

*International Fire Code, 2018 Edition and Amendments, Additions and Deletions Thereto
and 2018 Amendments to the Flagstaff City Code, Title 5, Fire Code*

5-02-001-0005 AMENDMENTS

The following provisions shall have the effect of either amending, adding to, or deleting from the International Fire Code, 2018 Edition:

CHAPTER 1. IFC. Administration

Amend Section 101.1 Title, to read:

These regulations shall be known as the Fire Code of City of Flagstaff, hereinafter referred to as "this code."

Amend Section 102.7 entitled "Reference codes and standards", by adding:

Referenced codes and standards as listed in Chapter 80, and in this document are adopted in their entirety.

Amend Section 104.6, Official Records, to read:

The fire code official shall keep official records as required by Sections 104.6.1 through 104.6.4. Such official records shall be retained as prescribed by state and city archival regulations.

Amend Section 105.6.3 Open Burning, by deleting

Exception: Recreational fires.

Amend Section 109.1 entitled "Board of appeals established", to read:

The Building and Fire Code Board of Appeals created in Chapter 2-02 of the Flagstaff City Code shall hear and decide appeals of orders, decisions or determinations made by the fire official relative to the application and interpretation of this code.

Amend Section 110.4 entitled "Violation penalties", to read:

Persons who violate a provision of this code or fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under a provision or provisions of this code, shall be guilty of a class one misdemeanor and upon conviction shall be punishable by a fine and/or imprisonment set forth by the governing laws of the jurisdiction. Each separate day or any portion thereof, during which any violation of this Code occurs or continues, shall be deemed to constitute a separate offense.

CHAPTER 2. IFC. Definitions

Amend Section 202 entitled "Definitions; Detached Building" to read:

DETACHED BUILDING: A separate standalone structure that is separated from other buildings in accordance with the requirements of the International Building Code, greater than 200 square foot and/or within 15 feet of the existing or primary structure. This classification shall include, but not limited to the following:

Casitas
Gazebos
Storage
Sheds
Garages
Green
Houses
Ramadas
Barns
Shops

Amend Section 202 entitled Definitions, by adding:

SPECULATIVE WAREHOUSE. A building designed for high piled combustible storage without a known type or commodity designation specified.

SKY LANTERN. A device designed to carry an open flame as an airborne light. Also known as, but not limited to, Kongming Lantern, Whish Lantern, Sky Candle, Fire Balloon.

CHAPTER 3. IFC. General Requirements

Amend Section 319 Mobile Food Preparation Vehicles, by adding

319.4.3 Location Mobile food preparation vehicles shall not be located within 20 feet of tents, canopies, or membrane structures.

CHAPTER 5. IFC. Fire Service Features

Amend Section 503.1.2 Additional Access, by adding:

Approved secondary access shall be provided to all subdivisions and developments when fire access exceeds 1200 feet in length. Secondary access shall be provided for all one or two family residential developments that exceed 30 units/lots.

Amend Section 503.2.3 Surface, to read:

Fire apparatus access roads shall be designed and maintained to support a minimum 80,000 pounds gross vehicle weight shall be surfaced as to provide all weather driving capabilities. A maintenance agreement for private roads or other fire access may be required showing the responsibility for roadway maintenance and snow plowing.

Amend Section 503.2.4 entitled "Fire Service Features; Fire Apparatus Access Roads; Specifications; Turning Radius", to read:

The required minimum turning radius of a fire apparatus access road shall be 35 feet inside, 55 feet outside, or 45 feet on center

Amend Section 503.2.5 Dead ends, by adding:

There shall be no parking or other obstructions in fire apparatus turnaround areas that would impair turning of apparatus. When parking or other design features are desired, the proper design must be approved. Accumulation of snow must also be accounted for to prevent winter time obstructions.

Amend Section 503.2.7 entitled "Fire Service Features; Fire Apparatus Access Roads;

Specifications; Grade, to read:

The gradient for a fire apparatus access road shall not exceed 10 percent on straight sections of roadway and 5 percent side slope on turnarounds and curves

Amend Section 504.2 Maintenance of exterior doors and openings, by adding:

Exterior doors and openings required by this code or the building code shall be maintained readily accessible for emergency access by the fire department. Exterior doors shall be supplied with an approved exterior handle.

Amend Section 505.1 Address Numbers, by adding:

Commercial address numbers shall be a minimum of 6 inches high with a minimum stroke width of 0.5 inch. Buildings in multi-building complexes must be marked with 12" minimum numbers. When address numbers attached to buildings are insufficient to be seen from the street, additional numbers may be required at a location approved by the Chief. Approved identification shall also be provided on the rear door(s) at any location where access into the building may be difficult to determine.

Amend Section 507 Fire Protection Water Supply, by adding:

507.1 Required water supply. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. When automatic fire sprinkler systems or other approved fire protection systems or features are installed, the specifications of this section may be modified at the discretion of the Chief, when in his opinion, firefighting or rescue operations will not be impaired.

Amend Section 507.2 Type of water supply, by adding:

Water supply for a major system component as described by the American Water Works Association must provide a continuous and uninterrupted supply of fire protection water through redundancy. Fire mains in excess of 1,000 feet in length or which have more than 3 hydrants affixed shall be looped to a second source of water. All fire mains hereafter constructed shall be a minimum of 8-inch diameter but in all cases shall be of sufficient size to adequately supply the required fire flow.

Amend Section 507.3 Fire Flow, to read:

Fire flow tests used to design sprinkler systems, standpipe systems, and fire supply mains shall be performed by a contractor licensed by the State of Arizona, and who has a current business license issued by the City of Flagstaff. The test shall be witnessed by the Flagstaff Fire Department. The method for determining fire flow requirements for buildings and subdivisions shall be Appendix B Fire Flow Requirements for Buildings.

Amend Section 507.5 Fire Hydrant Systems, by adding:

507.5.1 When any portion of the facility or building protected is in excess of 400 300 feet from a water supply on a public street for commercial occupancies and 500 feet from a water supply for residential single family and duplex occupancies, as measure by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the Fire Chief

CHAPTER 6. IFC. Building Services and Systems**Amend Section 605.8 Refrigerant detection, to read:**

Machinery rooms shall contain a refrigerant detector with an approved and distinctive audible and visual alarm. The alarm notification devices shall comply with the audible and visual requirements of the *National Fire Alarm Code*, NFPA 72. A supervisory alarm shall be activated when the mechanical ventilation system fails. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be activated at a value not greater than the corresponding TLV-TWA values shown in the International Mechanical Code. Detectors and alarms shall be placed in one or more locations to assure notifications of all occupants.

CHAPTER 9. IFC. Fire Protection Systems**Amend Section 901.2 entitled "Construction documents", by adding:**

Automatic sprinkler systems designed in accordance with NFPA 13, 13D and 13R shall be submitted and reviewed bearing a review certification and signature of a minimum level NICET III Certified Engineering Technician (CET) or Arizona registrant. Fire alarm systems designed in accordance with NFPA 72 shall be reviewed and submitted bearing a review certification and signature of a minimum level III NICET Technician or Arizona registrant.

Amend Section 901.3 entitled Permits, by adding:

901.3.1 Modifications. No person shall remove or modify any fire protection system installed or maintained under the provisions of this code without prior approval by the fire chief or fire code official.

Amend Section 901.6 entitled Inspection, testing and maintenance by adding:

Fire detection and alarm systems, emergency alarm systems, gas detection systems, fire- extinguishing systems, mechanical smoke exhaust systems and smoke and heat vents, fire pumps shall be maintained in an operative condition at all times and shall be replaced or repaired where defective. Nonrequired fire protection systems and equipment shall be inspected, tested and maintained or removed. All fire protection systems shall be inspected and tested annually by a contractor licensed by the State of Arizona and who possesses an Arizona State Revenue License to work on the specific type of fire protection system being inspected or tested. Contractors shall provide current copies to the fire department annually.

Amend Section 901.6.3 entitled "Records", to read:

Records of all system inspections, tests and maintenance required by the referenced standards shall be maintained on the premises for a minimum of three years and deficiencies shall be copied to the authority having jurisdiction within thirty (30) business days.

Amend Section 901.6, by adding:

901.6.3.1 Inspection and testing. All fire protection systems shall be inspected and tested annually by a contractor licensed by the State of Arizona and who has a current ~~business license issued by the City of Flagstaff~~ Arizona State Revenue License to work on the specific type of fire protection system being inspected or tested.

Amend Section 903 entitled Automatic Sprinkler Systems by adding

903.2 Where Required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12. In addition to the requirements of the fire and building codes, an approved automatic monitored sprinkler system shall be installed throughout all levels of all new Group B, E, F, M, U and S occupancies 5,000 square feet (464m²) or greater and in all buildings over 3 stories in height regardless of the total square footage. Such systems shall be in accordance with the International Fire Code, International Building Code and installed in accordance with NFPA 13, 13D or 13R as specified by the fire code official.

Notwithstanding the foregoing, an automatic monitored fire sprinkler system may be installed in any building regardless of floor area.

Amend Section 903.2.1.1 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group A-1, to read:

An automatic sprinkler system shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multi theater complex.

Amend Section 903.2.1.3 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group A-3", to read:

An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

Amend Section 903.2.1.4 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group A-4", to read:

An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464m²).
2. The fire area has an occupant load of 300 or more.

3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

Amend Section 903 entitled "Fire Protection Systems; Automatic Sprinkler Systems; Where required; by adding:

903.2.2.1 Group B

An automatic monitored sprinkler system shall be provided throughout all Group B occupancies where any of the following exist:

1. Where Group B fire area is 5,000 square feet (464m²) and greater, or
2. Fire area is located more than three stories above grade

Amend Section 903.2.2 Ambulatory care facilities, to read:

903.2.2.2 Ambulatory care facilities

An automatic sprinkler system shall be installed throughout the entire floor containing an ambulatory care facility where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation, whether rendered incapable by staff or staff has accepted responsibility for care recipients already incapable.
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

*In buildings where ambulatory care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* shall be installed throughout the entire floor where such care is provided as well as all floors below, and all floors between the level of ambulatory care and the nearest *level of exit discharge*, including the *level of exit discharge*.*

Amend Section 903.2.3 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group E", to read:

An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 5000 square feet (462m²) in area.
2. The Group E fire area is located on a floor other than a level of exit discharge serving such occupancies.

Exception: An automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has at least one exterior exit door at ground level.

3. The Group E area has an occupant load of 300 or more.

Amend Section 903.2.4 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group F-1", to read:

An automatic sprinkler system shall be provided throughout all buildings containing Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 5,000 square feet (464m²).
2. A Group F-1 fire area is located more than three stories above grade plan.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 5,000 square feet (464m²).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

Amend Section 903.2.4.1 Woodworking operations, to read:

An automatic sprinkler system shall be provided throughout all F-1 occupancy fire area that conation woodworking operations in excess of ~~2500~~ 5000 square feet in area (464 m²) which generate finely divided combustible waste or which use finely divided combustible materials.

Amend Section 903.2.7 entitled "Fire Protection Systems; Automatic Sprinkler Systems; Where required; Group M", to read:

An automatic sprinkler system shall be provided throughout buildings containing Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 5,000 square feet (464m²).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 5,000 square feet (464m²).
4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).

Amend 903.2.8 entitled Group R, to read:

An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R-1 and R-2 fire area.

Amend Section 903.2.9 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group S-1", to read:

An automatic sprinkler system shall be provided throughout all buildings containing Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 5,000 square feet (464m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 5,000 square feet (464m²).

4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).

Amend Section 903.2.9.1 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Repair Garages", to read:

An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the International Building Code, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 5,000 square feet (464m²).
2. Buildings no more than one story above grade plane, with a fire area containing a repair garage exceeding 5,000 square feet (464m²).
3. Buildings with repair garages servicing vehicles parked in basements.
4. A Group S-1 fire area used for the repair of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).

Amend Section 903.2.10 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group S-2 enclosed parking garages", to read:

An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 of the International Building Code as follows:

1. Where the fire area of the enclosed parking garage exceeds 5,000 square feet (464m²)
2. Where the enclosed parking garage is located beneath other groups.

Exception: Enclosed parking garages located beneath Group R-3 occupancies.

Amend Section 903.3.1.1.1 entitled "Fire Protection Systems; Automatic Sprinkler Systems; Installation requirements; Exempt locations", to read:

Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the fire code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire resistance rating of not less than 2 (t w o) hours.
4. Fire service access elevator machine rooms and machinery spaces.
5. Machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008 of the International Building Code.

Amend Section 903.3.5 entitled "Fire Protection Systems; Automatic Sprinkler Systems; Installation requirements; Water supplies", by adding:

The introduction of any toxic substance shall be prohibited. If a sprinkler system is connected to a potable water supply, the use of solutions other than that of pure glycerin (C.P. or U.S.P. 96.5 percent grade) or propylene glycol shall not be permitted."

Amend Section 903.3 installation requirements, by adding:**903.3.9 Speculative warehouse special requirements**

Speculative warehouses shall comply with Chapter 32, and this Chapter. Where the maximum allowable storage height can exceed 12 feet (3658mm) but less than 22 feet (6706mm) the following shall apply:

1. Design for a Class IV non-encapsulated commodity, double row rack storage, 8 foot (2,438mm) aisles and 286 degrees sprinklers; and
2. Hydraulically design to protect the maximum possible clear height of storage without in-rack sprinklers; and
3. Add 500 GPM at the base of the riser for inside hose to hydraulic calculations, and provide the hose stub-outs for future installation or use existing columns for hose installing locations.

Where the maximum allowable storage height can exceed 22 feet (6706mm) the following shall apply:

1. Hydraulically design system to protect the maximum possible clear height of storage without in-rack sprinklers; and
2. Provide .64 GPM per square foot over the hydraulically most remote 2,000 square feet (609600mm); or use an approved alternative design such as ESFR sprinklers.

Amend Section 905 Standpipe Systems, by adding:

Section 905.13 Other Standpipe Systems Required Locations. Notwithstanding the previously specified required locations, approved standpipe systems shall also be required in: Commercial buildings greater than two stories in height.

Amend Section 912.2 Location, to read:

With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located such that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. Fire department connections (FDC) shall be remote from the building if possible.

Amend Section 912.2.1 Visible Location, to read:

Fire department connections shall be located at the primary entrance to the site, fully visible and recognizable.

Amend Section 1103.5 Sprinkler systems, deleting section 1103.5.1;

1103.5.1 Group A-2 ~~Where alcoholic beverages are consumed in a Group A-2 occupancy having an occupant load of 300 or more, the fire area containing the Group A-2 occupancy shall be equipped with a n automatic sprinkler system in accordance with section 903.3.1.1.~~

Amend Section 3106 Outdoor Assembly Events, addition table 3106.3**Outdoor Assembly Events Table 3106.3**

Occupant Load	Minimum number of Exits
1-500	2
501-1000	3
1001-1500	4
Each additional 500 Persons	36" of additional exit width for each exit

3106.3.3 Exit Width The aggregate clear width of exits shall be a minimum of 36 "width wide for each 500 persons to be accommodated

3106.3.4 Exit Signs Exits shall be identified with signs that read -EXIT – The signs shall be weather resistant with letters on a contrasting background. Lettering shall be of sufficient height and brush stroke to be visible within 100 feet. Placement of the exit signs shall be approved by the fire code official.

3106.4 - Outdoor Concerts / Crowd Management, section added

3106.4.1 Front Stage Isle/Separation Minimum 10 foot aisle space for front of stage, adequate crowd manager's during the concert or event to maintain minimum widths. Main isle shall be a minimum of 10 feet in width.

CHAPTER 50. IFC. Hazardous Materials – General Provisions**Amend Section 5003.2.2.1 Design and construction to read:**

(2) Piping and tubing shall be identified indicate the material conveyed and the direction of flow. Pipe labels shall be provided at a maximum spacing of 20 feet at each change of direction and on both sides of walls or floor/ceiling penetrations.

Amend section 5003.2.2.1 Design and construction and add:

(6) Pressure tests of piping constructed of non-metallic material used to convey hazardous materials shall be limited to hydrostatic tests. Pneumatic pressure testing of non-metallic piping shall not be permitted.

Amend Section 5004.9 Emergency alarm to read:

An approved manual emergency alarm system shall be provided in buildings, rooms or areas used for storage of hazardous materials. The emergency alarm system shall be designed using the manual fire alarm requirements of the *National Fire Alarm Code*, NFPA

72. Emergency alarm initiating devices shall be installed outside of each interior exit or exit access door of the storage buildings, rooms or areas. Activation of an emergency alarm-initiating device shall sound an audible signal distinctly different than that of the fire alarm signal. Emergency alarm notification devices shall be yellow or amber in color.

CHAPTER 53, IFC, Compressed Gases**Amend Section 5301.1 Scope, to read:**

Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall comply with this chapter, and National Fire Protection Association standard, NFPA 55, Compressed Gases and Cryogenic Fluids, 2016 edition. Where there is a conflict between the International Fire Code, 2018 edition and NFPA 55, 2016 edition, the more restrictive provision shall apply. Partially full compressed gas containers, cylinders or tanks containing residual gases shall be considered as full for the purpose of the controls required.

Amend Section 5302.1 Definitions to add:

Point of Use means detection shall be provided at each location where material or chemical is placed into action.

Amend Section 5303.16.10.1 Insulated Liquid Carbon Dioxide Systems to add:

(A) Gas detection shall be provided at each point of use whether the cylinder vessel, and/or container are located inside or outside the structure. Basements and/or subterranean spaces that could be physically entered, and which contain CO2 process lines, shall have gas detection.

(B) When a CO2 gas detection device reaches 15,000 ppm a local warning/supervisory alarm shall sound at a normally occupied location, and/or transmit a supervisory signal to a supervising station if system is monitored off-site.

(C) When a CO2 gas detection device reaches 30,000 ppm a general evacuation signal shall sound for the occupancy and transmit a gas specific alarm to a supervisory station if system is monitored off-site.

(D) Where there are DOT approved non-insulated cylinders stored and/or used inside or outside the structure, per system, gas detection and alarm systems shall not be required.

CHAPTER 55, IFC, Cryogenic Fluids

Amend Section 5501.1 Scope to read:

Storage, use and handling of *cryogenic fluids* shall comply with this chapter and National Fire Protection standard NFPA 55, Compressed Gases and Cryogenic Fluids Code, **2016** edition. Where there is a conflict between the International Fire Code, 2018 edition and NFPA 55, **2016** edition, the more restrictive provision shall apply. *Cryogenic fluids* shall also comply with Chapter 50 for general requirements. Partially full containers containing residual *cryogenic fluids* shall be considered as full for the purposes of the controls required.

CHAPTER 56. IFC. Explosives and Fireworks**Amend Section 5601.2.4 Financial responsibility, to read:**

Before a permit is issued, as required by Section 5601.2, the applicant shall file with the jurisdiction a corporate surety bond in the principal sum of \$1,000,000 or a public liability insurance policy for the same amount, for the purpose of the payment of all damages to persons or property which arise from, or are caused by, the conduct of any act authorized by the permit upon which any judicial judgment results. The *fire code official* is authorized to specify a greater or lesser amount when, in his or her opinion, conditions at the location of use indicate a greater or lesser amount is required. Government entities shall be exempt from this bond requirement.

Amend Section 5608 by deleting it in its entirety. Amend Section 5609 by deleting it in its entirety. APPENDIX D Fire Apparatus Access

Roads**Amend Section D102 Required Access to read:**

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 80,000 pounds.

Amend Section D107 One- or Two-family dwelling residential developments to read:

D107.1 One- or two- family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads.

Exceptions:

1. Where there are more than **30 to 50** dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3, access from two directions shall not be required.