

CHAPTER 1

Administrative Procedures

A. Introduction

This design manual establishes uniform standards for the design and construction of public improvements. These standards will promote consistent construction practices, and safeguard the interests of the City of Manitowoc by ensuring that all improvements are designed and constructed in conformance with sound engineering principles and accepted standards.

No guarantee is made by the City that standards will be waived in the case where development costs are prohibitive. This guide is instructional only. Approval of public construction is ultimately subject to approval by the Director of Public Works, the Streets and Sanitation Committee, the Planning Commission and finally the Common Council. The City of Manitowoc reserves the right to alter this document at any time or to change requirements for public construction at any time for one or more projects. Federal, State, and Local regulations and ordinances supercede this document. We strongly recommend that the developer obtain the services of a Design Engineer prior to purchase of land to be developed.

B. Title

This document shall be referred to as the "City of Manitowoc Engineering Design Manual."

C. Authority

The Common Council has authorized this manual and its revisions by Resolution No. 02-199.

D. Jurisdiction

The review and approval of engineering designs, plans, and specifications by the City, for certain improvements, is not exclusive. Other public agencies have review jurisdiction, including but not limited to Wisconsin Department of Natural Resources, Manitowoc Public Utilities, Manitowoc County Department of Public Works, Wisconsin Department of Transportation, Department of Industry, Labor, and Human Relations, Department of Commerce, and Army Corps of Engineers. This design manual is not a substitute for the requirements of other public agencies having review jurisdiction.

The design engineer must conform not only to the requirements of the City, but to the legal requirements of all public agencies who may have review jurisdiction and issue permits or require bonds or other securities in order to construct public improvements. This manual does not relieve the design engineer of the responsibility to use acceptable engineering principles or to comply with all Federal, State, and Local laws and codes.

All public improvements shall be designed and constructed to the standards established in this design manual. While the City of Manitowoc Standard Specifications and this manual rely upon State and Federal specification publications, this manual takes precedence over all design standards in the State and Standard Specifications.

E. Definition of Terms

AASHTO	Refers to all the publications of the American Association of State Highway Transportation Officials, and specifically, <u>A Policy on Geometric Design of Highways and Streets</u> , current edition.
ASTM	American Society for Testing and Materials.
Arterial Street	A public street or highway used, or intended to be used, to connect and serve collector streets, residential, commercial, or industrial land uses. Arterial streets and highways include freeways and expressways, state trunk and county trunk highways, and other high use streets.
As-Built Drawings	Design plans reviewed in the field and revised to show actual construction dimensions and quantities.
Base Course	The layer or layers of specified or selected material of designed thickness placed on a sub-base or subgrade to support a surface course.
Board of Public Works	A standing Committee of the Common Council responsible for establishing policy for Public Works in the City of Manitowoc.
Bond	Any form of security approved as to form and amount by the City, including a cash deposit, surety bond, letter of credit, collateral, or other instrument of credit.
Building or Structure	Anything constructed or erected, the use of which requires more or less permanent location on ground, or attached to something having permanent location on the ground. This does not include public utility fixtures and appurtenances.
Change Order	City Engineer's written approval on any changes, additions, or

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deletions to the approved contract documents.

City	The City of Manitowoc, Wisconsin, and where appropriate, its Common Council, Commissions, Committees, and authorized officials.
City Engineer	A professional engineer, registered in the State of Wisconsin, who has been appointed as the City Engineer or the City Engineer's authorized agent.
City Planner	A professional planner appointed by the City or the City's authorized planning agent.
Concept Plat or Plan	A preliminary drawing, made to approximate scale, of a proposed land division for discussion purposes.
Collector Street	A street that carries traffic from a local street to an arterial street system. This includes the principal entrance street of developed areas and the primary circulating streets within a developed area.
Common Council	The ten Aldermen of the City of Manitowoc and the Mayor.
Contract Documents	Includes the notice to bidders, instructions to bidders, bid proposal, affidavit of organization and authority, listing of sub-contractors, bid bond, contract, performance bond, detailed specifications, general specifications, standard specifications, state specifications, construction plans, special provisions, wage rates, agency permits, addenda, notice to proceed and any other contract sections defined as components of the contract. Also included are any contract change orders and agreements that are required to complete construction in an acceptable manner, including any authorized extensions, all of which constitute one instrument.
Contractor	An individual, company, firm, or other party or organization who contracts to construct all or a portion of a project.
Cul-de-sac	A short street having one end open to traffic and the other end permanently terminated with a vehicular turnaround.
Dead-End Street	A street permanently or temporarily closed at one end, with or

without turnarounds.

Design Engineer	A licensed professional engineer registered in the State of Wisconsin responsible for the design and preparation of contract documents.
Developer	Any person, firm, corporation, agent, partnership, or entity who seeks to improve land in accordance with the City's development regulations.
Development	A man-made change to improved or unimproved real estate.
DNR Technical Standards	<p>A technical standard is a document that specifies the following minimum criteria for a practice or system of practices:</p> <ul style="list-style-type: none">• Planning• Performance Expectations• Design Parameters• Operation and Maintenance <p>Standards are based on current research, field experience and the best available technology. Technical standards are voluntary unless directly linked to mandatory federal, state or local conservation programs.</p>
DPW	City of Manitowoc, Department of Public Works
Easement	A right given by an owner of land to another party for a specific limited use of that land
Engineering Inspector	An individual or firm designated or employed by the City as the authorized representative of the City Engineer assigned to inspect construction and to ensure compliance with approved plans and specifications.
Erosion Control	Any method or means of controlling sediment or runoff from a construction site, as specified in the "Construction Site, Best Management Practices" Handbook, a Department of Natural Resources publication or approved by the City Engineer.
Final Plat	The final map, drawings, or chart, on which the subdivider's plan of subdivision is presented for approval and which, if approved, will be submitted to the County Register of Deeds.
FDM	Refers to the Wisconsin Department of Transportation <u>Facilities Development Manual</u> , current edition.

Frontage	All the property on each side of a street between two intersecting streets (crossing or terminating) or property lines measured along the line of the street. If the street is dead-ended, frontage is all property abutting on each side between an intersecting street and the dead end of the street.
Gradient or Percent of Grade	The vertical rise in feet per 100 feet of horizontal distance. (A 1% grade is a rise of 1 foot in 100 feet, for example.)
Local Street	A street of little or no continuity designed to provide access to abutting property and leading into collector streets.
Lot	A designated parcel, tract, or area of land established by plat, subdivision, or as otherwise permitted by law, to be used, developed, or built on.
Manual	This document, entitled "The City of Manitowoc Engineering Design Manual."
MPU	Manitowoc Public Utilities
MUTCD	Manual on Uniform Traffic Control Devices. United States Department of Transportation, Federal Highway Administration Manual that establishes uniform standards for traffic control devices, such as signs, signals, markings, and construction signage.
Owner	Any government, firm, association, partnership, private corporation, public or quasi-public corporation, or a combination of any of them, or other legal entity having sufficient proprietary interest in the land to be subdivided to commence and maintain proceedings to subdivide.
Parcel	A lot or tract of land.
Pavement Structure	The combination of sub-base, base, and surface courses placed on a subgrade to support the traffic load and distribute it to the roadbed.
Plan Commission	The Plan Commission created by the Common Council

pursuant to Section 62.23 of the Wisconsin Statutes.

Plans	The approved plans, profiles, typical cross sections, working drawings, supplemental drawings, or exact reproductions that show the location, character, dimensions, and details of the work to be done.
Plats	See concept plat, preliminary plat, or final plat.
Ponding	The creation of pockets or depressions that have no outlet for surface drainage provided, or in the event of failure or overload of inlets or storm sewers, will contain standing water. Any surface waters that are flowing will not be considered as ponding.
Preliminary Plat	The map or drawing indicating the proposed subdivision layout to be submitted to the City for its preliminary consideration as to compliance with the Comprehensive Development Plan, this manual, and the regulations as outlined in Chapter 7,15 and 21 of the Municipal Code, along with required supporting data.
Public Improvement	Public storm water and sanitary sewers, water mains, storm water quality and quantity facilities, highways, parkways, sidewalks, street lighting, and all other public improvements to be required by the Common Council or the Plan Commission.
Punch List	A list of deficiencies requiring corrective action before final payment or acceptance of the project.
Release Rate	The controlled rate at which storm water is discharged from a storm water-holding reservoir.
Right-of-Way	A strip of land dedicated, condemned, or reserved for public use (ROW or R/W).
Road or Roadway	The paved and shoulder area or paved and curbed areas within the street ROW.
Roadbed	The graded portion of a roadway prepared as a foundation for the pavement structure and curb and gutter or shoulders.
Standard Specifications	Refers to the <u>Standard Specifications for Sewer and Water Construction in Wisconsin</u> , current edition and its revisions, prepared by a committee of municipal engineers, consulting engineers, suppliers, and contractors for the purpose of suggesting standards for the design and construction of

sanitary sewer, storm sewer, and water main or the City of Manitowoc Standard Specifications, if appropriate.

State Specifications	Refers to the <u>Standard Specifications for Road and Bridge Construction, State of Wisconsin, Department of Transportation</u> , current edition and its supplements.
Streets and Sanitation Committee	The Committee responsible for setting policy for street and sanitation construction and maintenance in the City of Manitowoc.
Subdivider	Any person, firm, corporation, agent, partnership, or other entity that divides or proposes to divide, by plat or certified survey, or re-plat land in any manner. This includes such heirs and assigns as may be responsible for the obligations of the sub-divider under the provisions of the Municipal Code.
Subdivision	Pursuant to §236.02 a subdivision is a division of a lot, parcel, or tract of land by the owner or the owner's agent for the purpose of sale or of building development where: A. The act of division creates five or more parcels, lots, or building sites of 1½ acres each or less; or B. Five or more parcels, lots, or building sites of 1½ acres each or less in area are created by successive divisions within a period of five years.
Subgrade	The top surface of the roadbed on which the pavement structure, curb and gutter, and/or shoulders are constructed.
Utility Engineer	A professional engineer, registered in the State of Wisconsin, who has been appointed as the utility engineer of the City, by the Manitowoc Public Utility Commission.
Watershed	That land area from which all precipitation runoff would eventually reach the point in question by flowing over the surface of the ground <u>or through existing public improvements</u> .
Wisconsin Administrative Code	The rules of administrative agencies having rule-making authority in Wisconsin.

F. Pre-Design Conferences

Before the development of any parcel of land or the preparation of detailed plans, the design engineer shall meet with the City Engineer to review the City's requirements and the proposed project. The request for the preliminary design conference shall be initiated by the design engineer, his/her representative, or the developer. This requirement is advisory. However, unless the Developer's Engineer has significant experience under these guidelines, we strongly recommend they request a pre-design conference.

G. Construction Specification Requirements

The detailed construction specification requirements for all public improvements will be outlined in the contract documents. Technical specifications, as discussed in this document, are requirements of the City and must be adhered to in the preparation of engineering drawings. The design engineer must also follow the appropriate specific sections of the most recent editions, including but not limited to:

- State Standard Specifications for Road and Bridge Construction in Wisconsin
- Standard Specifications for Sewer and Water Construction in Wisconsin
- American Society for Testing and Materials
- American Water Works Association
- Manual of Uniform Traffic Control Devices
- DNR Technical Standards

H. Required Documents for Review Approval

The design engineer must submit the following documents to the City Engineer, along with a letter of transmittal listing the items being submitted and requesting review and approval of the project. The design engineer may supplement the documents with any additional data necessary to help the City Engineer review a proposed development. Should the design engineer want or need any document returned for his/her files, an additional set must be included and marked "for return to the design engineer."

The City requires that all engineering plans be neat and clean, readable, and well organized. Engineering plans shall be coordinated as follows:

Title Sheet	Including location map, north arrow, legal description, project name, project number, City datum benchmarks, index of sheets, legend, developer's name, and engineer's seal and signature.
Subdivision Plat	In accordance with preliminary plan and final engineering.
Development Plan	Indicating all proposed underground and surface public improvements, easements, and building outlines with dimension to the property line.
Grading Plan	Indicating all information specified in this manual.
Plan and Profile Sheets	Indicating all information specified in this manual.
Street Lighting and Traffic Control Plan	Indicating all information specified in this manual for street lighting and traffic control signs.
Detail Sheets	Indicating all construction details, notes, and specifications.
Erosion Control Plan	Indicating all information specified in this manual.
Storm Water Management Plan	Indicating all information specified in this manual.

The design engineer must submit all documents for review and approval to the City in two parts. The first (preliminary) submittal shall be sent to the City Planner for review and comment. The second shall be the revised plans submitted for approval. The following documents must be included in the first (preliminary) submittal:

Site Plan (if applicable)	14 sets
Engineering Plans	3 sets
Construction Documents and Specifications	3 sets
Design Computations	3 sets
Plat of Subdivision (if applicable)	14 sets
Soil Boring Report (if borings taken)	3 sets
Preliminary Construction Cost Estimate	3 sets
Storm Water Management Report	3 sets
Miscellaneous Data (system plans, exhibits)	3 copies

After reviewing the first submittal, the City Planner will send to the design engineer comments on any items that do not meet the City requirements or that require revisions, additions, or clarifications to the engineering plans and contract documents. The design engineer must then revise the engineering plans and make a second submittal to the City for review and approval purposes.

The second submittal shall include the following documents:

Final Engineering Plans	3 sets
Engineering Specifications	3 sets
Detailed Cost Estimate	3 sets
Revised Design Calculations	3 sets
Permit Application	As required by the public agency
Final Storm Water Management Plan	3 sets

Once the final plans are revised, the City Planner will accept any applicable charges and request the signed and sealed original Mylar drawings for City signature. The design engineer is responsible for plan set reproduction for record copy, bidding, and construction purposes. The design engineer shall make all submittals to the other agencies not requiring a City signature. Any agency application that requires a City signature shall be prepared by the design engineer, delivered to the City, and sent to the agency by the City.

I.. Plan Revision

Once the plans are approved, any deviations shall require a written change order signed by the City Engineer. Any revisions that occur because of field construction conditions must be reported to the City Engineer by the design engineer, developer, or engineering inspector. Should the City Engineer consider the required changes to be major, a "stop work order" shall be issued by the City Engineer until revised drawings are submitted and approved. Any alterations to the plans that are not approved by the City will be subject to removal and replacement as per plan. No special consideration will be given to unauthorized installations due to hardship.

J. Project Completion and Acceptance

Following project completion, the design engineer, developer, or contractor shall initiate the acceptance of those public improvements by notifying the City Engineer, in writing.

The City Engineer will conduct a final inspection, prepare a punch list of the deficiencies (if any), and send it to the design engineer, developer, or contractor.

Final subdivision inspections are only scheduled between April 1 and November 15 of each year.

All public improvements should be in an approvable state when the final inspection is requested. If there are five or more unique deficiencies noted during the final inspection, the inspection may be terminated. A re-inspection will not be allowed for at least 30 days.

After receiving a punch list, the noted deficiencies shall be remedied to meet the City's requirements. If the deficiencies are not resolved within three months, the list will become null and void, and a new list will be prepared.

When the items have been corrected, the City Planner shall recommend final plat approval to the Common Council.