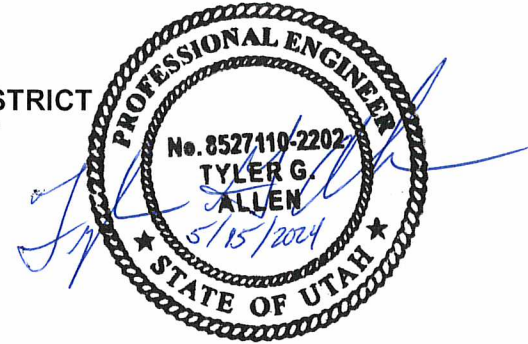


JORDAN VALLEY WATER IMPROVEMENT DISTRICT
2024 VAULT IMPROVEMENT PROJECT

DOCUMENT 00 91 13.1
ADDENDUM NO. 1



PART 1 - GENERAL

A. Receipt of this Addendum must be acknowledged by indicating acknowledgement on page C-1 of the Bid.

1.1 DOCUMENT INCLUDES

A. Changes to the Bid Documents.

1.2 CONSTRUCTION CONTRACT

A. The Construction Contract is known as: **2024 VAULT IMPROVEMENT PROJECT**

B. Date of this Addendum: May 15, 2024.

1.3 QUESTIONS

Q. Could you clarify what the type of stainless steel is for the 2" Sch SS piping for the air vacs – 304 or 316?

A. *Either will work so assume 304.*

Q. On 4330 South 300 West, the detail on Sheet C-8 calls for 12" transition couplings rather than buttstraps. Do you know the type of pipe we are connecting to?

A. *The pipe that we are connecting to is AC pipe. Contractors will need to abide by DAQA-155-14 (document attached).*

PART 2 – CHANGES

Addendum to include Location and Description of Change:

Item	Location	Description of Change
1	Section A	In "Receipt of Bids" Section the time of bid opening shall be changed from 3:00 pm to 4:00 pm. The date shall remain the same (May 21, 2024)
2	Section 40 92 57	Replace Section 40 92 57 - "Electric Motor Actuators" in entirety with attached Section 40 92 57 – "Electric Motor Actuators".

PART 3 – CHANGES TO DRAWINGS

Replace the following drawings with the attached revised drawings.

G-3 – Changes General Note 2 to correct entity jurisdiction for 11400 South Vaults.

C-4A – Corrected callout for bend from DI fitting to WSP.

C-8 – Identified existing pipe as AC pipe.

This Addendum shall be incorporated into and made part of the Project Manual and become part of the agreement.

END OF DOCUMENT 00 91 13.1

HOW TO HANDLE NON-FRIABLE ASBESTOS CEMENT PIPE

A Guide for Meeting Utah Department of Environmental Quality/Division of Air Quality Rules

Purpose

The Utah Department of Environmental Quality (DEQ) Division of Air Quality (DAQ) regulates the removal, handling, and disposal of asbestos-containing materials during renovation, abatement, and demolition activities pursuant to Title 40 Code of Federal Regulations (40 CFR) Part 61 Subpart M and Utah Administrative Code (UAC) R307-801. These Federal Regulations and State Administrative Rules provide that non-friable asbestos-containing material (ACM) is regulated only if it "...has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation" (40 CFR Part 61.141 and UAC307-801-3). Projects that remove or disturb greater than three linear feet and less than 260 linear feet of regulated asbestos-containing material (RACM) are regulated under Utah State law (See UAC R307-801-3 definition of "Small-Scale, Short-Duration (SSSD) Project"). Projects that remove or disturb 260 linear feet or more of asbestos cement (AC) pipe are potentially subject to both Utah State Asbestos Administrative Rules (R307-801-3) and Federal Regulations (40 CFR Part 61.145(a)(1)).

This document provides guidance for handling or removing AC pipe as non-friable ACM and as friable RACM which is subject to State and Federal standards if it meets the above stated regulatory thresholds. AC pipe is generally considered non-friable because, when dry, it cannot be crumbled, pulverized, or reduced to powder by hand pressure or has not become crumbled, pulverized, or reduced to powder. Non-friable material becomes regulated when the forces expected to act on the material have a high probability of crumbling, pulverizing, or reducing the material to powder.

How to Determine if a Material Contains Asbestos

The only way to determine if a material contains asbestos and comply with Utah Administrative Rules is to have a Utah certified inspector take a sample and have it analyzed by an accredited laboratory.

What is AC Pipe?

AC pipe was used widely in the mid-1900s in potable water distribution and sewer systems. Since the lifetime of this product is approximately 70 years, many projects to update this infrastructure involve removal of this product. The cement acts as a binder that holds the asbestos fibers within a solid matrix. This will prevent asbestos fibers from being released easily, unless mishandled, damaged, or in badly weathered condition. In most cases, AC pipe is considered non-friable.

Before You Start

Ensure you understand the Utah Asbestos Rule (UAC R307-801) and Federal Asbestos Regulations (40 CFR Part 61 Subpart M). Contact the DAQ at 801-536-4000 for information on complying with asbestos environmental program Administrative Rules. Contact the Utah Occupational Safety and Health (UOSH) at 801-530-6855 regarding current occupational rules and policy information for working with asbestos-containing materials.

Removal and Maintenance of Non-friable AC Pipe

Removal and maintenance activities involving AC pipe in good condition and in whole sections are not regulated by DAQ Administrative Rules or Federal Regulations. Specifically, as long as the AC pipe is not crumbled, pulverized, or reduced to powder and does not have a high probability of becoming crumbled, pulverized, or reduced to powder, you do not need to be a DAQ certified asbestos company or use DAQ certified asbestos workers to perform AC pipe removal or maintenance activities.

If you perform removal or maintenance activities on AC pipe following the hand methods in this guide, the ACM does not have a high probability of becoming crumbled, pulverized, or reduced to powder and therefore the work would not be subject to Utah Asbestos Administrative Rules or Federal Asbestos Regulations. When counting linear feet of RACM at a project site for the purposes of determining the three linear foot threshold, only count material crumbled, pulverized, reduced to powder, or otherwise reduced to a friable state. For disposal, one cannot separate friable from non-friable asbestos-containing material, so the entire length of AC pipe must be disposed of as friable ACM.

If more than three linear feet of AC pipe becomes friable during removal or maintenance activities, stop work immediately and promptly contact a DAQ certified asbestos company that employs Utah certified asbestos supervisors and workers.

Options for Managing, Maintaining, and Removing Non-friable AC Pipe

AC pipe must be removed, handled, and disposed of in a manner that keeps the material in whole pieces to be considered non-friable. Sanding, sawing, grinding, or chipping with hand methods will make AC pipe friable and must be minimized. Power tools make AC pipe friable, can generate large amounts of dust, and must be avoided. The AC pipe must be kept wet during removal. Wetting minimizes asbestos fibers from being released. Please remember to use amended water (a mixture of water and a chemical wetting agent) whenever possible to minimize asbestos fiber release. Use plastic sheeting or bags to collect AC pipe and any soil or debris contaminated by AC pipe for disposal as friable asbestos waste.

DAQ recommends that facilities with AC pipe use the following methods to manage, maintain, or remove AC pipe:

Snap cutters - Snap cutters (“squeeze-and-pop” equipment) operate by means of cutting wheels mounted in a chain wrapper around the pipe barrel. Hydraulic pressure, applied by means of a remote, pneumatically, or manually operated pump, squeezes the cutting wheels into the pipe wall until the cut is made.

Carbide-tipped blade cutters - Blade cutters are frame adjustable to the circumference of the pipe and have a number of self-tracking rollers that align one or more carbide-tipped cutting blades. Because of the relatively low mechanical input and clean cutting action, hand operated blade cutters produce lesser amounts of airborne asbestos dust.

Manual field lathes - Manual field lathes are designed to end-trim and re-machine rough pipe barrels to factory-machined end profiles. The lathe consists of an adjustable, self-aligning arbor inserted into the pipe bore (which acts as a mandrel upon which the turning handle operates), a screw-fed turning frame, carbide machining blades, and manual (hand or ratchet) turning handles.

Wet tapping AC pressure pipe - Pressure or “wet” tapping for service connections is performed in the trench while the pipe is under pressure. The equipment (manual driven) is affixed to the pipe by means of a chain yoke. A combination boring-and-inserting bar drills and taps the pipe wall and inserts a corporation stop or pipe plug. The pressure chamber, which protects against water leakage, also catches the asbestos-cement chips, so this is essentially a dust-free operation.

Dry tapping AC pressure pipe - Non-pressure or “dry” tapping for service connections may be performed in or out of the trench. The equipment is affixed to the pipe by means of a chain yoke. Separate drills and taps or a combination tool is used to drill and tap the pipe wall. Corporation stops or other connections may then be affixed to the pipe.

Manual rasp - Short lengths of AC pipe, machined-end exclusively and machined overall, can be cut to make closures and repairs and to locate fittings exactly. Field-cut ends may be re-beveled with a coarse wood rasp to form a taper approximating the profile of the factory-beveled end.

Chisel and rasp - Holes may be cut into AC pipe with a hammer and chisel. The edge of a plumber's wood chisel is used to cut completely around the hole outline, about ¼ in. (7 mm) from the prescribed line. The operation is repeated and the cut deepened until through. The edges of the hole are then dressed with a coarse wood rasp.

Hammer and chisel - Replacement of damaged pipe may necessitate excavation, exposure, and removal. AC coupling removal may be accomplished by gradually splitting the coupling lengthwise using a chisel and hammer. After the top of the coupling has been split, a crowbar or similar tool is used as a lever to split the bottom of the coupling.

The Utah DAQ considers using power tools, crushing, or pipe bursting AC pipe subject to the regulatory requirements of Utah State Administrative Rules and Federal Regulations when regulatory thresholds have been met because it makes the AC pipe RACM.

Non-Friable AC Pipe Disposal

Though non-friable AC pipe is not regulated, it must be removed, handled, and disposed of in a manner that keeps the material in whole pieces to remain non-friable and non-regulated. AC pipe can be abandoned and buried in place so long as it is not actively crushed, crumbled or pulverized. If removing AC pipe for disposal, locate a landfill that is authorized to accept non-friable asbestos waste and be sure to inquire about any special packaging requirements the landfill may require. The landfill must be aware that the AC pipe is Category II non-friable asbestos-containing material to ensure proper handling and disposal.

If the AC Pipe Is or Becomes Friable

If the AC pipe becomes crumbled, pulverized, or reduced to powder during removal or maintenance activities or is badly weathered (inside or out) such that it has a high probability of becoming crumbled, pulverized, or reduced to powder, it is considered friable and may release asbestos fibers. Friable AC pipe must be removed by properly trained and DAQ certified facility personnel or by a DAQ certified asbestos company using DAQ certified asbestos supervisors and workers.

If the AC pipe becomes friable, applicable asbestos work practice rules under UAC R307-801-14 must also be followed. A DAQ one working day notification form must be submitted before the removal of more than three linear feet and less than 260 linear feet of friable AC pipe. The notification form for a removal or maintenance project of 260 linear feet or more must be received by the DAQ with the applicable fee at least 10 working days prior to starting project. For emergency situations, the 10 working day waiting period is waived, but DAQ must be notified as soon as possible, but no later than the next working day.

The use of power tools on AC pipe during projects subject to State and Federal Asbestos Rules and Regulations is not allowed without full airtight containment or properly designed local exhaust ventilation.

Training Requirements

If handling three feet or less of friable AC pipe, DAQ requires no training or work practices. DAQ expects that most maintenance or emergency work will not be regulated. DAQ strongly recommends, based on the Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763.92 that all workers receive two hours of asbestos awareness training and that workers handling up to three linear feet of friable AC pipe have an additional 14 hours asbestos training. Please note that OSHA training found in 29 CFR Part 1926.1101(o)(4)(ii) requires Class III maintenance personnel be trained to the AHERA 40 CFR Part 763.92(a)(2) standard.

Workers handling more than three feet of friable AC pipe are required to have 32 hours of asbestos worker training and be certified as a worker by the DAQ. At least one 40 hour trained and DAQ certified supervisor needs to be on-site to supervise regulated work activities (wetting, cutting, cleanup, loading, etc.).

Notification

File a DAQ notification form for removal of AC pipe if more than three linear feet of RACM is expected to be disturbed. The notification form must be received by the DAQ at least one working day prior to starting the removal project. If 260 linear feet or more of RACM is expected to be disturbed, then a ten working day notification form and fees are required. If 260 linear feet or more of AC pipe becomes RACM in separate non-scheduled activities at a facility during a calendar year, then an annual notification form is required to be submitted to the DAQ.

Friable AC Pipe Disposal

Friable asbestos waste must be collected, packaged, labeled, and disposed of properly. Place small quantities of friable AC pipe fragments and dust from removal in leak-tight containers. Wrap and encapsulate friable components of large pieces. Mark all waste with the warning statement "DANGER ASBESTOS-CONTAINING MATERIAL" and waste generator information. Locate a landfill that is approved by the Utah DAQ and/or operated under 40 CFR Part 61.154 that is authorized to accept friable asbestos waste material. Be sure to inquire about any special packaging requirements the landfill might have. Fill out a waste shipment record and give it to the landfill upon arrival.

Leaving AC Pipe in Place

The crushing or bursting of AC pipe causes the material to become RACM and subject to Federal Asbestos Regulations and Utah State Administrative Rules. The backfilling and burial of crushed or burst AC pipe would also potentially be subject to both federal and state civil and criminal penalties.

Alternative methods for leaving AC pipe in place when no longer in service include abandoning and burying empty pipe or pumping grout into the pipe before burying. Abandoning uncrushed or unburst empty pipe or the pumping of grout into buried lines is not a process which, in and of itself, would cause AC pipe to become RACM. However, both the present condition of the pipe and the method used to take the pipe out of service should be considered to determine the applicability of the Utah State Asbestos Administrative Rules and Federal Asbestos Regulations.

For More Information

For more information or questions, please contact Utah DAQ at 801-536-4000.

Applicable Regulations

40 CFR Part 61.145(a) and UAC R307-801-9 and 10 provides inspection requirements.

40 CFR Part 61.145(b) and UAC R307-801-11 and 12 provides notification requirements.

UAC R307-801-13(2) requires use of certified asbestos workers or supervisors certified under UAC R307-801-6.

UAC R307-801-14-1 provides work practices for all projects greater than three linear feet.

UAC R307-801-14-2 provides work practices for projects 260 linear feet or more.

40 CFR Part 61.150 and UAC R307-801-15 provides federal and state requirements for asbestos waste disposal.

SECTION 40 92 57
ELECTRIC MOTOR ACTUATORS

PART 1 GENERAL

1.1 DESCRIPTION

- A. CONTRACTOR shall furnish and install electric motor actuators and appurtenances for butterfly valves, complete and operable, in accordance with the Contract Documents.
- B. The valve manufacturer shall be made responsible for coordination of design (valve stem diameter, threading, key and keyway adaptation, and other dimensional information), assembly, testing, and installation of actuators on the valves; however, CONTRACTOR shall be responsible to OWNER for compliance of the valves and actuators with the Contract Documents.
- C. Where two or more valve actuators of the same type or size are required, the actuators shall be produced by the same manufacturer.

1.2 RELATED WORK

- A. Related Work specified in other Sections includes, but it not limited to:
 - 1. Section 01 33 00 Submittal Procedures
 - 2. Section 33 12 00 Mechanical Appurtenances

1.3 REFERENCES

- A. The latest edition of the following publications form a part of this Specification to the extent referenced. The publications are referred to in the text by basic designation only.
- B. American Water Works Association (AWWA)
 - 1. AWWA C 542 Electric Motor Actuators for Valves and Slide Gates

1.4 SUBMITTALS

- A. Provide submittals in accordance with Section 01 33 00 – Submittals.
- B. Shop drawing information for actuators, floor stands, and extension stems shall be submitted together with the valve submittals as a complete package.
- C. Submit information on electric motor actuator including cut sheets, technical brochures, electrical diagrams, control schematics, and operation and installation manuals.
- D. Submit calculations showing dynamic seating and unseating torques versus output torque of the actuator.

PART 2 PRODUCTS

2.1 GENERAL

- A. All electric motor actuators shall conform to the requirements of AWWA C 542.
- B. Actuators shall contain motor, gearing, manual over-ride, limit switches, torque switches, selector switch, drive coupling, integral reversing motor controls, control voltage transformer, indicator lights, handwheel, lubricants, heating elements, wiring, terminals, position feedback transmitter, and mechanical dial position indicator.
- C. In order to maintain the integrity of the enclosure, setting of the torque levels, position limits and configuration of the indication contacts, etc. shall be carried out without removal of any actuator covers over an Infra-Red or wireless interface.
- D. The electric motor actuator shall mount directly to the butterfly valve as specified in Section 33 12 00 – Mechanical Appurtenances. The actuator supplier shall coordinate with the butterfly valve supplier to determine the proper actuator size and configuration.
- E. Position and limit switches, position transmitters, controls, indicating lights, devices, and selector switches shall be coordinated with the input/output requirements of the control system as indicated in the Drawings and specified herein.

2.2 ACTUATOR SIZING

- A. The actuator shall be sized to guarantee valve closure at the specified maximum pressure and flow within specified time shown in Table 40 92 57 -1 below.
- B. One actuator size shall be available covering output speeds from 18 to 200 rpm for a given torque range to avoid over-sizing and unnecessary weight load on the valve stem, flange, and yoke. An increase of actuator size caused by higher actuator output speed is not acceptable to avoid weight over-sizing actuators. Actuators must be selected to provide sufficient torque required for safe valve operation. Actuator output torque must be available at 90% of nominal voltage.

2.3 ENVIRONMENT

- A. Actuators shall be suitable for indoor and outdoor use. The actuator shall be capable of functioning in an ambient temperature ranging from 25°F to 140°F, up to 100% relative humidity.

2.4 ENCLOSURE

- A. Actuators shall be O-ring sealed, watertight, NEMA 4. The motor and all other internal electrical elements of the actuator shall be protected from ingress of moisture and dust when the terminal cover is removed for site cabling, the terminal compartment having the same ingress protection rating as the actuator with the terminal cover removed.
- B. The enclosure must allow for temporary site storage without the need for electrical supply connection. All external fasteners shall be plated stainless steel. The use of un-plated stainless steel or steel fasteners is not permitted.

2.5 MOTOR

- A. The motor shall be specifically designed for the valve actuator service. The motor will be of the induction type with Class F insulation and protected by means of thermal switches imbedded in the motor windings. Motor enclosure will be totally enclosed, non-ventilated.
- B. Motors shall be capable of operating on 208 volt, 3 phase, 60 Hz power.
- C. Electrical and mechanical disconnection of the motor shall be possible without draining the lubricant from the actuator gearcase.
- D. Protection shall be provided for the motor as follows:
 - 1. Stall – the motor shall be de-energized within 8 seconds in the event of a stall when attempting to unseat a jammed valve.
 - 2. Over Temperature – thermostat will cause tripping of the motor, auto-reset on cooling.
 - 3. Single phasing – lost phase protection
 - 4. Direction – phase rotation correction

2.6 GEARING

- A. The actuator gearing shall be totally enclosed in an oil-filled or grease lubricated gearcase suitable for operation at any angle. All drive gearing and components must be of metal construction and incorporate a lost-motion hammerblow feature. For rising spindle valves the output shaft shall be hollow to accept a rising stem and incorporate thrust bearings of the ball or roller type at the base of the actuator. The design shall be such as to permit opening the gearcase for inspection or disassembly without releasing the stem thrust or taking the valve out of service. 90-degree operating type of valves drive gearing shall be self-locking to prevent the valve back-driving the actuator.

2.7 HAND OPERATION

- A. A handwheel shall be provided for emergency operation, engaged when the motor is declutched by a lever or similar means, the drive being restored to electrical operation automatically by starting the motor. The handwheel or selection lever shall not move on restoration of motor drive. Provision shall be made for the hand/auto selection lever to be locked in both hand and auto positions. It should be possible to select hand operation while the actuator is running or start the actuator motor while the hand/auto selection lever is locked in hand without damage to the drive train.
- B. Clockwise operation of the handwheel shall give closing movement of the valve unless otherwise noted. For linear type valves the actuator handwheel drive must be mechanically independent of the motor drive and should be such as to permit valve operation in a reasonable time with a manual force not exceeding 90 lbs through stroke and 180 lbs for seating/unseating of the valve.

2.8 DRIVE INTERFACE

- A. The actuator shall be furnished with a drive bushing easily detachable for machining to suit the valve stem or gearbox input shaft. The drive bushing shall be positioned in a detachable base of the actuator. Thrust bearings shall be sealed for life and the base shall be capable of withstanding five times the rated thrust of the actuator.

2.9 LOCAL CONTROLS

- A. The actuator shall incorporate local controls for Open, Close and Stop, and a Local/Stop/Remote mode selector switch lockable in any one of the following three positions: Local control only, stop (no electric operation), remote control plus local stop only. It shall be possible to select maintained or non-maintained local control.
- B. The local controls shall be arranged so that the direction of valve travel can be reversed without the necessity of stopping the actuator.
- C. The local controls and display shall be rotatable through increments of 90 degrees to suit valve and actuator orientation.

2.10 TORQUE AND LIMITS

- A. Torque and turns limitation to be adjustable as follows:
 - 1. Position Setting Range – multi-turn: 2.5 to 8,000 turns, with resolution to 7.5 degrees of actuator output.
 - 2. Position Setting Range – direct drive part turn actuators: $90^{\circ} \pm 10^{\circ}$, with resolution to 0.1 degree of actuator output.
 - 3. Torque Setting: 40% to 100% rated torque
- B. Position Measurement: Absolute position measurement should be incorporated within the actuator. The technology must be capable of reliably measuring position even in the case of a single fault. The design must be simple with the minimum amount of moving parts.
- C. Measurement of torque shall be from direct measurement of force at the output of the actuator. Methods of determining torque-using data derived from the motor such as motor speed, current, flux, etc. are not acceptable.
- D. A means for automatic “torque switch bypass” to inhibit torque off during valve unseating and “latching” to prevent torque switch hammer under maintained or repeated control signals shall be provided.
- E. The electrical circuit diagram of the actuator should not vary with valve type remaining identical regardless of whether the valve is to open or close on torque or position limit.

2.11 REMOTE VALVE POSITION AND STATUS INDICATION

- A. Four contacts shall be provided which can be selected to indicate any position of the valve. Provision shall be made for the selection of a normally closed or open contact form. Contacts shall maintain and update position indication during handwheel operation when all external power to the actuator is isolated.
- B. The contacts shall be rated for 5mA to 5A, 120V AC, 30V DC.
- C. As an alternative to providing valve position indication any of the four above contacts shall be selectable to signal one of the following:
 - 1. Valve opening, closing or moving
 - 2. Thermostat tripped, lost phase
 - 3. Motor tripped on torque in mid travel, motor stalled

- 4. REMOTE selected
 - 5. Actuator being operated by handwheel
 - 6. Actuator fault
- D. Provision shall be made in the design for an additional four contacts having the same functionality.
- E. A configurable monitor relay shall be provided as standard, which can be used to indicate either Availability or Fault. The relay should be spring return type with a Normally Open/ Normally Closed contact pre-wired to the terminal bung.
- F. The Monitor (Availability of Fault) relay, being energized from the control transformer will de-energize under any one or more of the following conditions:

Available Mode	Fault Mode
Loss of main or customer 24V DC power supply	Loss of main or customer 24V DC power supply
Actuator control selected to local or stop	Motor thermostat tripped
Motor thermostat tripped	Actuator internal fault
Actuator internal fault	

- G. Provision shall be made in the design for the addition of a contactless transmitter to give a 4-20mA analog signal corresponding to valve travel and/or torque for remote indication when required. The transmitter will auto range to the set limits.

2.12 LOCAL POSITION INDICATION

- A. The actuator display shall include a dedicated numeric/symbol digital position indicator displaying valve position from fully open to fully closed in 0.1% increments. Valve closed and open positions shall be indicated by symbols showing valve position in relation to the pipework to ensure that valve status is clearly interpreted. With main power connected, the display shall be backlit to enhance contrast at all ambient light levels and shall be legible from a distance of at least 10 feet.
- B. Red, green, and yellow LEDs corresponding to open, closed, and intermediate valve positions shall be included on the actuator display when power is switched on. The yellow LED should also be fully programmable for on/off, blinker, and fault indication. The digital display shall be maintained and updated during handwheel operation when main power to the actuator is isolated.
- C. The actuator display shall include a fully configurable dot-matrix display element with a minimum pixel resolution of 168 x 132 to display operation, alarm, configuration, and graphical data logger information. Provision shall be made to upload a different language without removal of any covers or using specialized tools not provided as standard with the actuator.
- D. Data logger graphical displays should as a minimum be able to display log and trend graphs on the local LCD for the following:
- 1. Torque versus Position
 - 2. Number of starts per hour

3. Dwell time
 4. Average temperature
- E. The main display shall be capable of indicating 4 different home-screens of the following configuration:
1. Position and status
 2. Position and torque (analog)
 3. Position and torque (digital)
 4. Position and demand (positioning)
- F. Provision shall be made for the addition of an optional environment cover to protect the display for high levels of UV radiation or abrasive materials.
- G. The local controls and display shall be rotatable through increments of 90 degrees to suit valve and actuator orientation.

2.13 INTEGRAL STARTER AND TRANSFORMER

- A. The reversing starter, control transformer and local controls shall be integral with the valve actuator, suitably housed to prevent breathing and condensation. The starter shall be suitable for 60 starts per hour and of rating appropriate to motor size. The controls supply transformer shall be fed from two of the incoming three phases and incorporate overload protection. It shall have the necessary tapping and be adequately rated to provide power for the following functions:
1. Energizing of the contactor coils
 2. 24V DC or 120V AC output for remote controls (maximum 5VA)
 3. Supply for all the internal electrical circuits

2.14 REMOTE CONTROL FACILITIES

- A. The necessary control, wiring, and terminals shall be provided integral to the actuator enclosure. Open and close external interlocks shall be made available to inhibit local and remote valve opening/closing control. It shall be possible to configure the interlocks to be active in remote control only.
- B. Remote control signals fed from an internal 24V DC (or 120V AC) supply and/or from an external supply between 20V and 60 V DC or 40V and 120 V AC, to be suitable for any one or more of the following methods of control:
1. Open, Close, and Stop Control
 2. Open and Close maintained or "push to run" (inching) control
 3. Overriding Emergency Shut-down to close (or open) valve from a normally closed or open contact.
 4. Two-wire control, energize to close (or open), de-energize to open (or close)
- C. Additionally provision shall be made for a separate 'drive enable' input to prevent any unwanted electrical operation.
- D. It shall be possible to reverse valve travel without the necessity of stopping the actuator. The motor starter shall be protected from excessive current surges during rapid travel

reversal. The internal circuits associated with the remote control and monitoring functions are to be designed to withstand simulated lightning impulses of up to 2 kV.

- E. Provision shall be made for operation by distributed control system utilizing the following network systems:
 - 1. Modbus (no equal)

2.15 MONITORING CAPABILITIES

- A. Capabilities shall be provided for monitoring actuator operation and availability as follows:
 - 1. Actuator text display indication of the following status/alarms:
 - a. Closed limit, open limit, moving open, moving closed, stopped
 - b. Torque trip closing, torque trip opening, stalled
 - c. Thermostat trip, phase lost, 24V supply lost, local control failure
 - d. Configuration error, Position sensor failure, torque sensor failure
 - e. Battery low, power loss inhibit
 - 2. Integral data logger to record and store the following operational data:
 - a. Opening last/average torque against position
 - b. Closing last/average torque against position
 - c. Total open/close operations
 - d. Maximum recorded opening and closing torque values
 - e. Event recorder logging operational conditions (valve, control, and actuator)
- B. The data logger shall record relevant time and date information for stored data.
- C. Data logger data shall be accessed via non-intrusive wireless communication and data displayed on the local LCD. Sufficient standard intrinsically safe tools shall be provided for downloading data logger and actuator configuration files from the actuators and subsequent uploading to a PC. The actuator manufacturer shall supply PC software to enable data logger files to be viewed and analyzed.

2.16 WIRING AND TERMINATION

- A. Internal wiring shall be tropical grade PVC insulated stranded cable of appropriate size for the control and 3-phase power. Each wire shall be clearly identified at each end. The terminals shall be embedded in a terminal block of high tracking resistance compound.
- B. The terminal compartment shall be separated from the inner electrical components of the actuator by means of a watertight seal and shall be provided with a minimum of 3 threaded cable entries with provision for an additional 5 extra conduit entries.
- C. All wiring supplied as part of the actuator to be contained within the main enclosure for physical and environmental protection. External conduit connections between components are not acceptable. A durable terminal identification card showing a plan of terminals shall be provided attached to the inside of the terminal box cover indicating:
 - 1. Serial number
 - 2. External voltage values
 - 3. Wiring diagram number

4. Terminal layout

- D. The code card shall be suitable for CONTRACTOR to inscribe cable core identification alongside terminal numbers.

2.17 COMMISSIONING KIT

- A. Each actuator shall be supplied with a start-up kit comprising installation instruction manual, electrical wiring diagram, and cover seals to make good any site losses during commissioning period. In addition, sufficient actuator commissioning tools shall be supplied to enable actuator set-up and adjustment during valve/actuator testing and site installation commissioning.

2.18 PERFORMANCE AND TEST CERTIFICATE

- A. Each actuator must be performance tested and individual test certificates shall be supplied without additional cost to the OWNER. The test equipment should simulate a typical valve load, and the following parameters should be recorded:
 - 1. Current at maximum torque setting
 - 2. Torque at maximum torque setting
 - 3. Flash test voltage
 - 4. Actuator output speed or operating time
- B. In addition, the test certificate should record details of specification such as gear ratios for both manual and automatic and second stage gearing if provided, drive closing direction, and wiring diagram number.

Valve ID	Location	Service	Valve Type	Max Pressure/Max Flowrate	Motor Type	Open/Close Speed (seconds)
-	Valve Vault	Open - Close	Butterfly	275 psi/ 9,500 gpm	AC Reversing	200/200

2.19 MANUFACTURER, OR APPROVED EQUAL:

- A. AUMA Actuators SQ
- B. Rotork IQTM

PART 3 EXECUTION

3.1 INSTALLATION

- A. Electric motor valve actuators shall be installed in accordance with the manufacturer's written instructions. Actuators shall be located to be readily accessible for operation and maintenance without obstructing walkways.

3.2 SERVICES OF MANUFACTURER

- A. Field Adjustments: Field representatives of valves with electric motor actuators shall adjust actuator controls and limit switches in the field for the required function.
- B. Inspection, Start-up, and Field Adjustment: The manufacturer shall furnish an authorized representative who shall visit the site and witness the following:
 - 1. Installation of the equipment – not less than 2 hours
 - 2. Inspection, checking, and adjusting the equipment – not less the 2 hours
 - 3. Start-up and field testing for proper installation – not less than 2 hours
- C. Instruction of OWNER's Personnel: The authorized representative shall visit the site for not less than 2 hours to instruct OWNER's personnel in the operation and maintenance of the equipment including step by step troubleshooting procedures with necessary test equipment.

- END OF SECTION –

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GENERAL NOTES

- COMMAND TERMS (I.E. "PROVIDE", "CONSTRUCT", "INSTALL" ETC.) DESIGNATE WORK TO BE DONE BY CONTRACTOR.
- IN ADDITION TO THE TECHNICAL SPECIFICATIONS, DRAWINGS, AND OTHER PROVISIONS OR DOCUMENTS CONTAINED IN THESE CONTRACT DOCUMENTS; THESE DRAWINGS REFERENCE "MANUAL OF STANDARD SPECIFICATIONS" AND "MANUAL OF STANDARD PLANS" AS PREPARED BY THE UTAH CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION AND THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, JWCD STANDARDS, AND CITY STANDARDS FOR THE VARIOUS JURISDICTIONAL MUNICIPALITIES / AGENCIES (LATEST EDITIONS) IN WHICH THIS PROJECT IS LOCATED (I.E. TAYLORSVILLE: 4390 S 2200 W; MURRAY: 4330 S 300 W; MURRAY / MILLCREEK: 4500 S 350 E; UDOT/SANDY/DRAPER: 11400 S STATE ST & 11400 S 700 E; SANDY/DRAPER: 11400 S 100 E). ANY CONFLICTS BETWEEN PROVISIONS OR DETAILS IN THE TECHNICAL SPECIFICATIONS, DRAWINGS, AND OTHER PROVISIONS OR DOCUMENTS CONTAINED IN THE CONTRACT DOCUMENTS VERSUS PROVISIONS CONTAINED IN THE LATEST EDITION OF APWA MANUAL OF STANDARD SPECIFICATIONS, APWA MANUAL OF STANDARD PLANS, JWCD STANDARDS, OR CITY STANDARDS SHALL BE RESOLVED IN FAVOR OF THE MOST STRINGENT OF THE CRITERIA AND CONDITIONS AS DETERMINED BY ENGINEER.
- CONTRACTOR SHALL MEET ALL UTAH STATE DEPARTMENT OF ENVIRONMENTAL QUALITY AND U.S. EPA REQUIREMENTS WITH RESPECT TO THEIR MINIMUM RULES AND REGULATIONS. ALL MATERIALS THAT MAY CONTACT DRINKING WATER, INCLUDING, PIPES, GASKETS, LUBRICANTS, O-RINGS, SHALL BE ANSI/NSF 61, DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS AND BE APPROPRIATELY STAMPED WITH THE NSF LOGO.
- CONSTRUCTION OPERATIONS SHALL BE CONDUCTED AND SIGNS, BARRICADES, AND FLASHERS SHALL BE PLACED SO AS TO COMPLY WITH OSHA, UTAH STATE INDUSTRIAL COMMISSION, LOCAL SAFETY STANDARDS, AND MANUAL ON UNIFORM TRAFFIC CONTROL.
- UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES (WATER, FIBER, SEWER, TELEPHONE ETC.) AND ANY OTHER OBSTRUCTION DURING THE COURSE OF CONSTRUCTION. (CALL BLUE STAKES @ 1-800-662-4111)
- CONTRACTOR SHALL POTHOLE UTILITIES AT LEAST 2 DAYS AHEAD OF PIPELINE CONSTRUCTION TO VERIFY THAT THE DESIGN ALIGNMENT AND GRADE IS FEASIBLE AND TO PLAN ANY UTILITY RELOCATION'S THAT MAY BE NECESSARY. FAILURE TO POTHOLE IN ADVANCE WILL NOT RELIEVE THE CONTRACTOR FROM LOCATING THE PIPELINE IN AN ACCEPTABLE MANNER TO THE OWNER. ANY RELAYING OF THE PIPELINE, THAT MAY BECOME NECESSARY IN THIS REGARD, SHALL BE DONE AT THE CONTRACTORS EXPENSE.
- SUBMIT TO OWNER, CONTRACTOR AGREEMENTS WITH LAND OWNERS OF EACH PARCEL CONTRACTOR USES BEYOND PUBLIC STREET RIGHTS-OF-WAY AND OWNER EASEMENTS.
- UNLESS DETAILED, SPECIFIED OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS ARE MEANT TO APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS OR IN SPECIFIC DRAWINGS.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING IMPROVEMENTS DURING CONSTRUCTION AND SHALL REPLACE OR RESTORE ANY IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION ACTIVITY, AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THIS PROJECT IS LOCATED IN TAYLORSVILLE, MURRAY, MILLCREEK, SANDY, DRAPER CITY LIMITS AND UDOT ROADS. OBTAIN ALL APPLICABLE PERMITS AND APPROVALS FROM THESE RESPECTIVE ENTITIES AND COMPLY WITH THEIR RESPECTIVE REGULATIONS FOR TRAFFIC CONTROL, SAFETY, EXCAVATION IN PUBLICLY OWNED RIGHTS-OF-WAY, ETC.
- CONTRACTOR SHALL OBTAIN NOTICE OF INTENT, AND DEVELOP AND COMPLY WITH STORM WATER POLLUTION PREVENTION PLAN, AND ALL UPDES REQUIREMENTS.
- WORKING PRESSURE FOR THE INDIVIDUAL VAULTS AND SYSTEMS VARY. CONTRACTOR SHALL COORDINATE WITH JWCD TO OBTAIN CURRENT PRESSURES. ALL COMPONENTS FOR CONSTRUCTION SHALL BE MIN RATED FOR 250 PSI ON 4500 SOUTH PIPELINE & 300 PSI ON 11400 SOUTH PIPELINE.

WATER NOTES

- WATER LINE TRENCHES IN PRIVATE ROADWAYS OR TRAFFIC AREAS TO BE THOROUGHLY COMPACTED TO A MINIMUM OF 96% OF MAXIMUM DENSITY PER ASTM D1557. DENSITY CHECKS MAY BE REQUIRED BY THE GOVERNING JURISDICTION AT ANY TIME.
- A MINIMUM OF 48" OF COVER FROM THE TOP OF THE PIPE TO THE FINISH GRADE IS REQUIRED, EXCEPT AS NOTED.
- UNLESS OTHERWISE NOTED, ALL FITTINGS FOR PRESSURIZED WATER PIPING SHALL BE PROPERLY RESTRAINED BY THRUST BLOCKING, AND JOINT RESTRAINT.
- NEW MANHOLE RING & COVERS SHALL BE MARKED 'JWCD'.

STEEL AND METAL FABRICATIONS:

- BOLTS FOR PIPELINES: ASTM A193 BOLTS. IF BURIED, USE CARBON STEEL BOLTS, AWWA C217 WAX TAPE COATED.
VAULTS: 316 SS BOLTS WITH GREASE CAPS (SILICONE RUBBER "MOCAP" FOR <2". USE SAP SEAL CAPS FOR >2")
- BOLTS FOR STRUCTURES: HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE:

UNLESS SHOWN OTHERWISE	A325-N
SLIP CRITICAL	A325-SC
ANCHOR BOLTS (AB)	
STAINLESS STEEL	F593, AISI TYPE 316, CONDITION CW
STEEL	F1554, GR 36
GALVANIZED STEEL	F1554, GR 36/A153
MACHINE BOLTS (MB)	A307

 - USE A307 BOLTS WITH PLATE WASHERS, UNLESS OTHERWISE SPECIFIED, FOR TYPICAL CONNECTIONS AND CONNECTIONS TO CONCRETE.
 - USE A325 BOLTS WITH PLATE WASHERS, UNLESS OTHERWISE SPECIFIED, FOR STEEL TO STEEL CONNECTIONS.
 - ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.
 - STEEL FABRICATED PARTS SHALL CONFORM THE CURRENT EDITION OF "THE AISC MANUAL OF STEEL CONSTRUCTION" AND CURRENT OSHA STANDARDS.
 - ALL WELDS AND WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 OF "THE AMERICAN WELDING SOCIETY" (LATEST EDITION), USING ELECTRODES AS SPECIFIED THEREIN. WELDS TO BE MADE WITH E-70XX ELECTRODES U.N.O.
 - EACH FIELD WELD SHALL HAVE A CWI INSPECTION REPORT STATING COMPLIANCE WITH AWS D1.1, A WPS FOR EACH WELD (OR SERIES OF LIKE WELDS), & PQR FOR EACH WELDER BY NAME.
 - STEEL PIPE SHALL CONFORM TO A53, GRADE B AND HAVE 0.375 MIN WALL THICKNESS.

GENERAL CONSTRUCTION NOTES

- EXCAVATION, BEDDING AND BACKFILL FOR BURIED PIPELINES SHALL CONFORM TO CITY SPECIFIC STANDARDS, AND SECTION 31 23 15 OF THESE CONTRACT DOCUMENTS.
- ASPHALT, OR CONCRETE PAVEMENT CUTTING AND PATCHING SHALL CONFORM TO CITY SPECIFIC STANDARDS.
- CONTRACTOR SHALL REPLACE ANY EXISTING PAVEMENT, SIDEWALK OR CURB & GUTTER ALONG THE FRONTAGE OF THIS PROJECT, THAT IS DAMAGED OR REMOVED BY THE CONTRACTOR, OR AS DIRECTED BY CITY INSPECTORS OR ENGINEERS.
- ALL CONSTRUCTION SHALL CONFORM WITH THE CURRENT CITY STANDARD SPECIFICATIONS AND DETAILS FOR MUNICIPAL CONSTRUCTION FROM THE CITY IN WHICH CONSTRUCTION IS BEING CONDUCTED. (SEE NOTE 1 "GENERAL NOTES")
- ANY PROPOSED CHANGES TO THE APPROVED DESIGN SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD AND THE CITY ENGINEER.
- NOTIFY EACH CITY'S PUBLIC WORKS INSPECTION DEPARTMENT, 48 HOURS PRIOR TO BEGINNING CONSTRUCTION IN ANY ROADWAYS OR PUBLIC IMPROVEMENTS WITHIN CITY. ALL INSPECTIONS MUST BE DONE PRIOR TO OR CONCURRENT WITH CONSTRUCTION. FAILURE TO MAKE THIS NOTIFICATION MAY RESULT IN THE UNCOVERING AND/OR REMOVAL OF ALL CONSTRUCTION DONE WITHOUT NOTIFICATION AT THE DISCRETION OF CITY'S ENGINEER.
- PROVIDE A PROCTOR TEST FOR ANY ROADBASE MATERIAL, TO THE CITY'S PUBLIC WORKS INSPECTOR, WHEN DELIVERED OR PLACED ON SITE.
- DUST, MUD, AND EROSION SHALL BE ADEQUATELY CONTROLLED BY WHATEVER MEANS NECESSARY (EXCEPT AS NOTED), AND THE ROADWAYS SHALL BE KEPT FREE OF MUD AND DEBRIS AT ALL TIMES.
- THE USE OF MOTOR OILS AND OTHER PETROLEUM-BASED OR TOXIC LIQUIDS, FOR DUST SUPPRESSION, IS ABSOLUTELY PROHIBITED.
- PUBLIC NOTIFICATION TRAFFIC BOARDS SHALL BE PLACED AS PER CITY REQUIREMENT PRIOR TO CONSTRUCTION ON ALL AFFECTED ROADWAYS.
- TRAFFIC CONTROL PLANS SHALL BE SUBMITTED TO, AND APPROVED BY, THE APPROPRIATE CITY AGENCY PRIOR TO CONSTRUCTION (I.E. CITY, UDOT).

OBSERVATION AND TESTING

- SPECIAL INSPECTION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR ANY REQUIRED INSPECTIONS BY THE BUILDING OFFICIAL. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BOTH INSPECTIONS.
- SPECIFIED CONCRETE TESTING DURING CONSTRUCTION WILL BE CONTRACTOR SCHEDULED, OWNER AND ENGINEER APPROVED. SPECIFIED LAB TEST, MIXES AND SIMILAR TESTING TO VERIFY MATERIAL QUALITY AND CONFORMANCE TO THE SPECS, REQUIRING SUBMITTAL FOR REVIEW AND ACCEPTANCE, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- STRUCTURAL OBSERVATIONS (CONTRACTOR SCHEDULED, OWNER AND ENGINEER APPROVED) IS REQUIRED IN ACCORDANCE WITH IBC SECTION 110 AND CHAPTER 17 AS INDICATED IN THE STATEMENT OF SPECIAL INSPECTION.

CONSTRUCTION NOTES

FOR ALL CITIES AND SITES

- OBTAIN RELEVANT PERMITS FROM JURISDICTIONAL AGENCIES, UDOT &/OR CITY. MAINTAIN DRIVEWAY ACCESS. NOTIFY ALL EMERGENCY SERVICES OF LOCATION & TIME OF EACH TRAFFIC LINE CLOSURE. IF WORK BLOCKS CROSSWALKS OR WALKS, PROVIDE ADA-COMPLIANT SIGNED DETOURS. PROVIDE ACCEPTABLE SIGNED DETOUR IF BIKE PATHS ARE BLOCKED.
- PROVIDE UDOT-APPROVED WATER FILLED BARRIERS (TRITON) PER MUTCD BETWEEN TRAFFIC & OPEN EXCAVATIONS. STEEL PLATE COVER TRENCHES DURING NON-CONSTRUCTION HOURS. ANCHOR STEEL PLATES TO PAVEMENT SO THEY DON'T SLIP.
- A. REPAIR ASPH. CONC: MATCH EXST THICKNESS + 1" (7" MAX THK IN UDOT HWYS). COMPLY WITH DET A, DWG C-13 (T-PATCH DETAIL). COMPLY WITH ALL JURISDICTIONAL AGENCY (UDOT/CITY) REQUIREMENTS AND STANDARDS. PAVE BETWEEN APRIL 15 AND OCT 31 (UNO). FOLLOW AGENCY WEATHER REQUIREMENTS.
B. REPAIR CONC PAVEMENT (AT STATE ST & AT 700E): REPLACE FULL REINF. CONC PANELS PER UDOT STANDARDS, SPECS & PERMITS. USE UDOT RAPID STRENGTH CONC (BY PARSONS OR DRYCREEK - MIXED ONSITE, DRIES IN 1 HR, SPEC 03058). USE UDOT REINFORCING (RING BASKETS W/ L #11 BARS TIED W/ #5 BARS) PREMADE.
- RESTORE EXISTING LANE MARKINGS AFTER PAVING. RESTORE EXISTING FACILITIES DISTURBED (IE WALKS, C&G, LANDSCAPING, UTILITIES, SURFACE FEATURES, ETC).
- COORDINATE WORK TIMING AND JWCD MAINS SHUTDOWNS PER NOTES IN DWGS C-1 THRU C-8.
A. CONSTRUCT ALL THREE (3) 4500S PIPELINE VAULTS (4390S 2200W + 4330S 300W + 4500S 250E) AND PAVING BETWEEN OCT 15 TO NOV 15, 2024. IN ORDER TO MEET THIS SCHEDULE, 2200W SHALL BEGIN CONSTRUCTION ON OCT 15, 2024 AND BE BACK ON LINE BY NOV 1, 2024. 300W AND 250E CAN BE CONSTRUCTED SIMULTANEOUSLY AND SHALL START ON NOV 1, 2024.
B. CONSTRUCT ALL THREE (3) 11400S PIPELINE VAULTS (STATE ST, 200E, 700E) AND PAVING BETWEEN NOV 15, 2024 AND APRIL 15, 2025. COORDINATE CONSTRUCTION SO THAT THE CONNECTION AT STATE STREET CAN BE MADE DURING THE SAME SHUTDOWN FOR WORK AT 100E.
- ALL NEW WATER MAINS SHALL BE "RJ" UNO. "RJ" MEANS "RESTRAIN ALL JOINTS" (INCLUDES JOINTS TO EXST PIPE).

TAYLORSVILLE CITY: 4390 S 2200 W CONTACT: BEN WHITE 801-293-8344

- OBTAIN, PAY AND COMPLY WITH CITY PERMIT. SUBMIT & GET CITY APPROVAL FOR TRAFFIC CONTROL PLAN. 1-LANE FLAGGED TRAFFIC IS ALLOWED FROM 9AM TO 3PM. MAINTAIN 2-WAY TRAFFIC (12' LINES) AT OTHER TIMES. SEE SPECS AND SHEET C-1 REQUIREMENTS.
- AMBIENT TEMPERATURE MUST BE 50 DEG F & RISING FOR PERMANENT HOT MIX ASPHALT PAVING.

MURRAY CITY: 4330 S 300 W (COMMERCE AVE) CONTACT: TRAE STOKES 801-270-2440

- PREPARE, SUBMIT AND EDIT CONTRACTOR TRAFFIC CONTROL PLAN UNTIL APPROVED BY MURRAY. NO ROAD CLOSURES ARE PERMITTED. MAINTAIN 1-LANE THRU TRAFFIC IN BOTH DIRECTIONS UNO. UDOT HAS NO REQUIREMENTS AT THIS SITE.
- PAVING IS PER MURRAY CITY PERMIT REQUIREMENTS.

MURRAY/MILLCREEK: 4500 S 350 E MURRAY CONTACT: TRAE STOKES 801-270-2440
MILLCREEK CONTACT: AARON ROBERTS 801-214-2662

- PREPARE, SUBMIT AND EDIT CONTRACTOR TRAFFIC CONTROL PLAN UNTIL APPROVED BY MURRAY, MILLCREEK & UDOT. NO ROAD CLOSURES ARE PERMITTED. MAINTAIN THRU TRAFFIC IN BOTH DIRECTIONS UNO. SEE SHEET C-2 REQUIREMENTS.
- UDOT REQUIRES WORK BE DONE BETWEEN 9AM TO 3PM. MAINTAIN 1-LANE TRAFFIC IN BOTH DIRECTIONS. COMPLY WITH UDOT STANDARDS. PROVIDE SIGNS IN BOTH DIRECTIONS 72 HOURS BEFORE WORK UNTIL END. KEEP ALL WORK IN MEDIAN OR THE FIRST LANE SOUTH OF MEDIAN.

11400 S STATE ST.: SEE SHEETS C-4, C-4A, C-5, C-6 & PV-0.

UDOT CONTACT: PETER TANG 801-887-3459; EMAIL: ptang@utah.gov
SANDY CONTACT: BRITTANY WARD, SANDY TRAFFIC ENGINEER, 801-568-2991.
DRAPER CONTACT: BRIEN MAXFIELD, SENIOR ENGINEER MANAGER, 801-576-6326.

- OBTAIN AND COMPLY WITH UDOT PERMITS AT STATE ST & DRAPER + SANDY PERMITS AT 100 E VAULT. SUBMIT & EDIT CONTRACTOR TRAFFIC CONTROL PLANS UNTIL APPROVED BY ALL JURISDICTIONAL AGENCIES.
- PROVIDE VARIABLE MESSAGE SIGNS (VMS) ON ALL APPROACHES TO WORK (72 HOURS BEFORE WORK UNTIL AFTER WORK IS DONE), INFORMING PUBLIC OF FUTURE CONSTRUCTION AND CHANGES IN TRAFFIC PATTERNS.
- 100 E REQUIREMENTS (SEE SHEET C-5):** DRAPER-SANDY CITY BOUNDARY IS AT CENTER OF 11400 S STREET (100E IS NOT UDOT CONTROLLED). DRAPER WILL ISSUE PERMIT & REVIEW CONTRACTOR TRAFFIC CONTROL. ALSO, SUBMIT TRAFFIC CONTROL TO SANDY (BRITNEY WARD) AND INTEGRATE SANDY INPUT.
- STATE STREET & 700E UDOT REQUIREMENTS (SEE SHEETS C-4, C-4A, C-6):**
 - STATE ST, SHT C-4 & C-4A. KEEP ALL LANES OPEN IN NON-WORK HOURS (FLUSH PLATING):
 - FIRST BUILD (OUT OF TRAVELED LANES) STA 2+80± TO 1+75± AT NIGHT 9PM TO 5AM (OR DURING DAY 9AM TO 3PM).
 - THEN BUILD (IN TRAVELED LANES & REPAVE CONC) STA 1+00 TO 1+75± IN 1 WEEKEND (FRI 9PM TO MON 5AM). SAWCUT PAVING ON A PRIOR NIGHT (9PM TO 5AM).
 - THEN BUILD EXST VAULT ABANDONMENT/AC REPAVE AT NIGHT (9PM TO 5AM).
 - 700E, SHT C-6. KEEP ALL LANES OPEN IN NON-WORK HOURS (FLUSH PLANTING):
 - BUILD AT NIGHT 9PM TO 5AM (COMPLY W/ NOISE ORDINANCE) OR DURING DAY (9AM TO 3PM).
- CALL UDOT BEFORE CONSTRUCTION TO MARK UDOT SIGNAL COMMUNICATION FIBERS IN PAVEMENT - LOCATIONS UNKNOWN. REMOVE/REPLACE (FUNCTIONAL) ALL UDOT SIGNAL FIBERS IN PAVEMENT.
- USE UDOT RAPID SET CLSM (TRENCH ZONE) & CONC (FULL CONC PANELS & UDOT REBAR BASKETS/DOWELS PER UDOT STD SPECS & DWGS SEE PV-0).
- INSULATE & CURE CONCRETE ABOVE 40 DEG F, SEE SPECS ON SHEET PV-0.

FILE NAME: PROJECTS\127 - JWCD\42.100 - 2023-24 VAULTS IMPROVEMENT\CAD\G-3 GENERAL-CITY NOTES.DWG
FILE DATE: 4/30/2024 08:36:07 (DD)



DESIGNED	NPJ	3			
DRAFTED	DD	2			
CHECKED	TGA	1	5/15/24	CORRECTED GENERAL NOTE 2 FOR JURISDICTION ON 11400 SOUTH PROJECTS	
DATE	APRIL 2024	NO.	DATE	REVISIONS	BY

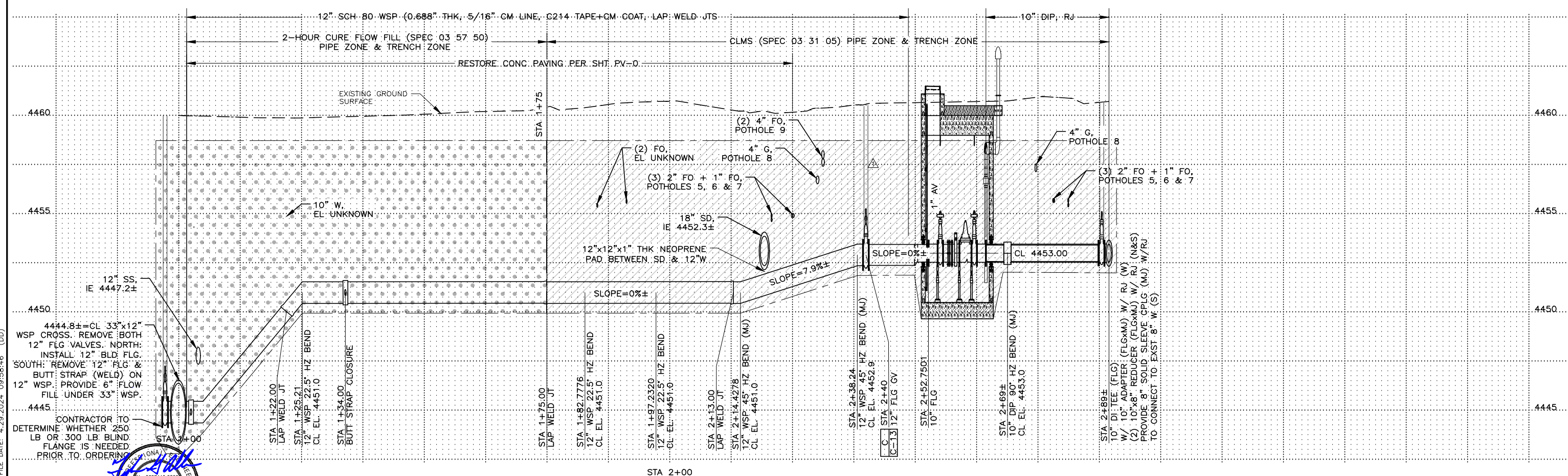
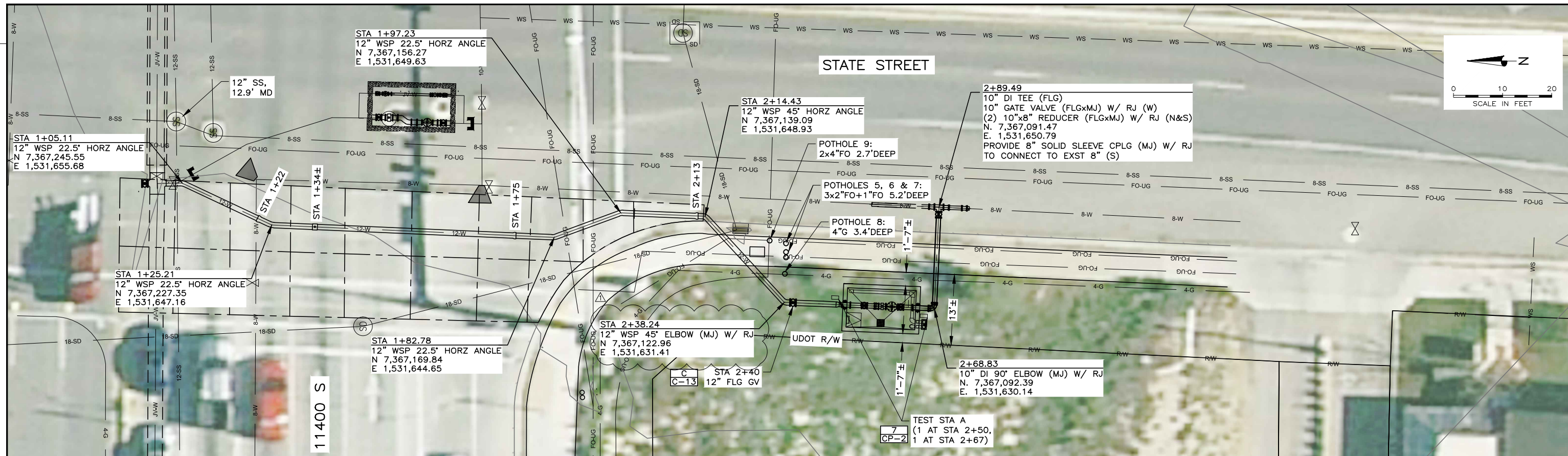
SCALE
NONE



2024 VAULT IMPROVEMENT PROJECT
GENERAL
GENERAL & CITY NOTES

SHEET
G-3
127.42.100

FILE NAME: PROJECTS\127_JVWCD\42.100 - 2023-24 VAULTS IMPROVEMENT\CAD\C-4A SITE PLAN 11400S_STATESTREET (PP).DWG
 FILE DATE: 4/29/2024 08:58:46 (DD)



CONTRACTOR TO DETERMINE WHETHER 250 LB OR 300 LB BLIND FLANGE IS NEEDED PRIOR TO ORDERING

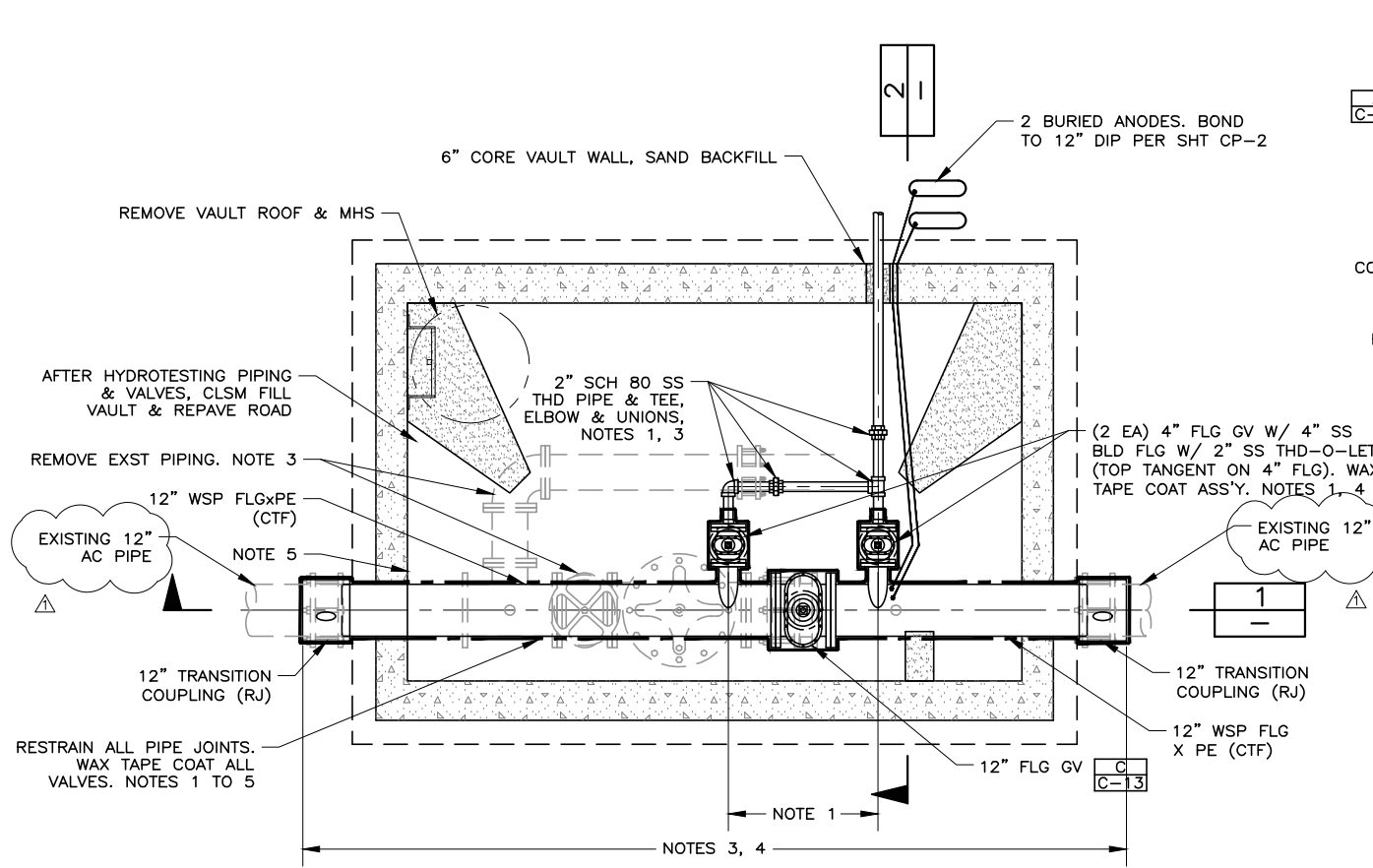
DESIGNED NPJ 3
 DRAFTED DD 2
 CHECKED TGA 1 5/15/24
 DATE APRIL 2024 NO. DATE

NO.	DATE	REVISIONS
1	5/15/24	CORRECTED BEND CALLOUT FROM DI TO WSP.

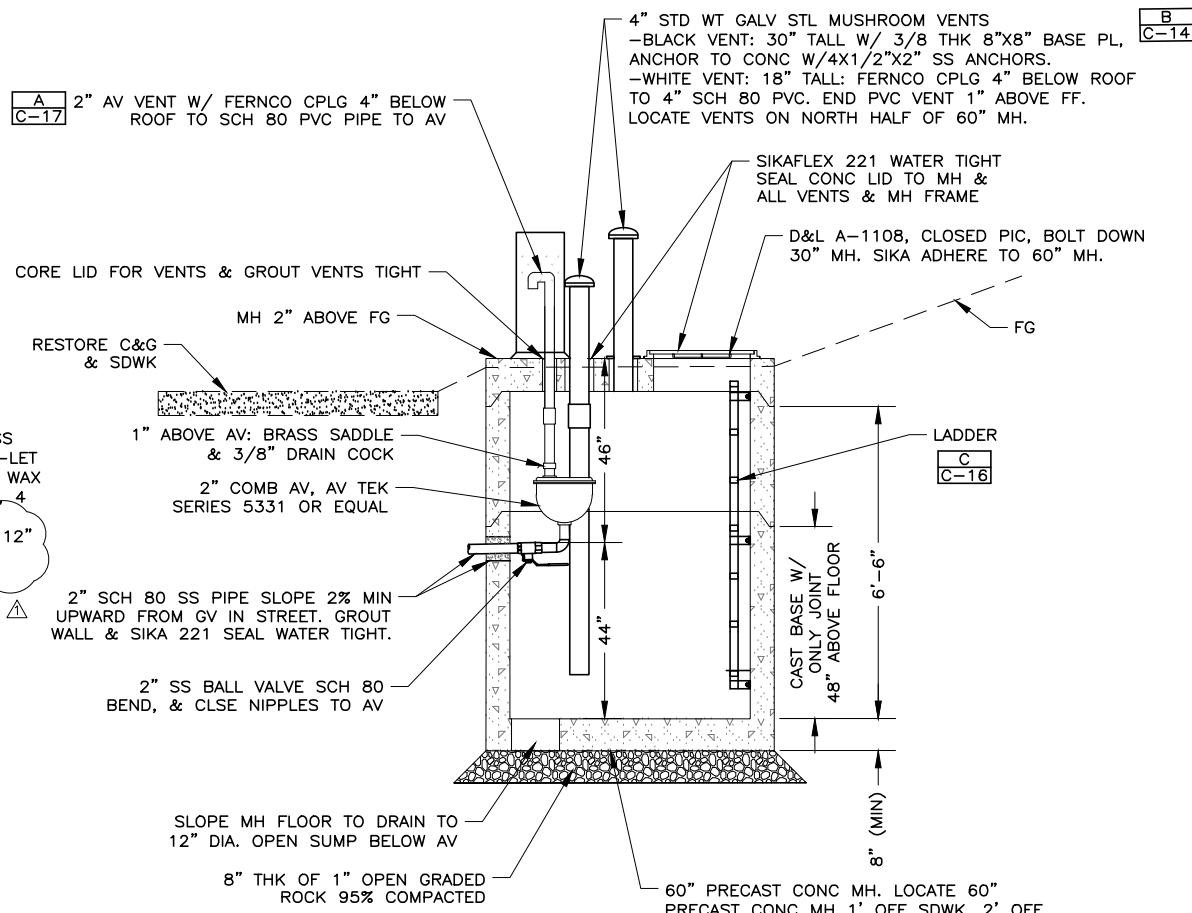
SCALE AS SHOWN

JORDAN VALLEY WATER CONSERVANCY DISTRICT

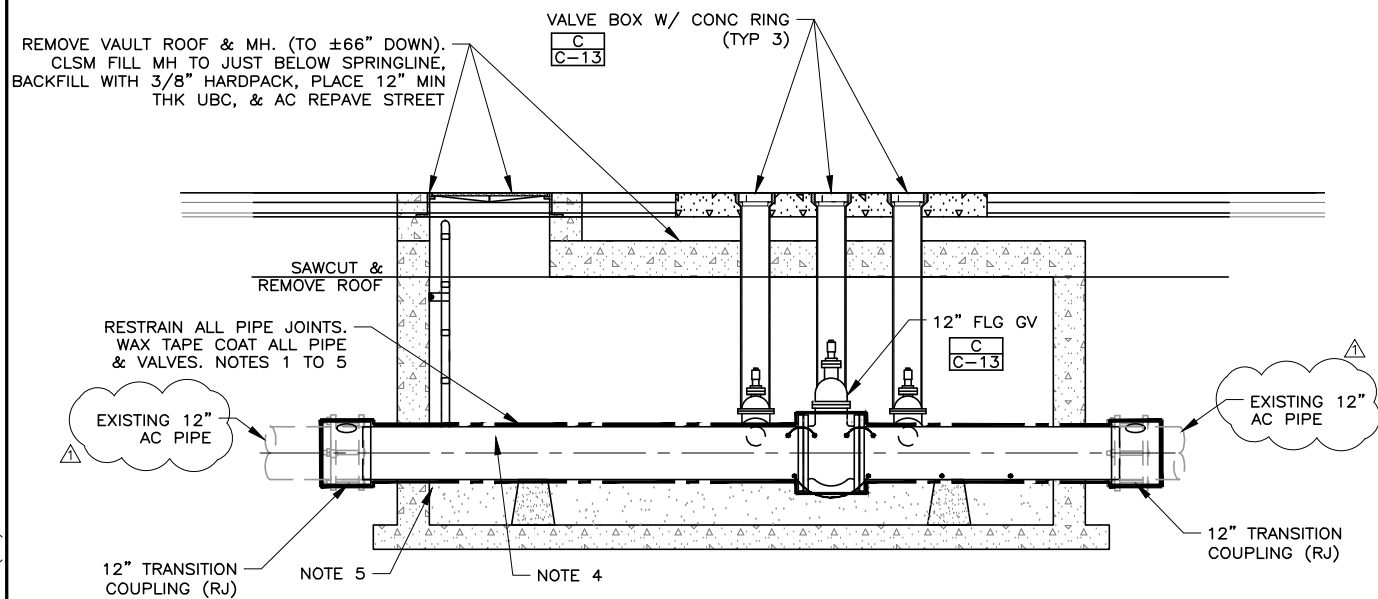
FILE NAME: PROJECTS\127 - JWCD\42.100 - 2023-24 VAULTS IMPROVEMENT\CAD\C-8 VAULT 4330S_300W.DWG
 FILE DATE: 4/23/2024 13:14:34 (DD)



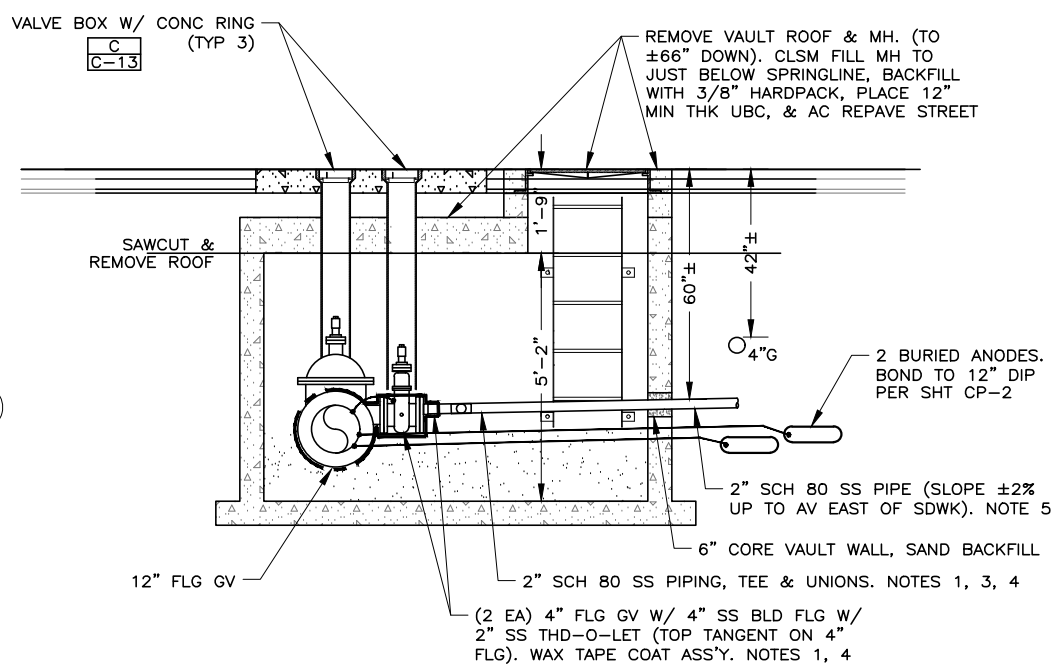
4330 SOUTH 300 WEST - PLAN



AV MH DETAIL



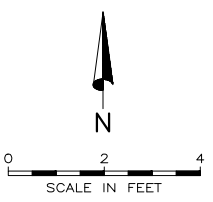
4330 SOUTH 300 WEST - SECTION 1



4330 SOUTH 300 WEST - SECTION 2

NOTES (DO WORK IN THIS ORDER):

1. SHOP ASSEMBLE PIPING LOOP (4" GVs + 2" SS PIPE LOOP). LEAK TEST ALL GVs & PIPING ARE DRIP TIGHT, THEN OPEN 12" GV & SHUT 4" GVs.
2. SAWCUT & REMOVE VAULT AS DETAILED. TO MINIMIZE 12" MAIN SHUTDOWN (SERVES BUSINESSES), REPLACE PIPING IN VAULT (ITEM 3) BETWEEN SAT 6PM & MON 6AM.
3. WORK DURING SHUTDOWN: REMOVE ALL EXST PIPING & CONFLICTING CONCRETE. DISINFECT & INSTALL ALL NEW PIPING & VALVES IN VAULT. THEN HAVE JWCD RESTORE 12" WATER MAIN TO SERVICE.
4. HAVE ENGR VERIFY THERE ARE NO LEAKS, THEN BOND ALL JOINTS & DBL BOND TO ALL VALVES (SEE SHT CP-1 & SPEC 26 42 10); THEN WAX TAPE COAT ALL VALVES IN VAULT.
5. 30"x30"x30" REINF CONC ENC WAX COATED FLG. #5 BARS AT 22" OC EW EF + 22" DIA #5 HOOPS EA SIDE FLG. BARS SHALL NOT TOUCH PIPING. DRILL #5 DOWELS IN FLOOR & 2 WALLS - 22" OC EW (12 TOTAL).
6. INSTALL & LEAK TEST 2" SS PIPING TO AV & 60" MH. COMPLETE VALVE BOXES. CLSM FILL (50-150 PSI) VAULT. BACKFILL PIPING. AC REPAVE STREET PER CITY PERMIT.



DESIGNED	NPJ	3	
DRAFTED	DD	2	
CHECKED	TGA	1	5/15/24
DATE	APRIL 2024	NO.	DATE

IDENTIFIED EXISTING PIPE AS AC PIPE	
REVISIONS	BY APVD.

SCALE AS SHOWN



2024 VAULT IMPROVEMENT PROJECT
 CIVIL
 4330 SOUTH 300 WEST - VAULT

SHEET C-8
 127.42.100