

TITLE 27
MINIMUM STANDARDS FOR LOW WATER CROSSINGS
WITHIN THE CITY OF STURGIS

(This Title was replaced in its entirety effective 9/21/07, Ordinance 2007-31)

Chapter:

27.01.01: Minimum standards for low water crossings within the City of Sturgis

27.01.01: MINIMUM STANDARDS FOR LOW WATER CROSSINGS WITHIN THE CITY OF STURGIS

All Non-Bridge, hereinafter referred to as Low Water Crossings of any creeks, within the City of Sturgis, shall be constructed to the following minimum standards, shall be designed by a South Dakota Licensed Professional Engineer with experience in this type of construction and shall be submitted to the City Engineering and Inspections Department and City Street Committee for review and approval before any construction may begin.

A Type I low Water Crossing will be required if:

- A. The crossing represents the only access into an inhabited residential area;
- B. There is year round water flow in the creek at the crossing location;
- C. Grade constraints at the creek crossing location can not be met when trying to install a Type II crossing.

Type II Low Water Crossings will be required at all other creek crossing locations.

A Type I Low Water Crossing will be designed in accordance with the following minimum standards:

- A. Shall have a minimum thirty two feet (32') wide top driving surface;
- B. Shall be constructed with a minimum of 4 - 24" RCP or CMP culverts;
- C. Shall have a minimum twenty feet (20') long flat bottom driving section over the culverts;
- D. All Concrete slab portions of the Crossing shall be constructed of a minimum eight inch (8") thick, reinforced concrete slab;
- E. Shall be constructed to meet an H-20 Highway Loading;
- F. Shall have a maximum grade of the driving surface out of and in to the crossing bottom of ten percent (10%);
- G. Shall have a minimum of six inches (6") of crushed base course as cover over the culverts;
- H. Shall have minimum eight inch (8") thick reinforced concrete side slopes on the upstream and downstream side of the crossing which shall have a 3:1 slope;

- I. Shall have a minimum of four feet (4') of Reinforced Concrete footing walls and wing walls or eight feet (8') of buried sheet pilings for footing walls and wing walls installed at the toe of the concrete side slopes.
- J. Shall be constructed of minimum M-6 Concrete as specified within the most recent edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges;
- K. Shall have a minimum four inch (4") thick Class "G" Asphalt driving surface on the roadway running out of and into the twenty feet (20') long, flat, reinforced concrete, bottom section over the culverts (Class "G" Asphalt surface shall be as specified within the most recent edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges);
- L. Shall have a 12" x 16" concrete cap poured on top of the sheet pilings, if used, to tie the pilings to the concrete slab (the method of rebar connection to the sheet pilings shall be approved by the City);
- M. Shall have a City approved flowable fill mixture or gabion baskets placed one each side of the culverts for a height of 18";

A Type II Low Water Crossing will be designed in accordance with the following minimum standards:

- A. Shall have a minimum twenty five (25') wide top driving surface which may be expanded to thirty two (32') when in the City's opinion the extra width is necessary and justified for pedestrian traffic or any other public safety issue;
- B. Shall have minimum twenty feet (20') long flat bottom driving section;
- C. Shall be constructed of a minimum eight inch (8") thick, reinforced concrete slab which shall extend from the top of the creek back to top of creek bank;
- D. Shall be constructed to meet an H-20 Highway Loading;
- E. Shall have a maximum grade of the driving surface out of and in to the crossing bottom of ten percent (10%);
- F. Shall have a minimum of six inches (6") of crushed base course placed under the driving slab;
- G. Shall have a minimum of four feet (4') of Reinforced Concrete footing walls and wing walls or eight feet (8') of buried sheet pilings for footing walls and wing walls installed at the edge of the concrete driving surface;
- H. Shall be constructed of minimum M-6 Concrete as specified within the most recent edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges;
- I. Shall have a 12' x 16' concrete cap poured on top of the sheet pilings, if used, to tie the pilings to the concrete slab (method of rebar connection to the sheet pilings to be approved by the City);
- J. Shall have a minimum of twenty feet (20') of two feet (2') thick gabion baskets placed on the upstream and downstream sides of the crossing extending from top of bank to top of bank of the creek channel;

Example of some typical details shall be available for review at the City of Sturgis Engineering and Inspections office.

That is the finding of the Common Council of the City of Sturgis that this ordinance is necessary for the public safety of the citizens of Sturgis and shall take effect immediately upon passage.

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