REQUEST FOR EXCEPTION TO
RAPID CITY DESIGN STANDARD / CRITERIA / REGULATIONS

PROJECT: Prairiefire Subdivision Phase 2

DATE: 8/8/17

SUBMITTED BY: Britton Engineering & L.S., Inc.

(Please use back of sheet if additional room is needed)

LEGAL DESCRIPTION: SE 1/4 of NE1/4 and NE 1/4 of NE 1/4 less Eisenbraun Subdivision, less Winton Subdivision, less Prairiefire Subdivision and less ROW, Section 26, T11N, R8E, BHM, Pennington County, South Dakota.

EXCEPTION REQUESTED: SECTION 3.9.4 STD / CRITERIA / REG Design Criteria

DESCRIPTION OF REQUEST: Exception for the construction of a 12" water main in Anderson Road

JUSTIFICATION:

It appears that with the proposed 8" water mains in Receda, Abelia, and Mondo Street, according to available data showing 900gpm @ 50psi, this would satisfy minimum fire flow requirements. A 12" is currently installed on Anderson Rd from Southside or to Winton Street as part of the E Rapid City Water Expansion - Southside project.

SUPPORTING DOCUMENTATION: Yes

PROPERTY OWNER'S SIGNATURE**:

DATE: 8/9/17

**Or Agent, if previously designated by the Owner in writing.

STAFF COMMENTS: See attached letter.

STAFF RECOMMENDATION: Deny

REVIEWED BY: DATE: 9/1/17

AUTHORIZATION:

APPROVED: 8/31/17

DENIED: 8/31/17

COMMUNITY PLANNING DIRECTOR

APPROVED: DATE

DENIED: DATE

PUBLIC WORKS DIRECTOR

FILE #: 17EX148

ASSOCIATED FILE#: 17PL054

Copy to Utility Maintenance: Copy to Water: Copy to Waste Water: Copy to Streets: Copy to Traffic: Copy to Construction:
September 1, 2017

Britton Engineering & Land Surveying
Steven Thingelstad
PO Box 649
Black Hawk, SD 57718

Re: Exception File No. 17EX148

Dear Steven Thingelstad:

Enclosed please find a copy of the original exception request that was filed with the assigned file number and the decision details.

In the event that an exception request is denied, the Director of Public Works or the Director of Community Planning will advise the applicant of such denial in writing. Any applicant that disputes the denial of an exception may appeal such denial. In order to appeal the denial the applicant shall file a written request of appeal to the Director within ten (10) working days of the denial. The appeal will be placed on the next Public Works Committee agenda, which will then go to The City Council for final consideration.

If you have any questions or need additional information, please contact our office at 605-394-4154.

Sincerely,

Susan Donat

Susan Donat
Administrative Secretary

Enclosure
September 1, 2017

Britton Engineering & Land Surveying, Inc.
Steve Thingelstad, P.E., L.S.
8035 Black Hawk Road, Suite 5
Black Hawk, SD 57718

Re: Request for Exception to waive the requirement to construct a 12-inch water main in Anderson Road
    Associated with Prairiefire Subdivision
    City File # 17EX148, Related Files 17PL054

Dear Steve,

The Request for Exception to Section 3.9.4 of the City of Rapid City Infrastructure Design Criteria Manual (IDCM) to waive the requirement to construct a 12-inch water main in Anderson Road is denied.

Water modeling conducted by the City indicates the available fire flow in the un-looped 8-inch main as proposed results in an available fire flow of approximately 900 gallons per minute (gpm). This does not meet the minimum 1,000 gpm as required in Section 3.9.2 (2) (a) of the IDCM. Constructing the 12-inch loop will result in an available fire flow of approximately 2,170 gpm. The City is taking ownership of the water mains located within and around the Prairiefire Subdivision or around October 1, 2017. A 12-inch water main going south from Winton Street is included as part of a master utility plan being developed by the City. The 12-inch water main required from Winton Street to Mondo Street may be eligible for oversize cost reimbursement.

The denial of this exception request may be appealed to the City Council by requesting it be placed on the next Public Works Committee agenda. The City Council has final approval of exception requests. In order to appeal the denial the applicant shall file a written request of appeal to the Public Works Director within 10 working days of the denial. Please contact the Public Works Engineering Department if you desire to appeal.

Sincerely,

City of Rapid City

Dan Kools, P.E., P.L.S., CPESC
Project Engineer
Good morning Steve,

Existing water mains extend in Anderson to Winton Street (I believe Dan sent you the bid set plan sheet). There is no City of Rapid City water main in Southside drive nor will there be a connection from the water mains in Southside to the existing water main in Felicia Street as the City does not own a water main in Southside west of Anderson Road. I believe there is Green Valley Water or RVSD water in Southside if you are seeing hydrants.

With respect to your question regarding available flow to the development, the City modeled the existing subdivision and added the proposed development. City assumed minimal grading and placed the nodes at current contour elevations and assumed the minimum 8 inch diameter for all new mains within the development. Fire flows were assumed to be 1500 gpm although Britton Engineering should work with the fire department to determine what the required fire flow will be for the proposed home sizes per the Fire code. Demands were assigned per the Infrastructure Design Criteria Manual. Velocity in the water mains of less than 12 fps and topography greater than 20 psi in the water mains are criteria that are used in modeling the available flow.

In general, without a loop in Anderson Road connecting to Mondo, available flows within the development are less than 1000 gpm in locations. I’ve attached the data tables for your reference and identified an example node discussed below to identify available flows without a loop in Anderson to Mondo, with an 8 inch loop in Anderson to Mondo, and with a 12 inch loop in Anderson Road connecting to Mondo street.

Available fire flow is as follows in the unlooped 8 inch water main in Mondo Street related to J-17-414

- The available fire flow in the water main at 50% reservoir is approximately ~900 gpm @ ~50 psi residual. This flow provides for a velocity less than 12 fps in the 8 inch main (and mains within the vicinity) and satisfies minimum pressure requirements in the area.

Available fire flow is as follows in the looped 8 inch water main in Mondo Street related to J-17-414 (loop modeled as an 8 inch in Anderson Road)

- The available fire flow in the water main at 50% reservoir is approximately ~1900 gpm @ ~20 psi residual. This flow provides for a velocity less than 12 fps in the 8 inch main (and mains within the vicinity) and satisfies minimum pressure requirements in the area.

Available fire flow is as follows in the looped 8 inch water main in Mondo Street related to J-17-414 (loop modeled as a 12 inch in Anderson Road)

- The available fire flow in the water main at 50% reservoir is approximately ~2170 gpm @ ~20 psi residual. This flow provides for a velocity less than 12 fps in the 8 inch main (and mains within the vicinity) and satisfies minimum pressure requirements in the area.

Kind Regards,

Morgan Falcone, P.E. | p: (605)394-4154 | morgan.falcone@rcgov.org