North County Fire Protection District
330 South Main Avenue • Fallbrook • California 92028
Tel. (760) 723-2010
Website: ncfireca.gov

FIRE PREVENTION BUREAU
RESIDENTIAL PLAN REVIEW CHECK SHEET

For Single-Family Residences, Duplexes, Out Buildings, Ag Buildings, and Garages

Project Name: _____ Address: _____

Date: _____

Items marked are to be corrected on printed on new drawings/plans before the Fire Protection District will issue its approval.

The approval of plans and specifications does not permit the violation of any section of the North County Fire Protection District Fire Code, County Ordinances, or State law. The following list does not necessarily include all errors and omissions.

To facilitate rechecking, please identify, next to each item, the sheet of the plans upon which the correction has been made. Return this correction list with the corrected plans. If new plans are provided when resubmitting, return at least one copy of the original stamped and checked set.

General Requirements:

- **At least two sets of County PDS red or green-stamped, original, building plans**
- County mitigation form
- Corrections cannot be made on stamped plans. (No red ink or handwriting)
- Identify rooms and specify each use.
- Define all symbols and shaded areas etc.
- If there are corrections, see notes/remarks made on one set of plans. Return marked set with new/revised sets after you have complied with the requirements on the marked set of plans. Red marks on plans are part of this comments list.

Plot plan and site plan requirements:

☐ Needs to show full-size fire hydrant within the minimum distance.

Fire Hydrant Location (CFC §507.5.1) Fire Hydrants shall be installed as required by the California Fire Code, using the following criteria and taking into consideration departmental operational needs. Hydrants shall be located at intersections, at the beginning radius of cul-de-sacs and at intervals identified in the following table and criteria. Hydrants located across heavily traveled roadways shall be not considered as serving the subject property. Where a portion of the facility of building hereafter constructed or moved into or within the jurisdiction is more than 400 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

Exception: For Group R-3 and Group U occupancies, equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, the distance requirement shall be not more than 600 feet.

Roads and Driveways:

☐ The below verbiage needs to be present for the gate.

Gates (CSDCFC §503.6) No person shall install a security gate or security device across a fire access roadway without the fire code official's approval. An automatic gate across a fire access roadway or driveway shall be equipped with an approved emergency key-operated switch overriding all command functions and opening the gate. (Refer to SDCCFC §503.6, 2. for gates serving 4 or more residences and hazardous institutional, educational or assembly occupancies).

☐ The road needs to be the appropriate width at ____ feet wide.

Road and Driveway Phasing Requirement for New Single-Family Dwellings (CSDCFC §503.2.1) The fire access roadway requirement for widening an existing, improved and paved fire apparatus roadway shall be as provided in Table 503.2.1.1. The Fire access roadway shall be constructed to extend from the property line to the nearest public road.

☐ The road or driveway needs to have a 28-foot turning radius.

Turning Radius (CSDCFC §503.2.4) The horizontal inside radius of a fire apparatus access road shall comply with the County public and private road standards approved by the Board of Supervisors. The horizontal inside radius for a private residential driveway shall be a minimum of 28 feet, as measured on the inside edge of the improvement width or as approved by the fire code official. The length of vertical curves of fire apparatus access roads shall not be less than 100 feet, or as approved by the fire code official.

☐ The fire apparatus turnaround area needs to be indicated.

Dead Ends (CSDCFC §503.2.1) Dead-end fire access roads in excess of 150 feet in length shall be provided with an approved area for turning around emergency apparatus. A cul-de-sac or other approved turn-around shall be provided in residential areas where the access roadway serves more than 2 structures. The minimum unobstructed radius width for a cul-de-sac in a residential area shall be 36 feet paved, 40 feet graded, or as approved by the fire code official. The fire code official shall establish a policy identifying acceptable turnarounds for various project types. See Annex of Code for illustrations. (See back of this guide).

☐ The grade needs to be indicated throughout the length of the driveway or road.

Grade (CSDCFC §503.2.7) The gradient for a fire apparatus access roadway shall not exceed 15.0%. The fire code official may allow roadway grades up to 20.0% provided that the roadway surface conforms to Section 503.2.3. The fire code official may require additional mitigation measures. (i.e., sprinkler system and PCC with a broom brush finish).

☐ The angle of approach and departure needs to be indicated for the driveway or road.

Angles of Approach and Departure (CSDCFC §503.2.8) The angles of approach and departure or fire apparatus access roads shall not exceed 7 degrees (12%) for the first 30 feet or as approved b the fire code official and shall not allow for transitions between grades that exceed 6% elevation change along any 10-foot section.

☐ The first paragraph of the below verbiage needs to be present.

☐ Indicate that the road or driveway is paved.

Surface (CSDCFC Amendment to section §503.2.3) Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus (not less than 75,000 lbs. unless authorized by the fire code official) and shall be provided with an approved paved surface so as to provide all-weather driving capabilities. The paving and sub-base shall be installed to the standards specified in the County of San Diego Parking Design Manual. A residential driveway constructed of 3½" Portland cement concrete may be installed on any slope up to 20% provided that slopes over 15% have a deep broom finish perpendicular to the direction of travel to enhance traction. The fire code official may allow a surfacing material of 6 inches of compacted decomposed granite on fire apparatus access roads with a slope of 10% or less in areas allowed by the San Diego County Standards for Private Roads.

Note: (When using pavers or alternative surfaces, additional documentation must be provided to show that the surface meets the requirements and intent of this section).

☐ The furthest point of the building needs to be within 150ft. of the closest paved part of the driveway.

Buildings and Facilities (CSDCFC §503.1.1) Approved fire apparatus access roads shall be provided for every facility, building or portion of building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measure by an approved route around the exterior of the building or facility.

☐ The road or driveway needs to meet the below dimensions requirement.

Dimensions (CSDCFC §503.2.1) Fire apparatus access roads shall have an unobstructed improved width of not less than 24 feet, except as provided in Section 503.2.1 for single-family residential driveways serving no more than two residential parcels, which shall have a minimum of 16 feet of unobstructed improved width.

☐ The below verbiage needs to be present.

Bridges and elevated surfaces (CSDCFC §503.2.6) When a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits and clearance eliminations shall be posted at both entrances to bridges where required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained where required by the fire code official.

☐ The below verbiage needs to be present.

Street Numbers (CSDCFC §505.1) Approved numbers and/or addresses shall be placed on all new and existing buildings and at appropriate additional locations as to be plainly visible and legible from the street or roadway fronting the property when approaching from either direction. The numbers shall contrast with their background and shall meet the following minimum size standards: 4" high with a 3/8" stroke for residential buildings.

☐ The 100-foot, fuel modification zone needs to be indicated around the building.

Fuel Modification Zone (CSDCFC §604.6) When a building or structure in a hazardous fire area is located 100 feet or more from the property line, the person owning or occupying the building or structure shall maintain a fuel modification zone within 100 feet of the building or structure. The area within 50 feet of a building or structure shall be cleared of vegetation that is not fire resistant and re-planted with fire-resistant plants. In the area between 50 to 100 feet from a building all dead and dying vegetation shall be removed. Native vegetation may remain in this area provided that the vegetation is modified so that combustible vegetation does not occupy more than 50% of the square footage of this area. Weeds and annual grasses shall be maintained at a height not to exceed 6 inches. The chips from chipping of vegetation that is done on-site may remain if the chips are dispersed so they do not exceed 6 inches in depth. Trees may remain in both areas provided that the horizontal distance between crowns of adjacent trees and crowns of trees and structures is not less than 10 feet.

☐ The LPG tank needs to be appropriately far enough away from the building.

Location of LPG Tank (CFC §6104.3) Minimum separation between containers and buildings, public ways, or lines of adjoining property that can be built upon is: 10 feet for containers 125 gallons to 500 gallons; 25 feet for containers 501 to 2,000 gallons.

Sprinklers and Fire Alarms:

☐ A sprinkler system is indicated to be installed.

Automatic Fire Sprinkler Systems - Where required (CSDCFC §903.2)

Note, for more specific sprinkler requirements, see the NCFPD's Residential Fire Sprinkler Plan Review Checklist.

All new buildings constructed shall have an approved NFPA 13, NFPA 13R, or NFPA 13D automatic sprinkler system installed per Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3. The Fire Code Official has the final decision of which NFPA 13 standard to apply, as required due to access, water supply and travel time.

Exceptions:

1. Group U ***detached*** occupancies ***not greater*** than 1200 square feet, and when the building is more than 10 feet from an adjacent building or property line measured from the farthest projection from the building ***and without ESS installed inside***.
2. Agricultural buildings constructed of wood or metal frames over which fabric or similar material is stretched, which are specifically used as green houses are exempt from the automatic sprinkler requirements unless physically connected to other structures.

(a) Additions. An automatic sprinkler system may be required to be installed throughout the building when the addition is more than 50% of the existing building or when the altered building will exceed a fire flow as calculated pursuant to Section 507.3. The fire code official may require an automatic sprinkler system to be installed in buildings where no water main exists to provide the required fire flow or where a special hazard exists, such as poor access roads, steep grades and canyon rims, hazardous brush and response times greater than 5 minutes by a fire department. The fire code official may require that other protective measures be taken based on existing conditions and/or potential hazards. The preceding addition or remodel exception is limited to one permit per three-year period from the date of the last permit.

(b) Remodels or reconstructions. The fire code official may require an automatic sprinkler system to be installed throughout buildings if a remodel or reconstruction includes significant modification to the interior or roof of the building. The fire code official may require that other protective measures be taken based on existing conditions and/or potential hazards. The preceding addition or remodel exception is limited to one permit per three-year period from the date of the last permit approval.

(c) Group U Occupancies. For Group U Occupancies ***greater*** than 500 square feet, ***attached to an R-3 occupancy,*** an approved automatic sprinkler system shall be installed as per NFPA 13D edition referenced in Chapter 80 CFC, or as approved byt the FAHJ. ***This applies to NEW buildings, remodels or additions.***

☐ Verbiage needs to be on the plans showing the water tank will be installed in accordance with NFPA 22 and the County of San Diego Consolidated Fire Code.

Water tanks. (CSDCFC §507.2.3) Water tanks for private residential fire protection, when authorized by the fire code official, shall comply with Table 507.2.2 and be installed in accordance with the NFPA 22 edition referenced in Chapter 80 of the CFC. Water tanks for commercial fire protection, when authorized by the fire code official, shall be installed in accordance with the NFPA 22 edition referenced in Chapter 80 of the CFC. ***Water tanks are only allowed as determined by the fire code official if a letter from the applicable water district is provided stating that the district would not be able to provide service (proper fire flow) if the water line were extended and a hydrant installed.***

Table 507.2.2
RESIDENTIAL WATER TANK REQUIREMENTS

Building Size (Square Feet)	Water Flow (Gallons per Minute)	Capacity (Gallons)	Duration (Minutes)
0 to 3,600	250	7,500	30
Over 3,600	250	15,000	60
When the exposure distance is one hundred feet (100') or less from an adjacent property, or where additional hazards or higher fire flow exists, the required water storage may be modified by the fire code official.			

☐ The below verbiage needs to be present.

Smoke detector locations (CFC §907.2.11.2) Single- or multiple-station smoke alarms shall be installed and maintained in Group... R.3... regardless of occupant load at all the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.
3. In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

☐ The below verbiage needs to be present.

Smoke alarm interconnection (CFC §907.2.11.5) Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R occupancies, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

☐ The below verbiage needs to be present.

Carbon monoxide alarm locations (CFC §915.2) Carbon monoxide detection shall be installed in dwelling units in the following locations:

1. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.
2. On every occupiable level of a dwelling unit, including basements.
3. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, carbon monoxide detection shall be installed within the bedroom.

☐ The below verbiage needs to be present.

Carbon monoxide interconnection (CFC §915.4.4) Where more than one carbon monoxide alarm is required to be installed within a dwelling unit or within a sleeping unit in Group R occupancies, the alarms shall be interconnected in a manner that activation of one alarm shall activate all of the alarms in the individual unit.

Building Construction Requirements:

From the County of San Diego, Planning & Development Services document #664, "Wildland-Urban Interface County Fire and Building Code Requirements."

☐ Roof needs to be "Class A."

Roofs: Roofs shall have a minimum Class 'A' roof covering. For roof coverings where the profile allows a space between the roof covering and roof sheathing, the spaces shall be fire-stopped with approved materials to keep out flames and burning embers.

☐ Exterior surfaces need to be non-combustible.

Exterior walls: Exterior wall surfaces must be non-combustible (stucco, masonry, cement-fiber board, etc.), ignition-resistant, heavy timber or log wall construction. Stucco and cement plaster used as an exterior wall covering shall be minimum 7/8 inch thick. Noncombustible or fire-retardant treated wood shake used as an exterior wall covering shall have an underlayment of minimum 1/2- inch fire-rated gypsum sheathing that is tightly butted, or taped and mudded, or an underlayment of other ignition-resistant material. As an exception, around door and window openings, maximum 3/4-inch-thick combustible trim with an underlayment of ignition-resistant material.

☐ Eaves, soffits, and fascia need to be ignition resistant.

Eaves: Eaves, soffits and fascia must comply with requirements for ignition-resistant construction. See guidance document PDS #198 for possible options.

☐ Open post-and-beam construction needs to be enclosed.

Unenclosed Underfloor Areas: Homes built on stilts or using open post-and-beam construction are not permitted unless the underfloor area is enclosed to the ground with non-combustible construction.

☐ Vents resist ember intrusion.

Vents: All vents (attic, underfloor, combustion air, etc.) must resist the intrusion of flames and burning embers into the structure. Ventilation openings for enclosed attics, eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation openings, and vent openings in exterior walls and exterior doors shall be listed to ASTM E 2886 and comply with all of the following:

- There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
- There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
- The maximum temperature of the unexposed side of the vent shall not exceed 662 degrees Fahrenheit (350 degrees Celsius).

☐ Windows need to be dual glazed with one tempered pane or have a 20 minute fire resistance rating.

Windows (glazing): Windows shall be dual-glazed units with a minimum of one tempered pane or shall be glass block units or shall have a fire-resistance rating of 20 minutes. Vinyl window frames must have welded corners to prevent glass from falling out with flame impingement and metal reinforcing in the interlock area to prevent the windows from opening or falling unexpectedly. In addition, vinyl windows must have a label showing they are certified to AAMA/WDMA/CSA 101/I.S.2/A440 structural requirements.

☐ Skylights need to be tempered.

Skylights: Skylights shall be tempered glass.

☐ Insulation needs to be foil-backed or un-faced fiberglass material.

Insulation: Paper faced insulation is not permitted in attics or ventilated spaces due to the potential of embers igniting the paper. Foil-backed or un-faced fiberglass batts and blankets are better suited to conditions of potential fire hazards. Use foil-backed insulation in areas where a vapor barrier is required.

☐ Roof gutters need to have leaf protection.

Roof Gutters: Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris.

☐ Exterior doors need to be either non-combustible, ignition-resistant, solid-core not less than 1 3/8-inch thick, or are 20 minute rated.

Exterior doors: Exterior doors shall have an exterior surface or cladding of noncombustible or ignition-resistant material or be constructed of solid-core with stiles and rails wood not less than 1- 3/8-inch thick or have a fire protection rating of not less than 20 minutes per NFPA 252 or meet SFM Standard 12-7A-1.

☐ Decks, balconies, carports, patio covers, and exterior stairs need to be protected.

Decks, balconies, carports, patio covers, and exterior stairs (exposed structural members): Exposed structural supports and framing members for decks, balconies, carports, patio covers, exterior stairs, and other projections and attachments must be one, or a combination, of the following:

- Non-combustible construction (such as concrete or metal)
- Fire-retardant treated wood (pressure-treated, listed for exterior use, installed per listing)
- Modified heavy timber construction (minimum 2x exterior grade tongue-and-groove roof sheathing, 4x6 roof rafters/beams, 4x8 floor joists, 4x10 or 6x8 floor beams and stair stringers, 6x6 posts/columns, 3x blocking, 4x stair treads with steel angles)
- One-hour fire-resistive construction

Note: All other exposed surfaces must be enclosed with ignition-resistant materials such as stucco or cement-fiber material. There is no fire-resistive requirement for handrails and balusters.

☐ Deck, balcony, porch, stair, and landing surfaces need to be protected.

Deck, balcony, porch, stair, and landing surfaces: The surfaces of decks, balconies, and exterior stair treads/risers/landings must be one, or a combination, of the following:

- Non-combustible construction (such as concrete or tile)

- Fire-retardant treated wood (pressure-treated, listed for exterior use, installed per listing)
- One-hour fire-resistive construction
- Alternative decking materials passing the performance test requirements of State Fire Marshal standard 12-7A-4 and approved by the building official.

☐ Fences within 5 feet of a building need to be non-combustible, pressure-treated exterior fire-retardant wood, or meet the same requirements as exterior walls.

Fences and other attachments: Any portion of a fence or other structure less than five feet from any building shall be constructed of non-combustible material, pressure-treated exterior fire-retardant wood or meet the same fire-resistive standards as the exterior walls of the structure. The building official may allow vinyl fences when the construction conforms to guidance documents.

Plan reviewed by: _____ Date: _____

Comments:

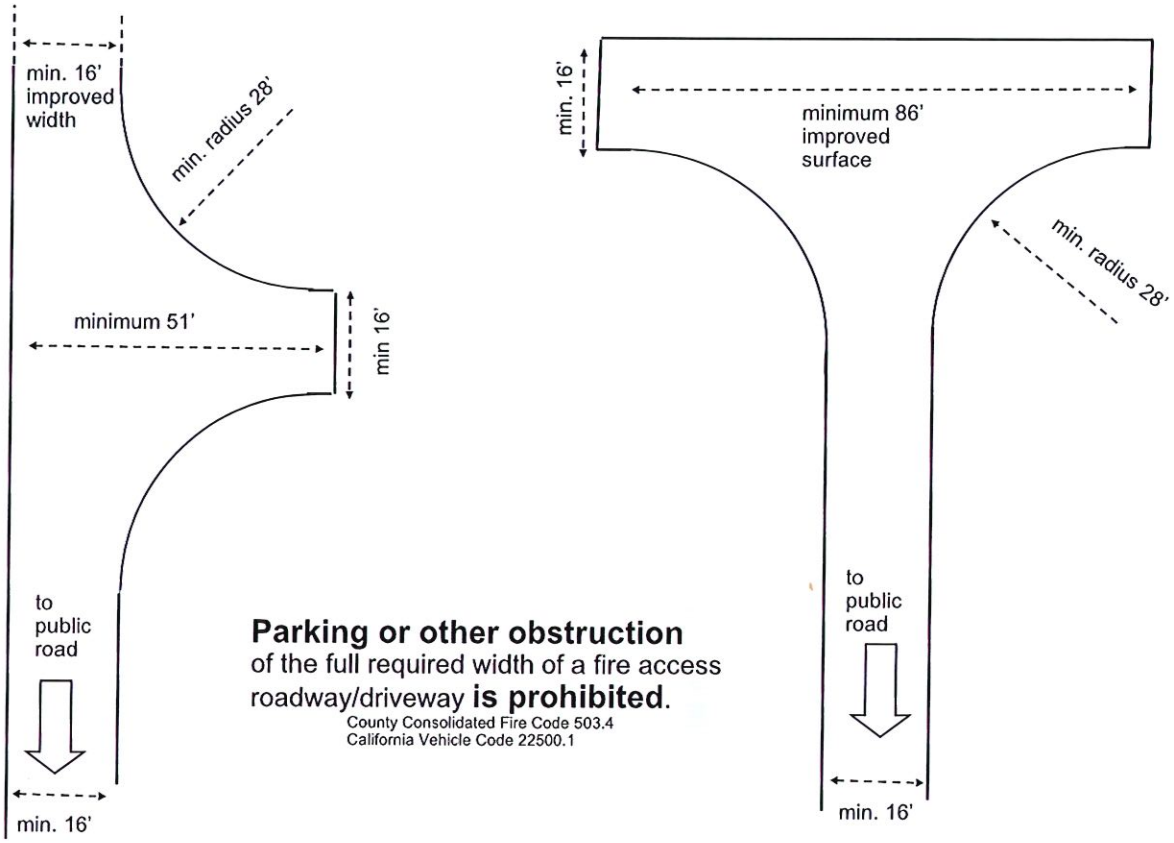
SAN DIEGO COUNTY FIRE PROTECTION DISTRICT

5560 OVERLAND AVE., SUITE 400, SAN DIEGO, CA 92123 • (858) 974-5999

Emergency Vehicle Turnaround

Hammerhead Turnaround

Residential fire access road/driveway serving no more than two parcels

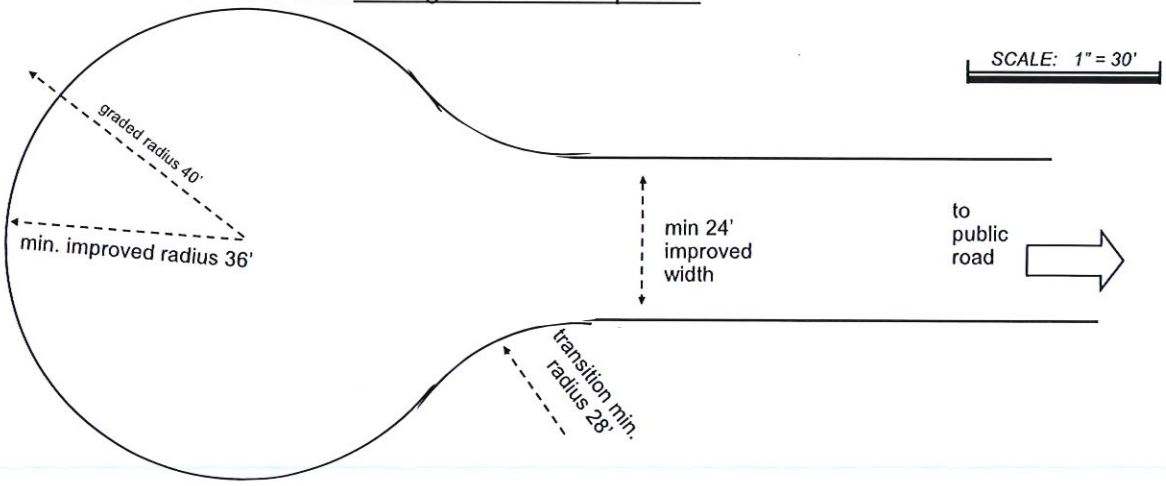


Parking or other obstruction of the full required width of a fire access roadway/driveway **is prohibited.**

County Consolidated Fire Code 503.4
California Vehicle Code 22500.1

Cul-de-sac Turnaround

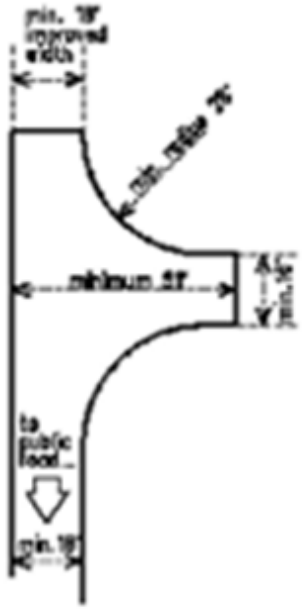
Residential fire access road serving three or more parcels



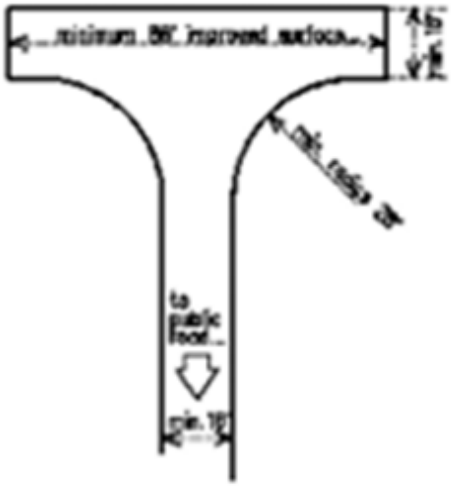
Residential
Emergency Vehicle Turnaround

Hammerhead Turnaround

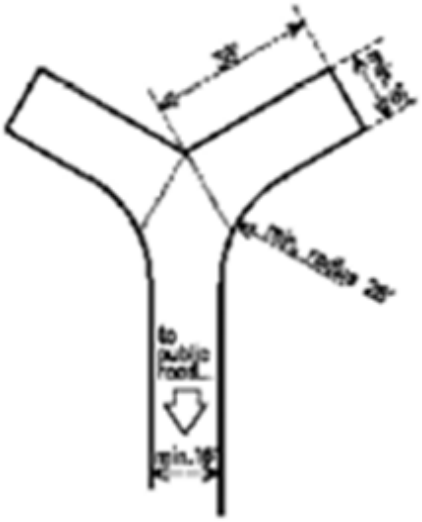
Residential fire access road/driveway serving no more than two dwellings...



Option #1



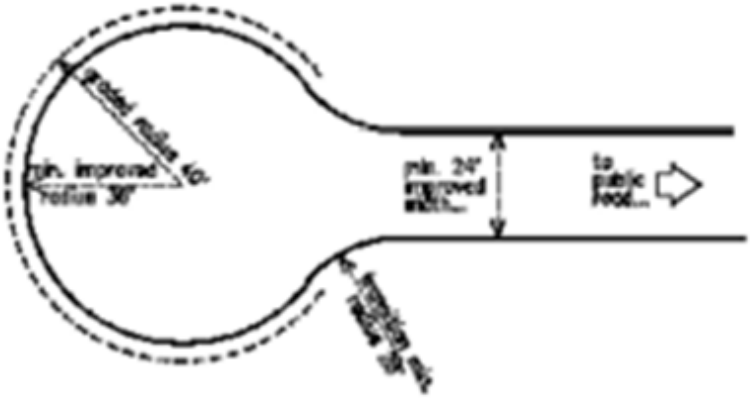
Option #2



Option #3

Cul-de-sac Turnaround

Residential fire access road serving three or more dwellings...



Approved Residential Turn-Out

