

ND-06 ACCEPTANCE TESTING, FINAL ACCEPTANCE, AND WARRANTY REQUIREMENTS

1) ACCEPTANCE TESTING

Acceptance testing must be performed prior to the introduction of wastewater into the District's facilities.

- a) Required tests may be conducted by the Contractor or an independent specialty Contractor.
- b) The Contractor shall furnish all labor, equipment, and any appurtenant items necessary to satisfactorily perform the required tests.
- c) All acceptance tests must be performed in the presence of the District. Tests not witnessed by the District will be considered invalid.
- d) The Contractor shall notify the District 48-hours prior to testing (see Standard Detail ND-01).
- e) Documentation of each round of testing, inspection, and defect correction shall be submitted to the District.
- f) Re-testing documentation following correction of defects shall be submitted to the District.

Testing shall be per TABLE 6A.

TABLE 6A. SUMMARY OF REQUIRED ACCEPTANCE TESTING

ASSET TEST	SEWER MAINS	LATERAL SEWERS	MANHOLES	MANHOLES W/ CORROSION PROTECTION BARRIERS
CCTV INSPECTION	X	X	X	X
LOW PRESSURE AIR TEST	X	X		
DEFLECTION TEST	X			
VACUUM TEST			X	
HOLIDAY TEST				X
PULL TEST				X

Manhole Testing

- 1) Manhole visual and CCTV inspection
- 2) Manhole vacuum testing

a) The Contractor must perform a vacuum test of each manhole prior to backfilling. The vacuum test shall be performed per ASTM C1244. The District reserves the right to require additional vacuum testing following backfill. If the manhole fails the vacuum test, a passed exfiltration test will satisfy the manhole testing requirements.



NORTH DAVIS SEWER DISTRICT

**ND-06 Acceptance Testing, Final Completion, and
Warranty Requirements 1 of 3**

Adopted 6/13/2024

Manhole Testing Cont.

3) Manhole corrosion protection testing

- a) Holiday testing: after coatings have cured in accordance with Manufacturer instructions, all surfaces shall be tested with high-voltage holiday detection equipment in accordance with NACE RPO 188.
- b) Adhesion pull testing: testing shall be in accordance with ASTM D4541, ASTM D7234, OR NACE SP018. The District shall select the manholes to be tested. A minimum of three (3) - 50 MM dollies shall be affixed to the coated surface at the cone area, mid-section, and at the bottom of the structure. Additional pull tests shall be conducted in areas where adhesion quality is suspect.

Gravity Sewer Testing

1) CCTV Inspection.

2) Low Pressure Air Testing.

- a) The Contractor must perform low pressure air testing after initial backfill has been placed. Testing shall conform to ASTM F1417 and UNI-BELL UNI-B-6 as applicable. The time-pressure drop method will be used to determine if the pipe segment is "acceptable".
- b) In pipe sections with laterals, no air test is required. All pipe joints shall be checked during the CCTV inspection.
- c) Trenches shall be backfilled following successful completion of the low-pressure air test.

UNDER NO CIRCUMSTANCES SHOULD WORKERS BE ALLOWED TO BE PRESENT IN THE CONNECTING MANHOLES OR NEAR THE SEWERS BEING TESTED WHILE A PRESSURE TEST IS BEING CONDUCTED.

3) Deflection Testing

- a) Deflection testing shall be conducted for all newly installed semi-rigid pipe. (PVC, FRP, etc)
- b) Deflection testing shall be conducted not less than 30 days after the trench has been backfilled, but prior to placement of any hard-surface paving. Backfilling includes street section granular base courses, compacted to the required densities, and all backfill compaction testing performed, and passed.
- c) Sewers shall be cleaned and CCTV inspected prior to deflection testing.
- d) The deflection test shall be performed in accordance with ASTM D3034 and ASTM F679 as applicable. A go-no-go mandrel, specifically designed for the type and size of pipe, shall be pulled through the pipe with a force not greater than the weight of the mandrel. The mandrel must be sized per the allowable deflection of 5% for pipe sections with laterals and 3% for pipe sections without laterals.
- e) Pipes failing the mandrel test shall be removed and replaced at no additional cost to the District. Use of re-rounding machines or other devices that create vibrations or other stresses inside the pipe to return the pipe to the required inside diameter shall not be permitted.

4) Laser Profiling

- a) In lieu of a mandrel test, a laser profile, CCTV inspection may be performed in the presence of District Inspector.
- b) Laser profiling shall be performed in accordance with all applicable ASTM standards (ASTM F3080, ASTM F3095) by operators demonstrating to the District's satisfaction, that they have undergone training and are competent in the use of the equipment.



NORTH DAVIS SEWER DISTRICT

ND-06 Acceptance Testing, Final Completion, and Warranty Requirements 2 of 3

Adopted 6/13/2024

2) FINAL ACCEPTANCE

The Contractor must perform the following for final acceptance:

- a) Notify the District 48-hours prior to performing a final acceptance inspection. The final inspection must be performed in the presence of the District.
- b) Submit to the District all testing and inspection documentation. Defects and deficiency shall be addressed and verification documentation shall be submitted separately.
- c) Submit to the District a full set of record drawings showing all revisions from the approved construction plans and documents.
- d) Submit to the District a letter of final acceptance by the city or entity in which the Work was performed.

3) WARRANTY

- a) Contractor shall guarantee work for a period of one (1) year from the date of final acceptance by the city or entity in which the Work was performed.



NORTH DAVIS SEWER DISTRICT

ND-06 Acceptance Testing, Final Completion, and Warranty Requirements 3 of 3

Adopted 6/13/2024