctuary.

 X Yes No

3. The activity will not cause or contribute to significant degradation of waters of the U.S., including adverse effects on human health; life stages of organisms dependent on the aquatic ecosystem; ecosystem diversity; productivity and stability; and recreational, esthetic, and economic values.

Yes No

4. Appropriate and practicable steps have been taken to minimize potential adverse effects of the discharge on the aquatic ecosystem.

Yes No

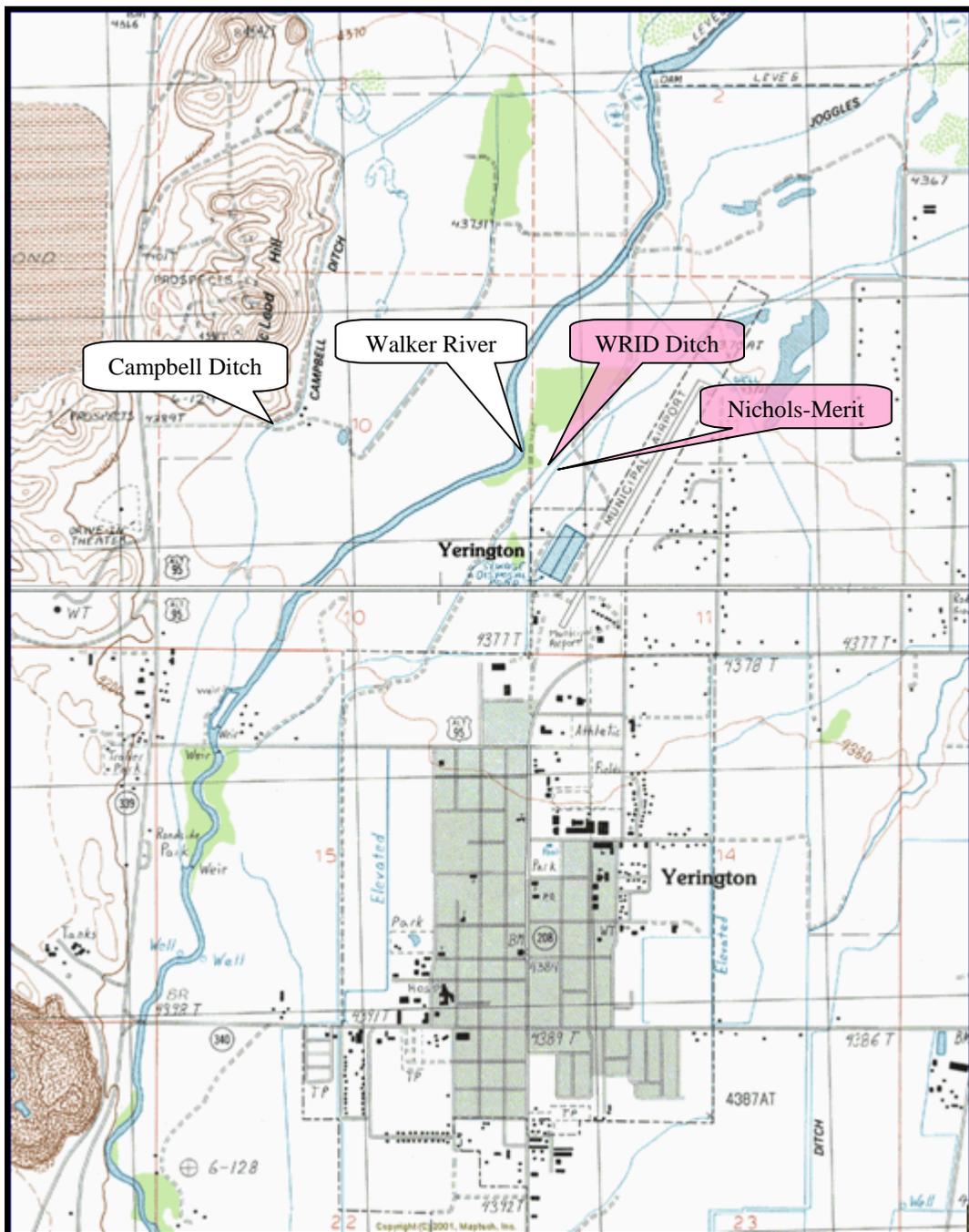
Note: A negative response indicates that the proposed project does not comply with the guidelines.

REFERENCES

Natural Resources Conservation Service (NRCS). 2009. Web Soil Survey. Available from: <http://websoilsurvey.nrcs.usda.gov/app/>.

PLATE

Plate 1. Location Map of the Waters of the U.S within the Yerington 595 Project Area. Areas of potential discharge are in pink.



Scale: 1:24,000

APPENDIX C

Determination from FAA Regarding Proposed Project



U.S. Department
of Transportation

831 Mitten Road, Suite 210
Burlingame, CA 94010

**Federal Aviation
Administration**

February 13, 2009

City of Yerington
Attn: Dan Newel
102 S. Main St
Yerington, NV 89447

RE: (See attached Table 1 for referenced case(s))
FINAL DETERMINATION

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2008-AWP-1295-NRA		YERINGTON, NV	38-59-58.48N	119-09-30.79W	1	4379
2008-AWP-1297-NRA		YERINGTON, NV	39-00-16.85N	119-09-18.36W	1	4379
2008-AWP-1299-NRA		YERINGTON, NV	39-00-23.45N	119-09-17.04W	1	4379
2008-AWP-1304-NRA		YERINGTON, NV	38-59-51.14N	119-09-55.79W	1	4379
2008-AWP-1298-NRA		YERINGTON, NV	39-00-16.93N	119-09-21.74W	1	4379
2008-AWP-1300-NRA		YERINGTON, NV	39-00-28.96N	119-09-29.17W	1	4379
2008-AWP-1302-NRA		YERINGTON, NV	39-00-14.98N	119-09-42.77W	1	4379
2008-AWP-1303-NRA		YERINGTON, NV	39-00-11.91N	119-09-47.54W	1	4379
2008-AWP-1301-NRA		YERINGTON, NV	39-00-20.07N	119-09-36.77W	1	4379
2008-AWP-1296-NRA		YERINGTON, NV	39-00-06.63N	119-09-25.55W	1	4379

Description: Point 1 of 10. This is an underground water pipeline that crosses the Walker River. The Land is owned by the City of Yerington (the Sponsor). The Sponsor is in favor of the project. The purpose is to supply safe drinking water to service a developing Industrial Park, potential 500 home subdivision and service a proposed Airport Business Park located at the Yerington Municipal Airport. There is a proposed water storage tank and well. Notems will be issued and safety guidelines followed.

We do not object to the construction described in this proposal provided:

RECEIVED
FEB 18 2008

BY:.....

You comply with the requirements set forth in FAA Advisory Circular 150/5370-2E, "Operational Safety on Airports During Construction."

You comply with Chapters 3, 4, 5, 12 of Advisory Circular 70/7460-1K, Obstruction Marking and Lighting.

Please be advised that the airfield will be located within the confines or near a military training route or military training area.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

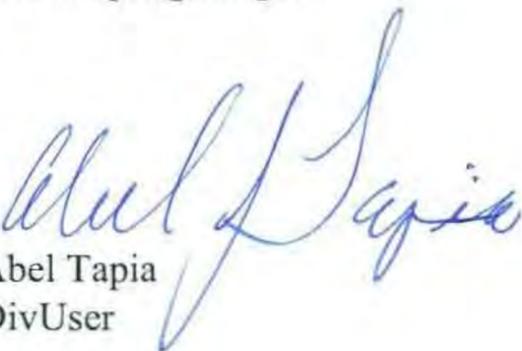
This determination expires on August 13, 2010 unless:

(a) extended, revised or terminated by the issuing office.

(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for the completion of construction, or the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be obtained at least 15 days prior to expiration date specified in this letter.

If you have any questions concerning this determination contact Abel Tapia, (650)876-2778, Abel.Tapia@faa.gov.


Abel Tapia
DivUser

APPENDIX D

Correspondence Regarding Cultural Resources



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEER
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

Environmental Resources Branch

Mr. Vince Conway, Tribal Chair
Yerington Tribal Council
171 Campbell Lane
Yerington, Nevada 89447

JUL 23 2009

Dear Mr. Conway:

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, we are writing to inform you of the proposed City of Yerington Water and Sewer Project in Lyon County, Nevada. The U.S. Army Corps of Engineers (Corps) is authorized to participate in water-related infrastructure and resource development projects in rural Nevada pursuant to Section 595 of the Water Resources Development Act of 1999, Public Law 106-53, as amended. The Corps is the lead Federal agency, and the City of Yerington is the local sponsor for the project.

The City of Yerington is proposing to (1) improve the city's water supply system and (2) extend the wastewater collection system to the developing industrial park areas of the city. This would provide additional water for residential, commercial, and industrial uses, and allow existing septic systems to be closed. The new systems would also increase fire protection, help to ensure public health and safety, and allow continued growth and development in the northern part of the city.

Portions of the area have been surveyed in the past but due to the length of time that has passed since the last survey was conducted, the Area of Potential Effect was resurveyed by Basin Research Associates. There were no prehistoric sites found during the current survey. There were, however, a number of historic ditches that have been previously recorded, but would not be adversely affected by the project.

We are sensitive toward the protection of traditional cultural properties and sacred sites, and make every effort to avoid them. Please let us know if you have knowledge of locations of archeological sites, or areas of traditional cultural value or concern in or near the City of Yerington Water and Sewer Project area. Correspondence may be sent to Ms. Melissa Montag, U.S. Army Corps of Engineers, Sacramento District, 1325 J Street, Sacramento, California 95814-2922. If you have any questions or would like additional information, please contact Ms. Montag at (916) 557-7907 or by email at: Melissa.L.Montag@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Francis C. Piccola".

Francis C. Piccola
Chief, Planning Division

Enclosure



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEER
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

Environmental Resources Branch

Mr. Edmund Reymus, Tribal Chair
Walker River Paiute Tribal Council
P.O. Box 220
Schurz, NV 89427

JUL 23 2009

Dear Mr. Reymus:

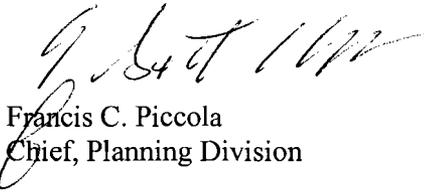
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Sincerely,


Francis C. Piccola
Chief, Planning Division

Enclosure

Copy Furnished w/encl:



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEER
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

Environmental Resources Branch

Mr. Waldo W. Walker, Tribal Chair
Washoe Tribal Council
919 Highway 395 South
Gardnerville, NV 89410

JUL 23 2009

Dear Mr. Walker,

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, we are writing to inform you of the proposed City of Yerington Water and Sewer Project in Lyon County, Nevada. The U.S. Army Corps of Engineers (Corps) is authorized to participate in water-related infrastructure and resource development projects in rural Nevada pursuant to Section 595 of the Water Resources Development Act of 1999, Public Law 106-53, as amended. The Corps is the lead Federal agency, and the city of Yerington is the local sponsor for the project.

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Sincerely,

A handwritten signature in black ink, appearing to read "Frank Piccola".

Frank Piccola
Chief, Planning Division

Enclosure

APPENDIX E

Mailing List

U.S. Army Corps of Engineers
Reno Regulatory Office
C Clifton Young Federal Building
300 Booth Street
Reno, NV 89509

U.S. Department of Agriculture
Natural Resources Conservation Service
215 West Bridge St., Suite 11-A
Yerington, NV 89447

U.S. Department of Agriculture
Rural Development
1390 South Curry Street
Carson City, NV 89703

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607

U.S. Federal Aviation Administration
San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, California 94010

U.S. Fish and Wildlife Service
Nevada Fish and Wildlife Office
1340 Financial Boulevard
Reno, NV 89502

Nevada Bureau of Air Pollution Control
901 So. Stewart Street, Suite 4001
Carson City, NV 89701

Nevada Bureau of Health Protection
Services
1179 Fairview Lane, Suite 101
Carson City, NV 89710

Nevada Bureau of Safe Drinking Water
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712

Nevada Division of Environmental
Protection
901 South Stewart Street, Suite 401
Carson City, NV 89701

Nevada Division of Wildlife
1100 Valley Road
Reno, NV 89512

Nevada State Clearinghouse
209 East Musser Street, Room 200
Carson City, NV 89701

Nevada State Historic Preservation Office
100 North Stewart Street
Carson City, NV 89701

Lyon County Planning Department
Yerington Office
27 S. Main Street
Yerington, NV 89447

Lyon County Library
20 Nevin Way
Yerington, NV 89447

City Council
City of Yerington
102 S. Main Street
Yerington, NV 89447

Public Works
City of Yerington
227 S. Main Street
Yerington, NV 89447

Mason Valley News
207 W. Goldfield Avenue
Yerington, NV 89447-2349

Walker River Irrigation District
410 N. Main Street
Yerington, NV 89447

Yerington Paiute Tribe
171 Campbell Lane
Yerington, NV 89447