

PART 1 - GENERAL

1.01 **INTRODUCTION** Unless modified, deleted, replaced, or otherwise changed, the latest published addition of the following documents shall be the accepted standard for materials and/or procedures for the construction of water mains and appurtenances:
 A. Northern Kentucky Water District's Standard Drawings
 B. Natural Resources & Environmental Protection Cabinet, Division of Water
 C. Kentucky Public Service Commission Regulations
 D. American Water Works Association's Standards (AWWA)
 E. Recommended Standards for Water Works
 If a conflict exists between referenced sources, the more restrictive requirements shall prevail. The District shall provide interpretation as requested.

1.02 **DESCRIPTION** In general the following specifications are minimum requirement for water main design and installation. New design ideas and concepts are welcomed by the District, but subject to District's approval. Construction may be dictated by location, soil conditions, ground water, topography, etc. Additional provisions may be required by the District.

1.03 **DESIGN GUIDELINES** Plans are approved subject to the conditions of compliance with all applicable laws, rules, regulations and technical design and construction standards including, but not limited to all water quality standards set forth in 401 KAR chapter 8 and all technical design and construction standards as required by the Kentucky Division of Water. Deviation from applicable laws, rules, regulations and standards will only be considered with appropriate justification submitted to the District's Engineering Department. The proposed project may be constructed only in accordance with the approved plans. It is strongly recommended that the design engineer meet with the Water District prior to plan submittals for review of overall project. Extensions from and connections to the public water system will be approved by the District where proper pressures and flows permit, provided there is a sufficient water supply developed and available for domestic use and fire protection to take on new or additional extension or service without detriment to those already served. The District will run a hydraulic analysis for every new water main extension to ensure adequate water, as defined by the Ky. Public Service Commission, is available. The hydraulic analysis will: (a.) identify the existing and potential customer peak demand. (b.) demonstrate that the proposed water main projects can be flushed at a minimum of two and one half [2.5] feet per second [fps], while keeping system pressure above twenty [20] pounds per square inch [psi] within the pressure zone of the proposed project. (c.) demonstrate that the proposed water main project maintains thirty (30) psi under peak demand. (d.) demonstrate that the proposed water main project does not drop ground level pressure in any part of the pressure zone below 20 psi under all flow conditions. (e.) demonstrate pressures greater than or equal to (≥) thirty (30) psi are available on the discharge side of all water meters. Any needs in excess of the available water at the site, is the responsibility of the developer to provide (e.g. additional domestic needs for processing or increased fire protection requirements).

1.04

To allow for the future extension of the water system in an orderly manner, the water system shall be constructed to the developer's property limits which abut a proposed or existing public right-of-way or has a potential for future development and the termination shall be as described in the Standard Drawings and Specifications of the Water District or by connection to an existing main.

All improvement drawings shall consist of plan and profile views, street layout, lot or building layout and number, water main and appurtenance locations, and location of other utilities that may be in conflict. The Developer's Design Engineer is responsible to maintain an unobstructed area for the placement of the water main and appurtenances and allow no conflict with other utilities other than crossing of laterals. Utility laterals shall maintain a minimum of 6" outside diameter to outside diameter clearance except for storm and/or sanitary laterals which shall provide, 18" clearance below the water main.

The four-(4) foot area over the water main, (3' from curbside) shall be a non-paved, strip totally unobstructed with the exception of:

- a) removable, post type mail boxes;
- b) utility laterals (gas, electric, telephone, and cable television) maintaining a minimum of 6 inch outside diameter to outside diameter clearance;
- c) no more than 30' of continuous pavement used as driveways or parking pads;
- d) street and sidewalk crossings;
- e) sidewalks (may not be over main, but could encroach on this four-(4) foot area on street radius curves, and cul-de-sacs);

The ten-(10) foot area over the water main, centered (5' either side) shall be totally unobstructed with the exception of:

- a) items listed above;
- b) streets, curbs, and gutters;
- c) sidewalk pavement;
- d) storm drainage appurtenances

Additional requirements may be required for subdivision plans submittals that create double frontage lots (a lot other than a corner lot that has frontage on more than one public street) along public streets which currently do not have public water. The developer may be responsible for extending the water main along both sides of the double frontage lots if the property would benefit from the extension. If there is a future potential that a water main extension may be made by District's Extension Policy along the existing public street would be beneficial, as determined by the District, an agreement would need to be signed between the developer and the District.

Upon the request of the Developer, the District shall provide the Developer with a letter accepting the water main installation and the start of the one year maintenance period.

PLAN SUBMITTALS

Design drawings shall include both plan and profile views of the proposed water main. All plans submitted must be dated and bear the stamp and signature of a Professional Engineer licensed in the State of Kentucky and be on a 1" = 50' scale with plan sheets no larger than 24" x 36". Improvement plans shall be submitted in duplicate for preliminary review by the District. One copy of the improvement plan will be returned to the Engineer for corrections to meet District's Standards. The Engineer will need to revise and resubmit six (6) sets of plans. Also at this time a set of plans in digital format showing curb lines, a north arrow on a 1" = 50' scale will also be submitted for the District's GIS system. The District will not approve any project until these digital format plans have been received. Distribution of approved plans will be made by the District as follows: Three (3) copies retained by the District; one (1) copy to Planning Development Services; and two (2) copies returned to the Design Engineer when approval is granted and the District's Subdivision Agreement is signed and returned to the District by the Developer. A project approval period shall not exceed twenty-four (24) months, during which time the water main construction shall begin. Project approval does not relieve the Developer from the responsibility of obtaining any other approvals, permits, or licenses required by the Cabinet and other state, federal, and local agencies. Submittal to the Kentucky Division of Water will only be required if any of the following conditions exist :

If any phasing is to be allowed after the District has approved a set of drawings, the Developer shall provide to the District a set of the approved drawings with the proposed phasing shown in redlined notation. The drawing shall indicate any proposed additional appurtenances to the system per Standard 101. This redline shall provide dimensions of the proposed phased water main extension. Upon approval of the phasing by the District, and after construction of the system, the District's Inspector shall confirm the work was completed in accordance with the approved changes.

Water lines must be sized to meet the demands anticipated for the total development being designed. The design engineer and/or developer are responsible for properly sizing water mains to meet required demands of the development. Public water mains shall be installed in a public right of way with the exception of cross-country lines installed to eliminate dead ends and water mains installed on private property which are going to be maintained by the Water District.

REVISION					
BY DATE					
N. KY. WATER DISTRICT		SPECIFICATIONS			
DRAWN BY: SAR					
APPROVED: 					
DATE: 2/1/2021					
STANDARD DRAWING NO: 100					