



**CITY OF NORTH LAS VEGAS FIRE DEPARTMENT
FIRE ENGINEERING**

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**CIVIL IMPROVEMENT PLAN REQUIREMENTS
COMMERCIAL DEVELOPMENTS**

Civil improvement plans for commercial developments shall comply with the Fire Code including, but not limited to, the following:

General

1. The General Fire Department Notes from the City of North Las Vegas General Project Requirements and General Notes shall be provided on the plans.

Access

1. Fire Department access roads are required to be provided to within 150 feet of all exterior ground floor walls of all buildings as the hose lays around obstructions.
2. Fire Department access roads shall have an all weather surface and be capable of supporting the weight of Fire Department apparatus.
3. A minimum of one Fire Department apparatus access road is required to all buildings. A second means of Fire Department apparatus access may be required by the North Las Vegas Fire Department when it is determined that a single means of access is insufficient.
4. Access lanes shall have a minimum width of 24 feet, a minimum inside turning radius of 28 feet, and a minimum outside turning radius of 52 feet.
5. Dead-ends longer than 150 feet shall be provided with a clear turnaround with a diameter of 105 feet to back of curb.
6. The grade of fire apparatus access lanes shall not exceed 12 percent. Angles of approach and angles of departure must not exceed 6 percent for 25 feet before or after the grade change.
7. Red-painted curbs and appropriate signage are required to maintain the minimum required width of the access lane. For lanes having a minimum clear width of 24 feet but with clear width less than 32 feet wide, both sides of the lane shall be marked. For lanes having a minimum clear width of 32 feet but having a clear width less than 40 feet wide, one side of the lane must be marked, and parallel parking is allowed on the other side of the lane. For lanes having a clear width of 40 feet or greater, marking of the curbs and posting of fire lane signs is not required. When the measurement of the street is given from Back of Curb to Back of Curb, the measurement must be a minimum of 1

foot greater than the clear width required; i.e. a street measuring 41 feet wide from Back of Curb to Back of Curb has a clear width of 40 feet.

8. Where required by number 7 above, signage shall be posted at the two ends of the fire lane, and additionally as required to provide maximum separation of 100 feet between signs. Signage shall state "No Parking Fire Lane". A detail of the "No Parking, Fire Lane" sign shall be included on the plans.
9. Gates across access lanes shall have a minimum 24 feet clear opening width and be operable by the Fire Department. Where the apparatus access lane serves only one building, a manual gate with Knox box on both sides or Knox padlock accessible from both sides is acceptable. Where the apparatus access lane serves more than one building, gates shall be electrically powered, provided with an AVI loop, and have a back-up battery system in case of normal power loss. The AVI loop shall be located 10 feet perpendicularly from the face of the access gate along the route of arrival, 10 feet from the public right-of-way, and the loop shall be marked by way of a green reflective marker on the access lane. For manual gates, a note on the plans shall be provided stating "Gate shall be 24 ft clear opening width with Knox box on both sides or Knox padlock accessible from both sides." For electric gates, a note on the plans shall be provided stating "Gate shall be 24 ft clear opening width, electric and equipped with AVI loop opening system."

Water Supply

1. Fire hydrants must be spaced at a maximum separation of 300 feet along the required apparatus access lane in commercial/industrial areas and 1,000 feet where not required for structures to provide for transportation hazards. Hydrant spacing may be increased by 100 feet if all structures within the development are provided with fire sprinkler protection. There is no allowable increase for hydrants installed for transportation hazards.
2. Sectional valves must be provided on the underground piping so that no more than two fire hydrants are out of service due to a break in the underground piping.
3. Two sources of water supply are required for every group of four or more fire hydrants and/or sprinkler underground lead-ins.
4. A minimum of three feet of clear space is required around the entire circumference of all fire hydrants.
5. Where hydrants are located on the same level as the driving surface, hydrants must be protected from vehicular damage by bollards that comply with the requirements of Section 8001.11.3 of the Fire Code.
6. No fire hydrant shall be located within six feet of a driveway, power pole, or light standard or any other obstruction or within 15 feet of a curb return or driveway in a commercial or industrial area.
7. Fire hydrants shall be located adjacent to apparatus access lanes a minimum of four feet and a maximum of seven feet from back of curb. Provide a detail on the plans.
8. A fire flow chart for each building is required. Indicate the maximum square footage of each proposed building, the type of construction, the maximum area separated by four

hour rated walls, the occupancy group of each building in accordance with the Building Code, the height of each building, the number of stories, whether each building is provided with fire sprinklers, and the resulting fire flow required for each building in accordance with Appendix III-A in the Fire Code

9. The maximum allowable reduction in required fire flow for fire sprinklered facilities is 50%. High-rise buildings, buildings more than three stories in height, and buildings stocking high-piled combustibles and/or flammable/combustible liquids or hazardous materials in excess of exempt amounts may have their required fire flow reduced by a maximum of 25%. The minimum required fire flow for any structure is 1,500 gallons per minute at 20 psi residual pressure.
10. The fire flow for a building may be reduced by separating the building into fire areas using a four hour rated wall with no openings and a 30" parapet. Where this option is selected, the location(s) of the four hour wall(s) shall be shown on the plan.
11. Any buildings with an area of 5,000 square feet or greater must be provided with fire sprinklers.
12. All buildings that are R-1 or R-2 Occupancy per the Building Code shall be fire sprinklered regardless of size.
13. All Group S Occupancy, per the Building Code, shall be fire sprinklered regardless of size.
14. A one hour rated fire sprinkler riser room with exterior door is required unless a yard type or wall mounted Post Indicator Valve (PIV) is provided for sprinkler valve control.
15. Where more than one building is protected by a common fire protection water supply, and where more than one building on that common supply requires a fire pump to achieve the minimum pressure requirements of the sprinkler system, then a minimum of two fire pumps shall be installed to supply the private fire protection loop. Each fire pump shall be provided with its own individual tie-in to the city water supply.
16. When automatic fire sprinkler protection is required, the Fire Department Connection (FDC) shall be adjacent to a fire apparatus access lane with no obstructions between and located within 100 feet of a fire hydrant. Yard type FDC's shall be labeled with the address of the building(s) served. FDC supply piping shall be rated for at least 200 psi service.