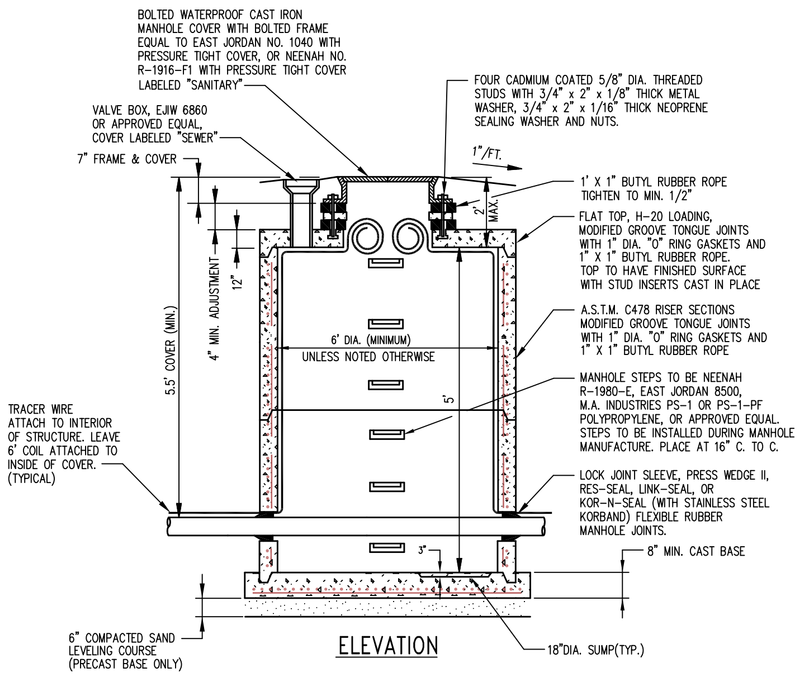
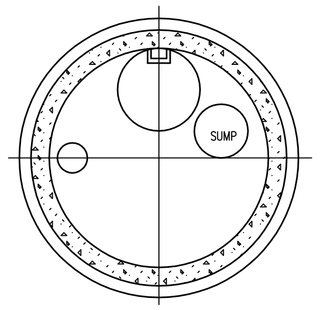
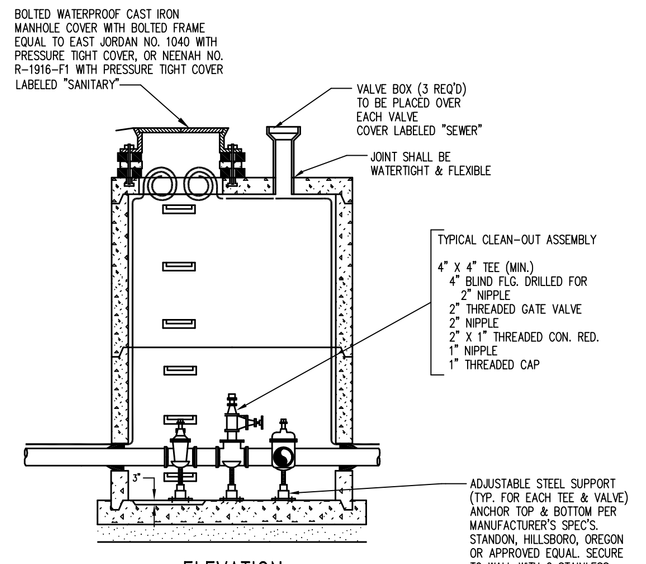


ELEVATION

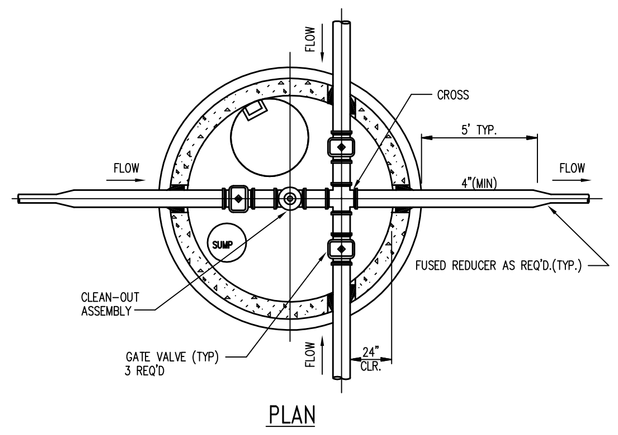


PLAN

TYPICAL STRUCTURE DETAIL

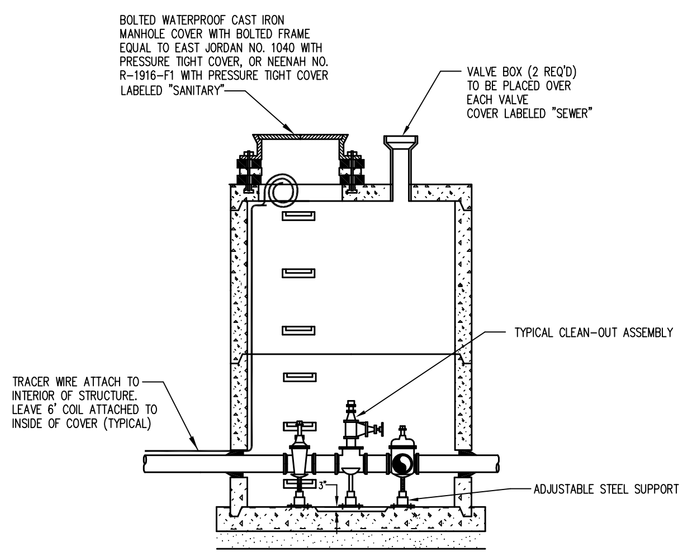


ELEVATION

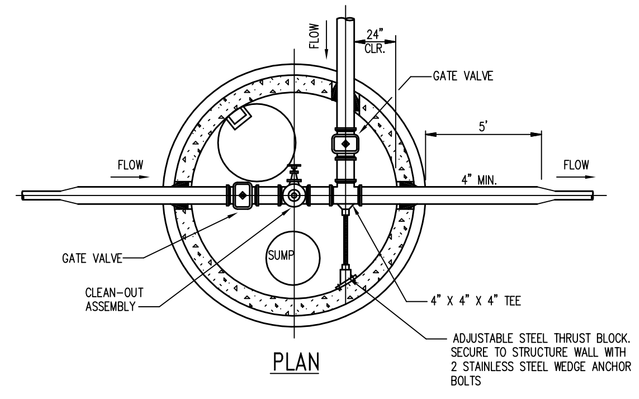


PLAN

BRANCH FLUSHING CONNECTION (BFC) 4 WAY IN WELL

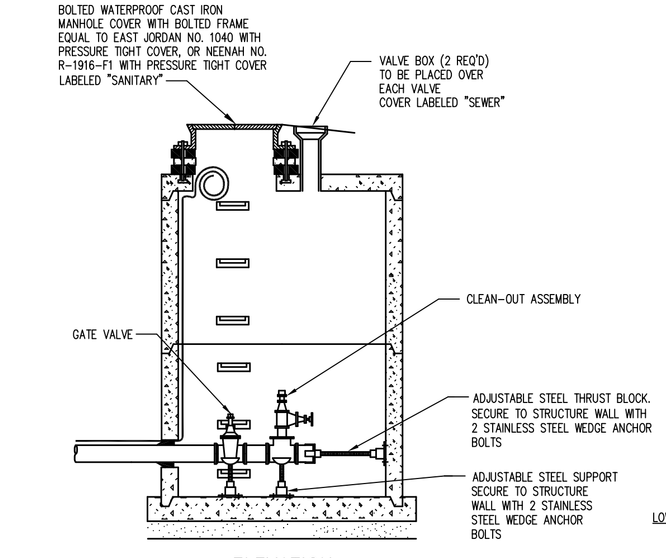


ELEVATION

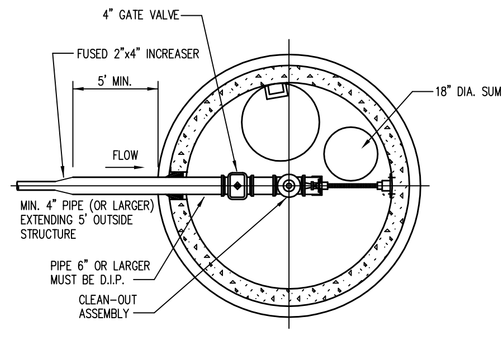


PLAN

BRANCH FLUSHING CONNECTION (BFC) 3 WAY IN WELL



ELEVATION



PLAN

TERMINAL FLUSHING CONNECTION (TFC) IN WELL

NOTES:

1. FLANGED OR MECHANICAL JOINTS MUST BE USED WITHIN VALVE WELLS, AND FUSED JOINTS OUTSIDE OF VALVE WELLS. 4" MIN. VALVE SIZE AS APPROVED.
2. SHOP DRAWINGS MUST BE SUBMITTED AND APPROVED ON THE FOLLOWING COMPONENTS, GATE VALVES, AIR RELEASE VALVES, TAPPING SLEEVE AND VALVE, CLEAN-OUT ASSEMBLIES, ADJUSTABLE STEEL SUPPORT AND THRUST RESTRAINTS, TRANSITION FITTINGS BETWEEN PIPE MATERIAL.
3. WHERE SEWER MAIN IS 6" DIAMETER NO REDUCER IS REQUIRED OUTSIDE OF VALVE STRUCTURES AND 6" PIPING & VALVING IS REQUIRED INSIDE OF STRUCTURES.
4. GATE VALVE SHALL BE DESIGNED FOR 250 PSI MINIMUM WORKING PRESSURE AND MEET THE REQUIREMENTS SET BY ANSI AND AWWA. GATE VALVES SHALL BE DUCTILE IRON BODY, BODY AND BONNET FUSION BONDED EPOXY COATING INSIDE AND OUT, FULLY BRONZE MOUNTED, BRONZE STEM, O-RING STEM SEAL, NON-RISING STEM, SEATING MECHANISM SHALL BE A ONE-PIECE WEDGE DESIGN. THE SINGLE DUCTILE IRON WEDGE SHALL BE BONDED-IN-PLACE NITRILE ELASTOMER COVERING.

   GATE VALVE SHALL HAVE A CLEAR WATERWAY EQUIVALENT IN AREA, WHEN FULLY OPEN, EQUAL TO THAT OF THE CONNECTING PIPE, VALVE SHALL BE MADE TO OPEN WHEN TURNED TO THE LEFT, OR COUNTER CLOCKWISE. THE GATE VALVE SHALL HAVE A SQUARE WRENCH NUT.

   GATE VALVES SHALL BE INSTALLED IN MANHOLES AS DETAILED ON THE DRAWINGS. VALVES TO BE FURNISHED WITH FLANGE CONNECTIONS FOR DUCTILE IRON PIPE. O.D. SIZE TO FIT IPS (IRON PIPE SIZE).

   GATE VALVE SHALL BE AS MANUFACTURED BY AMERICAN FLOW CONTROL, OR APPROVED EQUAL.

LOW PRESSURE SANITARY SEWER HYDROSTATIC TESTS

FOLLOWING PIPE-LAYING AND BACKFILLING, THE CONTRACTOR SHALL COMPLETE ALL WORK NECESSARY TO PERFORM HYDROSTATIC TESTING. IF, IN THE OPINION OF THE TOWNSHIP ENGINEER, WORK HAS NOT PROGRESSED IN A REASONABLE MANNER, HE SHALL HAVE THE RIGHT TO DIRECT THE CONTRACTOR TO PROCEED WITH THE WORK, OR ANY PORTION THEREOF, IMMEDIATELY. THE CONTRACTOR SHALL PERFORM ALL NECESSARY PRELIMINARY HYDROSTATIC TESTS AND SHALL MAKE ALL NECESSARY REPAIRS, INCLUDING THE REPAIR OF ALL VISIBLE LEAKS AND CRACKS, AND RETEST WITH HIS OWN FORCES TO READY THE FORCEMAINS FOR FINAL HYDROSTATIC INSPECTION AND TESTING WHICH WILL BE WITNESSED BY THE TOWNSHIP ENGINEER. IMMEDIATELY AFTER THE FORCEMAINS HAVE PASSED SUCH PRELIMINARY TESTS, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE TOWNSHIP ENGINEER FOR FINAL HYDROSTATIC INSPECTION AND TEST.

PRIOR TO AND DURING THE HYDROSTATIC TEST, THE NEW MAIN CANNOT BE CONNECTED TO FORCEMAINS OR PUMP STATIONS INSTALLED IN OTHER CONTRACTS, EXCEPT AS SPECIFIED HEREIN.

THE CONTRACTOR SHALL FURNISH ALL NECESSARY PERSONNEL, TEMPORARY TIMBER BRACING, PLUGS, TEST PUMPS, AND ALL OTHER NECESSARY APPARATUS FOR CONDUCTING THE TEST. ALL GAUGES AND METERS USED FOR TESTING SHALL BE RATED AT OR ABOVE REQUIRED TEST PRESSURE. TEST GAUGES WILL BE 3 1/2" DIAMETER OR LARGER READABLE IN ONE POUND INCREMENTS. METERS AND GAUGES SHALL BE CALIBRATED EVERY SIX MONTHS. CALIBRATION WILL BE TO AN ACCURACY OF ±1% OR BETTER. VERIFICATION OF CALIBRATION SHALL BE FURNISHED TO TOWNSHIP ENGINEER PRIOR TO START OF TEST.

BEFORE APPLYING TEST PRESSURE, ALL AIR SHALL BE EXPELLED FOR THE PIPE. IF NECESSARY TO ACCOMPLISH THIS, TAPS SHALL BE MADE AT POINTS OF HIGHTEST ELEVATION IN THE PIPE, AND SUCH OPENING SUBSEQUENTLY CLOSED PRIOR TO TEST.

TEST PRESSURE SHALL BE MAINTAINED AT MINIMUM OF ONE OF THE FOLLOWING: 1.) TWO HUNDRED (200 LBS.) POUNDS PER SQUARE INCH OR 2.) 1.5 TIMES THE PRESSURE OF THE FORCE MAIN OR 3.) THE PRESSURE RATING OF THE PIPE AT THE POINT OF HIGHEST ELEVATION IN THE TEST SECTION BY PUMPING WATER FROM AN APPROVED SOURCE INTO THE PIPE FOR A PERIOD OF AT LEAST TWO (2) HOURS, AND IN ALL CASES LONG ENOUGH TO PERMIT ASSURANCE OF A SATISFACTORY TEST. ALLOWABLE LEAKAGE SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER OF PIPE PER MILE OF PIPE FOR 24 HOURS.

MAXIMUM LENGTH OF MAIN LINE PIPE SHALL NOT EXCEED 2,000 I.F. FOR ANY ONE TEST.

IN THE EVENT THAT THE LEAKAGE EXCEEDS THE SPECIFIED AMOUNT, THE JOINTS IN THE LINE SHALL BE CAREFULLY INSPECTED FOR LEAKS AND REPAIRED WHERE NECESSARY. ANY PIPES OR SPECIAL CASTINGS FOUND TO BE CRACKED SHALL BE REMOVED AND REPLACED WITH NEW PIECES BY THE CONTRACTOR. AFTER THIS WORK HAS BEEN DONE, THE TEST SHALL BE REPEATED. FINAL ACCEPTANCE OF THE LINES WILL NOT BE MADE UNTIL SATISFATORY TESTS HAVE BEEN PASSED.

TRACER WIRE

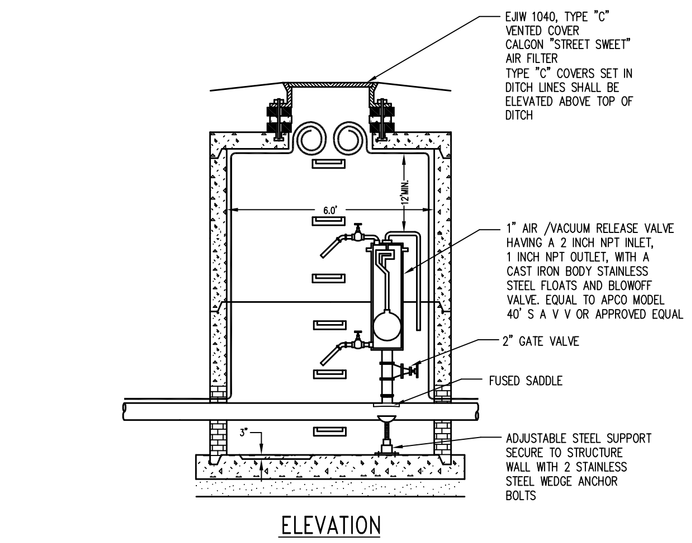
TRACER WIRE SHALL BE 6 GAUGE STRANDED COPPER WITH PLASTIC INSULATION AND SUITABLE FOR DIRECT BURY.

TRACER WIRE SHALL BE ATTACHED TO ALL SEWER PIPE AT APPROXIMATELY 5 FOOT INTERVALS. ATTACHMENT TO PIPE SHALL BE MADE WITH PLASTIC CABLE TIES OR EQUIVALENT.

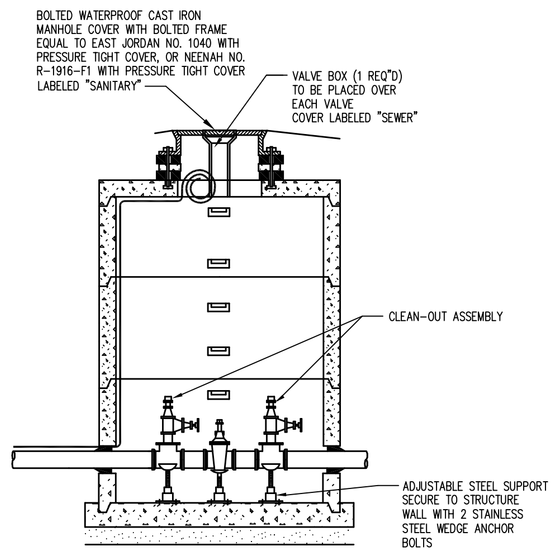
SPLICES SHALL BE SOLDERED, COPPER TO COPPER. SPLICE SHALL THEN BE ATTACHED TO PIPE WITH TIES AND SHRINK-WRAPPED IN PLACE TO RE-ESTABLISH INSULATION ACROSS SPLICED LENGTH.

A MINIMUM LENGTH OF 6 FEET OF WIRE SHALL BE LEFT ACCESSIBLE AT CLEAN-OUTS AND OTHER STRUCTURES.

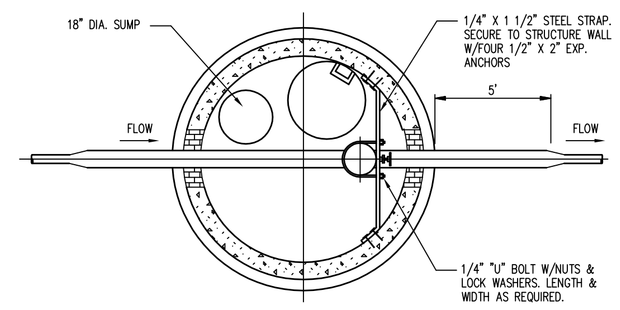
CONTRACTOR IS RESPONSIBLE FOR TESTING CONTINUITY OF WIRE FROM STRUCTURE TO STRUCTURE USING EQUIPMENT COMPATIBLE WITH WEST BLOOMFIELD TOWNSHIP LOCATING DEVICES.



ELEVATION

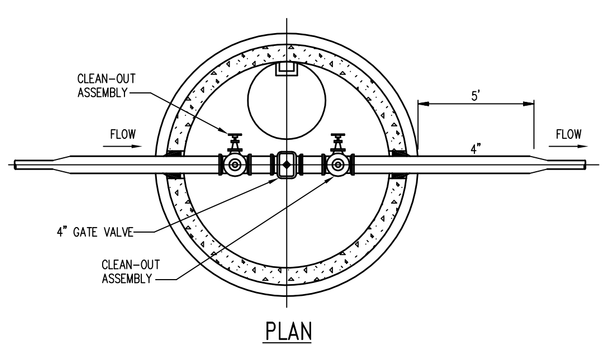


ELEVATION



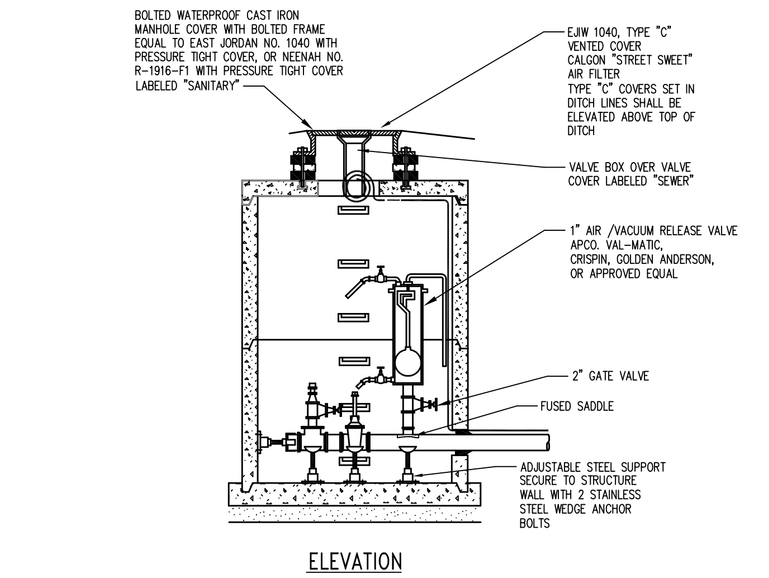
PLAN

AIR/VACUUM RELEASE VALVE (ARV) IN WELL

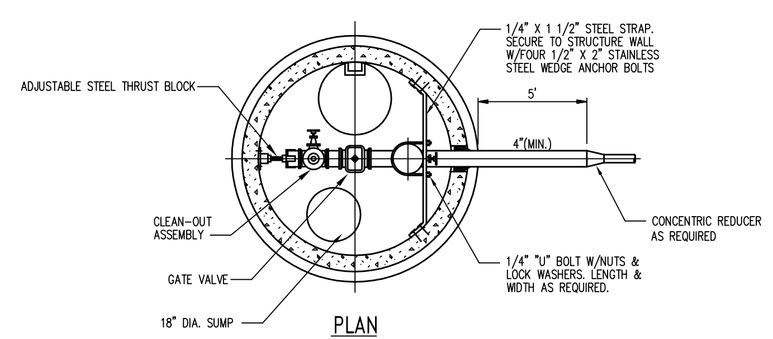


PLAN

INTERMEDIATE FLUSHING CONNECTION (IFC) IN WELL

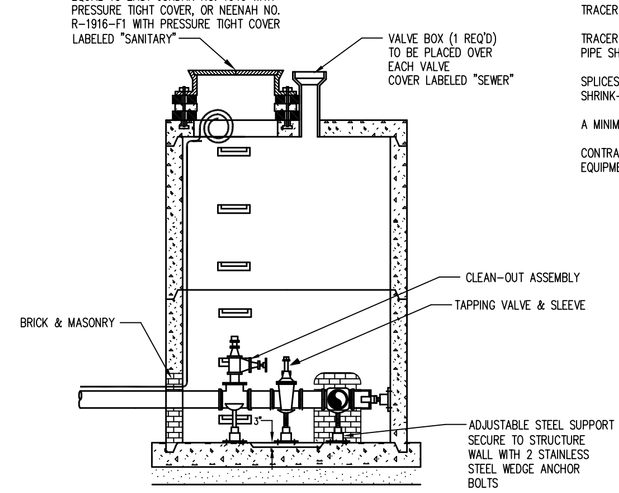


ELEVATION

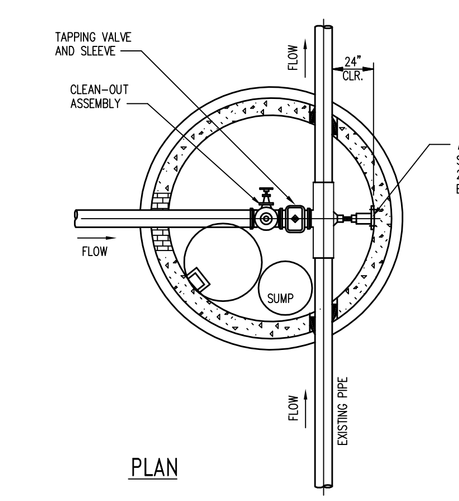


PLAN

TERMINAL FLUSHING CONNECTION WITH AIR/VACUUM RELEASE VALVE (TFC/ARV) IN WELL

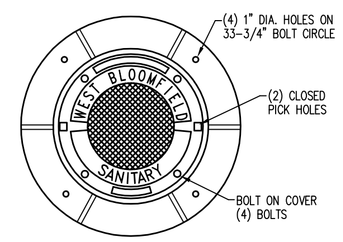


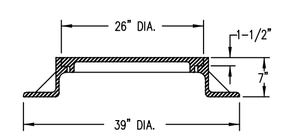
ELEVATION



PLAN

TAPPING SLEEVE & VALVE (TSV) IN WELL





EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

LOCAL MUNICIPALITIES MANHOLE COVER

CHARTER TOWNSHIP OF WEST BLOOMFIELD
4550 WALNUT LAKE ROAD
WEST BLOOMFIELD TOWNSHIP MI 48325-0130
PHONE (248)451-4800 FAX (248)682-3788

LOW PRESSURE SANITARY SEWER DETAILS

WEST BLOOMFIELD TOWNSHIP, MICHIGAN

SCALE:	NONE	REV.	6/03/03	SHEET NO.
DATE:	6/03/03	REV.	6/15/09	
DESIGNED BY:	N/A	REV.		OF
DRAWN BY:	N/A	REV.		