

VILLAGE OF UNION GROVE, WISCONSIN

STANDARD MATERIAL SPECIFICATION CHECKLIST

GENERAL

- Comply with the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition.
- Obtain written approval for the proposed Plans and Specifications from the Director of Public Works prior to construction.

SANITARY SEWER

GENERAL

- Location: Center of road right-of-way, unless allowed otherwise.
- Sewer depth: 2.5 feet below basement floors, minimum.
- Bedding & cover material: 3/8" crushed limestone chips (pea gravel is not acceptable).
- Compacted granular backfill, topped with 12-inches of 3/4" or 1-1/4" dense graded aggregate base course material is required below or within 4-feet of any paved surface. Use only clean graded sand, clean granular bank run, aggregate slurry, or excavated granular material, with Engineer's approval.
- Consolidation of backfill: 95% standard Proctor density for imported granular material and 100% for excavated material of existing aggregate material in the adjacent trench wall. Use mechanical means, unless allowed otherwise.
- Mandrel test: after 30-days.
- Internal sewer inspection: closed circuit color television.
- Low pressure air test: per Standard Specifications.
- Manhole vacuum test: per Standard Specifications.

PIPE MATERIAL

- Minimum 8-inch PVC SDR-26 (min.) conforming to ASTM D-3034, unless allowed otherwise.

MANHOLE MATERIALS

- 48-inch ID precast concrete w/eccentric cones, ASTM C478.
- Design flat top slabs to resist H-20 loading.
- Frames and covers: Neenah R-1580, East Jordan 11140 EXHD, or equal, with Type B non-rocking lid, stamped with the word "SANITARY"; self-sealing gaskets; and concealed pick holes.
- Floodplain Areas: use bolted and gasketed watertight frame and cover: Neenah R-1916-C, East Jordan 1058 WT, or equal.
- Use a maximum of 8-inches of concrete adjusting rings.
- Internal/external chimney seals: Adaptor, Inc., no substitutions.
- Exterior joint protection: WrapidSeal by CCI Pipeline Systems or MacWrap by Mar Mac Construction Products.
- Exterior surface treatment: heavy duty coal tar pitch, Top-Coat or bituminous Super Service Black.

SANITARY LATERALS

- Minimum 4-inch PVC; See materials for mainline pipe above. Provide a manufactured transition between different pipe materials; the transition must be approved by the Public Works Director.
- Provide wye connections unless allowed otherwise. Provide ductile iron riser tee on deeper installations.
- Terminate lateral pipe with a wooden 2x4 set one foot above finish grade and painted orange.
- Lateral pipe locator wire and terminal post: No. 10 AWG single strand insulated copper wire and 2-1/2 inch by 18-inch C.P. Test Services – Valvco terminal box.

SAMPLING MANHOLE (Industrial Customers)

- Similar construction to standard manholes except provide a bench with a 1" weir slot suitable for installation of weir.
- No change in flow direction is allowed within or 10 feet upstream or downstream of manhole.
- Install a slip-in flume; contact the Public Works Director for size. Locate the frame and cover directly over the flume.

WATER MAIN

GENERAL

- Location: Under roadway pavement, unless allowed otherwise.
- Only joint deflections within pipe manufacturer's specifications are permitted without fittings.
- Polyethylene wrap: Provide 8 mil on ductile iron pipe, valves, valve boxes, fittings, fire hydrant barrel sections, and curb boxes.
- Bedding & cover material: 3/8" crushed limestone chips (pea gravel is not acceptable).
- Compacted granular backfill, topped with 12-inches of 3/4" or 1-1/4" dense graded aggregate base course material is required below or within 4-feet of any paved surface. Use only clean graded sand, clean granular bank run, aggregate slurry, or excavated granular material, with Engineer's approval.
- Operation of valves: by Village representatives or agents unless allowed otherwise.
- One-hour pressure test: 150 psi with no loss.
- Leakage test (only if pressure test fails): Two hours at system pressure per Standard Specifications.

PIPE MATERIAL

- Ductile iron: conforming to AWWA C-151, minimum Class 52.
- PVC: conforming to AWWA C-900, class 150, SDR 18.
- Tracer wire shall be installed with PVC pipe, extend wire up all valve boxes and to hydrants terminated in a 4-inch diameter by 30-inch long PVC pipe with a treaded cap set behind the hydrant.

LOCATOR WIRE

- Tracer locator wire: Install with PVC pipe, single strand blue insulated copper, minimum No. 10 AWG.
- Location: On top of PVC pipe and fittings, secure at min. 10-foot intervals.
- Terminal Box: 2-1/2 inch by 18-inch C.P. Test Services - Valvco.

- Extend locator wire to top of terminal boxes leaving 12 inches of slack for future connection and connect to terminal box.
- Secure terminal box to back side of fire hydrant barrel and all service curb stops and set top of box flush with finished grade. Connect service locator wire to water main locator wire.

FITTINGS

- Only North American-made fittings, pipe, valves, and hydrants will be allowed. Sigma and Star are not allowed.
- Ductile iron fittings: meet AWWA C-110 standard.
- All fittings shall be full-bodied styles.
- If a sleeve is required, a full-bodied solid sleeve shall be used.
- Fittings shall be polyethylene wrapped per Standard Specifications.
- Bolts and nuts: Cor-Blue or A-304 stainless steel, no substitutions.
- Use restrained joints on all fittings.
- Thrust blocking (in addition to restrained mechanical joints): solid concrete masonry units or Class F poured concrete per Section 4.3.13 of the Standard Specifications. Wood thrust blocking will not be permitted.

VALVES

- 4-inch to 12-inch: resilient wedge gate valve, non-rising stem meeting AWWA C-509, Clow Model 2639/2640.
- Provide restrained joints on all valve fittings.

VALVE BOXES

- Three-piece, Tyler Series 6860 with bottom section compatible with valve box stabilizer.
- Valve box stabilizer: metal "spider" type for gate valves or butterfly valve type by Adaptor, Inc., no substitutions.
- Provide bituminous coated carbon steel valve operating extension rods with 2-inch square operating nuts terminating within 2 inches below the lid for all main line valves that are buried deeper than 8 feet from top of pipe.
- Do not extend locator wire into valve boxes.

TAPPING VALVE AND SLEEVES

- Two-piece bolted stainless steel type with mechanical joints.
- Sleeve Model/Manufacturer: Cascade CST extra heavy duty.
- Valve Model/Manufacturer: Clow F-5093 or Kennedy C950.

WATER SERVICES

- Pipe: High Density Polyethylene tubing, SDR 9, 200 psi, copper tube sized.
- Size: 1-inch, 1 ½-inch, and 2-inch.
- Utilize stainless steel stiffeners of compatible size and connection type.
- Depth of bury: between 6-feet and 6.5-feet from main to curb box.
- Service pipe shall be seamless from the main to the curb box.
- Service saddles for connecting to PVC pipes: Stainless steel saddle with O-ring and grade 30 rubber grid map; Cascade styles CSC1, CSC2, CS22, or equal.
- Corporation stops: McDonald No. 4701, or equal.
- Curb stops: McDonald No. 6104, or equal.
- Service boxes: Extension type with stationary rods, McDonald No. 5614, or equal.
- Install box 2-3 feet from the back of curb, wherever possible.

- Polywrap service box.
- Place locator wire on top of water service lines and extend to terminal box adjacent to the service box.

FIRE HYDRANTS

- Model/Manufacturer: Clow Medallion, no substitutions.
- Color: Factory painted per Village Flow Rate Table.
- Nozzle height: 18-inches to 26-inches to finish grade.
- Equip steamer nozzle with a factory installed 4 ¼" Storz Quick Connect.
- Standard hydrant extensions are required for hydrants with over 6 feet of cover, or where required to adjust nozzle height.
- Auxiliary valves: connect directly to water main at an anchor tee.
- Hydrant lead pipe: Class 52 ductile iron or C-900 PVC with restrained joints.
- Hydrant leads and fittings: restrain by Mega-lug gland or equal.
- Provide stop nut or factory-installed means of preventing damage to hydrant when torque is applied to close hydrant.
- Spacing: Maximum 400 feet (residential subdivisions).
- Place locator wire terminal boxes at all hydrant locations.

STORM SEWER

GENERAL

- Compacted granular backfill, topped with 12-inches of ¾" or 1-1/4" dense graded aggregate base course material is required below or within 4-feet of any paved surface. Use only clean graded sand, clean granular bank run, aggregate slurry, or excavated granular material, with Engineer's approval.
- Consolidation of backfill: 95% standard Proctor density for imported granular material and 100% for excavated material of existing aggregate material in the adjacent trench wall. Use mechanical means, unless allowed otherwise.
- Provide sump pump connection pipes for all new homes with flexible watertight tee service connector, KOR-N-TEE by NPC Systems, or approved equal.

PIPE MATERIAL

- Within road right-of-way: minimum 12-inch reinforced concrete pipe, minimum class III, conforming to ASTM C76 or ASTM C507.
- Outside road right-of-way: alternate pipe material, such as HDPE ADS N-12, may be permitted by Public Works.
- Rubber O-ring gasket pipe required.

MANHOLE MATERIALS

- Design flat top slabs to resist H-20 loading.
- Frames and closed lids: Heavy duty, indented top solid lid, stamped with the word "STORM", Neenah R-1580, East Jordan 1050 EXHD, or equal.
- Frames and open lids: Heavy duty, Neenah R-2504 with Type D grates, or equal.

CATCH BASINS

- 2'x3' precast concrete box with a minimum 12-inch sump for catch basins in the curb line.
- 2' diameter precast concrete structure with a minimum 12-inch sump for catch basins in grassed areas.

- Do not place catch basins within the entire curb return at intersections, if possible.
- Curb inlet frames: Neenah R-3067-L.
- Turf area drainage grates: Beehive type, Neenah R-2561.

DRIVEWAY CULVERTS

- Minimum 15-inch diameter CMP or RCP with flared end sections.

STORM LATERALS

- Minimum 6-inch PVC SDR-26.
- Provide wye connections unless allowed otherwise.
- Terminate lateral pipe with a wooden 2x4 set one foot above finish grade and painted green.
- Lateral pipe locator wire and terminal post: No. 10 AWG single strand insulated copper wire and 2-1/2 inch by 18-inch C.P. Test Services – Valvco terminal box.