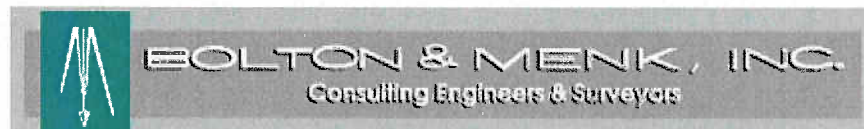




**MANUAL OF
DESIGN AND CONSTRUCTION
STANDARDS**

2008 UPDATE

PREPARED BY:



**APPROVED BY CITY COUNCIL
APRIL 22, 2008**

Manual of Design and Construction Standards, 2008 Update

The following is a summary of the changes that have been made for the 2008 Manual:

Section 2- Specification Reference

- * Changed references to current specifications

Section 3- Safety

- * Added review and approval of traffic control plans
- * Added light spacing requirements
- * Added lighting specifications
- * Added park lighting language
- * Added emergency contact list
- * Added warning siren language

Section 5 – Plan Standards

- * Added GPS language for record drawings

Section 6 – Grading, Landscaping, & Irrigation

- * Changed maximum driveway grade from 10 percent to 8 percent
- * Added language that requires special approval for backyard storm sewer
- * Updated approved tree list per MK Land
- * Added Irrigation details per MK Land

Section 7 – Sediment and Erosion Control

- * General changes to be consistent with Carver County Rules
- * General changes to be consistent with NPDES requirements

Section 8 – Storm Water Management

- * General changes to be consistent with Carver County Rules
- * General changes to be consistent with NPDES requirements

Section 9 – Wetlands, Flood Plains, and Shore Lands

- * General changes to be consistent with Carver County Rules
- * General changes to be consistent with NPDES requirements

Section 10 – Water Supply

- * Added language prohibiting curb stops in paved surfaces

Section 11 – Sanitary Sewer

- * Added manhole spacing requirements
- * Added material types for different depths
- * Added language specifying that the City will design lift stations

Section 13 – Streets and Alleys

- * Added language that alleys be constructed to street standards
- * Added language specifying that the City will design roundabouts
- * Added language that specifies that signing plans must be submitted to the City for review and approval
- * Added language that specifies that signs will be furnished and installed by the developer
- * Specified the use of B618 Curb and Gutter
- * Updated right of way and street width standards to be consistent with Comp. Plan

Section 14 – Sidewalk and Trails

- * Change trail width to a range of 8.5' to 10'
- * Added standards for sidewalks

Details

- * Update to current detail plates
- * Updated hydrant detail
- * Changed street sections
- * Changed tree planting details per MK Land
- * Added tree protection detail per MK Land
- * Added irrigation details

FORWARD

This manual outlines certain requirements, materials, and standards that should be incorporated into the preparation of plans and specifications for sanitary sewer, storm sewer, watermain, and street construction within the City of Watertown.

This manual is NOT a specification in itself. Developers and their Engineers in charge of construction activity within the City are expected to prepare a complete and competent set of specifications for their work. At a minimum, the project specifications should include the general specifications listed in Section 2 of this manual plus the specific requirements for construction listed in Sections 3, 6, 7, 8, 9, 10, 11, 13, and 14. These sections may be included as special provisions in the specifications.

This manual is intended as a reference source of information, standards and data. Particular sections or information in this manual may be incorporated into project specifications by reference as deemed appropriate by the City, provided this manual is made available to those to whom the reference is intended. Developers and their Engineers must comply with the requirements outlined in this manual.

Inspection check lists for site grading, utility, and street construction have been included in the appendix of this manual to serve as a guide for project personnel in determining the City inspection needs for a project. All listed inspections are required unless determined unnecessary by City personnel.

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SECTION 1 – DEFINITION OF TERMS

- Alley:** A public or private way which afford a secondary means of vehicular access to abutting property and which is not intended for general traffic circulation and which is generally considered for the use of service vehicles and lines, such as water, sewer, gas, and electrical poles.
- Benchmark:** A permanent or semi-permanent physical mark of know elevation. The elevation shall be tied to the U.S.G.S. Sea Level Datum.
- Block:** An area of land within a subdivision which is entirely bounded by streets or by a combination of streets, railroad right-of-way, public parks, or cemeteries, the exterior boundary or boundaries of the subdivision, or the shoreline of a river or lake.
- Boulevard:** That portion of the street right-of-way between the curb line and the property line.
- Building**
- Setback Line:** A line parallel to a street between which line and the nearest street right-of-way line no building or structure may be erected or placed.
- City:** City of Watertown, Carver County Minnesota.
- City Council:** Governing body of the City of Watertown.
- Contractor:** A person under contract with the City or Developer to install municipal or public improvements.
- Construction:** The total process of furnishing labor, material and equipment to arrange and combine the parts into a completed project in accordance with approved plans and specifications.
- County:** Carver County, State of Minnesota.
- Cul-de-Sac:** See Street, Cul-de-Sac.
- Developer:** A person or firm that develops land through construction of public and/or private improvements. The developer may be the owner and/or developer.
- Double**
- Frontage:** A lot with two public streets forming boundary (not a corner lot).
- Easement:** A grant or authorization by a property owner for the use of a designated part of their property by the public, a corporation, or persons for a specific

purpose such as utilities, drainage ways, roadways, walkways, trails, buffers, and berms.

Escrow: The deposition of funds in an account maintained by the City specifically for the purpose of ensuring fulfillment of certain obligations assumed by the section.

Grade: The average elevation of the finished ground.

Grade,

Percentage of: The rise or fall of a street in feet and tenths of a foot for each one hundred (100) feet of horizontal distance measured at the centerline of the street.

Improvement,

Public: Any drainage facility, roadway, parkway, park, sidewalk, pedestrian way, tree, lawn, off-street parking area, lot improvement, or other facility for which the local government may ultimately assume the responsibility for maintenance and operation, or which may affect an improvement for which the City responsibility is established.

Lot: The smallest unit of a subdivision individually numbered or designated on the plat for purpose of description, recording, conveyance, development and taxation.

Lot, Corner: A lot situated on the intersection of two streets.

Lot Depth: A mean horizontal distance between a street right-of-way line and the opposite rear line of the lot measured in the general direction of the side lot lines.

Lot Line: The line forming the boundary of a lot.

Lot Width: The horizontal distance between the side property lines of a lot measured at the building setback line.

Plans: The approved drawings which include plan views, profiles, cross sections, working drawings, details, and supplemental drawings, or exact reproductions thereof, which show the location, character, dimensions, extent, limits and all else necessary to complete the work covered by the project.

Record Plans: The corrected or adjusted construction plans that accurately show the distances, elevations, dimensions, details and all other changes to reflect the actually completed work as constructed.

Right-of-Way: A strip of land acquired by reservation, dedication, prescription, or condemnation and intended to be occupied by a street, alley, trail, water line, sanitary sewer and/or other public utilities or facilities. The usage of the term "right-of-way" for land platting purposes shall mean that every right-of-way hereafter established and shown on a final plat is to be separated and distinct from the lots or parcels adjoining such right-of-way and not included within the dimensions or areas of such lots or parcels. Right-of-Way intended for streets, alleys, trails, water main, sanitary sewers, utilities, shade trees, or any other use involving maintenance by a public agency shall be dedicated to public use by the owner of the land being platted on which such right-of-way is established.

Specifications: The body of written directives, provisions, and requirements made pertaining to the methods or manner of performing the work, the quantities, and the quality of materials to be furnished under the contract; and outlining the obligations and responsibilities of the parties to the contract; and setting forth the method of payment and the duration of the work.

Standard

Details: Detailed drawings or plates approved by the City.

Street Right-of-Way

Width: The distance between property lines measured at right angles or radially to the centerline of the street.

Street, Arterial:

A Street of considerable continuity, which is used primarily for heavy through traffic between major traffic generation areas.

Street, Boulevard:

A broad thoroughfare with landscape, sidewalk, or pedestrian improvements, often with a landscaped median or center divider that functions as a linear open space.

Street, Collector:

A feeder street which provides connection primarily between arterial streets and minor streets. Collector streets include the principal entrance streets to a residential development and the principal streets for circulation within such development.

Street, Cul-de-Sac:

A local street with only one outlet and having an appropriate terminus for the safe and convenient reversal of traffic movement.

- Street, Half:** Streets with half the width of the required right-of-way on the bounding edge of a tract being subdivided.
- Street, Local:** A minor street, the principal function of which is to provide access to individual parcels of property. Cul-de-sacs and marginal access streets are to be considered local streets.
- Street,
Parkway:** A divided thoroughfare having controlled access with landscape, trail, or pedestrian improvements with a landscaped center island that functions as a linear open space.
- Street Width:** The width of the improved surface of the street as measured at right angles or radially to the centerline of the street from curb face to curb face, or on a street without curbs from the outside edge of the improved shoulder to outside edge of improved shoulder.
- Structure:** Anything constructed or erected that requires location in or on the ground or is attached to something having location on the ground, including mobile storage sheds.
- Tree,
Evergreen:** Any living, self-supporting woody perennial plant which at maturity attains a trunk diameter of at least three (3) inches or more when measured at a point four (4) feet above ground level and normally displays green leaves or needles throughout the year.
- Tree,
Ornamental:** Any living, self-supporting woody perennial plant which at maturity attains a trunk diameter of at least three (3) inches or more when measured at a point four (4) feet above ground level and normally attains an overall height of at least fifteen (15) feet, usually with one main stem or trunk and many branches.
- Tree,
Overstory:** Any living, self-supporting woody perennial plant which at maturity attains a trunk diameter of at least three (3) inches or more when measured at a point four (4) feet above ground level and normally attains an overall height of at least fifteen (15) feet, usually with one main stem or trunk and many branches.
- Tree,
Significant:** Trees that are healthy, measured a minimum of eight (8) inches in diameter at a distance of fifty-four (54) inches above ground or are a minimum of four (4) inches in diameter for conifers.

SECTION 2 – SPECIFICATION REFERENCE

1. General Conditions.

The “Standard General Conditions of the Construction Contract” (No. C-700, 2002 Edition), prepared by Engineers Joint Contract Documents Committee, and issued and published jointly by Professional Engineers in Private Practice (a Practice Division of the National Society of Professional Engineers), American Consulting Engineers Council, American Society of Professional Engineers and the Construction Specifications Institute, and Supplementary Conditions shall govern the work of all persons engaged in the performance of the work in the City of Watertown.

2. Watermain, Sanitary Sewer, and Storm Sewer Construction.

A. Watermain, sanitary sewer and storm sewer construction shall conform to the applicable provisions of the “Standard Utilities Specification for Trench Excavation and Backfill/Surface Restoration Watermain and Service Line Installation and Sanitary Sewer and Storm Sewer Installation” as published by the City Engineers Association of Minnesota, (CEAM) 1999 Edition.

B. Copies of the Standard Utilities Specification are available at a nominal charge from:

League of Minnesota Cities – CEAM
c/o Mary-Margaret Zindren
145 University Avenue, West
St. Paul, MN 55103-2044
(651) 215-4034

C. The standards and guidelines in this manual shall serve to supplement or modify the referenced specification. Portions of referenced specifications not specifically affected by the supplemented information of modification shall remain in effect as originally written.

D. THREADED ITEMS – All threaded items used in the City of Watertown, including but not limited to mechanical joint connectors, flanged joint connectors, mainline valves, saddles, corporation stops, hydrants, and air release valves shall be furnished to the nominal size as specified with ENGLISH threads. Should the Contractor choose to supply any items with metric threads, the Contractor shall supply full shop drawings of the item(s) with special attention drawn to the metric thread designation proposed.

3. Grading, Street, and Surface Improvements.

A. All of Divisions II and III, and any specifically referenced Division I sections of the Minnesota Department of Transportation (Mn/DOT), “Standard Specifications

