

JOHN PATRICK ARCHITECT, INC

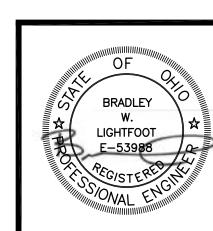
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Project Number 10003

07-09-10 AS SHOWN

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APPROVED BY THE MASSILLON CITY ENGINEER THIS _

ONLY APPROVED SIGNED PLANS BY THE CITY ENGINEER

ALL REVISIONS MADE TO THIS

|| BE DATED AND DESCRIBED BELOW.

THIS DRAWING WAS LAST REVISED

REVISION DESCRIPTION

UNDERGROUND UTILITIES

2 WORKING DAYS

Call...800-362-2764 (Toll Free)

OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS

MUST BE CALLED DIRECTLY

BWI

ENGINEERING

P.O.BOX 13136 - AKRON, OHIO 44334 - PH: (330) 715-6226

DRAWING AFTER

SEE THE FOLLOWING WEBSITE FOR LATEST DRAWINGS

www.schumacherconstruction.com/drawings

(1) 10-25-10 ADDED SHEET

ISSUED FOR THIS PROJECT.

KEITH A. DYLEWSKI, P.E., P.S.

NO DATE

ARE TO BE USED FOR CONSTRUCTION.

NEGATIVE AIR PRESSURE (VACUUM) TESTING OF MANHOLES AS PER ASTM C-1244

MINIMUM TEST TIMES FOR MANHOLES

DEPTH (FT) 30 33 36 42 48 54 60 66 72

ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

A. ALL LIFT HOLES SHALL BE PLUGGED.

CLEAN WATER STATEMENT

RELATION TO WATER MAINS

COST OF THIS WORK SHALL BE INCLUDED IN ITEM 623 CONSTRUCTION STAKING

WORKING AREA

PRICE TO FINAL PAYMENT FOR AND ACCEPTANCE OF SANITARY SEWER INSTALLATION THE RESULTS OF THE AIR PRESSURE TESTS, TELEVISION TESTS AND WADREL TESTS SHALL BE FORWARDED TO THE CITY ENGINEER.

MAXIMUM ALLOWABLE PIPE DEFLECTION (REDUCTION IN VERTICAL INSIDE DIAMETER) SHALL BE 5% DEFLECTION TESTS OF PIPE SHALL BE PERFORMED NOT SOONER THAN 30 DAYS AFTER THE BACKFILL HAS BEEN PROPERLY PLACED AND BEFORE FINAL ACCEPTANCE, LOCATIONS WITH EXCEST DEFLECTION SHALL BE EXCAVATED AND REPAIRED BY RE-BEDDING OR REPLACEMENT OF THE PIPE AT THE CONTRACTOR'S EXPENSE, DEVICES FOR TESTING INCLUDE A DEFLECTIONETER METER, OR PROPERLY SIZED (60, NO-GO) MANDREL OR SEVER BALL. THE DEFLECTION TESTING MUST BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES. FOR THE PURPOSE OF DEFLECTION MEASUREMENTS, THE BASE INSIDE PIPE DIAMETERS WITHOUT DEFLECTION ARE PROVIDED IN TABLE A. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE APPLIED TO THE BASE INSIDE DIAMETER IN DETERMINING THE MINIMUM PERMISSIBLE DIAMETER. IT MUST BE EMPHASIZED THAT TO INSURE ACCURATE TESTING, THE LINES MUST BE THOROUGHLY CLEANED.

TABLE A INSIDE DIAMETERS FOR DEFLECTION MEASUREMENTS OF ASTM D 3034 SDR 35 / SDR 21 PVC SEWER PIPE

ALL SANITARY SEWERS, 8-INCH DIAMETER AND LARGER, MUST PASS AN INTERNAL TELEVISION INSPECTION. THE CONTRACTOR SHALL PROVIDE COMPLETE INTERNAL INSPECTION VIDEOTAPE TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT. THE VIDEOTAPING PROCEDURE SHALL BE IN ACCORDANCE WITH CITY OF MASSILLON ENGINEERING DEPARTMENT STANDARDS.

LEAKAGE TESTS SHALL BE PERFORMED WHICH MAY INCLUDE APPROPRIATE WATER OR LOW PRESSURE AIR TESTING. THE TESTING METHODS SELECTED SHOULD TAKE INTO CONSIDERATION THE RANCE IN GROUNDWATER ELEVATIONS DURING THE TEST AND ANTICIPATED DURING THE DELIGN LIFE OT THE SEWER COMPLETED AND ACCEPTED.

THE LEAKAGE EXPLITATION OR INFILTRATION SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY (9L/(MM OF PIPE DIAMETER KM D)) FOR ANY SECTION OF THE SYSTEM. AN EXPLITATION OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET (0.6 M).

AIR TESTING WILL BE CONDUCTED AS THE PROJECT IS BEING CONSTRUCTED. AT NO TIME WILL MORE THAN 900 FEET OF PIPE BE INSTALLED BEFORE AIR TESTING IS PERFORMED. SEWAGE WILL NOT BE DIVERTED TO ANY SECTION OF PIPE, REGARDLESS OF LENGTH, UNTIL ALL TESTING IS COMPLETED AND ACCEPTED.

AFTER BACKFILLING A MANHOLE TO MANHOLE REACH OF SANITARY SEVER LINE, THE CONTRACTOR SHALL, AT HIS EXPENSE, CONDUCT THE LINE ACCEPTANCE TESTS. THE TESTS SHALL BE PERFORMED ACCORDING TO THE STATED PROCEDURES AND UNDER THE SUPERVISION OF THE CITY ENGINEER OR HIS REPRESENTATIVE.

TEST EQUIPMENT TESTING PROCEDURES SHALL BE AS FOLLOWS:

ALL PNEUMATIC PLUGS SHALL BE SEAL TESTED BEFORE BEING USED IN THE ACTUAL TEST INSTALLATION. ONE LENGTH OF PIPE SHALL BE LAID ON THE GROUND AN SEALED AT BOTH ENDS WITH THE PNEUMATIC PLUGS TO BE CHECKED. THE SEALED PIPE SHALL BE PRESSURED TO 5 PSIG. THE PLUGS MUST HOLD AGAINST THIS PRESSURE WITHOUT HAVING TO BE BRACED.

AFTER A MANHOLE TO MANHOLE REACH OF PIPE HAS BEEN BACKFILLED AND CLEANED, AND THE PNEUMATIC PLUGS ARE CHECKED BY THE ABOVE PROCEDURE, THE PLUGS SHALL BE PLACED IN THE LINE AT EACH MANHOLE. LOW PRESSURE AIR SHALL BE SLOWLY INTRODUCED INTO THIS SEALED LINE UNTIL THE INTERNAL AIR PRESSURE REACHES APPROXIMATELY 4 PSIG.

AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 PSIG, THE AIR HOSE FROM THE CONTROL PANEL TO THE AIR SUPPLY SHALL BE DISCONNECTED. THE PORTION OF THE LINE BEING TESTED SHALL BE TERMED "ACCEPTABLE" IF THE TIME REQUIRED IN MINUTES FOR THE PRESSURE TO DECREASE FROM 3.5 TO 2.5 PSIG (GREATER THEN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE) SHALL NOT BE LESS THAN THE TIME SHOWN FOR THE GIVEN DIAMETERS IN THE FOLLOWING TABLE:

1. PNEUMATIC PLUGS SHALL HAVE A SEAUNG LENGTH EQUAL TO OR A GREATER THAN THE DIAMETER OF THE PIPE BEING INSPECTED.
2. PNEUMATIC PLUGS SHALL RESIST INTERNAL TEST PRESSURES WITHOUT REQUIRED EXTERNAL BRACING OR BLOCKING.
3. ALL AIR USED SHALL PASS THROUGH A SINGLE CONTROL PANEL.
4. THREE INDIVIDUAL HOSES SHALL BE USED FOR THE FOLLOWING CONNECTIONS:
5. FROM CONTROL PANEL TO PNEUMATIC PLUGS FOR INFLATION.
6. FROM CONTROL PANEL TO SEALED LINE FOR INTRODUCING THE LOW PRESSURE AIR.
6. FROM SEALED LINE TO CONTROL PANEL FOR CONTINUALLY MONITORING AIR PRESSURE RISE IN THE SEALED LINE.

EQUIPMENT USED SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS AND BE APPROVED BY THE CITY ENGINEER:

TELEVISION TESTING

SDR AVG. O.D. BASE I.D. DEFLECTION MANDREL