Gardena Farms Irrigation District #13
Upper Canal Piping Project

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Walla Walla County Conservation District
350 North 18th Avenue
Walla Walla, WA 99362

Not For Construction

Coversheet

Gardena Farms Irrigation District # 13
Upper Canal Piping Project
All Mainline is 60"
All Mainline is 60°
All Mainline is 60"
Ditch Top Right
Existing Ground

Walla Walla County
Conservation District

NOT FOR CONSTRUCTION

Profile 5 & 6

Gardena Farms Irrigation District #13
Upper Canal Piping Project
All Mainline is 60"
Ditch Top Right
Existing Ground

All Mainline is 60"

Walla Walla County Conservation District
9 & 10
Profile
Gardena Farms Irrigation District # 13
Upper Canal Piping Project
43° Elbow
11° Elbow
34° Elbow
60" x 4" Service Saddle
Road Crossing Typical
12" Air Vac Typical
60" x 12" Tapping Sleeve

All Mainline is 60"

Ditch Top Right
Existing Ground

NOT FOR CONSTRUCTION
All Mainline is 60"
Ditch Top Right
Existing Ground

All Mainline is 60"
All Mainline is 60"

This Section Intentionally Blank
All concrete slabs shall have a 6" (or minus) gravel layer underneath.
Re-bar Schedule:
Slab Work- #4 bar 18" OCBW with 2" Cover
(½" Re-bar, 18” On Center Both Ways)
Slab For Base of Structure-#4 18" OCBW 2" Cover
Walls-#5 bar OCBW with 3" Cover

Rebar Schedule

Intentionally Blank

Dimensions for Walls
### Pump Details

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<td>468</td>
<td>2&quot; Sch 40 Steel Coupler, Galv.</td>
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Screen Pump Discharge

Approx 112”

Screen Pump Suction

Pump & Assembly may require on-site modifications.
Screen Pump Orientation and Layout
30" Min.

12" Min.

Replace Existing Discharge
To Accommodate Design

Existing Flange

Existing Discharge
to Remain the Same
at this Point.
Existing Discharge to Remain the Same at this Point.

Existing 49" Field Measurement Discharge To Accommodate Design
Plan View

Profile View

Approx 200' to Main Pipeline
Finished Grade

This station will have field fabricated tie-ins to 4 different mainlines. See Plan View.

Profile View

Plan View

Not To Scale
This site will require a new Electrical Service Panel.
16" Flange will be a specialty part (8 or 10 hole)
Pump is inside shed, will require extra length nipple.
NOTES:
Trash rack to use 1' steel tubing with 2" spacing and 2" angle iron for frame.
Mound backfill to allow for settling

Construction Notes:

1) Bedding shall be used on foundations containing materials larger than $\frac{3}{4}$". If required, bedding depth shall be 4" min. Native soils may be used for backfill.
2) The initial backfill material shall consist of soil or granular material that is free from rocks greater than 1/2 inch in diameter.
3) The final backfill shall be free from material larger than 3 inches.
4) Pipe will be installed as Staked in field.
5) System will be pressure tested according to requirements.
6) The bury depth shown is a minimum.

Pipe Material:
- PVC-80,100 or 125 PSI PIP, or C905
- Steel-Sch.40, or otherwise specified

Bury Depth: 36" minimum

Road Crossings-Cut
Supply and install casing, carrier, and spacers.

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<th>Pipe Size (in)</th>
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Construction Notes:

1. The culvert shall be installed to the elevations as staked in the field.
2. Bedding materials shall meet the requirements of installation specifications.
3. $\frac{3}{8}$" minus gravel backfill installed according to installation specifications.
4. Finished roadway surface shall be returned to its prior condition.
5. Calpico pipe spacers or equivalent shall be installed to mfg's. recommendations.
Place Holder Until Pipe Composition Decided

TYPE A
(SEE SECTION A)

TYPE B
(SEE SECTION A)

TYPE F
(SEE SECTION A)

SECTION A
Drain Assembly

Adjustable Pipe Stand Assembly

Buried Butterfly Valve Assembly

4" x Cut to Fit at 12" above Finished Grade PVC IPS 125 PSI Pipe

3/4" Weld O-let

1 Cu Ft-5/8" Minus Gravel

AWWA504C Butterfly Valve, Direct Bury, Gear Operated, 2" Sq. Nut

Debris Plate on Extension Shaft

6" x Cut to Fit at 12" above Finished Grade

Finished Grade

4" Sch.40 PVC Cap, FIPT

4" Sch.40 PVC Male Adapter

Valve Key w/Extension to 12" above Finished Grade

3" x 3" x 1/4" Angle Iron

1-8 Redi Bolt, 5" Long

1" UNC Heavy Shoulder Nut

1-1/2" x 1-1/2" x 3/16" Flat Iron

1-1/2" Square Tube, Field Fit

6" x 6" x 3/8" Steel Plate

Or an Approved Equal.

NOT FOR CONSTRUCTION

Gardena Farms Irrigation District # 13
Upper Canal Piping Project

Drain, Pipe Stand & Buried Butterfly Valve Assemblies

Typical C

57
* Conduit and conductors shall be sized to horsepower per N.E.C.
Telemetry Needs

5" x ½" Steel Flange

5" x ½" Steel Blind Flange

22.5°

Suction Clean-Out

5" Sch 40 Steel Pipe, Cut to 22.5° Angle, Length to allow minimum needed for fabrication and welding, and dovetail welded to suction pipe 1 inch below cone.

60" X 8" Tapping Saddle
8" Direct Bury Butterfly Valve
8" x ½" Steel Flange
8" Std Weight Steel Pipe

14" x 12" x 8" Fiberglass box with back panel and hinged solid door installed on pump panel backboard, install 120 vac x 24 vdc power supply, conduit from flow meter installed in the bottom with flex conduit between conduit from flow meter and box no longer than 18". Power supply to be mounted to back panel, grounding bar for cable shields to be installed and grounded.

14" x 12" x 8" Fiberglass box
Hoffman A14128CHQRF
Back Panel A14PAL
Square D PK12GTA

Finished Grade

3 4" L. R. PVC Sch. 40 Conduit 90°

⅝" Flex conduit maximum length 18", install pull line

Include 120v Power Receptacle.
Mainline Air Vents at Lateral Turn-Outs

The mainline and lateral Air/Vac may not always be co-located as shown.

Lids for the CMP may need to be vented. Not tight fitting.
Typical Crossing River/Creek

Creek or River

### Item Description

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<td>8&quot; Steel Pipe Standard Weight</td>
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<tr>
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<tr>
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<td>1' x 1' Thrust Block (Typical)</td>
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<tr>
<td>413</td>
<td>Operator Extension Assembly (Typical)</td>
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<tr>
<td>908</td>
<td>60&quot; x 8&quot; Tapping Sleeve</td>
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See Inset For Details

NOT FOR CONSTRUCTION

Gardena Farms Irrigation District # 13
Upper Canal Piping Project
Article 1. SCOPE OF WORK
The CONTRACTOR shall provide all labor, equipment, supplies and services required for earth work to excavate and bring to grade the existing canal in accordance with the lines and grades shown in the Project Drawings. This shall include removal and disposal of all existing concrete structures in the existing canal and at pump stations.

The CONTRACTOR shall provide, install and backfill all pipe in accordance with the lines and grades shown in the Project Drawings.

The CONTRACTOR shall provide all labor, equipment, supplies and services required to install all pre-fabricated steel “special” assemblies, valves, filters and related appurtenances in accordance with the lines shown on the project Drawings and Specifications.

The CONTRACTOR shall provide all labor, equipment, supplies and services required to connect the Project pipeline to the District landowners individual pump stations. There will be 37 separate pump connections, each individually detailed out in the Project Drawings.

Article 2. MATERIALS
All materials will be CONTRACTOR supplied including the required concrete as outlined in the Drawings, consumables, such as, but not limited to; pipe thread sealant, PVC glue, etc (excepting the quantities of pipe on hand as listed in the MATERIALS SPECIFICATIONS).

Article 3. UNLOADING AND STRINGING
The ENGINEER will provide pipeline drawings showing locations, sizes, classes and lengths. It shall be the CONTRACTOR’S responsibility to verify that pipe is strung in the correct order prior to laying.

Pipe will be unloaded using a canvas or nylon web sling, by hand for smaller pipe sizes or other methods approved by the ENGINEER. Pipe shall not be rolled off the trucks. No cables, chains or hooks shall be used.

Where stockpiling is necessary, pipe shall be placed in a manner that the adjoining pipes do not contact each other.

The CONTRACTOR at his sole expense shall replace pipe damaged during unloading or installation.

The OWNER will provide all required rights-of-way, easements and sites for the material storage and permanent works.

OWNER will provide and CONTRACTOR will maintain haul roads in close proximity to the final destination of the pipe. The roads will be suitable for pipe trucks to proceed under their own power without damage.
**Article 4. TRENCHING AND BACKFILLING**

The CONTRACTOR shall provide all labor, equipment and materials necessary for construction of the trenches. The trench shall be cut to such a depth that the minimum cover is 36”.

Where the pipelines cross agricultural fields the excavation material removed from the trench shall be segregated into topsoil and sub-soil so that it can be returned to the trench in essentially the same order that it was removed.

In areas where rock is encountered the trench shall be over-excavated to a depth of 3 inches below the normal trench bottom then refilled and compacted to grade using select material from areas approved by the OWNER or ENGINEER. Non-rippable rock (as determined by the ENGINEER) shall be considered an "extra". The addition to the Contract amount will be negotiated based on Time and Materials, however the CONTRACTOR must not proceed without a written Change Order approved by the ENGINEER and/or OWNER.

Bedding of the pipe with non-native material will not be required except in areas of rock as described in the previous paragraph.

The bottom of the trench shall be maintained on a uniform grade. The pipe finish grade line must be controlled and maintained using a laser level. The grade line and survey staking will be established by others. Survey stakes with an offset distance and a depth to pipe invert will be provided every 100 feet and at transitions.

All trenching shall be done in accordance with federal, state, and local safety rules, regulations and codes. CONTRACTOR agrees to hold OWNER and ENGINEER harmless for any violations.

Backfill material shall be native soil free from rocks, vegetation and debris around the pipe to 12” over the top of the pipe. The balance of the backfilling will be done by returning the soil to the trench in its original location as nearly as practicable. Bridged areas under the pipe shall be hand filled and compacted to assure support for the pipe along its entire length. There shall be no exceptions.

Local backfill material shall be utilized, as available. The top foot shall be scraped and stockpiled for later replacement. After borrow material is removed the topsoil shall be replaced on the disturbed area. All disturbed areas shall be returned to a farmable condition.

**Article 5. ROAD CROSSINGS**

The listed road crossings shall be installed as shown in the Detail sheet. They shall be installed to meet current Walla Walla County Standards and Specifications. All road crossings, including access roads, shall be finished to the original condition or better.

**Article 6. PVC PIPE INSTALLATION**

Handling of pipe for placement in the trench shall be accomplished utilizing nylon or canvas slings. Any damaged pipe shall be replaced by the CONTRACTOR at his sole expense.
Cut ends of PVC pipe shall be deburred and beveled prior to gluing or inserting into slip sockets or gasketed joints. Cuts shall be square and perpendicular to axis of pipe. Pipe shall be installed following the manufacturer’s recommendations.

Glued PVC pipe connections shall be fabricated using primer and glue conforming to ASTM D2564. The glue and primer shall be handled as specified in ASTM F402. All glued connections shall be made according to the pipe, fitting and glue manufactures recommendations. The PVC glue and primer shall be CONTRACTOR supplied.

The deflection at each individual pipe joint must not exceed the pipe manufactures recommendations.

The pipe shall be installed with the bell-end in the direction of work.

**Article 7. SHOP AND FIELD WELDING**

All welds shall be full penetration and full thickness of the parent metal.

All pipe field cuts shall be re-beveled and ground prior to welding. Weld-on flanges shall be installed with two bolt holes positioned horizontally. All flange to flange connections require a full faced EPDM flange gasket that will be CONTRACTOR supplied.

The shop and infield weld fabrication and installation of steel components and fittings shall be completed by the Contractor at the locations and to the dimensions shown on the Drawings.

It shall be the Contractor’s responsibility to supply and use welding rod compatible with the material being welded. The Contractor shall notify the Engineer of the welding rod to be used.

**Article 8. FABRICATION OF SPECIALS AND FITTINGS**

All below ground bare steel pipe shall be pre-fabricated into “special” assemblies. These special assemblies shall be welded according to the specifications of Article 7, using materials supplied by the CONTRACTOR and according to the drawings.

**Article 9. INSTALLATION OF SPECIALS AND FITTINGS**

The pre-fabricated “special” assemblies are to be installed by the CONTRACTOR according to the Drawings. They shall be installed plumb and level, with all connections to the appropriate piping complete and tightened before the concrete supports or thrust blocks are poured.

Shipping and handling of the coated “special” assemblies shall be conducted in a way as to protect the integrity of the coating. Any damage to the coating shall be repaired prior to field installation according to the appropriate AWWA Standard.

The CONTRACTOR shall supply and install adapter fittings at transitions from PVC pipe to the steel specials.

All underground bolts, nuts and washers will be resistant to oxidation. Bolts smaller than ½” shall be stainless steel, bolts larger than ½” shall be galvanized. All bolts shall be prepared with an anti-seize thread compound before installation. Each bolt will have a flat washer on one end, a lock washer and nut on the other end. Bolts on flanges and compression fittings are to be tightened to compress the gasket uniformly. This means going from side to side around the
joint, in a star-like crossing pattern. All bolts should be tightened in one-third increments, according to proper bolting patterns.

All threaded pipe fittings shall be assembled using Teflon based joint sealing compound and not a tape product. When assembling pipe threaded fittings, first hand tighten the external thread into internal thread. Then tighten an additional 2 turns with a wrench for pipe up to 1/2 inch and 1-1/2 to 2-1/2 turns for pipe sizes greater than 1/2 inch.

All direct buried butterfly valves shall be a direct buried service type with a 2” square-drive nut with an access tube centered over the drive nut. The access tube shall extend 1-ft above the surrounding finished ground surface and fitted with a cap.

All air vents, valves, valve access tubes, pressure gauges and other appurtenances shall be installed plumb and level.

**Article 10. ABOVE GROUND STEEL PIPE COATING**
After completion of the on-site pipe fabrication of any pipe that is bare steel, the exterior surfaces shall be primed and painted with enamel paint. The pipe shall be prepared according to the paint manufactures recommendations. A two coat application is required. The material required for this field application of the pipe coating will be CONTRACTOR-supplied.

**Article 11. BELOW GROUND STEEL PIPE COATING**
All completed underground assemblies shall be shop protected on the outside with hot-applied coal-tar enamel and tape coating applied according to the AWWA Standard C203.

**Article 12. THRUST BLOCKS**
The CONTRACTOR shall install, at the locations shown on the Drawings cast-in-place concrete thrust blocks. Thrust blocks shall be poured such that the bearing surface is against undisturbed earth and the bearing area is as specified on the Drawings. Concrete for thrust blocks shall be formed or otherwise restricted from coming within 6-inches of all flange bolts. All steel pipes in contact with concrete shall be wrapped with a 50 lb. felt material to protect the pipe coating.

Concrete used in thrust blocks and slabs shall be a standard structural mix with minimum 3000 psi compressive strength (28 days) and slump not to exceed 5 inches. CONTRACTOR shall provide ENGINEER with concrete supplier’s name and address for approval at least 2 days prior to his scheduled time for pouring thrust blocks.

Concrete slabs (pump station) shall be formed and cast-in-place, 6-inches thick unless otherwise indicated in the drawings and shall include a 6-inch square wire mesh for reinforcement. The slabs shall be finished with a broom texture.

**Article 13. LOCATOR WIRE INSTALLATION**
Locator wire will be installed on all main and lateral pipe runs. All splicing will be above ground and locator wire access and splicing posts located in protected areas and marked with posts. Junction box locations shall be approved by the Project Engineer.
Article 14. SYSTEM STARTUP AND TESTING
The pipe shall be filled with water and pressurized to xx psi (at station 0+00) for a period of 2 hours. A pressure gauge shall be installed to record the pressure at the start and end of the test. All components will perform as intended and pump stations shall be fully operational as per design. Project ENGINEER and Construction Management shall be scheduled and present during testing.

Article 15. POLLUTION CONTROL
The CONTRACTOR shall perform work to control soil erosion, sedimentation, petroleum, dust and smoke from becoming air and or water pollutants during construction.

Article 16. TIME OF COMPLETION
Works specified herein shall be completed in accordance with the following schedule:

Start Date:

Substantial Completion:

Final Completion:
Article 1. MATERIAL SPECIFICATION SHEETS

PROJECT SPECIFICATION SHEETS have been prepared for this Project by the ENGINEER on which the prospective material SUPPLIER shall prepare their bid. These specifications are intended to add specific detail and provisions not provided in the Plan or Detail sheets.

Manufacturer names are specified for some items on the Materials Specifications. Unless followed by the word "ONLY", substitutions for the specified items may be allowed if approved by the ENGINEER. Items where the Manufacturer's name is followed by the word "ONLY" indicate a product requested by the ENGINEER or that is critical to the operation of the system and may not be replaced by another manufacturer's product.

Article 2. STEEL PIPE

All steel pipe shall be Standard Weight wall thickness with beveled ends and shall be manufactured according the AWWA C200 Standard. All listed pipe sizes are standard pipe sizes.

Article 3. Plastic PIPE

PVC Pipe

The listed pipe sizes are nominal dimensions, the actual pipe sizes shall be the corresponding pipe sizes as shown on the drawings. All pipe lay lengths with the integrated bell shall be 20 or 22 feet. The pipe pressure rating shall be as shown on the drawings. The PVC pipe material shall conform to ASTM D 1784 cell class 12454 and the pipe gaskets shall meet the requirements of ASTM F 477.

HDPE or SRPE

Reserved for final determination of mainline materials selected.

Article 4. CMP PIPE

12 ga. corrugated metal pipe shall be used for the road crossings listed in the Detail sheet.

Article 5. FACTORY FITTINGS AND JOINT COUPLERS

All steel pipe fittings shall be seamless carbon steel Grade B, Standard Weight wall thickness with beveled ends. All elbow fittings shall be of the Long Radius type. All reducers shall be concentric unless otherwise stated.

Steel flanges shall be of forged carbon steel construction, weld neck type with a flat face, rated for 150 psi. Flanges shall be ½" thick on pipe sizes 10" or less and shall be Class D on 12" and larger sizes.
Repair couplers or Flanged Coupling Adapters shall be carbon steel with flanges, Nitrile Buna rubber gaskets, 304 stainless steel bolts and nuts, and with a fusion bonded epoxy coating. (Gheen 7040 or equal)

By contractors choice, factory fabricated fittings can be either PVC or Gheen (or Equal). If PVC, the fittings must be Class 125, regardless of the pipe class the fitting will be used with. If the fittings are Gheen style they shall be fusion bonded epoxy coated.

**Article 6. CONTRACTOR FABRICATED ASSEMBLIES**

All contractor supplied steel fabricated assemblies shall be made from components (pipe, flanges and fittings) meeting the specifications outlined in Article 5.

**Article 7. VALVES**

Brass gate valves shall be non-rising stem type with a solid wedge disc and graphite stem packing. The valves shall have standard NPT threads and be rated for 200 psi WOG. (Fresno Valve Model 210, 220 or Equal as specified)

Brass ball valves shall have a blow-off proof stem with a Teflon seat and stem packing. The valves shall have standard NPT threads and be rated for 150 psi stem and 400 psi WOG. (Fresno Valve Model 120, 130, or Equal as specified)

Buried butterfly valves shall meet AWWA Standard C504 Class 150B. They shall be gear-operated, constructed with cast iron bodies, streamlined ductile iron discs, EPDM sealing liner, stainless steel shafts and bronze bearings. The valves shall be rated for a minimum of 150 psi and be designed for installation between Class D flanges. Valves shall be rated for buried service applications and have a 2” square-drive nut. The valve shall include a galvanized bolt kit sized appropriately for the valve and flanges. The bolt kit shall include the bolt, a nut, a lock washer and a flat washer.

Above ground butterfly valves (gear or lever operated) shall be lug, wafer or flanged style, constructed with cast iron bodies, streamlined ductile iron discs, EPDM sealing liner, stainless steel shafts and bronze bearings. The valves shall be rated for a minimum of 150 psi and be designed for installation between Class D flanges. The valve shall include a bolt kit sized appropriately for the valve and flanges. The bolt kit shall include the bolt, a nut, a lock washer and a flat washer (Grinnell 8000 or equal).

Chemigation Valves shall be galvanized with flanged connections. Valves shall have stainless steel hinge assembly and springs. Inspection port and air vent shall be included.

Continuous Acting Air Vent and Vacuum Release Valve – 2” shall be constructed of all corrosion resistant materials, with a maximum working pressure of 200 psi, 2” male NPT threads and a discharge elbow with internal protective screen. (Nelson ACV200P or equal)

Continuous Acting Air Vent and Vacuum Release Valve – 4” shall be constructed with a cast aluminum body and baffle, neoprene ball and sealing disc, nylatron bushings, stainless steel orifice, guide rod, bolts and nuts and a cast iron base. The valve shall be rated for a maximum working pressure of 125 psi and it shall have 4” female NPT threads screen (Fresno Valve series 3500 or equal).
**Article 8. PVC FITTINGS**

All solvent weld PVC fittings shall be thermoplastic injection molded. All fittings shall be Class 125. The PVC material used in manufacturing the fittings and flanges shall be from PVC Type I cell classification 12454 and shall conform to ASTM Standard D 1784 (Schedule 40) or D 2467 (Schedule 80).

**Article 9. Service Saddles**

Service saddles shall be constructed of carbon steel with epoxy coating or stainless steel. Gaskets shall be EPDM. (Morrill Industries 1095 or equivalent).

**Article 10. FLOW METERS**

Pump station flow meters shall be electromagnetic type based on Faraday’s law of induction. The meter ends shall be a flanged and shall have a non-invasive, full pipe flow path, with a lining made of non-conductive, corrosion resistant materials. The meter accuracy shall be +/-1% of true flow rate within the range specified. Meter sizes 4” and greater shall include a stainless steel grounding ring and electronic components shall be housed in stainless steel or epoxy coated enclosures that are NEMA 4 rated. The meter shall include the following options: External Power/Output cable (50’) with regulated 4-20 mA output signal with high speed pulse, built in display showing rate in gpm and total in ac-ft, weatherguard (SeaMetrics AG2000 series or Equal). Additional accessories shall include all electrical components required to provide a 24V dc power source from the existing power source at each meter location and a 120V receptacle.

Mainline flow meters shall be clamp-on, transit-time flow meters capable of +/-1% accuracy readings (velocity) with MODBUS RS485 communication capability (Panametrics XT 868i or equal).

**Article 11. Filters**

All pressure filters shall be galvanized with flanged connections. They shall have a pressure rating of 125 psi. Filters shall include; 2 pressure gages, a 2” air/vac valve, blowoff valve (brass ball valve) with a screen size of 3/32”. (Clemons pressure fine filters or equal). No post galvanizing welds.

**Article 12. Misc Components and Hardware**

Flange gaskets shall be full-faced, 1/8” thick and made of an EPDM elastomer material.

Tracer Wire shall be #14 UF copper locator wire.

Pressure gages shall be glycerin filled, stainless steel, 100 psi.
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<td>$1,255,000</td>
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<tr>
<td>and fitting</td>
<td>no.</td>
<td>80</td>
<td>$2,500</td>
<td>$200,000</td>
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<tr>
<td>Road Crossings/Install-72&quot; sleeve, spacers,</td>
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<td>7</td>
<td>$20,000</td>
<td>$140,000</td>
</tr>
<tr>
<td>resurface</td>
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<tr>
<td><strong>Sub-Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>$10,668,600</td>
</tr>
<tr>
<td><strong>On Farm Lateral/Pump Stations</strong></td>
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<tr>
<td>PVC Pipe</td>
<td>ft.</td>
<td>10,000</td>
<td>$18</td>
<td>$180,000</td>
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<td>Pump Stations</td>
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<td>$180,000</td>
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<tr>
<td><strong>Sub-Total</strong></td>
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<td></td>
<td></td>
<td>$360,000</td>
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<tr>
<td><strong>Excavation/Backfill</strong></td>
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<td>Backfill existing canal-structure removal</td>
<td>ft.</td>
<td>30,000</td>
<td>$8</td>
<td>$240,000</td>
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<tr>
<td>Remove excess fill on pipeline route</td>
<td>cu.yd.</td>
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<td>$7</td>
<td>$175,000</td>
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<tr>
<td><strong>Sub-Total</strong></td>
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<td>$415,000</td>
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<td><strong>Pipeline Termination</strong></td>
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<td>Flow Control Valve</td>
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<td><strong>Sub-Total</strong></td>
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<tr>
<td><strong>Total</strong></td>
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<td>$11,653,600</td>
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<td>Sales Tax 8.10%</td>
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<td><strong>Total</strong></td>
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<td>$12,597,541.60</td>
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</table>

*Cost estimate is based on the proposed alignment at the conceptual design stage. Assumed flow of between 70-80 cfs.*