



**DUBBO  
REGIONAL  
COUNCIL**

**TECHNICAL SCHEDULE**

**DRC-W401**

**WATER AND SEWER VALVE EXERCISING**

**TECHNICAL SCHEDULE DRC-W102 – CONSTRUCTION OF WATER RETICULATION**

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## DRC-W401: WATER AND SEWER VALVE EXERCISING

### DRC-W401.1 SCOPE

The Principal maintains a valve maintenance and exercising program for existing water and sewer valves located throughout the Principal's systems. This program generally comprises the following four components:

- Locate valves;
- Fully exercise valves;
- Maintain detailed valve records; and
- Schedule and perform necessary repairs.

### DRC-W401.2 REFERENCED DOCUMENTS

The following documents are referred to in this Specification. The latest version of the document including any published amendments shall apply. Where the drawings or a project specific specification are in conflict, or inconsistent with these referenced documents or this Specification, then the details on the drawings or project specific specification shall apply.

#### Australian Standards

AS 2638 Cast iron sluice valves for waterworks purposes

Works shall also comply with the current versions all other relevant Australian Standards where not specifically listed above.

#### Water Services Association of Australia Standards

WSA02 Sewerage Code of Australia  
WSA03 Water Supply Code of Australia  
N/A WSAA Product Specifications

### DRC-W401.3 NOFITICATION

If a water supply interruption is necessary under this Contract the Principal shall be responsible for placing media advertisements advising affected customers according to the work program supplied by the Contractor.

The Contractor shall give the Superintendent seven days' notice of the proposed work so that the Principal can arrange notification of affected customers.

The Superintendent will also arrange for notices to be published in a local newspaper (and electronic media?) indicating the water mains to be cleaned, the anticipated start date and the likely duration of the cleaning.

**DRC-W401.4 LOCATION**

Recorded valve locations will be shown on the plans supplied by the Principal. The Contractor is responsible for the locating the valves onsite.

If work cannot be undertaken by the Contractor due to failure to locate a valve after all reasonable effort has been made by the Contractor, notification is to be given to the Superintendent who will then arrange for the valve to be located by the Principal's staff. If the Principal's staff locate the valve within 2 m and less than 300 mm below the surface, the Principal reserves the right to charge the Contractor a fee to cover the Principal's staff time for the location works.

**DRC-W401.5 EQUIPMENT**

The Contractor shall advise the make, model, year and operating system version for any hydraulic valve turning equipment proposed to be used in their tender submission, or to the Superintendent prior to commencement of work. All equipment used shall comply with all relevant statutory requirements.

**DRC-W401.6 LABOUR, PLANT AND MATERIALS**

The Contractor shall provide at its own cost and expense all labour, materials, plant, tools and equipment necessary for the proper and complete performance of the Contract.

**DRC-W401.7 WORKPLACE HEALTH AND SAFETY (WHS)**

All costs associated with ensuring a safe work environment for the implementation of the works shall be deemed to be included in the Tender price.

The Contractor shall ensure that in the performance of the works, the Contractor's employees, sub-contractors and employees of such sub-contractors shall observe the Statutory Safety Regulations and Site Conditions for Contractors.

Within 28 days of the Date of Acceptance and prior to the commencement of work, the Contractor shall submit to the Superintendent details of the Contractor's WHS Management System, including a Hazard and Risk Assessment and a Safety Plan specific to the Contract covering all of the Contractor's activities for the duration of the Contract.

The Contractor's Safety Plan shall have included, but not necessarily be limited to:

- Safety inductions.
- Identification and accountability of personnel having specific responsibilities for safety and security matters.
- Safety procedures (including confined space entry and fall protection).
- Accident and loss reporting.
- Safety equipment.
- Statutory requirements.
- Safe working incentives and leadership.

- Occupational health and hygiene.
- Fire prevention.
- Storage and issue of materials.
- Confined space entry procedures, with valid confined space permits.
- Fall from heights procedures.
- Emergency procedures and contingency plans.
- Safety disputes procedures.

The Contractor is to conform to the requirements of the Work Health and Safety Act 2011.

The Contractor shall provide medical treatment facilities and first-aid personnel to at least the minimum standards required by Workplace Health and Safety legislation.

As soon as possible following their occurrence, the Contractor shall report to the Superintendent any injuries likely to require medical treatment or involving lost time. In addition, the Contractor shall report to the Superintendent all injuries and near misses.

The Contractor shall manage and report all safety and security matters relating to his sub-contractors as if they were his own personnel.

Copies of the Safety Plan and records of all safety and security reporting over the duration of the Contract shall be held onsite, and readily accessible for inspection by the Superintendent. The Superintendent shall carry out, from time to time, ad-hoc audits of the Contractor's safety systems onsite. The Contractor shall attend all safety audits. The cost for participation in safety audits shall be included in the tender price.

#### **DRC-W401.8 TRAFFIC**

The Contractor shall carry out the work in such a manner as to minimise interference to the flow of traffic and pedestrians and shall comply with the standard Principal requirements.

The Contractor shall develop and maintain a traffic management system that complies with the Transport for NSW (TfNSW) manual for *Traffic Control at Work Sites*, AS 1742, SAA HB81 and satisfies the requirements of the relevant road authorities. The Contractor shall submit the Traffic Management Plan to THE relevant road authority and the Superintendent at least seven days prior to the commencement of works.

Traffic control and public safety devices are to be provided by the Contractor. Methods and devices are to comply with Australian Standards, WorkCover Authority requirements, RMS requirements, and any other relevant standards of practice.

The Contractor shall not divert traffic onto any temporary routes or close any roadway without prior written approval from the Superintendent.

Where traffic or parked vehicles make it impracticable or hazardous to carry out the work during normal working hours the Contractor may apply to the Superintendent for approval to perform the work outside of normal working hours.

## DRC-W401.9 PROCEDURE

Valve exercising should generally follow the procedure below:

1. Locate valve;
2. Notify residents (as required);
3. Check the area for potential hazards and implement needed controls;
4. Establish traffic control as necessary;
5. Photograph the location, identifying the condition of the site;
6. Remove the cover;
7. Clean valve surface cover box/valve chamber and riser as necessary to inspect valve;
8. Exercise valve:
  - Verify the direction for turning the valve to the closed and open positions.
  - Unless known otherwise, assume the valve is in the full open position. Record starting position.
  - Begin closing valve slowly, increasing torque as necessary to achieve movement (without exceeding the pre-determined maximum torque). Torque to be reduced immediately following initial movement to the lowest force required to continue moving the valve. **If the valve fails to turn at the torque limit, the exercise process is to stop immediately.**
  - Count the number of turns necessary to achieve the full closed position.
  - Begin opening valve slowly, increasing torque as necessary to achieve movement (without exceeding the pre-determined maximum torque).
  - Count the number of turns necessary to achieve the full open position.
  - Repeat the open to close to open cycle a minimum of three times, or until the number of turns necessary to open or close the valve does not change.
  - Record the number of turns, cycles and maximum torque applied.
  - If there is a bypass valve it is to be exercised first. Should the bypass valve not operate, the main valve should not be exercised to ensure it does not become hydraulically locked in the closed position.
9. Photograph the valve if possible;
10. Record the valve dimensions (where possible), condition of the valve, necessary maintenance and other pertinent information;
11. Replace cover;
12. Prior to departing evaluate the location for hazards to people, property or environment and record findings; and
13. Mitigate any hazards discovered and/or initiate the actions necessary to eliminate those hazards.

## DRC-W401.10 VALVE EXERSIZING

Each valve should be operated through a full cycle and returned to its normal position on a schedule that is designed to prevent a build-up of tuberculation (rust formation in pipes as a result of corrosion) or other deposits that could render the valve inoperable or prevent a tight shutoff.

The valve should be operated through one complete operating cycle. If the stem action is tight as a result of build-up on the stem threads, the operation should be repeated until the opening and closing actions are smooth and free.

### **DRC-W401.11 REPORTING**

The number of turns required to complete the operation cycle should be recorded and compared with permanent installation records to ensure that full gate travel (ie it can be opened and closed) is maintained.

The Contractor shall record the following for each valve (where able to be obtained):

- Location;
- Make and model;
- Type of valve;
- Size of valve;
- Number of turns to close/open valve;
- Closing direction;
- General condition; and
- Maintenance and/or repairs required.

### **DRC-W401.12 VALVE MAINTENANCE**

Based on the condition of the valve and installation, the Contractor shall identify any required maintenance activities and carry out these where directed by the Superintendent. Valve maintenance may include:

- Adjustment of valve covers and surrounds where the existing cover/surround does not finish flush with the surface in roadways, footpaths and paved surfaces and 25 mm above the surface in other areas.
- Replacement of valve covers and surrounds where significantly damaged.
- Replacement or repair of any valve chambers where damage or deterioration is noted.
- Reinstallation of valve marking plate and/or marker post where an existing valve is not provided with these. Marker posts shall be white in colour and be either 100 mm square reinforced concrete with 20 mm chamfers, a powder coated metal post, recycled plastic post with recesses for marker plates of any other post approved by the Principal. When installed the top of the post shall be 1200 mm above the ground and installed to a depth of at least 500 mm into the ground.
- Replacement or provision of valve extension spindle (for buried valve) where valve spindle does not end within 300 mm of ground surface.
- Replacement of valve stem seal.
- Retightening or replacement of flange bolts or flange gaskets.
- Replacement of entire valve where inoperable and unrepairable.

Any new stop valves installed shall be resilient seated sluice valves compliant with WSAA Product Specification WSA PS-261 and shall be:

- Manufactured in accordance with AS 2638.
- Minimum pressure class PN16.
- Suitable for buried service.
- Provided with external and internal fusion bonded epoxy coating in accordance with AS 4158.

- Anti-clockwise closing.
- Provided with an extension spindle compliant with WSAA Product Specification WSA PS-269 where required, so that the valve can be operated by a key at a depth not exceeding 300 mm from the ground surface.