

ITEM: This Floodplain Permit Application is for the construction of an elevated residential structure in the Imhoff Creek Floodplain.

BACKGROUND:

APPLICANT: Brenda T. Dean, LLC V
BUILDER: Michael T. Dean
ENGINEER: Earl Gary Keen, P.E.

The property is located at 1030 W. Brooks St. in the Imhoff Creek floodplain/floodway. It is located between Carey Drive and South Pickard Avenue on the south side of Brooks Ave. and east of Imhoff Creek. The location of the proposed house is in the floodplain but not within the floodway. The BFE for this location is 1143.5'. The east edge of the proposed building would be out of the floodplain as the ground in this location slopes steeply down to the west towards Imhoff Creek. There is an existing building that will remain as an art studio on this property.

The proposed home would be built on stilts at an elevation approximately 8 feet above the lowest existing ground elevation at the site. The applicant proposes to use the area under the house as parking. The lowest finished floor elevation would be 1149.0' which is approximately 5.5' above the BFE and 3.5' above the Ordinance elevation requirements. The applicant has also indicated that utility structures, such as the HVAC unit will be installed on a platform at minimum elevation of 1145.5' or two feet above the BFE. Piers, stilts for HVAC unit and stairs to access the building will be constructed of steel or welded metal to minimize volume added to the floodplain. The proposed construction method recommended by the applicant's engineer focuses on strength and stability while minimizing surface area. Staff believes this would help meet the requirement of structures being built to withstand flotation, collapse and lateral movement in a flood. The engineering report also indicates that a geotechnical engineering company has located bedrock at a depth of 22 feet below ground at the site and a structural engineer has been retained to design a pier and foundation system that would bear directly on the rock layer rather than in the sandy soils that exist at the site.

In addition to the existing parking area on the north east side of the lot, the applicant wishes to install a driveway off of Brooks St. immediately east of the bridge over Imhoff Creek and through the floodplain to the parking area under the house. The engineer has provided fill and cut calculations for the proposed project, that includes both cut necessary for the drive, the house and accessory structures. The proposed plan includes a net removal of 218.5 cubic yards of soil from the floodplain. 18.5 cubic yards of soil is to be removed from the edge of the main channel of Imhoff Creek to ensure that the conveyance of Imhoff Creek is not reduced according the engineering report.

STAFF ANALYSIS:

Site located in Little River Basin or its Tributaries? yes__ no✓

According to the latest FIRM, the site of the proposed work is located in the Imhoff Creek floodplain (Zone AE). At the proposed site, the BFE is 1143.5 ft.

Applicable Ordinance Sections:	Subject Area:
36-533	(e)2(a)..... Fill restrictions
	(e)2(b)..... New construction designed and adequately anchored to prevent flotation, collapse or lateral movement
	(e)2(e)..... Compensatory storage and fill restrictions
	(e)3(a)(1)..... Residential structures and accessory structures elevated 2 feet above BFE
	(f)3(a)(8)..... No rise considerations

(e)2(b) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent floatation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

The engineering report indicates that the pier foundation system for the house will be anchored to bedrock. In addition, piers, stairs and accessory structures will be manufactured using steel or other metal material and welded joints for strength and to minimize volume of the structure. This satisfies ordinance requirements.

2(a) and 2(e) Fill Restrictions in the Floodplain and Compensatory Storage – Fill is restricted because storage capacity is removed from floodplains, natural drainage patterns are adversely altered, and erosion problems can develop. Compensatory storage must be provided within the general location of any storage that is displaced by fill or other development activity and must serve the equivalent hydrologic function as the portion which is displaced with respect to the area and elevation of the floodplain.

According to the engineer a net of approximately 218.5 cubic yards of fill will be removed from floodplain satisfying ordinance requirements.

(f)3(a)(8) No Rise Considerations – For proposed development within any flood hazard area (except for those designated as regulatory floodways), certification that a rise of no more than 0.05 ft. will occur in the BFE on any adjacent property as a result of the proposed work is required. For proposed development within a designated regulatory floodway, certification that no increase in the BFE on any adjacent property as a result of the proposed work is required.

The project engineer has provided a hydraulic analysis and determined that the proposed project will not cause a rise in the BFE, which meets the ordinance requirement.

(e)3(a)(1) Residential structures, including both site-built and manufactured homes, shall be constructed on fill so that the lowest floor including basement, ductwork, mechanical and electrical equipment including furnaces, water heaters, and air conditioners, etc. is at least two (2) feet above the base flood elevation...

The project engineer has indicated in the plans that the lowest floor of the proposed structure will be built at a minimum of 5.5' above the BFE exceeding the requirements of the ordinance.

RECOMMENDATION: Staff recommends Floodplain Permit Application #676 be approved with the following conditions:

1. A surveyor provide elevation of the lowest floor to verify elevation requirements have been met prior to going vertical with the walls;
2. An elevation certificate be submitted at completion of the construction to verify compliance;
3. The driveway be located on the east side of the site out of the floodplain and away from the bridge;
4. Stabilization of all excavated areas to prevent erosion.

ACTION TAKEN: _____