FIRE SAFETY ENGINEERING
Checklist

Civil Plans Initial Review

City of Henderson
Development Services Center
Fire Safety Engineering
240 Water Street, PO Box 95050
Henderson, Nevada 89009-5050
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This checklist is provided for the convenience of our customers. Complete and accurate plan submittals help speed the plan review process. Attention to the completeness and accuracy of information at the beginning of the process generally leads to fewer delays and requests for revisions by City staff. Please use the following information to assure that your application includes all the information that is necessary for a complete review of your plans.

Part. 1
Applicant's Responsibility

Applicants are responsible for ensuring applications submitted are complete. Incomplete applications will result in plans being rejected for acceptance or returned to the applicant during the review process. City service commitments will not apply to incomplete submissions.

Part. 2
Prerequisites

Plan Readability. Easily Read; legible; a readable typeface. Vivid contrast or difference in brightness between the light and dark areas of the drawing.

Part. 3
Applicable Codes

Plans shall meet the requirements of the adopted codes, ordinances and regulations.

Part. 4
Blue Line Initial Review

Provide the following information at the time you submit your preliminary plans for a Civil Review.

- ☐ 1. Project Name
- ☐ 2. Date Reviewed
- ☐ 3. Engineer: _____

Part. 5
Plan Contents

Please note: This review along with the preliminary plans it is attached to must be returned with the Mylar. Failure to return this review will result in the rejection of plans and longer review of the final drawings.

DEFICIENCIES

☐ 1. **PROVIDE** on drawings the most current Fire Dept. General Notes, Private Fire Service Main Standard Notes, Phasing Notes and/or other special notes as attached to this review.

☐ 2. **HYDRANTS**

- ☐ a. Fire Hydrants shall be provided along the required fire apparatus across roads.
- ☐ b. The spacing of the fire hydrants shall normally start by placing fire hydrants at all intersections.
- ☐ c. In all residential areas, hydrants will be spaced not to exceed 500.
- ☐ d. In all commercial and industrial areas, hydrants will be spaced not to exceed 300 feet or 400 feet if protected by an approved automatic sprinkler system.
- ☐ e. The maximum distance from a Group R, Division 3 Occupancy to a fire hydrant shall not be more than 300 feet, as measured from an approved point on a street or road frontage to a fire hydrant. (An approved point is measured from the property line furthest from the hydrant, at a right angle to the street.)
- ☐ f. The maximum distance from a fire hydrant to a fire department sprinkler connection and/or a standpipe connection shall be 100 feet, measured by an approved route. (An approved route is an unobstructed path of

travel on which hose can easily be laid.)

☐ g. The required fire flow and spacing requirements for fire hydrants are both utilized to determine the number of fire hydrants to be installed, based on a maximum of 1000 gallons per minute per fire hydrant

☐ h. Fire hydrants on adjacent properties shall not be considered unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads & fire hydrants and a written contractual agreement exists.

☐ i. Where streets are provided with median dividers or arterial streets are provided with four (4) or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrants shall be spaced at a maximum of 1,000 feet along both sides of the street and be arranged at 500 feet on alternating basis. When a street has a high degree of traffic volume, all hydrants being utilized to deliver fire flow to the proposed development must be located on the same side of the street as the proposed development. (Streets with high traffic volume are usually defined as section or half-section line streets; streets with 4 or more travel lanes; and federal or state highways regardless of the number of travel lanes.)

☐ j. Where new water mains are extended along streets or new streets are installed where hydrants are not needed for protection of structures or other fire problems, hydrants shall be located at not less than 1,000 feet spacing and at all intersections in order to provide for transportation hazards.

☐ **3. Provide fire flow design criteria**.

Include: square footage and height of each structure; type of construction (including any 4-hr. walls w/ no openings & 30" parapet); and whether or not fire sprinklers are to be installed. Fire flows shall have 20 psi residual. A fire hydrant is required for every 1,000 gallons or fraction thereof.

All hydrants used to calculate the required fire flow shall be within 750 feet of the structure being protected as measured along the approved fire apparatus road. Fire hydrants on adjacent properties shall not be considered unless fire apparatus access roads extend between properties and easements are established.

Exception:

☐ a. When a building(s) is provided with an automatic fire sprinkler system throughout, a reduction in the required fire flow of 50% is permitted.

☐ b. For High Rise building(s) a reduction in the required fire flow of 25% is permitted.

The resulting fire flow for all buildings shall not be less than 1,500 gallons per minute.

☐ **4. Two sources of water supply** are required for any project or facility where there are 4 or more fire hydrants and/or fire sprinkler lead-ins.

☐ **5. An automatic fire sprinkler system** shall be installed throughout all buildings 5,000 square feet or greater in total fire area, and all Group R occupancies, regardless of size.

VALVES & FIRE PUMPS

☐ **6.** When a building(s) is provided with a fire pump and the underground piping is pressurized by the Fire Pump class 305 pipe per NFPA 13 6.1.3, & 10.1.2 (as amended) is required.

☐ **7.** For systems required to have (2) sources of water supply, sectional control valve shall be installed so that no more than two (2) fire hydrants and/or fire sprinkler lead-ins can be out of service due to a break in a water main. A sectional indicating control valve (PIV) is required a minimum of 5 ft. from the building footing for fire sprinkler systems. Reference IFC Section C104.2 and NFPA 24 6.6.2 (as amended).

☐ **8.** All valves on backflow prevention device's (DCDA/RPDA) shall be provided with indicating valves (Uniform Design and Construction Standards for Water Distribution Systems, UDACS Plate 11E). If the fire sprinkler system is required to be monitored, valves shall be electrically supervised only if the DCDA/RPDA is in lieu of installing a PIV; otherwise an approved lock(s) and chain(s) is acceptable. Provide underground conduit for electrical wiring for tamper switches on

Backflow Prevention Devices and Post Indicator Valves.

☐ **9.** A fire hydrant shall be located within 100' of the fire sprinkler systems Fire Dept. Connection (FDC). For free-standing (yard) FDC'S provide a detail on the drawing

☐ **10.** When underground piping can be supplied or pressurized by an FDC, the underground piping shall be designed to withstand a working pressure of not less than 200 psi (minimum class 305) per NFPA 13 6.1.3 and 10.1.2 (as amended).

FIRE LANES

☐ **11.** Fire apparatus access roads shall have an unobstructed width of not less than 24 feet provided no parking is allowed; not less than 32 feet if parallel parking is allowed on one side; and not less than 40 feet if parallel parking is allowed on both sides. Vertical clearance shall be not less than 13 feet 6 inches.

☐ **12.** For Group R, Division 3 residential subdivisions, the minimum width of a fire apparatus access road is 36 feet measured face to face of curb (i.e., 20 feet driving lane with 8 feet of parking on each side). When approved by the Chief, vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained, indicating the established vertical clearance.

☐ **13.** All dead-end Fire Dept. Access roads (fire lanes) in excess of 150' in length shall be provided with approved turn around (bulbs).

☐ **14.** Turning radius for Fire Dept. access roads (fire lanes) shall be not less than 52' outside radius and 28' inside radius. All turns shall maintain the minimum roadway width of 24'.

☐ **15** No Fire Dept. access road (fire lane) shall have a gradient of more than 12%. Anything over 10% please check with a fire plans examiner. Angles of approach and angles of departure shall not exceed 6% for 25 feet prior to or after the grade change.

☐ **16** Fire apparatus access roads shall be provided for every facility when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet from fire apparatus access (fire lane) as measured by an approved route around the exterior of the building or facility.

☐ **17** Provide dual access when any of the following occur:

a. Projects contain 20 or more dwelling units.

b. Roads with dead-ends or with single-point access more than 600'.

c. For all commercial, industrial, and multi-family developments.

☐ **18** Provide the turning radius overlay where indicated on the Fire Lane plan.

☐ **19** Provide a complete Fire Lane plan including, but not limited to: Fire Lane, fire hydrants, blue reflective pavement markers, painted curbs, stenciling, signage and signage details.

☐ **20 GATES:**

a. All gates must have minimum clear opening width of 20 feet.

b. Identify whether each gate is electronically controlled or a manual gate.

c. Show the location of detector loops for each electronically controlled gate.

d. Provide a green reflective marker on the pavement in front of each gate for identification.

PLANNING CONDITIONS

☐ **21.** _____

_____

☐ **22.** _____

_____

☐ **23.** _____

_____

☐ **24.** _____

_____

If there are questions concerning this review, call _____

at the Henderson Building & Fire Safety Department, Ph: 702-267-3630.