

GENERAL :

ALL NECESSARY TOOLS, MATERIALS AND APPURTENANCES TO MAKE TESTS SHALL BE PROVIDED BY THE CONTRACTOR AND HE SHALL DISPOSE OF ALL WASTES, INCLUDING WATER, AT HIS OWN EXPENSE.

BALL AND FLUSH :

ALL PIPELINES SHALL BE TESTED FOR OBSTRUCTIONS AND CLEANED BY BALLING AND FLUSHING. THIS SHALL BE DONE WITH A COMMERCIAL SEWER CLEANING BALL, SUCH AS THE "WAYNE" SEWER CLEANING BALL MANUFACTURED BY THE SIDU COMPANY POST OFFICE BOX 3537, LONG BEACH, CALIFORNIA: AND THE "FLEXIBLE" SEWER BALL MANUFACTURED BY FLEXIBLE INC., 3786 BURANGO, LOS ANGELES, CA 90034, OR EQUAL. THE BALL SHALL BE CONTROLLED BY A TAG LINE OR ROPE, OR SEWER RODS, AND PERMITTED TO MOVE SLOWLY THROUGH THE SEWER. THE BALL SHOULD HAVE A TRAILING LINE TO ENABLE WORKERS TO MOVE IT IN EITHER DIRECTION IF NECESSARY.

THE BALL SHALL PASS FREELY THROUGH THE TEST SECTION, AND ALL DEBRIS FLUSHED AHEAD OF IT SHALL BE CAUGHT AND REMOVED AT THE FIRST MANHOLE. IF THE BALL IS STOPPED OR PREVENTED FROM MOVING FREELY BY DEBRIS, DAMAGED PIPE, ALIGNMENT IRREGULARITY, OR ANY OTHER CAUSE, THE CONTRACTOR SHALL LOCATE AND REMEDY OR REPAIR THE OBSTRUCTION AND SHALL RETEST THE CONDUIT BY BALLING AND FLUSHING TO THE SATISFACTION OF THE CITY INSPECTOR. ONLY AFTER THE LINE IS BALLED AND FLUSHED MAY FURTHER TESTS PROCEED.

MANDREL :

FOLLOWING THE PLACEMENT AND COMPACTION OF BACKFILL AND PRIOR TO THE PLACING OF PERMANENT SURFACING, ALL PIPEMAINS SHALL BE CLEANED AND THEN MANDREL IN THE PRESENCE OF THE CITY INSPECTOR TO DETERMINE THE EXISTANCE OF OBSTRUCTIONS (DEFLECTIONS, JOINT OFFSETS, AND LATERAL PIPE INTRUSIONS).

A RIGID MANDREL THAT IS APPROVED BY THE CITY, WITH A CIRCULAR CROSS SECTION HAVING A DIAMETER OF AT LEAST 95% (WHEN TESTING PVC) OR 97% (WHEN TESTING ABS COMPOSITE PIPE) OF THE SPECIFIED AVERAGE INSIDE DIAMETER OF THE PIPE, SHALL BE PULLED THROUGH THE PIPE BY HAND. THE MINIMUM LENGTH OF THE CIRCULAR PORTION OF THE MANDREL SHALL BE EQUAL TO THE NOMINAL DIAMETER OF THE PIPE. THE MANDREL SHOULD HAVE A TRAILING LINE TO ENABLE WORKERS TO MOVE IT IN EITHER DIRECTION. ANY OBSTRUCTIONS ENCOUNTERED BY THE MANDREL SHALL BE PROPERLY REPAIRED OR REPLACED AND RECHECKED AS DIRECTED BY THE CITY INSPECTOR.



CITY OF OROVILLE
DEPARTMENT OF PUBLIC WORKS

STANDARD FOR
SANITARY SEWER PIPE
TESTING AND INSPECTIONS

DRAWN BY.
SG

RICK WALLS, P.E.
DIRECTOR OF PUBLIC WORKS DEPARTMENT

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AIR TEST

THE DIAL ON THE GAGE SHALL HAVE A MAXIMUM READING OF 15 PSIG. PLUGS SHALL BE INSERTED AT EACH END OF THE PIPE AND EXPANDED AND SECURED. AFTER THE PLUGS ARE IN PLACE, INFLATED AND SEALED, THE SEWER LINE SHALL BE PRESSURIZED SLOWLY TO 4.0 PSIG. AFTER TWO MINUTES, THE AIR SUPPLY SHALL BE DISCONNECTED. THE PRESSURE SHALL BE ALLOWED TO DROP TO 3.0 PSIG IF NOT THERE ALREADY.

THE CITY INSPECTOR WILL THEN MEASURE THE TIME REQUIRED FOR THE PRESSURE TO DROP FROM 3.0 PSIG TO 2.5 PSIG. THE PIPE SHALL PASS IF THE TIME REQUIRED TO DROP IS EQUAL TO OR GREATER THAN THE TIME SPECIFIED IN THE TABLE BELOW.

PIPE DIAMETER (INCHES)	TIME (MINUTES : SECONDS)
4	2 : 25
6	3 : 38
8	4 : 50
10	6 : 03
12	7 : 15
15	9 : 04
18	10 : 53
21	12 : 42

TELEVISION :

ALL PIPE MAINS, WHETHER PLASTIC OR CLAY, SHALL BE INSPECTED BY TELEVISION AFTER ALL OTHER CLEANING AND TESTING HAS BEEN COMPLETED. TELEVISION INSPECTION TO BE PROVIDED BY THE OWNER.



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STANDARD FOR SANITARY SEWER PIPE TESTING AND INSPECTION		
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FORCE MAIN TESTING

1. ALL JOINTS, THRUST BLOCKS AND CONFLICTS IN THE FORCE MAIN(S) SHALL REMAIN UNCOVERED FOR VISUAL INSPECTION BY THE CITY INSPECTOR. THE CONTRACTOR SHALL ONLY BACKFILL AFTER APPROVED BY CITY REPRESENTATIVE.
2. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT SUCH AS PUMPS, GAUGES ETC., AND SHALL PERFORM ALL WORK REQUIRED FOR PIPE PRESSURE AND LEAKAGE TEST. PRESSURE AND LEAKAGE TEST SHALL BE MADE BETWEEN VALVES AND/OR CONNECTIONS FOR EACH SECTION TESTED USING THE PROCEDURE OUTLINED IN ANSI/' AWWA C-600 LATEST REVISION AND AUTHORITY REQUIREMENTS. A PRE TEST SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO CALLING THE CITY OF OROVILLE. THE USE OF PVC PIPE AND FITTINGS FOR PRESSURE TEST AS TEMPORARY PIPING IS NOT PERMITTED.
3. 1,500LF SHALL BE THE MAXIMUM LENGTH OF MAIN TO BE PRESSURE TESTED AT ANY ONE TIME. TESTING OF AN ISOLATED SECTION BETWEEN VALVES MAY BE REQUIRED IF A SECTION APPEARS QUESTIONABLE AFTER TESTING.
 - A. PRESSURE TEST- A HYDROSTATIC PRESSURE OF 150psi SHALL BE DEVELOPED BY THE CONTRACTOR, WITHIN THE SECTION OF PIPE TO BE TESTED AND THIS PRESSURE (150psi) SHALL BE HELD FOR A MINIMUM OF 1 HOUR.
 - B. LEAKAGE TEST- AFTER COMPLETING THE PRESSURE TEST, PRESSURE IN THE PIPE LINE BEING TESTED SHALL BE REDUCED TO 100psi AND THAT PRESSURE SHALL BE HELD FOR AN ADDITIONAL 1 HOUR TIME PERIOD. ALL VISUAL LEAKS INCLUDING DAMP SPOTS SHALL BE CORRECTED REGARDLESS OF THE RESULTS OF THE PRESSURE AND LEAK TEST.
 - C. ALLOWABLE LEAKAGE- LEAKAGE DURING BOTH THE PRESSURE AND LEAKAGE TEST SHALL NOT EXCEED THE FOLLOWING FORMULA:

$$L = \frac{SDP}{133200}$$

L= ALLOWABLE LEAKAGE (GALLONS PER HOUR)
 S= LENGTH OF PIPE TO BE TESTED (FEET)
 D= NOMINAL DIAMETER OF PIPE (INCHES)
 P= AVERAGE TEST PRESSURE (PSIG)
 - D. A LOSS OF 5psi OR MORE DURING THE 150psi, REGARDLESS OF THE AMOUNT OF LEAKAGE SHALL BE CONSIDERED A FAILING TEST. A LOSS OF 5psi OR MORE DURING THE 100psi, REGARDLESS OF THE AMOUNT OF LEAKAGE SHALL BE CONSIDERED A FAILURE. A TOTAL OF 10 psi OR MORE FOR BOTH TEST COMBINED SHALL BE CONSIDERED A FAILING TEST.
 - E. THE PRESSURE TEST SHALL BE CONSIDERED NOT ACCEPTABLE UNLESS ALL VALVES IN TEST SECTION ARE IN THE OPEN POSITION. THE CONTRACTOR SHALL PROVIDE A 1/2" BALL VALVE ADJACENT TO THE TEST PRESSURE GAUGE FOR INSTALLATION OF THE CITY'S "CHECK GAUGE".
 - F. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST OR REPLACE AT THE DISCRETION OF THE EOR, ANY COMPONENT OF THE PIPE LINE WHICH FAILS THE PRESCRIBED TEST. THE PIPE LINE SHALL THEN BE TESTED AS DISCRIBED ABOVE UNTIL IT SUCCESSFULLY CONFORMS TO SAID TEST.
 - G. SPECIAL TESTING REQUIREMENTS WILL BE NECESSARY FOR FORCE MAINS INSTALLED WITHIN POTABLE WATER WELL ZONES OF INFLUENCE.
 - H. WATER FOR TESTING FORCE MAIN SHALL BE CLEAN FRESH WATER. IN NO CASE SHALL IT BE TESTED WITH SALINE, BRACKISH OR TURBID WATER.



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