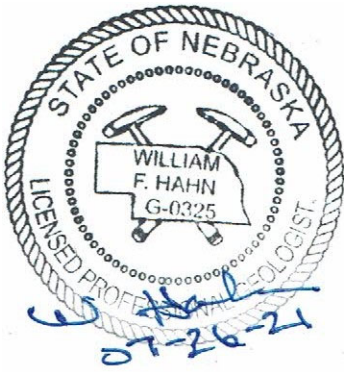
COTTONWOOD RANCH RECAPTURE WELL NETWORK BID #2

PIPELINE AND OUTFALL STRUCTURES



SECTION 01 SUMMARY OF WORK

PART 1. GENERAL

A. Work Under This Contract

All work under this contract shall be in accordance with the rules and regulations of the Tri-Basin Natural Resources District (TBNRD), Nebraska Department of Health and Human Services (NE DHHS), and the Nebraska Department of Natural Resources (NDNR). Work included under this contract generally includes construction, testing, and equipping of a discharge pipe network from seven (7) irrigation-style wells to two (2) discharge locations along a drain/side channel near the Platte River and one (1) in a nearby drain as shown in Figure 1a. The networks will be comprised mostly of 8" and 14" to 16" PVC pipe but will also include sections of steel pipe. The discharge structures will be comprised largely of crushed concrete/riprap and grouted concrete. The work under this contract includes:

1. Installation of surface piping and measurement and control items, including a check valve, butterfly valve, pressure relief valve, backflow preventor, discharge elbows, and transition piping as generally shown in the attached figures. The facilities will tie into an existing earthen and concrete pad and discharge elbow.

2. Trenching, bedding, installation of steel and PVC discharge piping, backfilling, and regrading between the wells and a point adjacent to the river.

3. Furnishing and installation of a discharge structure at the designated points of discharge as shown in the plans, which will include formed concrete, steel grate covering the end of the discharge pipe and grouted riprap.

4. Final demonstration of system function.

Contractor's work hours may be limited during the spring whooping crane migration periods. Contractor should expect to work under the following limitations:

For Work occurring in or within 0.25 miles of the Platte River channel between the dates March 6 and April 29, or October 9 and November 15, the Contractor will not begin work until one of the following requirements has been met each day: 1) The Contractor observes the airplane conducting whooping crane surveys during their daily basis fly-over the construction zone without circling back to verify a whooping crane sighting; or 2) it is at least one (1) hour after sunrise and the Contractor has confirmed there are no whooping cranes or large white birds in the construction zone; or 3) the Project Engineer has confirmed the lack of whooping cranes in the construction zone. If the Contractor has any suspicion or question as to whether or not a whooping crane is present, he will not start work until a positive identification can be made by the Project Engineer or the bird(s) leave

by their own accord. The Contractor will contact the Project Engineer anytime he thinks there may be a whooping crane in the construction zone. Between these same dates, the Contractor must conclude work two (2) hours before sunset and equipment must be staged appropriately.

The Contractor may propose alternate methods and/or materials to accomplish this work. In such a case, Contractor should provide the cost of the alternate methods and/or materials and a short narrative explaining the benefits. The Contractor shall immediately report any discrepancy between these specifications and State and Local rules governing the construction activities described herein.

The Contractor shall be responsible for confirming in advance the facilities that will have been installed in advance of his work that may affect his work, including locations, dimensions, and materials of construction.

Please fill out, sign and date bid form if you are submitting a bid. If submitting a bid, Contractor must attend a mandatory pre-bid inspection at 10:00 am CT on Thursday, August 19th, 2021 (meet at Tri-Basin NRD office in Holdrege and continue to site showing)**. Bids must be submitted in person to John Thorburn at the Tri-Basin NRD by 2:30 pm CT Tuesday, September 7th, 2021.** It is desired that the work be completed as soon as possible and no later than December 31st, 2021. Address and contact information is below.

Tri-Basin NRD

1723 Burlington Street
Holdrege, NE 68949

Phone: 308-995-6688

B. Site Access

Tri-Basin NRD will obtain easements on the properties on which the wells and pipeline will be installed and will arrange for legal access to the sites. The Contractor will be responsible for physical access to the locations. Access must be coordinated with the TBNRD.

PART 2. MATERIALS

Not Used

PART 3. EXECUTION

Not Used

END OF SECTION

SECTION 02 MEASUREMENT AND PAYMENT

PART 1. GENERAL

A. Section Includes

Measurement and payment criteria applicable to the Work performed under the lump sum and unit price payment method.

B. Unit Quantities Specified

1. Quantities and measurements indicated in the bid form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work shall determine payment.

2. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit/lump sum prices contracted.

C. Payment

1. Payment includes: Full compensation for furnishing all required equipment, labor, materials, tools, plant, transportation, services, incidentals, erection, application or installation of an item of the Work, and all other costs of whatsoever nature for the items of work complete, will be included in the various bid items, including overhead and profit.

2. Final payment for Work governed by lump sum and unit prices will be made on the basis of the actual measurements and quantities multiplied by the unit/lump sum price for Work which is incorporated in or made necessary by the Work.

D. Measurement and Payments of Bid Items Shall Be as Follows:

1. Mobilization/demobilization – Lump Sum. Mobilization will not be measured for payment. This bid item shall include preparatory work and all costs incurred in moving personnel and equipment to and from the sites, project signs, bonds, insurance, Contractor's administrative personnel, administrative costs, temporary facilities, and all incidental costs. Payment to the Contractor for mobilization/demobilization shall be at the lump sum price bid in the schedule and will be paid for as follows: 70% following initial setup of equipment; 30% at completion of the project.

2. Surface Facilities – Lump Sum. This item will not be measured for payment. This item shall be paid as a lump sum item and will include furnishing and installation of all surface facilities including flow meter, flow control valve, backflow preventer, air-vac valve, check valve, transition piping, and couplings at each well site.

3. Furnish/Install Discharge Piping from the Well to the Discharge Point – Lineal Feet. This item will be measured in lineal feet of installed discharge piping and will include trenching, backfilling, furnishing and installation of pipeline, and pressure testing.

4. Furnish/install discharge structure – Lump Sum. This item will not be measured for payment. This item shall be paid as a lump sum item for each structure installed.

PART 2. MATERIALS

Not Used

PART 3. EXECUTION

Not Used

END OF SECTION

SECTION 03 PERMITS

PART 1. GENERAL

A. Permits

The Contractor shall familiarize himself with the conditions and requirements of all permits that are required by Federal, State, County, and local governing agencies. The Contractor shall comply with the conditions and the requirements of the permits in the performance of this contract.

B. District Supplied Permits

The Tri-Basin Natural Resources District (TBNRD or District) will notify contractor as to which permits it has obtained. Contractor will be responsible for all other permits necessary for construction, if applicable.

PART 2. MATERIALS

Not Used

PART 3. EXECUTION

Not Used

END OF SECTION

SECTION 04 MOBILIZATION AND DEMOBILIZATION

PART 1. GENERAL

Contractor will provide all equipment, materials, and services necessary for the efficient construction, of the pipeline network and discharge structures. The pipeline alignments and discharge locations will be staked in advance of construction. The construction of the pipe networks will be as shown in the drawings and as described in these specifications.

PART 2. MATERIALS

A. General

The Contractor will provide all tools, equipment, accessories, power, pump, lighting, water and other equipment, and experienced personnel necessary to conduct efficient pipeline installation.

PART 3. EXECUTION

Mobilization and demobilization will include the transportation of personnel, equipment, and operating supplies to and from the sites; establishment of portable sanitary facilities; final cleanup and all other items required for a complete installation of the pipeline network and discharge structures.

END OF SECTION

SECTION 05 SURFACE FACILITIES

PART 1. GENERAL

This section covers the work, materials, and equipment necessary for installing surface piping, flow control valve, flow meter, check valve, air/vac valves and transition fittings. The surface facilities shall conform with the requirements of NEDHHS Title 178 Water Well Standards.

PART 2. MATERIALS

Surface facilities (Figure 2) will be installed at the existing concrete pad and discharge elbow (Figure 2). Surface facilities will generally include: a check valve; backflow preventer; air/vac valve; in-line flow meter; butterfly valve to control flow; pressure relief valve; transition pieces from the above-ground piping to the buried pipe; and any other fittings/equipment required for a complete installation. The flow meter will be supplied by Owner. Above-ground piping and a portion of the buried piping shown on the plans will be 8-inch, low carbon steel.

PART 3. EXECUTION

Install above-ground piping, valves, elbows, and transition pieces as generally shown in Figure 2. Wire brush all exposed steel and paint with rust-resistant light blue enamel.

END OF SECTION

SECTION 06 PIPELINE AND DISCHARGE STRUCTURE

PART 1. GENERAL

This section covers the work, materials, and equipment necessary for installing a discharge pipeline from the well to a designated discharge site adjacent to the river. The point of discharge will be staked in advance of construction. Construction details for the discharge structure are shown in Figure 3.

Provide a submittal for review by Owner showing proposed layout of pipe and fittings where the discharge from two or more wells is combined. Provide a submittal for review by Owner outlining the method proposed for pressure testing of pipeline.

Provide a submittal showing proposed method of anchoring the discharge pipe.

PART 2. MATERIALS

The discharge pipe shall be SDR 26 PVC pipe of the diameters shown in Figure 1. Contractor may substitute 16-inch SDR 26 PVC pipe for 14-inch pipe where 14-inch pipe is called for in the plans. The final 20 feet of discharge pipe terminating at the discharge structure shall be schedule 40 low-carbon steel pipe matching the diameter of the adjoining PVC pipe. The PVC pipe shall be solvent welded, bell-end or plain end with couplings, or it may be gasketed-joint pipe. The approximate lengths of the discharge piping are noted on Figure 1a. General site topography along each discharge pipe alignment is shown in Figure 1b. The total length of discharge piping and discharge trenching for this project is estimated to be 13,800 feet (rounded to nearest 100 feet), including 10,000 feet of 8-inch diameter pipe and 3,800 feet of 14-inch diameter pipe. The flowmeters will be provided by the Owner.

At wells 3 and 6, provide a pre-fabricated standpipe for transitioning to the buried pipeline. Equip standpipe with vacuum valve and 4-inch inspection port as generally shown in Figure 4. The purpose of this configuration is to provide a means to isolate water at the well and provide a means to evacuate the exposed piping. Contractor may submit an alternate proposal for accomplishing this.

The discharge structure shall be made up of broken concrete rip-rap, mixed and formed concrete for stabilizing the discharge pipe, and grating formed of steel bars not less than 3/8-inch in diameter with openings no larger than 2-inches square welded to and covering the outlet of the discharge pipe. The volume of rip-rap placed at each location shall be sufficient to cover an area measuring approximately 6 feet by 12 feet by 6-inches deep. It is estimated that about 10 cubic yards of concrete will be required.

The formed concrete used to stabilize the discharge pipe shall be reinforced concrete. The formed slab shall have the following approximate dimensions: 30 inches x 48 inches x 8 in. Dimensions shall be modified by the Contractor to conform to the terrain at the point of discharge.

The steel discharge pipe shall be anchored at or near the point of discharge in such a way as to prevent shifting or movement as may be caused by ice flows in the channel. Anchoring may consist of 4-inch diameter casings installed to a depth of not less than 10 feet and filled with a concrete mix, or a similar arrangement, subject to review by Owner. Contractor shall submit the proposed method of anchoring in advance of construction.

PART 3. EXECUTION

Excavate a trench to a depth of not less than 3 feet deep and 24-inches wide between the surface piping and the well and the designated point of discharge adjacent to the river. Bury depth can vary based on approval from Owner. The discharge locations will be staked in advance. Alignment of the discharge pipe is generally as shown in Figure 1a. Approximate profiles along the proposed alignments are provided in the attached Figures 1b. These profiles are provided for information only. Contractor shall satisfy himself by personal inspection, surveying, or other means as to the exact profiles along the proposed alignments.

Install thrust blocks at all horizontal bends in buried pipe. Install pipe with a minimum of 1.5 feet of cover. For pipeline discharging to river, insure a consistent downward slope toward the river measured from where well discharge piping enters the ground. Provide pipe restraints where required to prevent floating/uplift of pipe. Pipeline junctions shall not exceed 45 degrees.

Flowmeter will be supplied by Owner and installed by Contractor. Provide a minimum of 10 pipe diameters (80 inches) of straight, obstruction-free pipe upstream of the flowmeter and 2 pipe diameters (16 inches) of straight, obstruction-free pipe downstream of the flowmeter.

For wells discharging to a pipeline junction at a higher elevation (wells 3 and 6) construct additional draining and freeze prevention piping as generally shown in Figure 4.

Make connections at well. Following placement of pipeline in trench, backfill trench and restore to original contour. Backfill material in contact with the pipe shall be free of sharp stones and free of cobbles measuring more than 1-inch in diameter.

Place rip-rap immediately below point of discharge over an area measuring about 6 feet by 12 feet. Place material such that all water discharged will impact the rip-rap. Grout rip-rap to stabilize. Taper the end of the discharge pipe by cutting to an angle of about 45 degrees or one that approximates the side-slope of the channel. Form concrete around discharge end of pipe and embed grate such that the end of the pipe is fully covered by the grate.

Perform pressure testing of installed pipeline to demonstrate pipeline integrity between wellhead and discharge structure at the river and between wells in accordance with AWWA Standard C605.

END OF SECTION

Bid Table
Construction, Testing, and Equipping of Recapture Wells and Installation of Discharge Pipelines
Cottonwood Ranch

Spec. #	Description	Unit	Estimated Quantity	Contractor's Bid	
				Unit Price (Figures)	Total Price (Figures)
04	Mobilization/Demobilization	LS	1	$	$
05	Surface Facilities	LS	7	$	$
06	Discharge Pipeline (8-inch)	LF	10,000	$	$
06	Discharge Pipeline (14-inch)	LF	3,800	$	$
06	Drain-Back Structure	LS	2		
06	Discharge Structure	LS	3	$	$

LS = Lump Sum
LF = Linear Feet
HR = Hour

Total Construction Quote $_____

Work Dates _____

Submitted By: _____
(Company)

_____
(Individual)

_____
(Sign & Date)

APPENDIX A: FIGURES AND SCHEMATICS

Figure 1a: General Well Locations. Pipeline lengths are approximate as necessary for bidding.

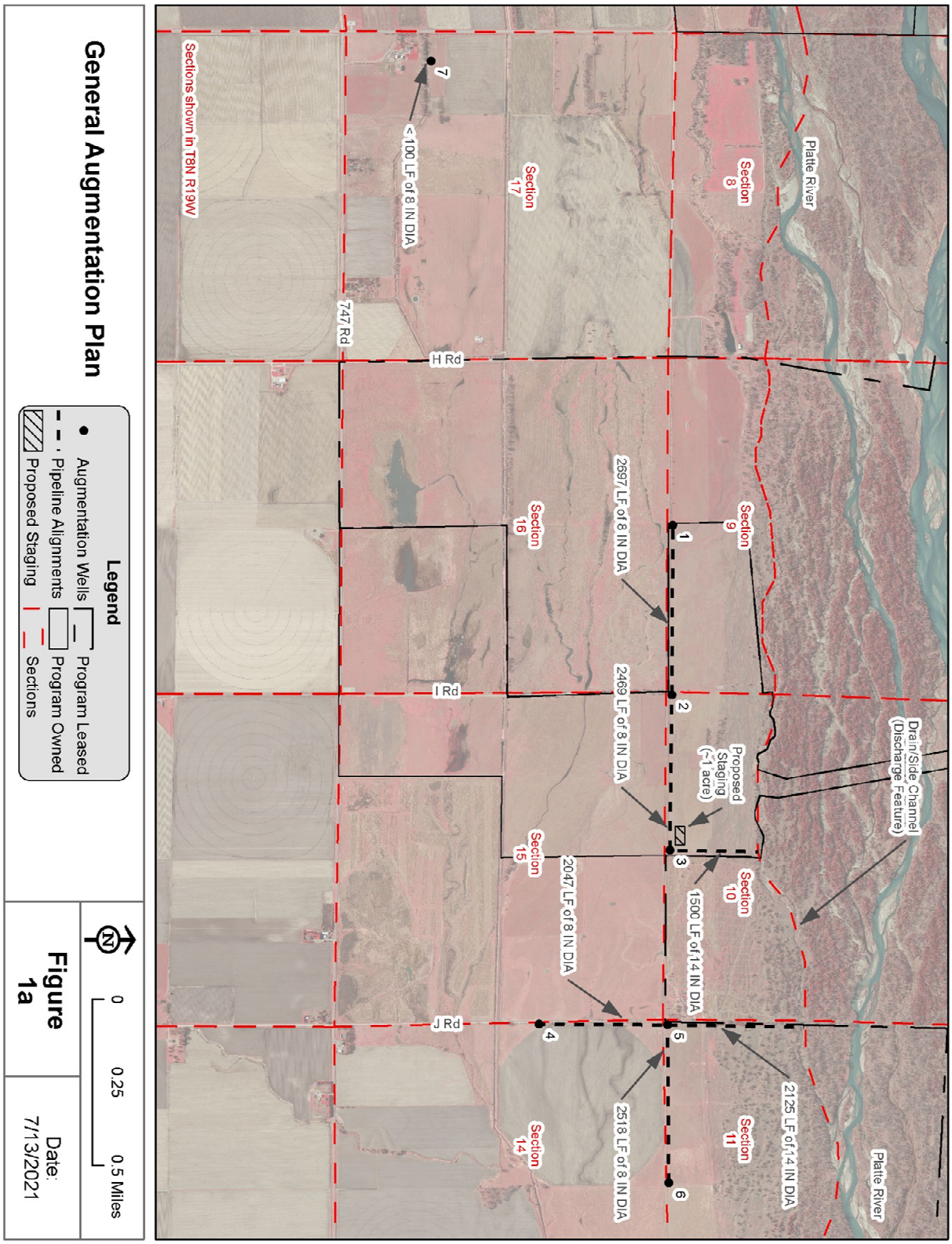
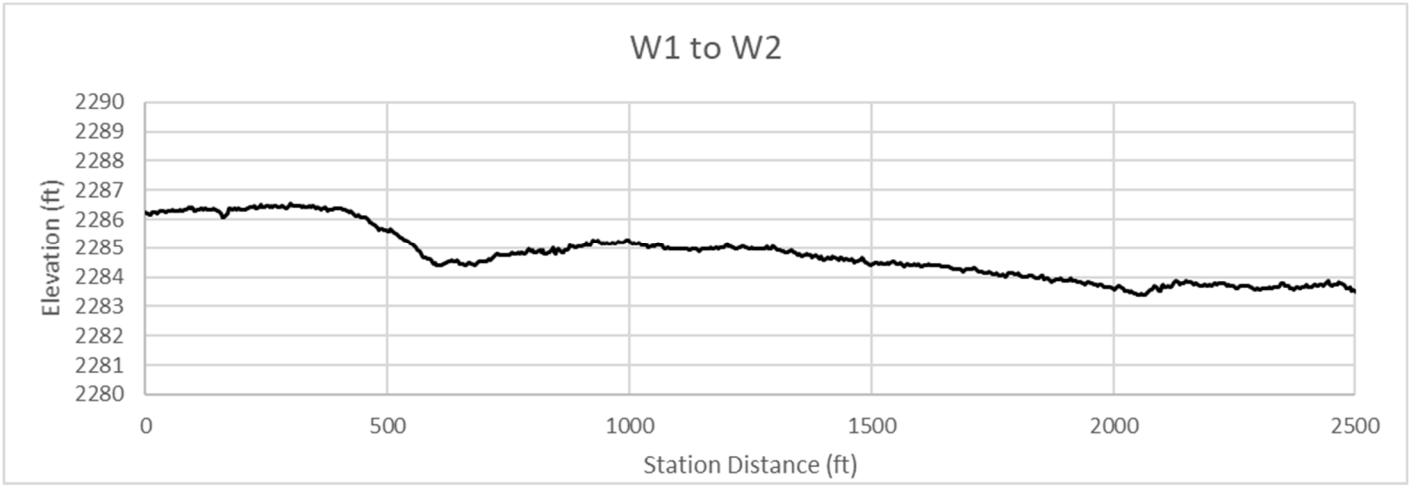
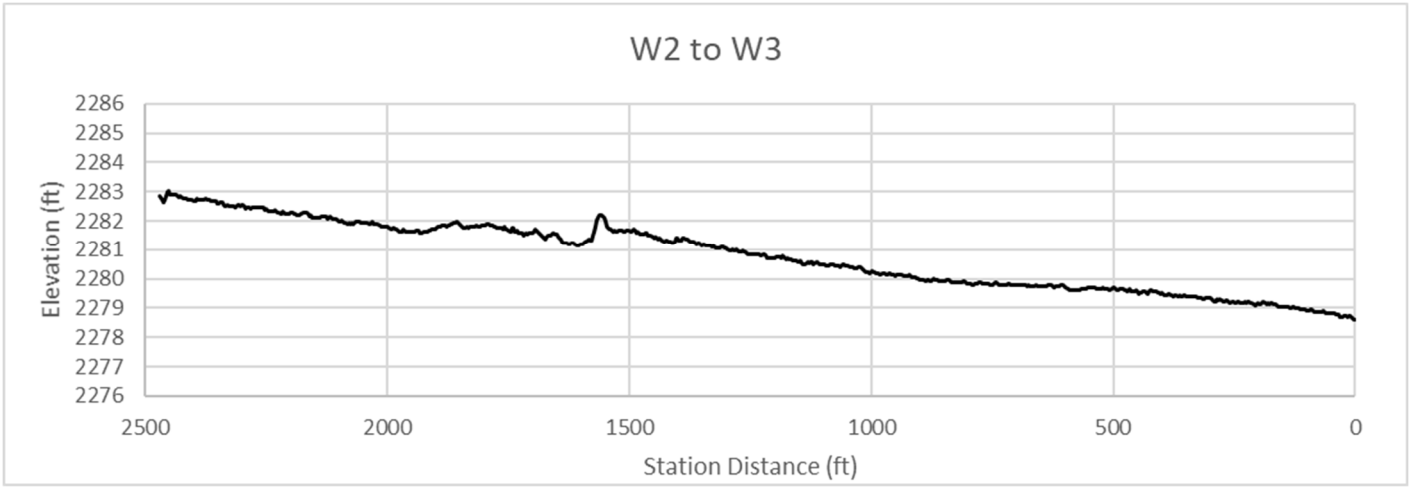


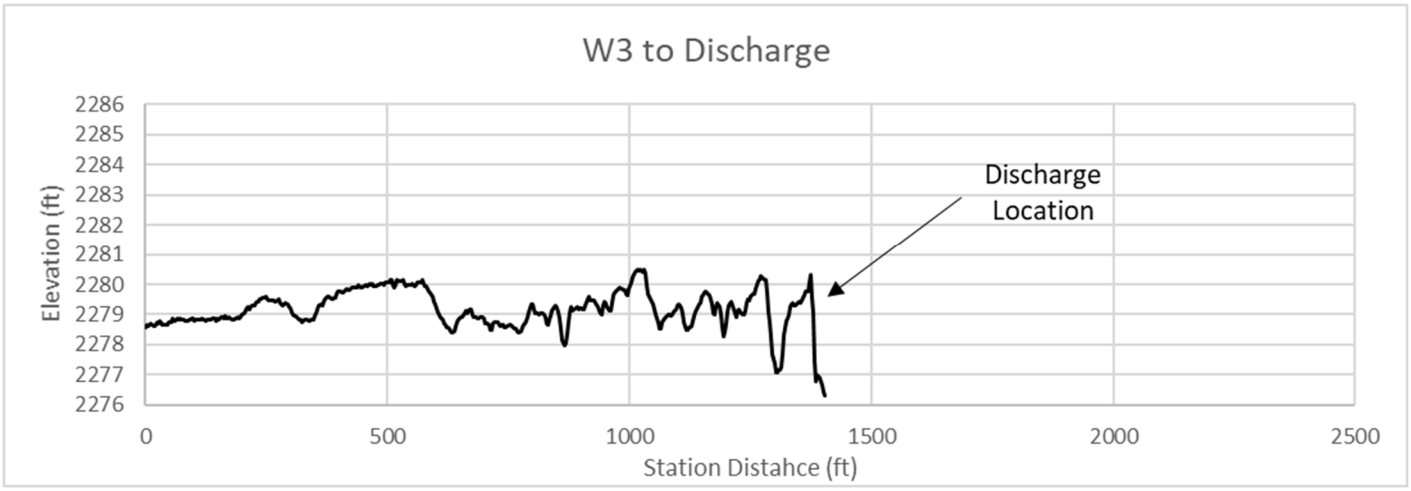
Figure 1b:



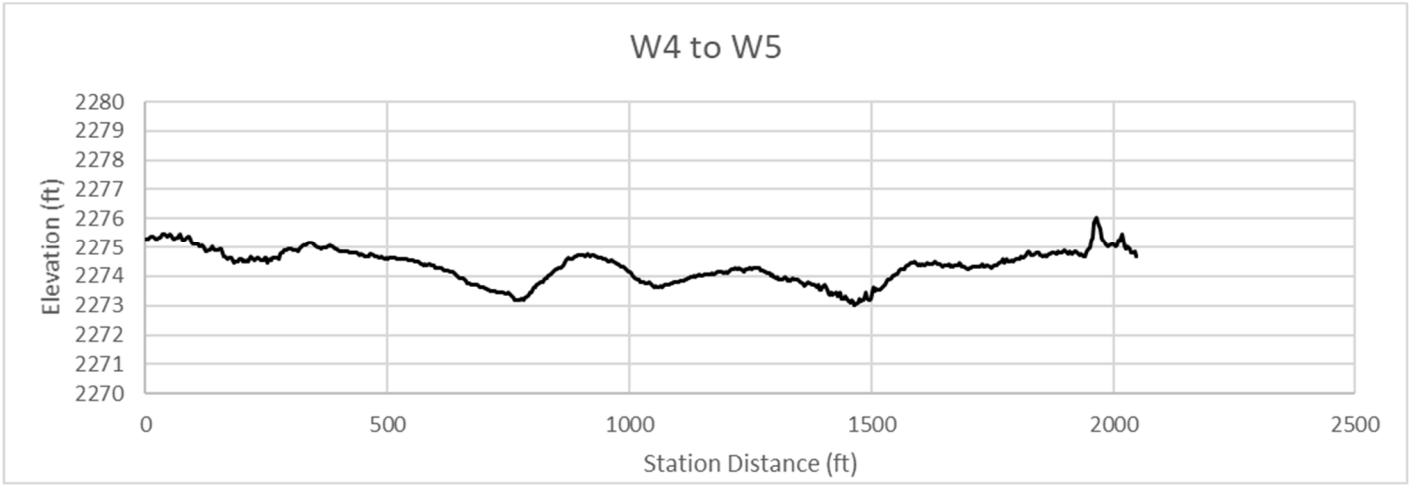
Profile A: Well 1 to Well 2 (West to East).



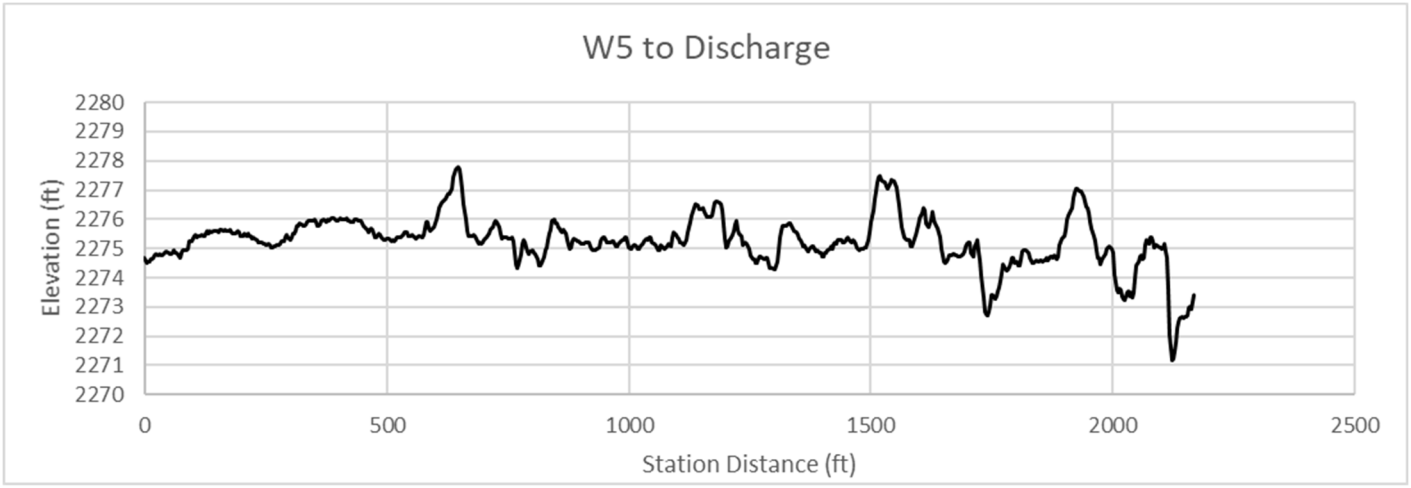
Profile B: Well 2 to Well 3 (West to East).



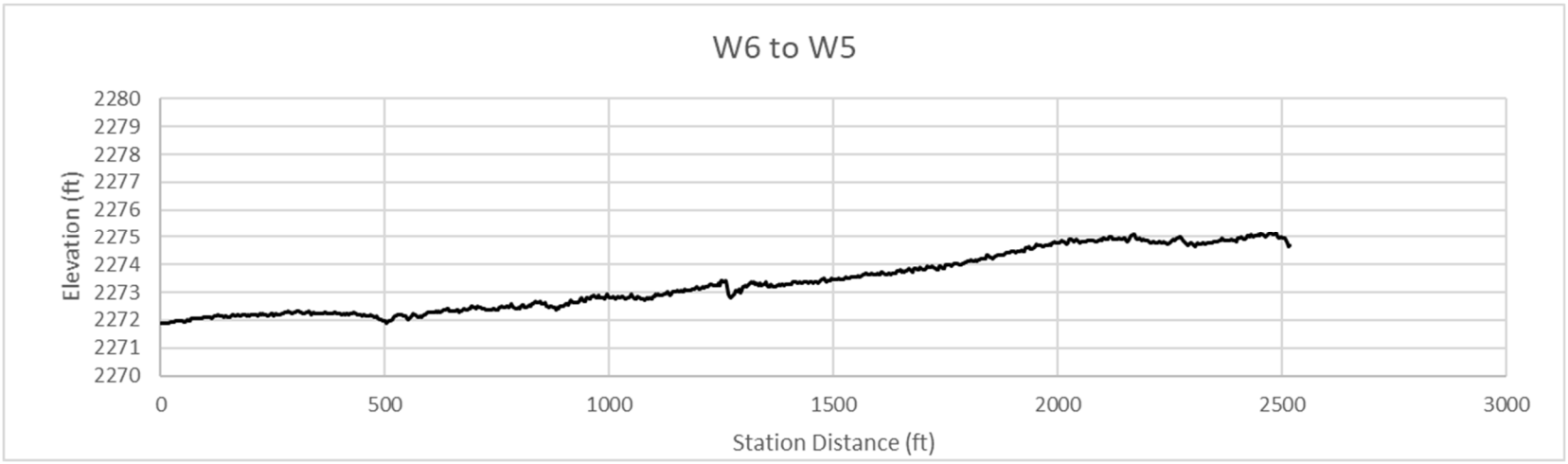
Profile C: Well 3 to Discharge Location (South to North).



Profile D: Well 4 to Well 5 (South to North).



Profile D: Well 5 to Discharge Location (South to North).



Profile E: Well 6 to Well 5 (East to West).

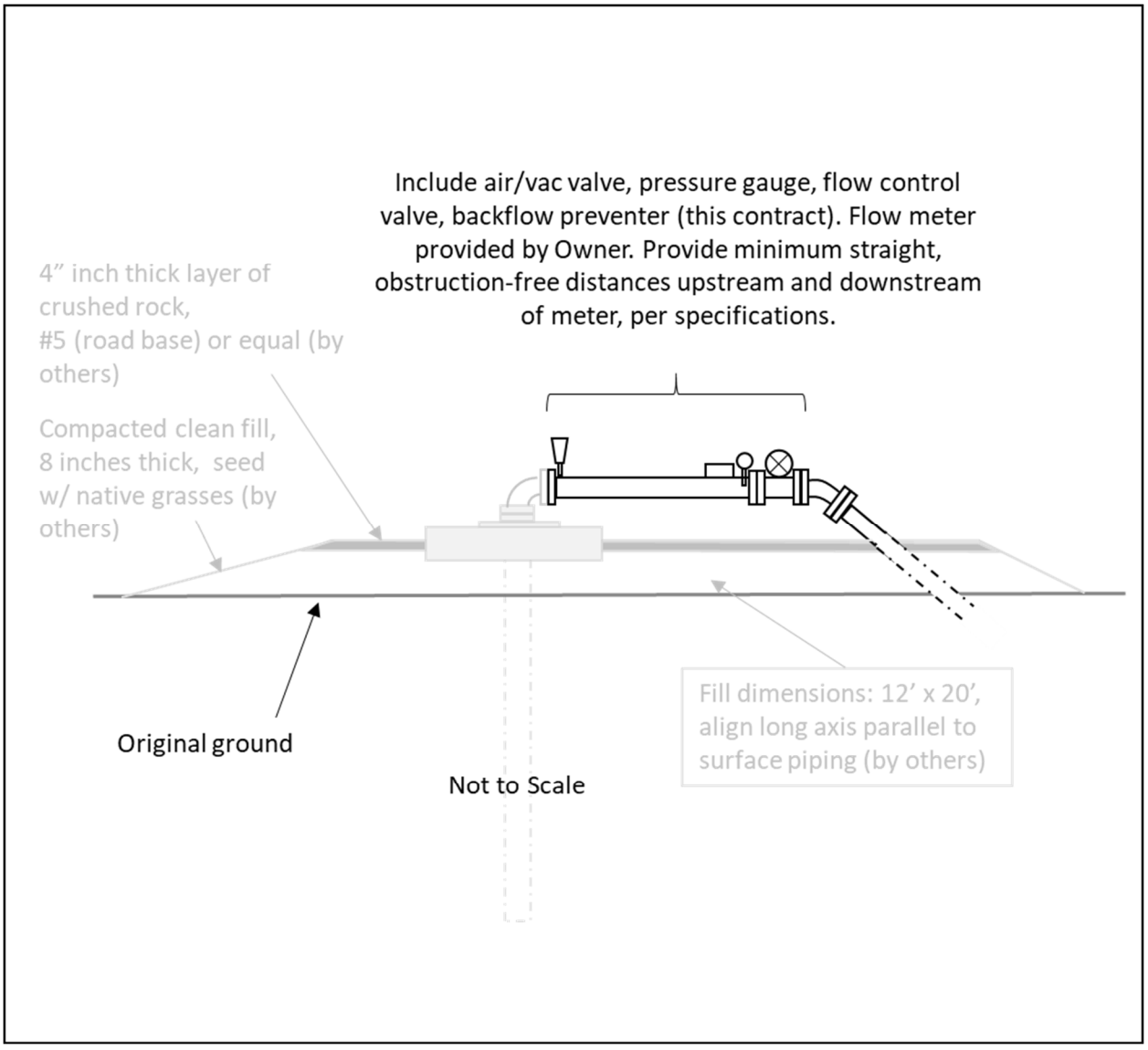


Figure 2: Typical surface facilities.

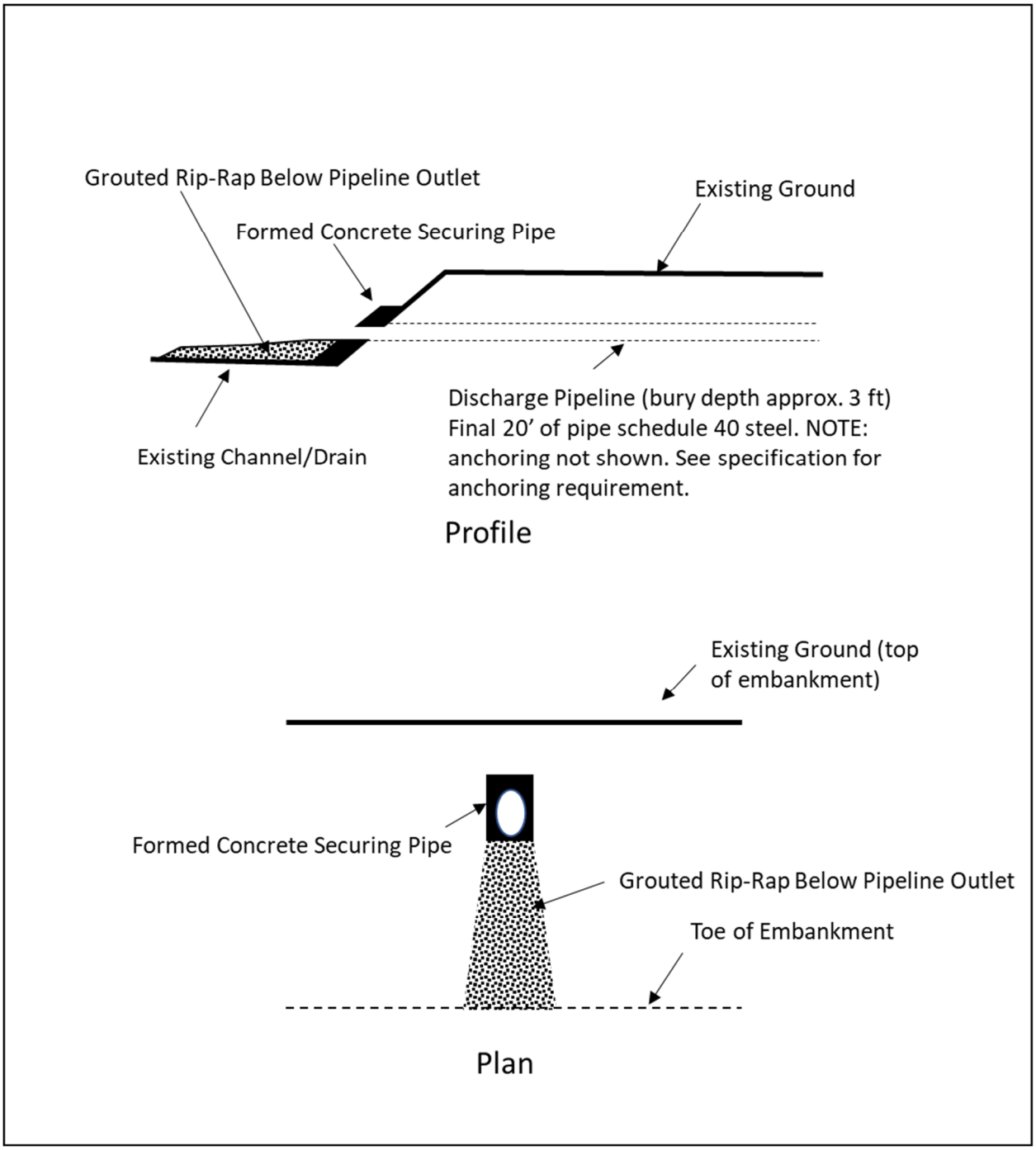


Figure 3: Pipeline discharge typical detail (not to scale).

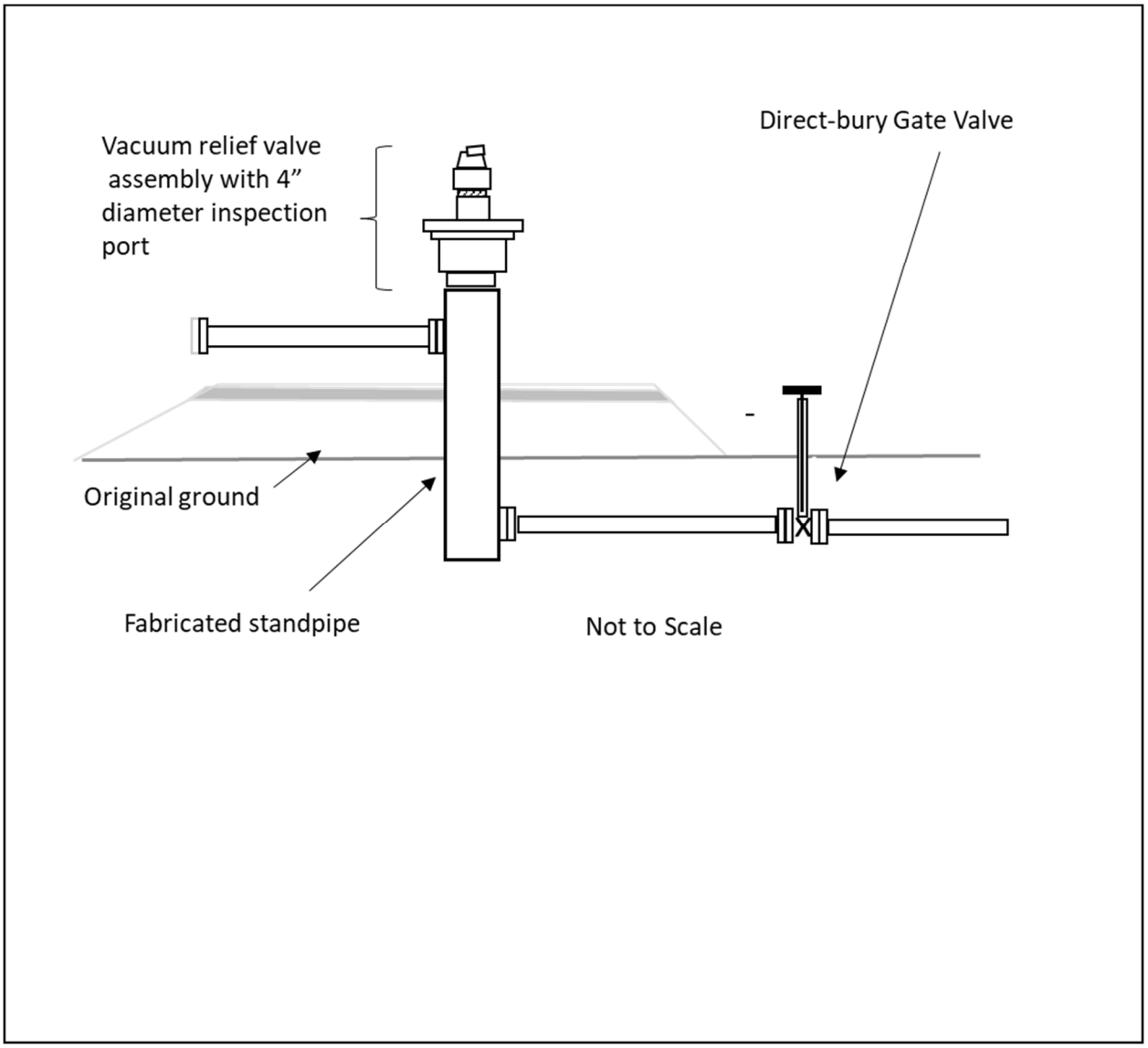


Figure 4. Additional facilities at Wells W3 and W6 for draining and freeze protection.