

Summary of 2024 Amendments to Flagstaff City Code, Title 13, Engineering Design Standards and Specifications

13-04-001: Easements

- Restructured 13-04-001-0003 to make the intent clearer.
- Revised and added language to define more clearly what can and can't be placed in easements.
- Changed the definition of "access" to allow driving ordinary construction equipment in an easement.

13-06-002: Plans Required

- Revised paragraph 13-06-002-0001.1.A.3 to allow for cost to be part of a justification for engineering standards modification requests.
- Removed incorrect and unnecessary scale conversions from 13-06-002-0003.A.
- Changed plan submission requirement from mylar to electronic format in 13-06-002-0004.
- Added a requirement in 13-06-002-0004 for design engineers to provide summaries of changes between submittals during the civil plan review process.
- Added requirement for space on cover sheets for a City approval stamp.
- Changed plan submission requirement from mylar to electronic format in 13-06-002-0008.
- Changed plan submission requirement from mylar to electronic format in 13-06-002-0009.

13-06-003: Grading Plans

- Changed plan submission requirement from mylar to electronic format in 13-06-003-0002.

13-06-007: General Notes

- Added requirements for the general notes to specify the protection of survey monuments and the prohibition of road plates from November to April.
- Added a requirement for the water and sewer notes to specify the abandonment of unused service or stubs.
- Added a requirement for the water and sewer notes to instruct the contractor to verify the size of water service and water meter.
- Added a requirement for fire hydrant testing procedures to be stated on the water and sewer notes.

13-06-008: Construction Traffic Control Plans

- Added statement defining when a construction traffic control plan is required.

- Clarified that Traffic Control Plans are to be approved by the City of Flagstaff Traffic Engineering Section under the supervision of the Traffic Engineer to clean up job title and chain of responsibility.
- Removed the requirements for a specific engineering drawing scale.
- Removed the requirement to include a City permit number on the traffic control plan.
- Added that bicycle and pedestrian accommodations need to be made during temporary realignment or rerouting of existing facilities.
- Added note that accessible routes need to be included per ADA requirements.
- Updated a note to include that the permittee needs to reach out to the transit agency a minimum of 3-days in advance if a transit stop will need to be relocated.
- Updated a note to include that a new plan needs to be submitted and approved if work extends past the original dates.
- Added a note regarding advanced VMB, when they are required to be posted and which roadways and types of closures it applies to.
- Added a requirement for TCPs to have a note that they are only valid for the dates specified and when stamped.

13-09-001: Underground Utilities

- Removed most easement requirements in 13-09-001-0008.G to instead refer back to the easement requirements of 13-04-001.

13-09-002: Sewer System Design

- Removed the column allowing an “n” value of 0.010 for minimum slope.
- Removed requirement for a manhole at changes in pipe material.
- Added prohibition against connecting to an existing manhole by coring.
- Added guidance to locate manholes outside of sidewalks etc. when feasible.
- Changed language of 13-09-002-0010.A to prevent installation of sewer service across multiple parcels without an easement.

13-09-003: Water System Design

- Added guidance for manholes to be located outside of sidewalks, bikeways, bike lanes, and FUTS trails, when feasible.
- Changed language of 13-09-003-0007.F to prevent installation of water service across multiple parcels without an easement.
- Added a statement specifying that water meters shall be located at the frontage of the lot being served.

13-09-006: Sewer and Water Line Materials

- Broadened fire hydrant flange height requirements.
- Added language allowing some flexibility for hydrant installation positioning when necessary.

13-10-002: Street Design

- Moved Tables 13-10-011-01 and 02 to this section.
- Changed language in Table 13-10-011-01 regarding installation of roll curb.

13-10-006: Intersection Design

- Added requirements for lane alignment through intersections.
- Changed the approach intersection grade for signalized, or likely to become signalized, intersections from 2% to 3%.
- Added the approach intersection grade for a roundabout to be 4% for 200-ft.
- Added that an intersection shall maintain a maximum 2% cross slope.
- Added a table for minimum spacing of driveways to a roundabout controlled intersection.

13-10-007: Horizontal Alignment

- Updated reference to Table 13-10-011-01.

13-10-010: Driveways

- Added reference to NCHRP Report 659.
- Added requirement to pave driveways and parking areas.
- Added reference to new solid waste access requirements.

13-10-011: Resource and Slope Design Criteria

- Removed Tables 13-10-011-01 and 02 from this section to be added to Section 13-10-002-0001.

13-12-003: Lighting Layout Requirements

- In Table 13-12-003-01, changed the IESNA Distribution number for the Local (All) from 1 to 2.

13-12-005: Street Light Equipment

- In Table 13-12-005-01 changed the Maximum EPA to 1.5 square feet to match the design of our new Signal Pole design standards.
- Updated the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals to the newer edition (6th edition, with 2015 Interim Revisions).

13-14-001: Pedestrian and Bicycle Facilities

- Updated the name of the division to include pedestrian facilities.
- Updated the reference to the AASHTO "Guide for the Development of Bicycle Facilities."

13-14-002: Flagstaff Urban Trails System (FUTS)

- Added this whole new division.

- Added detail for design guidelines, dimensions, structural requirements, expansion and control joints, shoulders, street/sidewalk transitions, fencing, and tunnels and underpasses for Flagstaff Urban Trail Systems.

13-15: Work in Public Rights-of-Way and Easements

- Combined this chapter with Chapter 13-04, which is also related to rights-of-way and easements.
- Separated permit application requirements from permit requirements.
- Changed from paper plan submission to electronic plan submission.
- Added reference to Division 13-06-008 for traffic control plan requirements.
- Added reference to prohibition of road plates from November to April.
- Updated contact and notification requirements.

13-16-002: Signal Design Elements

- Added statement that signal cabinets, poles, push buttons, and streetlight poles shall be outside of pedestrian/bicycle ways, and that full width shall be maintained. Referenced the newly added Pedestrian Push Button Locations standard drawing.
- Added statement that push buttons shall be located to meet ADA requirements.
- Changed multiple references to ADOT Type G signal heads to instead be a 12" – 4 section heads.
- Added statement that all signal heads shall include a 1" retroreflective border around the perimeter of the backplate.
- Added new section titled 13-16-002-0003 Traffic Signal Pole Design Requirements. This specification describes the general requirements for traffic signal equipment to be installed within, or supplied to, the City of Flagstaff.

13-16-004: Signal Construction

- Added specification for bagging new traffic signal and pedestrian heads.
- Changed plan submission requirements from paper submissions to electronic submissions.

13-16-005: Traffic Signs

- Added statement that traffic signs shall be outside of pedestrian/bicycle ways.

13-16-006: Pavement Markings

- Added statement that pavement markings shall comply the MUTCD, the Arizona Supplement to the MUTCD, the ADOT Traffic Safety for Schools, Guidelines, and these standards.

13-18-004: Installation, Placement, and Planting

- Updated the line of site at intersections and driveways section to follow AASHTO standards.
- Created new figure to illustrate the new dimensions.

13-21-002: Addendum to MAG Uniform Standard Details for Public Works Construction

- Added a statement to disallow plating during winter months (Nov. – April) for snowplow operations to the MAG Detail 211 – Standard Trench Plating Detail.
- Added reference to NCHRP Report 659 in MAG Detail 250 and 251.
- Updated reference to MAG Detail 420 and removed requirement for steps in manholes.
- Updated reference to MAG Detail 421.
- Updated reference to MAG Detail 422 and removed requirement for steps in manholes.

Standard Drawing 8-06-010: Standard Valley Gutter

- Increased concrete apron thickness.

Standard Drawing 09-03-100: Combination Air Release Valve 2”

- Delete previous detail drawing and replace with a new one.

Standard Drawing 09-03-101: Air Release Valve 1”

- Delete previous detail drawing and replace with a new one.

Standard Drawing 09-03-102: ARV Location and Standpipe Positioning

- New detail drawing specifying position of ARV and standpipe.

Standard Drawing 09-06-071: Double Check Valve Assembly Installation

- Removed drainage and updated notes.

Standard Drawing 09-06-072: Reduced Pressure Assembly (RPA) Installation

- Added GFI outlet.
- Changed “dump outlet” to “relief valve”.
- Updated notes.

Standard Drawing 09-06-073: Pressure Vacuum Breaker Assembly (PVBA) Installation

- Resized and centered drawing.
- Removed reference to U.S.C.
- Updated notes.

Standard Drawing 10-06-011: Standard Delineator

- Changed the delineator sign to MUTCD OM2-1V, as the previous sign was out of date.

Standard Drawing 10-06-015: Median Nose Signs

- Added a new standard that provides clarity and consistency for median nose signage utilizing MUTCD signs R4-7 and OM-3R.

Standard Drawing 10-09-010: Pavement Structural Section for Streets and Off-Street Parking Lots

- Separated into two drawings, one for streets and one for off-street driveways and parking areas.

- Rephrased note to require design by a registered engineer.

Standard Drawing 10-09-011: Structural Section for Private Driveways and Parking Areas

- New detail for off-street driveways and parking areas with information taken from Standard Drawing 10-09-010.

10-10-010: Parking, Driveway & Aisle Slope Parameters

- Updated ADA reference.
- Added note referencing new solid waste access requirements.

Standard Drawing 10-10-019: Bus Pullout

- Added a note stating that when a shelter/bus stop is adjacent to a FUTS, the FUTS shall be aligned behind the shelter/bus stop.

Standard Drawing 10-10-035: Bicycle Exit / Entrance Ramp

- Added a new standard that provides clarity and consistency for bicycle exit and entrance ramps. The City has designed these ramps many different ways and this is the one we have decided to standardize.

Standard Drawing 10-10-039: Driveway-Pedestrian Ramp Combination (For Use at T-Type Intersection)

- Delete this standard drawing.

Standard Drawing 13-03-011: Fire Hydrant Assembly

- Update flange height range to match 13-09-006-0006.R

Standard Drawing 13-03-015: Collapsible Bollard

- New detail for a collapsible bollard for use on FUTS trails in place of removable bollards.

Standard Drawing 14-01-010: Flagstaff Urban Trails System Details

- Delete this standard drawing and replace with Drawings 14-02-001, 002, and 010.

Standard Drawing 14-01-011: Pedestrian and Shared Use Path Underpass Dimensions

- Delete this standard drawing and move the information to the new Division 13-14-002

Standard Drawing 14-02-001: Flagstaff Urban Trails System: Paved Trail

- New drawing to replace 14-01-010 with updated information related to the new Division 13-14-002

Standard Drawing 14-02-002: Flagstaff Urban Trails System: Aggregate Trail

- New drawing to replace 14-01-010 with updated information related to the new Division 13-14-002

Standard Drawing 14-02-005: Flagstaff Urban Trails System: Expansion and Contraction Joints

- New drawing to provide more detail on expansion and contraction joint construction on paved FUTS trails.

Standard Drawing 14-02-010: Flagstaff Urban Trails System: Fencing

- New drawing to replace 14-01-010 with updated information related to the new Division 13-14-002

Standard Drawing 16-02-010: Traffic Signal Pole Design

- Added a new standard that provides clarity and consistency for design of traffic signal poles.

Standard Drawing 16-04-010: Pedestrian Rapid Flashing Beacon

- Changed the title of this standard.
- Page 1/5:
 - Added the location of the electric service and signal cabinet/BBS.
 - Added notes on the specific cabinet, battery backup system, and electric service required for this set up.
- Page 2/5:
 - Added MUTCD R1-5L signs and a note that includes the location of the signs.
 - Added MUTCD W11-2 sign to each mast arm.
 - Added references to other standard pages.
- Page 3/5:
 - Added a new custom sign which states “Cross Traffic May Not Stop Use Caution When Crossing.”
 - Updated the pedestrian push button and size of the MUTCD R10-25 sign that is mounted to it.
 - Changed the dimension of the fluorescent yellow prismatic retroreflective border from 2” to 3”.
 - Added notes to align with ADA requirements.
 - Updated the signal heads to not include louvers.
 - Added height dimensions to signs.
 - Updated the height to the pedestrian push button from 38” to 42”.
 - Added references to other standard pages.
- Page 4/5:
 - Updated the signal heads to not include louvers.
 - Added MUTCD W11-2 sign to the mast arm.
 - Changed the dimension of the fluorescent yellow prismatic retroreflective border from 2” to 3”.
 - Added note to specify mounting bracket for the overhead MUTCD W11-2 sign.
 - Added references to other standard pages.
 - Updated the height to the pedestrian push button from 38” to 42”.
- Page 5/5:
 - Added new page with detailed information on the mechanics and material list for the signal heads.

Standard Drawing 16-05-010: Street Name Signs

- Updated an error with dimensioning of the height of the letters on Detail A.

Standard Drawing 16-05-020: Traffic Signal Street Name Signs

- Added a note to specify the mounting brackets.

Standard Drawing 16-05-030: Sign Post Detail

- Added a separate detail for the specific breakaway base.

Standard Drawing 16-06-010: Intersection Striping

- Page 1/4:
 - Added an intersection configuration that includes a T-intersection and shows that the bike lane goes between the left and right turn lanes.
 - Added a note that states, "For bicycle lanes, stripe a skip section of 50 feet approaching the intersection."
- Page 2/4:
 - Added leader specifying the type of striping (4" white solid), Detail C.
- Page 3/4:
 - Added Note 4 which states, "For crosswalks, if a gap is larger than 6 feet to the center of the marking, add more stripes as appropriate."

Standard Drawing PW-50-001: Solid Waste Vehicle Access Requirements

- New detail to describe how to position solid waste enclosures for safe access by trucks.

Standard Drawing PW-50-010: Single and Double Trash Enclosure

- Separated this detail into one for a single enclosure and one for a double enclosure.
- Corrected some dimensioning errors.
- Deleted the gate hinge detail.
- Added a note requiring that gates and gate hinges not encroach on clearance rectangle.
- Added a note requiring that grease and oil containers be kept separate from trash or recycle bins.

Standard Drawing PW-50-015: Solid Waste Double Enclosure

- New detail for solid waste double enclosure taken from PW-50-010.