

**VILLAGE OF HAMPSHIRE
STANDARDS FOR SANITARY SEWER CONSTRUCTION**

1. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", LATEST EDITION, AND REVISIONS THERETO, THE NOTES AND ON THE PLANS, AND IN ACCORDANCE WITH CODES AND ORDINANCES OF THE VILLAGE OF HAMPSHIRE, ILLINOIS.
2. SANITARY SEWERS AND SEWER SERVICE SHALL BE CONSTRUCTED OF THE FOLLOWING MATERIALS:
 - a. POLYVINYL CHLORIDE PLASTIC GRAVITY SEWER PIPE (PVC) CONFORMING TO ASTM DESIGNATION D-3034 OR D-2241 WITH ELASTOMERIC GASKET JOINTS CONFORMING TO ASTM DESIGNATION D-3139. THE STANDARD DIMENSION RATIO (SDR) FOR PVC PIPE SHALL BE 26 AS A MINIMUM AND SHALL BE DEPENDENT ON THE DEPTH OF COVER. SDR 26 GRAVITY SEWER SHALL BE USED FOR DEPTHS UP TO FIFTEEN (15) FEET AS MEASURED FROM THE TOP OF THE PIPE. FROM FIFTEEN (15) TO TWENTY (20) FEET SDR 21 PRESSURE-RATED PIPE CONFORMING TO ASTM D-2241 SHALL BE USED. AT DEPTHS GREATER THAN TWENTY (20) FEET, PVC PRESSURE-RATED PIPE SHALL BE USED THAT HAS A MINIMUM DIMENSION RATIO (DR) OF 18 AND CONFORMS TO ASTM D-2241, AWWA C900 OR AWWA C 905, WHICHEVER IS APPLICABLE.
 - b. WHERE DUCTILE IRON SANITARY SEWER PIPE IS SHOWN ON THE PLANS, THE PIPE SHALL BE DUCTILE IRON PIPE, CLASS 52, CONFORMING TO AWWA C-151 (ANSI 21.51), WITH JOINTS COMPLYING WITH AWWA C-111 (ANSI A21.11).
3. PIPE SIZE SHALL BE A MINIMUM OF 8" FOR SEWER MAINS AND 6" FOR SEWER SERVICES. PIPE SLOPES SHALL BE A MINIMUM OF 0.40% FOR 8" SEWER AND 1.00% FOR 6" SEWER SERVICES.
4. ALL SANITARY SEWER MANHOLES SHALL BE PRECAST REINFORCED CONCRETE ASTM DESIGNATION C-478 PROVIDED WITH APPROVED CAST IN PLACE RUBBER BOOTS (FLEXIBLE MANHOLE SLEEVE) HAVING A NOMINAL WALL THICKNESS OF THREE/SIXTEENTHS (3/16) INCHES WITH A RIBBED CONCRETE CONFIGURATION AND WITH STAINLESS STEEL BINDING STRAPS PROPERLY SIZED. ALL SANITARY SEWER MANHOLES SHALL BE SET IN BUTYL ROPE JOINT SEALANT, INCLUDING ALL COMPONENT PARTS, BOTTOMS, BARRELS, ADJUSTING RINGS AND CASTINGS. THE OUTSIDE JOINTS SHALL BE PROVIDED WITH A FOUR (4) INCH WIDE STRIP OF BUTYL-RESIN SEALANT COMPLETELY AROUND EACH JOINT WITH VERTICAL LAP OF ONE (1) INCH AND HORIZONTAL LAP OF SIX (6) INCHES.
5. ALL MANHOLE COVERS SHALL HAVE "SANITARY" CAST INTO THE TOP AND SHALL BE THE CONCEALED PICKHOLE TYPE. ALL COVERS USED FOR SANITARY SEWERS SHALL HAVE A MACHINED SURFACE AND A WATERTIGHT RUBBER GASKET SEAL. ALL MANHOLE FRAMES SHALL BE SET WITH BUTYL ROPE JOINT SEALANT. FRAME AND LID SHALL BE NEENAH R-1713 WITH TYPE B LID OR EQUAL.
6. A 4' DIAMETER (MIN.) INSPECTION MANHOLE SHALL BE CONSTRUCTED OUTSIDE ALL BUILDINGS FOR THE PURPOSE OF FLOW MONITORING. MANHOLES SHALL PROVIDE A MINIMUM 6-INCH DROP FROM INLET TO OUTLET PIPE TO FACILITATE SAMPLING.
7. ALL FINAL ADJUSTMENTS OF CASTINGS WILL BE ACCOMPLISHED BY THE USE OF PRECAST CONCRETE ADJUSTING RINGS SET IN BUTYL ROPE JOINT SEALANT; MORTAR JOINTS WILL NOT BE ALLOWED. TOTAL HEIGHT OF ADJUSTING RINGS USED SHALL NOT EXCEED EIGHT (8") INCHES. NO MORE THAN 2 ADJUSTING RINGS SHALL BE USED.
8. "SURSEAL" CHIMNEY SEALS AS DISTRIBUTED BY MARATHON MATERIALS, INC. (800/983-9493) OR APPROVED EQUAL, SHALL BE INSTALLED ON ALL MANHOLES.
9. SANITARY SEWER SERVICES SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS ON THE PLANS.
10. WHEN CONNECTING TO AN EXISTING SANITARY MAIN WHEN A TEE OR WYE IS NOT PROVIDED, AN "INSERTA TEE" FITTING MUST BE INSTALLED. THE MINIMUM DISTANCE BETWEEN FITTINGS IS 4 FEET CENTER TO CENTER. DISRUPTION OF ANY EXISTING SANITARY MAIN BY BREAKING OR CUTTING IN A WYE/TEE IS PROHIBITED UNLESS THE EXISTING MAIN IS CRACKED OR BROKEN AT THE POINT OF CONNECTION WITH "INSERTA TEE". A REPRESENTATIVE OF THE VILLAGE SHALL DETERMINE THE EXISTING MAIN REPAIR OR REPLACEMENT REQUIRED ON A CASE BY CASE BASIS PRIOR TO CONNECTION, CONSTRUCTION OR INSTALLATION.
11. INFILTRATION LEAKAGE SHALL NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY OF SEWER PIPE, INCLUDING MANHOLES IN THE TEST SECTION.
12. ALL SANITARY SEWERS WILL BE SUBJECT TO AN AIR EXFILTRATION TEST, TELEVISION TEST, AND DEFLECTION TEST TO BE PERFORMED BY THE CONTRACTOR UNDER THE SUPERVISION OF THE ENGINEER. ALL TESTING WILL BE DONE IN CONFORMANCE WITH THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", CURRENT EDITION AND VILLAGE OF HAMPSHIRE REQUIREMENTS. IN ADDITION ALL MANHOLES SHALL BE VACUUM TESTED.
13. VACUUM TESTING OF EACH MANHOLE SHALL BE CARRIED OUT IMMEDIATELY AFTER ASSEMBLY AND PRIOR TO BACKFILLING. ALL LIFT HOLES SHALL BE PLUGGED WITH AN APPROVED NON-SHRINK GROUT.

NO GROUT WILL BE PLACED IN THE HORIZONTAL JOINTS BEFORE TESTING. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED, TAKING CARE TO SECURELY BRACE THE PLUGS FROM BEING DRAWN INTO THE MANHOLE.

THE TEST HEAD SHALL BE PLACED AT THE INSIDE OF THE TOP OF THE FRAME SECTION AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

A VACUUM OF 10 INCHES OF MERCURY SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF. WITH THE VALVES CLOSED, THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9 INCHES. THE MANHOLE SHALL PASS OF THE TIME IS GREATER THAN 60 SECONDS FOR A 48" DIAMETER MANHOLE, 75 SECONDS FOR A 60" MANHOLE AND 90 SECONDS FOR A 72" INCH MANHOLE.

IF THE MANHOLE FAILS THE INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE WITH A NON-SHRINK GROUT WHILE THE VACUUM IS STILL BEING DRAWN. RETESTING SHALL PROCEED UNTIL A SATISFACTORY TEST IS OBTAINED.

**VILLAGE OF HAMPSHIRE
STANDARDS FOR WATER MAIN CONSTRUCTION**

1. ALL WATER MAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", SIXTH EDITION, DATED JULY 2009, AND REVISIONS THERETO, THESE IMPROVEMENT PLANS AND DETAILS, SPECIAL PROVISIONS AND IN ACCORDANCE WITH CODES AND ORDINANCES OF THE VILLAGE OF HAMPSHIRE, ILLINOIS.
2. ALL WATER MAIN SHALL BE DUCTILE IRON PIPE CLASS 52 WITH EITHER MECHANICAL OR PUSH_ON JOINTS AND SHALL CONFORM TO ANSI A21.51-96, AWWA C151 AND ANSI A21.11-00, AWWA C111.
3. ALL FITTINGS SHALL BE COMPACT DUCTILE IRON AND SHALL CONFORM TO AWWA/ANSI C153/A21.53_00. FITTINGS SHALL BE U.L. LISTED CLASS 350, TYLER, GRIFFIN OR APPROVED EQUAL.
4. ALL PIPE AND FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH AWWA/ANSI C104/A21.4-95.
5. ALL FITTINGS SHALL BE MECHANICAL JOINT AND SHALL BE RESTRAINED WITH MEGA LUGS BY EBAA IRON UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
6. LONG RADIUS CURVES, EITHER HORIZONTAL OR VERTICAL, MAY BE LAID WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS. MAXIMUM DEFLECTIONS AT PIPE JOINTS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL BE IN ACCORDANCE WITH AWWA C600-99. WHEN RUBBER GASKETED PIPE IS LAID ON A CURVE, THE PIPE SHALL BE JOINTED IN A STRAIGHT ALIGNMENT AND THEN DEFLECTED TO THE CURVED ALIGNMENT. TRENCHES SHALL BE MADE WIDER ON CURVES FOR THIS PURPOSE.
7. SLEEVES SHALL BE SMITH BLAIR OMNI-COUPLING #441 OR EQUAL. SLEEVES SHALL BE PROVIDED AT LOCATIONS SHOWN ON THE PLANS OR AS REQUIRED. THE COST OF SLEEVES IS CONSIDERED AS INCLUDED IN THE COST OF WATER MAIN.
8. ALL GATE VALVES SHALL HAVE A NON-RISING STEM, SHALL HAVE A STANDARD 2' SQUARE OPERATING NUT AND SHALL OPEN IN A COUNTER-CLOCKWISE DIRECTION. GATE VALVES SHALL BE MUELLER RESILIENT WEDGE GATE VALVE CAT. NO. A-2360-23 IN ACCORDANCE WITH AWWA C-509_01. MAIN LINE VALVES SHALL BE FURNISHED WITH MECHANICAL JOINT CONNECTIONS AND RESTRAINED WITH MEGA LUGS.
9. ALL VALVE BOXES SHALL BE CAST IRON, TWO PIECE 5 1/4" INCH SHAFTS, SCREW TYPE TYLER MODEL 666_S. LIDS TO BE MARKED "WATER" (VALVE BOX EXTENSIONS IF REQUIRED ARE CONSIDERED INCLUDED IN THE COST). ALL BOXES WILL BE EQUIPPED WITH A RUBBER STABILIZER MANUFACTURED BY ADAPTER, INC.
10. ALL HYDRANTS SHALL BE IN ACCORDANCE WITH AWWA C502-94 AND SHALL BE A MUELLER A423 SUPER CENTURIUM HYDRANT (BREAK AWAY STYLE TRAFFIC DESIGN) WITH ONE 4 1/2" STEAMER NOZZLE AND TWO (2) HOSE OUTLETS, OF WHICH THE THREADS CONFORM WITH THE STANDARDS OF THE VILLAGE OF HAMPSHIRE, ILLINOIS. THE CONNECTIONS BETWEEN THE MAIN LINE SWIVEL TEE TO AUXILIARY VALVE AND AUXILIARY VALVE TO HYDRANT SHALL BE SWIVEL ANCHOR COUPLINGS.
11. ALL PRESSURE TAPS TO AN EXISTING VILLAGE MAIN SHALL BE MADE WITH MUELLER MECHANICAL JOINT TAPPING SLEEVE NO. H615 AND MUELLER T2360 FLG X MJ RESILIENT WEDGE TAPPING VALVE. ALL SHOULD BE CONSTRUCTED IN A VALVE VAULT.
12. ALL TEES, BENDS, VALVES, AND FIRE HYDRANTS SHALL BE ADEQUATELY SUPPORTED WITH A CONCRETE BASE, AND SUPPORTED LATERALLY WITH POURED IN PLACE THRUST BLOCKING AGAINST UNDISTURBED EARTH FOR ALL WATER MAIN WITH A DIAMETER 16" AND GREATER. CONCRETE BLOCK MAY BE USED IN LIEU OF POURED IN PLACE THRUST BLOCKING FOR ALL WATER MAIN WITH A DIAMETER LESS THAN 16".
13. ALL WATER MAINS SHALL HAVE A MINIMUM DEPTH OF COVER OF 5.5' OR AS NOTED ON PLANS.
14. ALL WATER SERVICES SHALL BE TYPE "K" COPPER PIPE WITH COMPRESSION CONNECTIONS.
15. ALL CORPORATION STOPS SHALL BE MUELLER. (1" H15008) (1-1/2' & 2" H15013)
16. ALL CURB STOPS SHALL BE MUELLER MINNEAPOLIS PATTERN. (1" H15155) (1-1/2' & 2" B25155)
17. ALL CURB BOXES SHALL BE MUELLER MINNEAPOLIS PATTERN BASE CURB BOX. (6' H10300 TAPT 2)
18. HYDROSTATIC TESTS - THE CONTRACTOR SHALL PERFORM HYDROSTATIC TESTS IN ACCORDANCE WITH DIVISION IV, SECTION 41 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION, AND APPLICABLE PROVISIONS OF AWWA C_600 AND C_603. THE WATER MAINS SHALL BE PRESSURE TESTED AT 150 PSI. THE TEST PRESSURE SHALL NOT DROP MORE THAN 2 PSI FOR THE DURATION OF THE TEST. THE GAUGE SHALL BE OF GOOD QUALITY AND CONDITION, AND BE FLUID FILLED. THE GAUGE SHALL HAVE A LARGE ENOUGH RANGE FOR THE PRESSURE BEING TESTED AND SHALL BE CAPABLE OF READING A MINIMUM PRESSURE INCREMENT OF 2 PSI. ALLOWABLE LEAKAGE SHALL BE AS SET FORTH IN AWWA C_600 LATEST EDITION. THE TESTING LENGTH SHALL BE LIMITED TO 1000 FOOT. IF MORE THAN 1000 FOOT OF WATER MAIN IS TESTED, THE ALLOWABLE LEAKAGE WILL BE BASED UPON 1000 FOOT. THE DURATION OF THE TEST SHALL BE FOR TWO HOURS MINIMUM.
19. DISINFECTION OF THE WATER MAINS - UPON COMPLETION OF THE NEWLY LAID WATER MAINS (AND WATER SERVICE LINES 4" AND LARGER), THE WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION, PROCEDURE DESIGNATION, AWWA C_651, LATEST EDITION. THE CONTRACTOR IS RESPONSIBLE FOR COLLECTING SAMPLES AND HAVING BACTERIOLOGICAL TESTING PERFORMED AS REQUIRED BY THE IEPA. THE CONTRACTOR SHALL FURNISH TO THE VILLAGE THE REQUIRED DOCUMENTATION, TEST RESULTS, ETC., REQUIRED BY THE IEPA BEFORE PLACING THE WATER MAINS IN SERVICE OR BEFORE OPENING A WATER SERVICE LINE TO THE VILLAGE SYSTEM.
20. ALL WATER MAINS AND WATER SERVICE LINES SHALL BE PROTECTED FROM SANITARY SEWERS, STORM SEWERS, COMBINED SEWERS, HOUSE SEWER SERVICE CONNECTIONS AND DRAINS IN ACCORDANCE WITH TITLE 35: ENVIRONMENTAL PROTECTION AGENCY SUBTITLE F: PUBLIC WATER SUPPLIES, CHAPTER II: ENVIRONMENTAL PROTECTION AGENCY, PARTS 651-654 TECHNICAL POLICY STATEMENTS, SECTION 653.119.
21. NO WATER SERVICE TAPS SHALL BE MADE PRIOR TO VILLAGE RECEIVING THE IEPA OPERATING PERMIT.

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								PROJECT NO. HPP-1468(004) JOB NO. C-91-175-06 SCALE: N/A SHEET NO. 3 OF 92 SHEETS STA. N/A TO STA. N/A				FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					
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