CITY OF MARION, IOWA

GENERAL SUPPLEMENT TO SUDAS DESIGN MANUAL

This General Supplement to SUDAS Design Manual amends or supplements the Statewide Urban Design and Standards (SUDAS). All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Specifications will have the meanings indicated in SUDAS.

Chapter 1 – General Provisions
    1C-1 Submittal Procedures
    Add the following:
    "Ownership of Data
    All information collected by the designer and/or surveyor for City improvement projects shall become property of the City of Marion and are subject to open records requests."

Chapter 2 – Stormwater
    2A-1 – General Information
    C. Conditions
        Replace:
        1e: "Street grades are coordinated with lot drainage; drainage slopes shall not be less than 1%. Lot drainage slopes less than 2% shall have a minimum of a 6" tile installed."
    D. Unified Sizing Criteria
        1. General Information:
        Replace Table 2A-1.01 with the following:

Table 2A-1.01: Summary of the Stormwater Sizing Criteria for improvements with proposed impervious areas over 11,000 square feet.

Sizing Criteria	Recommended Method
Water Quality Volume, WQv	Treat the runoff from 90% of the storms that occur in an average year. For Iowa, this equates to providing water quality treatment for the runoff resulting from a rainfall depth of 1.25 inches or less. Goal is to reduce average annual post-development total suspended solids loadings by 80%.
Channel Protection Storage Volume, Cpv	Provide 24 hours of extended detention of the runoff from the 1 year 24 hour duration storm event. Provide peak discharge control of the 1 thru 5 year storm event such that the post-development peak rate does not exceed the 1 year pre-development release rate. Cpv orifice diameter of less than 3 inches is discouraged.
Overbank Flood Protection, Qp	Manage the impacts of the extreme storm event through detention controls and/or floodplain management. 100 year post-development release rate cannot exceed the 5 year pre-development release rate.
Extreme Flood Protection, Qf (Major Storm)	Locate and design the emergency overflow spillway to convey the 100 year release rate without washing out or damaging the basin when overtopping and to avoid damage to upstream structures.

2A-3 – Stormwater Management Criteria

ADD

E. Private Storm Sewer Connections

"Downspouts from buildings or private yard surface drainage intakes are not allowed to be directly connected to the subdrain or tiled to the sump pump pit. Downspouts from buildings or private yard surface drainage intakes are allowed to be directly connected to the public storm sewer that is 12 inches in diameter or greater."

2A-4 – Project Drainage Report

a. Design Standards:

add

"A forebay or pretreatment system designed in accordance with the essential items listed in section 9-11.1 E of the Iowa Stormwater Management shall be used for all inlets to wet detention basins that drain an area greater than 1 acre."

d. Detention Basin Outlet:

add

"4) For wet retention basins the water quality and channel protection volume shall be drained using a structure that draws water from at least 3 feet below the permanent pool surface, such as those presented in figure 9.11-1-11 of the Iowa Stormwater Management Manual."

2D-1 – General Information for Storm Sewer Design

City of Marion | Engineering Department

        D. Physical Requirements

        3. Minimum Pipe Size

            Change:

            c. Footing Drain Collector Sewers in Public Right-of-way

            "6 inches in diameter."

Chapter 5 – Roadway Design

    5B-1 – Street Classifications

        E. Private Streets

        Add "Private streets shall be built to public street standards."

Table 5C-1.01 Preferred Roadway Elements

Add to footnote 9:

"City of Marion Fire allows 26 feet wide low volume residential streets in low density residential areas due to the size of the firefighting apparatus.

Table 5C-1.02: Acceptable Roadway Elements

Add the following to Footnote 15 for Min. horizontal curve radius (ft):

"For local residential streets a minimum centerline radius of 150' is allowed. Radius of 100' may be allowed for local residential streets for cul-de-sacs and loop streets less than 600 feet in length."

5C-2 – Geometric Design Elements

4.b Vertical Curves

Remove:

"…For both sag and crest vertical curves with a low algebraic difference in grade, sight distance restrictions may not control the design of the curve. In these cases, rider comfort and curve appearance are the primary considerations for vertical curve design. Generally, vertical curves with a minimum length (in feet) equal to three times the design speed (in mph) are acceptable…"

Add:

"Shall be per approved design for constructability as approved by the City."

Q. Intersection Radii

Add:

"Intersection radii may be modified with permission of the City Engineer"

Table 5C-2.09: Curb Return Radii Based Upon Roadway Classification

For Arterial to Collector and Collector to Arterial Replace:

"Special* with 35 feet"

5F-1 Pavement Thickness Design
D. Determining Pavement Thickness
Add:
"Minimum pavement section for new rigid pavements is 7 inch PCC with 6 inch granular subbase and subbase preparation per SUDAS Standard Specifications Section 2010."
"Minimum pavement section for all reconstruction pavements is 7 inch PCC with 12 inches granular subbase on geogrid and subbase preparation per SUDAS Stand Specifications Section 2010."
"Minimum HMA pavement section shall match structural equivalent of rigid pavement above and only allowed with permission of the City Engineer."

5L-4 Driveway Design Criteria
B. Width Measurement
Remove and Replace:
"1**.** Local street residential widths shall be measured on the street side of the sidewalk. If no sidewalk is present, the width shall be measured at the right of way.
2. All other widths shall be measured at the right of way or end of driveway curb radius onto the property if the distance is needed to fully construct the allowed radius per Table 5L-4.01"

Table 5L-4.01: Driveway Dimensions
Modify Residential Widths:
 "Maximum widths are 24 feet for one or two car garage, and 36 feet for three or more car garage. Accesses on cul-de-sac bulbs will have a maximum width of 24 feet, or as approved by the City**."**

3. For individual properties, the number of entrances should be as follows:
a. Single Family (SF) Residential
Add:
 "Maximum total width of accesses combined shall not exceed 36 feet if more than one is allowed, or as approved by the City"

Chapter 6 – Geotechnical
6G-1 – Subsurface Drainage Systems
D. Design
3. Subdrains
d. "Downspouts from buildings or private yard surface drainage intakes are not allowed to be directly connected to the subdrain or tiled to the sump pump pit. Downspouts from buildings or private yard surface drainage intakes are allowed to be directly connected to the public storm sewer that is 12 inches in diameter or greater."

Chapter 11 – Street Lighting

11C – 1 Facility Design

Replace:

B. Design Process

1. Local street (streets not designated in Major Streets Plan) streetlights should be located as follows:

a. At all intersections

b. Between intersections streetlights should be spaced not more than 600 feet apart.

2. Other relevant factors should be considered for new streetlights:

a. Accident rates.

b. Pedestrian use.

c. Street design (straight or curved).

d. Terrain

3. Streets designated in the Major Streets Plan may need additional streetlights to assure better illumination. Additional streetlights may also be necessary for Commercial and Industrial areas to assure traffic safety for vehicles entering and existing driveways.

4. Installation responsibility:

a. Cost of installing new streetlights in existing developments is the responsibility of the City

b. Cost of installing streetlights in new subdivisions is the responsibility of the developer.

End of Section
Adopted 2.22.24
City of Marion Resolution 31810