



City of Flagstaff

211 W. Aspen Ave
Flagstaff, AZ 86001
www.flagstaff.az.gov

Engineering Section

Engineering Standards Modification Request Form

Project Name: NAH Health Village

COF Project Number: PZ-21-00126

Standard Specification/Standard Detail:
13-10-004-0001 Dead End Streets

Modification Requested: The proposed Woody Mountain Road and Purple Sage Trail are dead-end streets longer than 1,200 feet and have paved temporary turn-arounds proposed at the boundary of the platted subdivision. Per the Preliminary Plat Engineering 1st Substantive Comment No. 2, dated 01/13/2023, the Preliminary Plat shows rural cul-de-sacs per City of Flagstaff Engineering Standard Detail 10-04-011. The cul-de-sacs include a max 5% grade, shoulder, and right-of-way dedication in accordance with the City's detail.

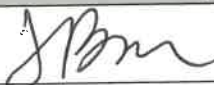


We are requesting a variance from this code requirement to not construct the edge treatment to match the adjacent street, including curb, gutter, and sidewalk, for the temporary turn-arounds at Woody Mountain Rd and Purple Sage Trl.

Reason for Modification: The cul-de-sacs are temporary until the future Purple Sage Trail and Woody Mountain Road intersection is constructed offsite of the Northern Arizona Healthcare (NAH) property. Any edge improvements constructed now will be "throw away" improvements and will be removed and disposed of.

The primary reason for providing the turn-arounds is for fire access. The existing Purple Sage Trail will continue through the cul-de-sac to allow thru traffic using the existing FR 532 and adjacent offsite streets to enter the NAH property. Constructing the cul-de-sac per the City's Rural Cul-de-sac detail will provide a transition from the paved roadway with curb and gutter to the rural dirt road without curb and gutter. There is a proposed driveway south of this cul-de-sac for delivery trucks and hospital staff to access the hospital's loading dock where public access is prohibited. Woody Mountain Trail will include barricades at the dead end to prohibit public traffic from entering.

Comments:

Approval/Denial

Transportation Engineering PM:		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	Date: 5-24-23
Dev Engineering PM:		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	Date: 5-24-23
City Engineer:		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	Date: 5/24/23



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Project Name: NAH Health Village

COF Project Number: PZ-21-00126-05

Standard Specification/Standard Detail:

Engineering Standard Section 13-10-010 Driveways

Modification Requested: Healthcare Blvd and Beulah Blvd are classified as minor arterial roadways with a minimum driveway spacing of 150 ft. Purple Sage Trail and Wellness Loop are classified as major collector roadways with the same minimum driveway spacing. Applicant is requesting to reduce the spacing between driveways to allow more property access on Healthcare Blvd and Purple Sage Trail.

Reason for Modification: Due to the volume of anticipated employees during shift change, as well as the need for providing medical services.

Comments: Applicant did not provide specific spacing between driveways, and we need more information on that.

Approval/Denial

Transportation Engineering PM:

Approved Denied

Date: 5-24-23

Dev Engineering PM:

Approved Denied

Date 5-24-23

City Engineer:

Approved Denied

Date: 5/24/23



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Project Name: NAH Health Village

COF Project Number: PZ-21-00126-05

Standard Specification/Standard Detail:

Engineering Standard Table 13-10-011-01 Functional Classification/Design Criteria

Modification Requested: Applicant is requesting that driveway entrances be designed as intersections with 25' to 30' curb return radii as seen at their driveway entrance on Beaver St.

Reason for Modification: Due to observed damage to the curb from traffic entering or exiting out of driveways designed according to MAG Standard Detail 250-2. Observations of the entrances with larger curb returns do not show any damage and they would like to prevent maintenance issues to roadway as well as vehicles at the new location.

Comments:

Approval/Denial

Transportation Engineering PM:

Approved Denied

Date: 5-24-23

Dev Engineering PM:

Approved Denied

Date: 5-24-23

City Engineer:

Approved Denied

Date: 5/24/23



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Project Name: NAH Health Village

COF Project Number: PZ-21-00126

Standard Specification/Standard Detail:
13-10-006-0001.H

Modification Requested: Increase the grade approaching intersections along Beulah Blvd from 2% to 3%.

Reason for Modification: This would reduce the cut requirement at the intersection of Beulah Blvd and Woody Mountain Rd, and reduce the fill requirement at Beulah Blvd and the hospital driveway. In order to achieve the required 2% intersection grade for a minimum of 300 feet, the cut and fill would increase to approximately 9 feet.

The design team evaluated options to meet the required intersection grade but this would result in drastic earthwork to achieve. One of the critical constraints to the design is the accommodation of the future Interstate 17 underpass at Beulah Blvd and Purple Sage Trl. The road design could not match the existing low point on Beulah and achieve a low enough grade at Purple Sage Trl for the underpass. The proposed low point was shifted outside of the intersection to avoid ponding water at an intersection and as far north towards the existing low point as possible. The location of the low point plays a role in determining how much earthwork is needed at the different intersection grade designs.

Comments: Although the grade is steeper, calculated stopping and accelerating distances on grades of 3% or less differ little from the corresponding distances on a level road per AASHTO Section 9.4.3. Using AASHTO Table 3-2, the design stopping distance at 45 mph and 3% is 378 feet, compared to the standard 360 feet which ignores impact of road grade in Table 3-1.

According to AASHTO Section 3.4.2., "operation on a 3% upgrade has only a slight effect on passenger car speeds compared to operations on level terrain", which should have little effect on the end user. Beulah Boulevard is considered a designated truck route that includes other parts along the route with intersections in the 3% grade range. According to AASHTO Figure 3-24, a typical heavy truck will be able to maintain the posted 40 mph speed limit with the 3% design on Beulah Boulevard. This design modification meets the general intent of the standards.

Approval/Denial

Transportation Engineering PM:

Approved Denied

Date: 5-24-23

Dev Engineering PM:

Approved Denied

Date: 5-24-23

City Engineer:

Approved Denied

Date: 5/24/23