

Select Auto Sales, 1316 Cambell Street

CHAPTER 15.32 FLOOD AREA CONSTRUCTION REGULATIONS

SUBSECTION 15.32.240.D

Additional Information:

1. The proposed addition to the Select Auto Sales building causes no rise in the Base Flood Elevation (BFE) or in the flow velocities. A No-Rise Certification has been prepared by Ferber Engineering Company and is included with this submittal.
2. Select Auto Sales is an existing used car lot that has been in use by Mr. Caldwell since 1995. At the time Mr. Caldwell purchased the property in 1995, the BFE was 3162.4 ft-msl. The first floor elevation of the building is 3163.0 ft-msl, which is approximately 0.6 feet above the 1995 BFE. As seen on the enclosed site plan, most of the existing parking lot was also at or above the 1995 BFE. Although the property was located within the floodway according to the earlier maps, there was little potential for cars to be swept downstream.

In 1996, FEMA published new FIRM and Floodway maps for Rapid City. In the revised study, the BFE increased by approximately 2.3 feet to 3164.7 ft-msl. The modifications to the previous model are listed in the 1996 Rapid City Flood Insurance Study (FIS). Mr. Caldwell had no control over and has made no improvements to the property that would have affected the BFE.

Due to this substantial increase in flood elevation, the potential for injury of persons and property has increased because of the increased risk of automobiles being carried downstream from the car lot. The City of Rapid City does not allow overnight parking within the floodway boundary. Mr. Caldwell has obtained a letter (attached) from FEMA that stipulates that this ordinance is above and beyond the federal guidelines. Even if the proposed addition to the building is not allowed by the Planning Commission and Common Council, the overnight parking of cars will remain due to the nature of the business.

3. The existing water service was constructed in 1998 and is buried four feet below existing ground. The ground surface is covered with asphalt from the Cambell Street curb to the building. Very little erosion potential exists that could impact the water line. No modifications to the water service are required.

The existing sanitary sewer service was also constructed in 1998. The proposed building requires a floor drain for a car wash down area and plumbing stub-outs will also be constructed for possible future lavatories. The floor drain will be connected to the existing sanitary sewer service and will have a check valve placed in the line to prevent potential sewage backup into the building. A gate valve will also be placed inside the building on the sewer service line to allow the service line to be isolated from the City's sewer main during times of flood.

01SE001

4. The susceptibility of both the existing and proposed buildings to flood damage has increased due to the increase in BFE. The majority of damage to the existing building would be to electrical outlets, interior wall coverings, office equipment and tools. The proposed building has been designed to resist hydrostatic, hydrodynamic, debris impact and buoyant flood forces in addition to all other standard loadings. The structural plans are included with this submittal.

With construction of the proposed addition, Mr. Caldwell will also bring the existing building into conformance with floodproofing requirements. Dry floodproofing methods will be used that will limit the amount of water into the building to 4 inches in 24 hours. This is within the United States Corp of Engineers (USCOE) definition of substantially impermeable as presented in FEMA's Technical Bulletin 3-93, *Non-Residential Floodproofing – Requirements and Certification*.

The existing egress doors of the existing building and proposed building and the proposed overhead doors of the proposed building will be made as watertight as possible by using neoprene seals on both walk-out and overhead doors up to the Design Flood Elevation (DFE) of 3165.7 ft-msl, which is one foot (1') above the BFE. Specifications for the seals for both the overhead and egress doors can be provided upon request.

All existing electrical lines are run through conduit under the concrete floor up to the outlets. All electrical outlets and HVAC ductwork will be raised to the DFE. Waterproof electrical junction boxes will be used where existing outlets must be extended vertically to the DFE. All water heaters and HVAC mechanical systems will also be placed above the BFE by use of platforms inside an enclosed mechanical room. All new electrical outlets in the proposed building will be placed above the DFE.

Interior floor and wall coverings for the existing building will conform to the Uniform Building Code and the guidelines established in FEMA's Technical Bulletin 2-93, *Flood-Resistant Materials Requirements*.

A Flood Emergency Operation Plan and an Inspection and Maintenance Plan have been prepared in accordance with FEMA recommendations and are enclosed with this submittal.

5. Small business is vital to a community. Select Auto Sales currently employs 4 people with plans to add 2 people following completion of the proposed addition and existing building remodeling. Select Auto Sales pays property tax to Pennington County, and the State of South Dakota collects 3% sales tax from each automobile sold.
6. Select Auto Sales does not require a water front location.

01SE001

7. The availability of alternative locations not subject to flooding on this property is nonexistent. Relocation of the business to another site is possible, but the replacement cost of the land, building and parking area is substantially higher than making the required floodproofing measures as outlined. Because Cambell Street is a major street in Rapid City, the business has high visibility. Relocating to another site could potentially result in loss of revenue due to lower visibility.
8. The proposed building addition does not change the existing use of the building. The addition will be used as shop area and the existing building will be converted to a showroom and office space.

The surrounding land use is commercial consisting mainly of automobile dealers and fast food restaurants. Development is limited within a few hundred feet in any direction due to the Rapid Creek floodway.

9. The comprehensive plan for this neighborhood has not been updated since 1974. At that time the anticipated land uses were light industrial. Current business along Cambell Street is primarily general commercial. At the August 6th, 2001 Common Council meeting, the subject property was rezoned from Flood Hazard District to General Commercial District.

Because Select Auto Sales is located within the regulatory floodway, it does not fit within the City of Rapid City floodplain management program.

10. The safety of access to the property in times of flood is similar to the access of Cambell Street. The depth of flow over the Cambell Street bridge is 4.8 feet making Cambell Street impassable during the 100-year flood. The maximum calculated 100-year water depth at the existing Select Auto Sales building floor elevation is 1.7 feet.
11. As shown in the No-Rise Certification materials provided with this submittal package, the Base Flood Elevation (BFE) is 3164.7 ft-msl. The calculated channel velocity within the defined model bank stations is 12.4 feet per second (fps). The left (north) overbank and right (south) overbank calculated velocities are 2.6 fps and 3.5 fps, respectively. The average calculated velocity for the base flood is 5.2 fps. HEC-RAS hydraulic results for the cross section upstream of the property, the cross section at the property and the next downstream cross section are included with this submittal.

Flood insurance studies are typically created using a steady flow assumption, where only the peak flow of interest is used to calculate flow depths. Because of this, the duration and rate of rise of the 100-year flood are nondeterminant from the information provided by the HEC-RAS modeling.

No detailed sediment transport or debris flow studies have been completed to our knowledge other than graduate studies being completed at SDSM&T. These studies do not address potential erosion and sediment capacity of Rapid Creek.