



LFD STANDARD OPERATING PROCEDURE

906 FIRE APPARATUS ACCESS ROADS

Effective: 11 January 2016

INTENT

To outline fire apparatus access road requirements as found in the currently adopted International Fire Code (IFC). This is a synopsis of the most common requirements for fire apparatus access roads. However, as every project is unique, this is intended as reference material only, and other requirements may exist in the IFC, City of Lewiston Standards, State of Idaho Standards, or with other city departments.

SCOPE

This SOP addresses mainly residential fire access roadways. However, portions of this SOP are relevant for commercial projects as well where applicable. Which requirements apply to a project is determined and enforced by, and at the discretion of the Fire Prevention Division.

REQUIREMENTS

Per IFC Chapter 5:

1. **Construction Documents.** Construction documents for proposed fire apparatus access shall be submitted to the Fire Department for review and approval prior to construction.
2. **Timing of Installation.** Fire apparatus access roads shall be installed and made serviceable prior to and during the time of construction. An exception to this would be granting a permit for construction of a noncombustible foundation.
3. **Where Required – Buildings and Facilities.** Fire apparatus access roads shall extend to within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building.

Exception: The fire code official is authorized to increase the dimension of 150 feet where:

- a. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with the IFC.
 - b. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
4. **Additional Access.** The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

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5. **Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches.
6. **Authority.** The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.
7. **Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities. See examples.
8. **Turning Radius.** The required turning radius of a fire apparatus access road shall be determined by the fire code official. City of Lewiston Standard is 45-foot radius minimum, without parking for a cul-de-sac.
9. **Dead Ends.** Dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved area for turning around fire apparatus.
10. **Grade.** The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the Fire Department's apparatus. City of Lewiston Standard is 11% maximum.
11. **Marking.** Approved signs shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Signs shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility. Reference Lewiston Fire Department SOP "Address Signs for Fire Access Roads".
12. **Obstruction of Fire Apparatus Access Roads.** Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances shall be maintained at all times.
13. **Required Access.** An approved access walkway leading from fire apparatus access roads to exterior openings shall be provided when required by the fire code official.
14. If conditions exist that would make it impossible for hose lines to be advanced to a certain portion of a building from a required access road, an additional roadway will be required to accommodate access to that particular portion of the building.
15. When a private driveway extends farther than the approved access road, then a barrier or sign shall be installed indicating the end of the fire access roadway.
16. Access roadways for Group U occupancies, 1,000 square feet and larger, may be modified as follows:
 - a. Minimum unobstructed width shall be 20 feet with a 16-foot-wide driving surface. These widths allow for the parking of one fire engine and side passage of portable equipment and Fire Department personnel.

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b. Group U private accessory buildings of less than 1,000 square feet do not require access roadways as outlined above; however, private property owners are encouraged to build such roads to aid in building safety.

17. **Additional Fire Protection Systems.** For occupancies of an especially hazardous nature or where special hazards exist in addition to the normal hazards of the occupancy, or where fire access is unduly difficult, the fire code official is authorized to require additional safeguards consisting of additional firefighting appliances. Reference IFC Chapter 9.
18. **Width for Buildings More Than 30 Feet in Height.** Fire apparatus access roads shall have a minimum unobstructed width of 26 feet in width in the immediate vicinity of any building or portion of building more than 30 feet in height.
19. **Proximity to Building.** At least one of the required access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building.
20. **Access Road Width with a Hydrant.** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet, for 20 feet in either direction from the fire hydrant.
21. Access doors or opening(s) shall be required as specified in the International Fire Code and/or Building Code on the exterior wall of a building along required access roadways.
22. The minimum turning radius for all fire apparatus access roads shall be 30 feet inside turning radius for hammer-head turnarounds and 45 feet radius for circle-type turnarounds without parking. For variations, reference Public Works Standards.
23. Dead-end fire apparatus access roads which are not looped must meet the turn-around criteria.

Note: Curves and topographical conditions could alter the requirements for turnarounds and the width of access roadways.

24. The fire apparatus access road is required to have signage to identify its location and prevent the parking of vehicles in the required width.
25. The fire apparatus access road surface is typically met with seven (7) inches minimum thickness of three (3) inch minus uncrushed aggregate subbase. Topped with three (3) inch minimum thickness of $\frac{3}{4}$ inch minus crushed aggregate surfacing..

The Building Permit will be issued after the fire apparatus access road is complete and has received final approval from the Fire Department. The process is as follows:

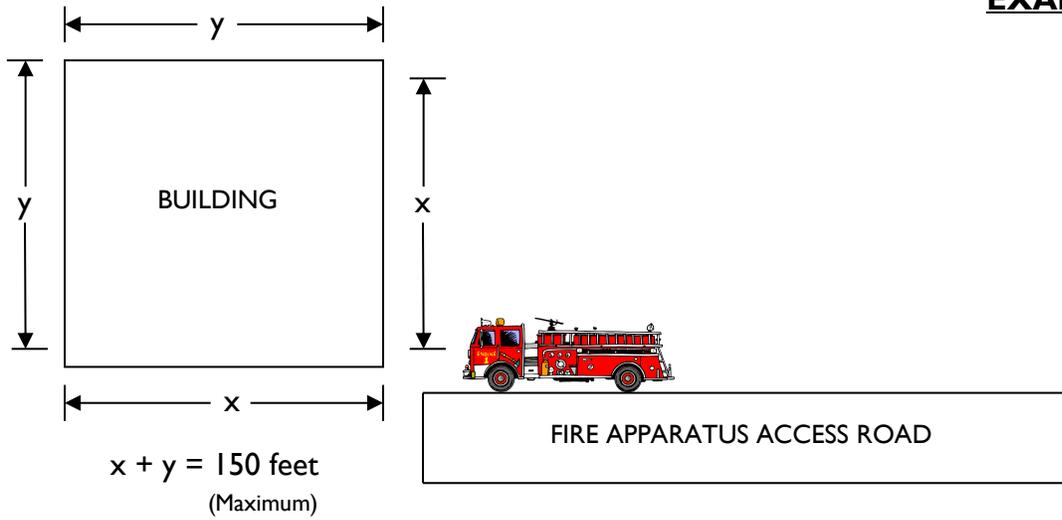
- a. Upon approval of the plan review, the applicant is authorized to install the fire apparatus access road per the approved site plan and specifications.

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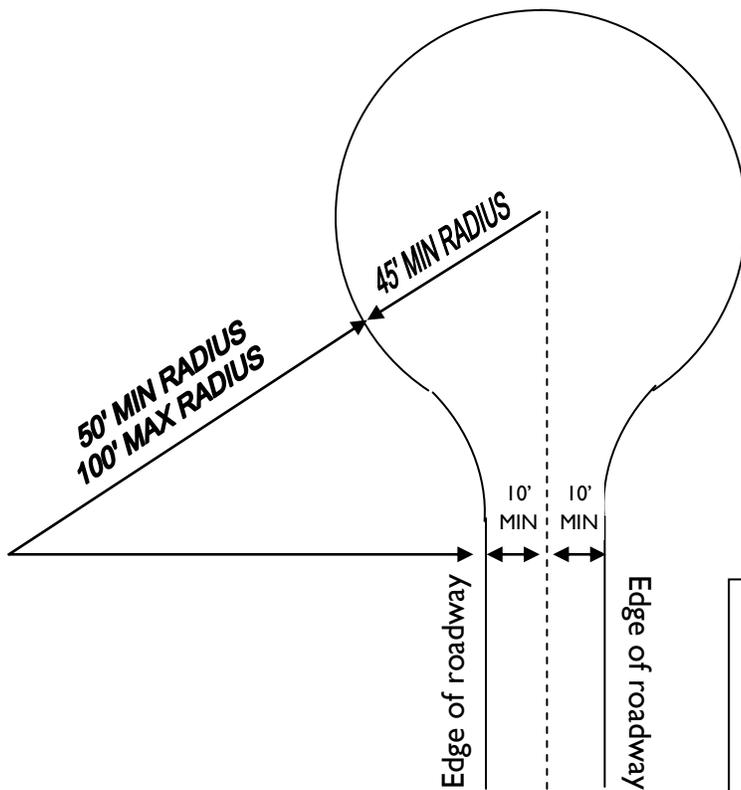
- b. Upon completion of the installation of fire apparatus access road and all signage, applicant contacts a construction materials testing firm to provide an inspection report to the building division that confirms the road was built to meet the minimums as outlined in example 4 or 5.
- c. After receipt of the inspection report, the Fire Department will inspect the fire access road signs. After Fire Department approval, the building permit will be released.
- d. Roadways that encounter irregular base material or drainage conditions are subject to approval by the City's Public Works Department, Engineering Division.
- e. Alterations/deviations from City Standards must have prior approval from the City Engineering Division.
- f. Remember: The road must be completed and approved through all of the above steps PRIOR to the Building Permit being issued, OR the stockpiling of combustible materials for construction on site.

Travis A. Myklebust, Fire Chief

EXAMPLE 1



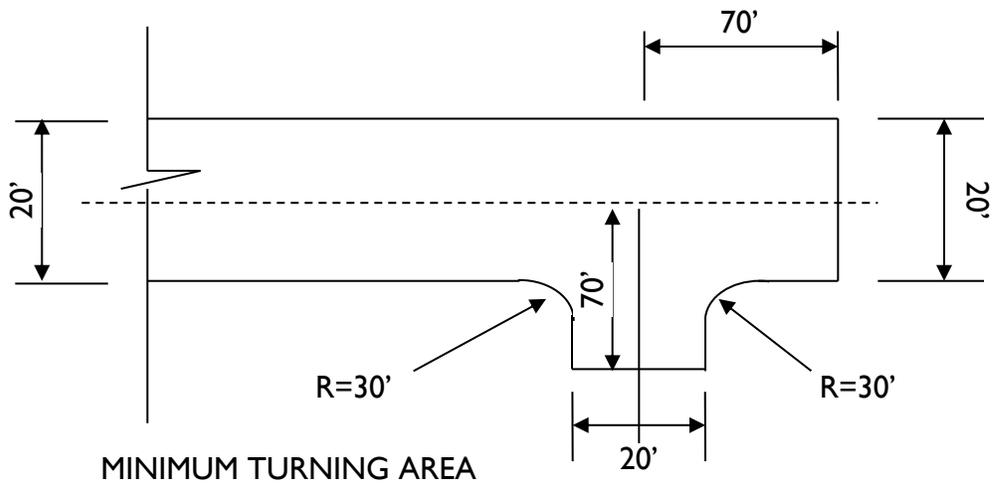
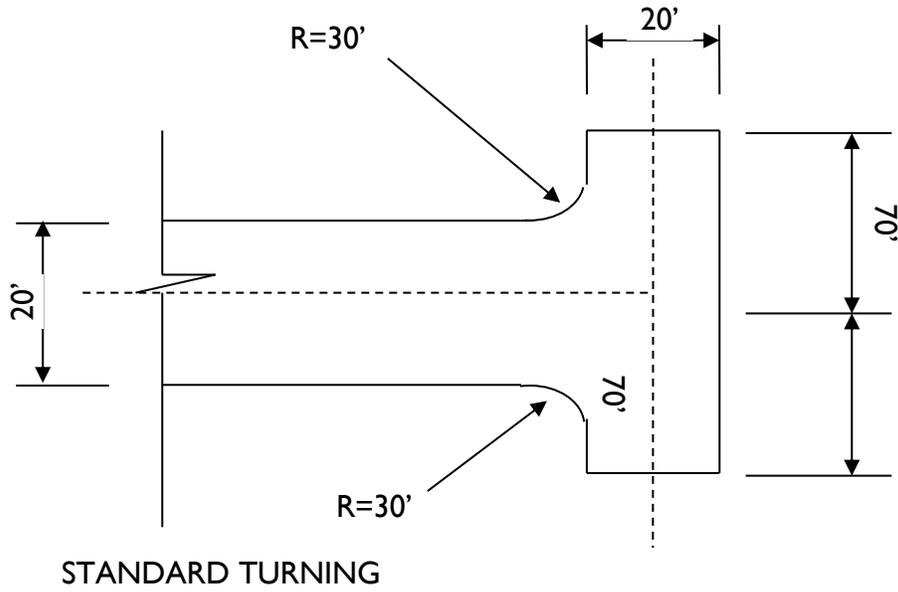
EXAMPLE 2



CITY OF LEWISTON STANDARD DRAWING
Cul-de-sac Design
APPROVED Chris Davies P.E.

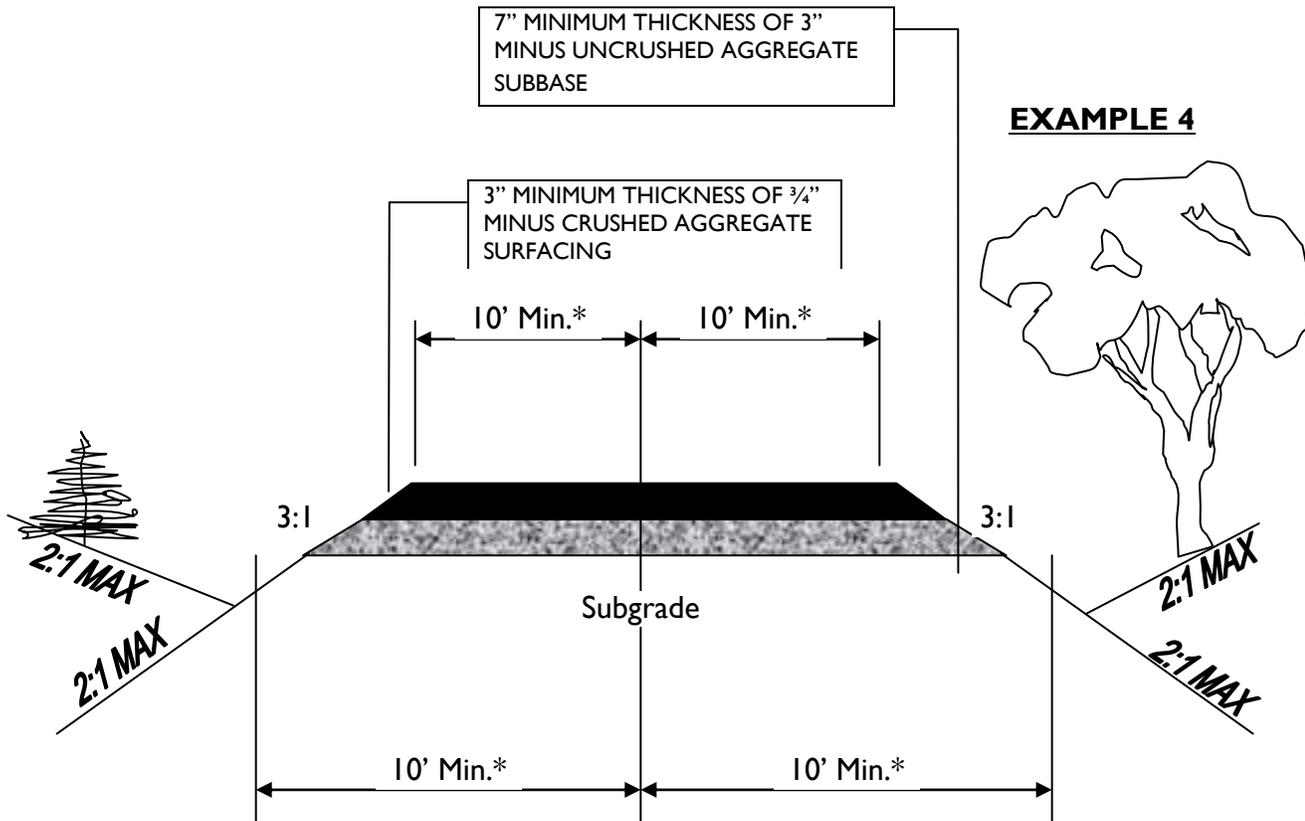
DWG. NO. 3-7

EXAMPLE 3



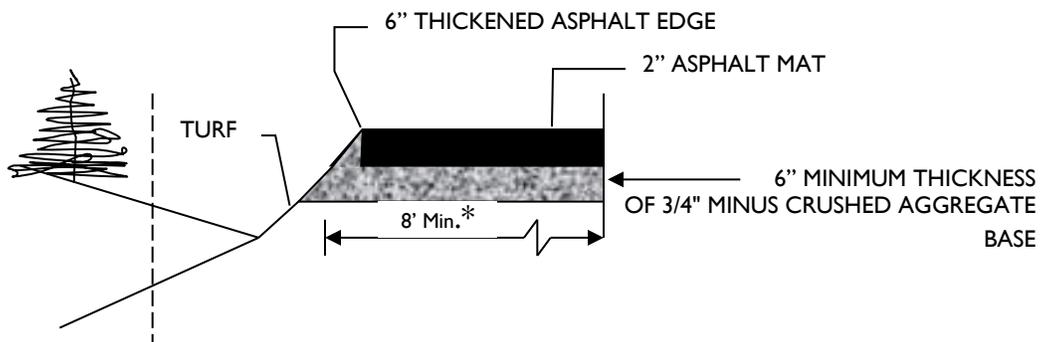
NOTE:

I. Residential use only.



EXAMPLE 4

EXAMPLE 5



Each layer of aggregate shall be compacted to 95% of the maximum density as determined by Modified Proctor test per ASTM D1557. . This standard shall apply to all new access onto private property that serve dwellings and storage buildings located farther than 150 feet from approved Fire Department vehicle access. Approval of construction under this standard is conditioned upon the following:

1. The access shall be a dead-end with no street to street through traffic allowed.
2. A fire vehicle turnaround shall be provided at the end of the access. Turnarounds shall be in accordance with the IFC and/or City Standards as applicable. Alternative turnarounds may be constructed in constrained topography with prior approval of the Fire Chief and/or the Public Works Director as applicable.
3. Construction of the access shall not create drainage low spots or direct drainage onto adjoining properties.
4. Reductions in the aggregate surface depth may be allowed if certified by a Professional Civil Engineer licensed to practice in Idaho.
5. Asphalt material shall conform to City and ITD specifications.
6. *The finished travel surface shall be 20 feet wide, however there may be exceptions for residential structures.

EXAMPLE 6

AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	SUBBASE COURSE PIT RUN (3-inch minus)	BASE COURSE TRAVEL SURFACE (3/4-inch minus)
3 inch	100 Percent Passing	
2 inch	65-95	
1 1/2 inch	40-75	
1 inch		100 Percent Passing
3/4 inch	40-75	90-100
No. 4	22-45	40-65
No. 8	16-34	30-50
No. 30	8-22	
No. 200	2-10	3.0-9.0

Construction Requirements per City of Lewiston Specifications

Gradation Source: Forest Service Standard Specifications for Construction of Roads and Bridges, 1979 & Table 703.04-1 per 2012 ITD Specifications