

APPENDIX A
ORANGE COUNTY PRIVATE ROAD STANDARDS

Proposed May 10, 1983
Approved July 5, 1983
Amended April 4, 1988
Amended October 3, 1988
Amended October 1, 1990
Amended October 16, 1990
Amended October 5, 1994
(effective December 3, 1990)
October 10, 2000
September 18, 2001

ORANGE COUNTY PRIVATE ROAD STANDARDS

Purpose

In Orange County, the preference is to serve subdivisions with State-maintained (NCDOT) public streets or municipal streets. The County recognizes, however, that private roads may be beneficial in some cases where the developer provides significantly larger lots, and where a private road graded to a narrower cross-section saves valuable vistas, trees, or natural resources, and reduces cut-and-fill and overall land disturbance. Where the developer clearly provides benefits such as enhancing entrances or streetscapes off an adjoining public road, saving trees, providing large lots, reducing disturbance, and "fitting" lots better into their natural surroundings, the County Staff, Planning Board and Commissioners may permit the use of private roads.

The County is concerned about the logical and safe extension of public roads throughout the County and also notes that private roads cannot be served by school buses and sometimes not by rescue squads and fire trucks. Private roads are generally unpaved and property owners who use the road are solely responsible for maintenance of the road. Therefore, the County will only approve private roads where the "benefits" outweigh the negative aspects. Private roads will never be approved simply to save money.

Private roads are a privilege, and not a right, and must be justified by the particular lot arrangement and benefits provided by each development. It is hoped that the following regulations and standards convey the sense that private roads can be used, but only where they clearly meet the spirit as well as the letter of the criteria contained herein.

The Board of County Commissioners amended Orange County Private Road Standards October 10, 2000. Planning staff shall track the use of private roads in subdivisions, and will report on private road subdivisions to the Board no later than October 10, 2002.

General Requirements

Private Roads serve lots within subdivisions that do not have access to state-maintained roads. Furthermore, Private Roads insure that all lots have documented legal right-of-way and provide adequate access for residents and emergency vehicles.

Private Roads may be allowed in a subdivision where, in the judgment of the Planning Board and with the approval of the Board of Commissioners, it is found that the nature and location of the subdivision are such that a private road is justified. In determining whether to permit Private Roads in subdivisions, the design features contained in Article IV-B-3-d of the Subdivision Regulations will be considered. Note that it is the responsibility of the applicant for subdivision approval to supply a written statement justifying the reasons for Private Roads in the proposed subdivision. Compliance with one or more of the standards contained in Article IV-B-3-d does not assure approval of a Private Road within a proposed subdivision.

After approval of and initial construction of the Private Road, maintenance must be provided by the property owners that use the road. A Road Maintenance Agreement or Declaration between the lot owners is required to insure that the needed repairs are made. Since Private Roads are not constructed to North Carolina Department of Transportation standards, they will not be added to the Secondary Road System and will not be maintained by the State or Orange County.

The standards and specifications for Private Roads apply to subdivisions in Orange County and the class of road required depends on the number of lots served by the road. A Class B road serves 1 to 5 lots or dwelling units, and a Class A road serves 6 to 12 lots or dwelling units. All Private Roads in a major (five or more lots) subdivision require the approval of the Board of Commissioners. Before the final plat of the subdivision can be recorded, the Private Road must be built and approved, or the applicant must post a security instrument with the County in an amount that would cover the cost of constructing the road. Class B Private Roads intended to serve 2 lots or dwelling units are not required to be constructed to Orange County Standards or to be inspected before recordation of the final plat. However, Orange County recommends that these Class B roads be built to these standards in order to provide adequate access, especially for emergency vehicles which require the clearances and turn areas shown on the specifications.

Standards and Specifications for Subdivision Private Roads

	Type of Residential Subdivision Road			
	Class A Private	Class B Private		
Max. no. of lots	12	2	3	5
Right-of-way width	50 ft.	50 ft.	50 ft.	50 ft.
Travel-way width	18 ft.	No Standard	12 ft.	12 ft.
Road Maintenance Agreement required	Yes	Yes	Yes	Yes
Maintenance responsibility	Property owners	Property owners	Property owners	Property owners

Private road construction must be inspected and the construction certified in writing to the Orange County Planning Department by a North Carolina Professional Engineer. Also, the location of the travelway within the right-of-way must be certified to be within the platted private road right-of-way by a North Carolina Registered Land Surveyor. The road must be inspected during construction so that any changes or improvements necessary to insure approval can be made before the stone is placed and the shoulders and ditches are seeded and mulched. In order for this to happen, the subdivider or representative must inform the professional making the certification prior to the start of construction and at intervals during construction when inspections are needed so that they can be scheduled.

Certification Requirements for Subdivision Private Roads

Maximum Number of Lots in Subdivision:	3 or fewer	4 -12
Professional engineer road construction certification required	No	Yes
Surveyor certification roadway in platted right-of-way	Yes	Yes

Inspections by the Planning Department are made only to insure that the road is built to the required dimensions; that the stone travelway is provided to the required width; adequate drainage is provided; any disturbed areas are seeded and mulched to establish permanent vegetation; and to see that the road sign is in place. The subdivider is responsible for supervising construction and for quality control inspections for clearing and grubbing of the right-of-way, compaction of fill, construction materials, and so forth. The subdivider or representative should employ a qualified grading contractor (and supervisor if necessary) to insure that the road is in the correct location and that acceptable methods and materials are used.

Bonds or letters of credit cannot be released or reduced until completion of the road is certified. Arrangements for payment between the subdivider and contractor are not the responsibility of the Planning Department staff.

NOTE: Private road construction must also conform to the requirements of the Orange County Erosion Control Ordinance. The ordinance requires that reasonable measures be taken to keep sediment on the site of a land disturbance regardless of the amount of area uncovered. When the amount of disturbance exceeds 20,000 square feet, the property owner or agent is required to submit an erosion control plan and obtain a grading permit before starting any timbering, clearing, or grading. Generally, permits are required when a private road is more than 650 feet long, assuming the width of disturbance averages 30 feet. Contact the Erosion Control Supervisor in the Planning Department for assistance.

GENERAL SUBDIVISION APPROVAL AND PRIVATE ROAD CONSTRUCTION SEQUENCE

1. Submit request for subdivision with a private road to Current Planning Division. Check proposed road name with Planning Department list to avoid duplication.
2. Submit erosion control plan for review if road construction will involve more than 20,000 square feet.
3. If necessary, apply for and obtain an NCDOT Driveway Permit.
4. Receive preliminary subdivision approval from the Planning Board.
5. Inform person inspecting and certifying construction that construction is to begin.
6. Schedule pre-construction conference if disturbance involves more than 20,000 square feet.
7. Construct road to private road standards, or post security bond for construction of the road.
8. Schedule inspections [with Planning Department staff and professional engineer] as construction progresses.
9. Have a professional engineer or registered land surveyor, respectively, provide written certification to the Planning and Inspections Department that construction meets the required standards and that the travelway is within the right-of-way; provided however, there is no requirement for written certification by a professional engineer for a private road serving three or fewer lots.
10. Record final subdivision plat with Register of Deeds.

GENERAL CONSTRUCTION SEQUENCE

Remove all trees, stumps, roots, and other vegetation from the width of right-of-way necessary to construct the road to the required dimensions. Fill and compact all depressions created by clearing.

Build roadbed to required dimensions, grades, cutting, filling, and compacting to 90% relative dry density (Standard Proctor Method) as determined by proofrolling observed by the certifying professional or by actual soil compaction tests, if required by the certifying professional or the County.

Install culverts to provide cross drainage.

Construct side ditches and crown travelway.

Place and compact 4 inches of surface material.

Seed and mulch disturbed areas in order to stabilize.

Install standard road name sign.

Have final inspection and written certification by certifying professional.

STANDARDS FOR PRIVATE ROADS

The standards described herein are the minimum set forth by the County. Orange County has not determined, and is not responsible for determining that these standards are adequate or appropriate for all uses by landowners. The standards also may not meet NCDOT criteria. No road will be accepted for maintenance by NCDOT unless or until NCDOT standards are met.

Certificate of Construction

A registered land surveyor must certify in writing to the Planning Department that the travelway of the Private Road, either existing, upgraded or newly constructed, is within the platted right-of-way.

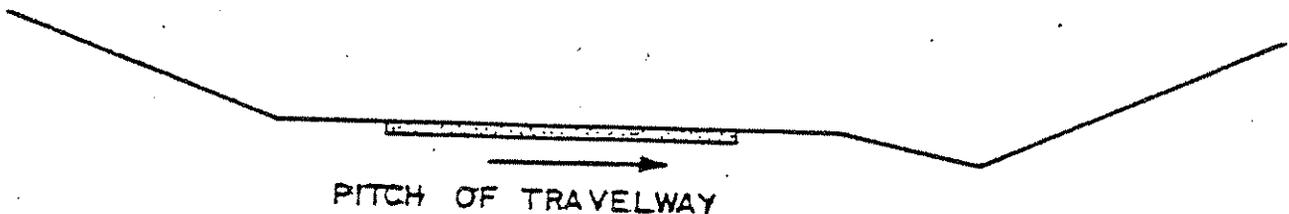
A professional engineer must certify in writing to the Planning Department that a Private Road, either existing, upgraded, or newly constructed, meets the standards of the required class for the subdivision, provided however, there is no requirement for written certification by a professional engineer for a private road serving three or fewer lots. The following must be inspected and certified:

1. the proper material has been used in the travelway and it is built to the required width and thickness;
2. the shoulders are the correct width and the typical cross section is in place;
3. the road is on the proper grade;
4. ditches are in place where necessary to provide adequate drainage, in accordance with sound engineering practice;
5. needed storm pipes of proper size, materials and construction are in place and energy dissipaters installed, in accordance with sound engineering practice;
6. all disturbed areas are properly stabilized;
7. the required road sign is in place;
8. an adequate turn-around is in place at the end of the road;
9. required vertical and horizontal clearance is provided; and
10. sight distance and construction at the intersection with a public road has been approved by NCDOT.

Travelway

The travelway must be surfaced and compacted with a material acceptable to Orange County to the required width of the particular class of road. A crown should be built into the travelway so that water will drain from the road surface into the side ditch. The crown should not be so great as to cause vehicles to slide off the travelway when ice or snow is on the road.

Generally the road and shoulder should be crowned as shown in the specifications sheet so that runoff will drain to the ditches on both sides of the road. However, in some situations it may be desirable not to crown the road but to have the travelway sloped to a single ditch as shown below. This is applicable in three situations: (1) where it is necessary to cut down on the length of a ditch in order to reduce the erosion potential by decreasing the volume of runoff, (2) where it is difficult to construct ditches due to rock, or (3) to provide for super-elevation [or] in curves. Such a single slope should always drain toward the inside of a curve. The crown slope of the road and shoulder should be approximately 1/2 to 1 inch per foot.



Surface Materials

Acceptable material for surfacing the travelway is Aggregate Base Course (commonly called "crusher run"). Soil type base materials (commonly called "Chapel Hill Gravel" or "Chapel Hill Grit") will be accepted under the following conditions:

The material originates from a quarry approved by the North Carolina Department of Transportation.

The grade of the road is less than 8 percent.

Where the grade is greater than 8 percent a layer of crusher run stone will be placed over the Chapel Hill Gravel before compaction.

Sources of surface material shall be verified with the certifying professional before placement.

Fill Material

Where filling is necessary to raise the roadbed, cross watercourses or fill stumpholes, it shall be done with suitable material that is free of roots or other organic matter. The fill should be firmly compacted to reduce settlement that will cause ruts or holes in the finished road.

Two-Way Traffic

Private Roads shall provide for two-way traffic in order to prevent conflict of vehicles meeting head-on. Two-way traffic for Class B roads can be accomplished by widening the travelway at prescribed locations to at least 16 feet to allow vehicles to pass or to pull over and stop while another vehicle passes. Plans showing road and right-of-way location, ditches and culverts, extent of clearing, and existing and finish contour lines shall be approved by the Erosion Control Officer.

Medians may be permitted between travel lanes when it is demonstrated that such design is desirable for the preservation of natural resources, or that excessive cut and fill would be required to construct a roadway to the standard width. Medians may be permitted only in accordance with the following:

1. Each lane shall contain a minimum of 14 feet of vertical and horizontal clearance.
2. Each lane shall contain a minimum travelway of 8 feet, or 1/2 of the required width for the applicable road class, whichever is greater.
3. No lots shall access directly onto any divided portion of the road unless there is adequate cross-access provided through the median, or some other acceptable means of access and turnaround for emergency vehicles.
4. Both lanes shall be contained within a single easement.
5. A standard travelway of required width for the road class shall be constructed where the private road intersects with another private or public road.
6. Signs indicating "One Way" shall be provided where the lanes diverge.

Grade

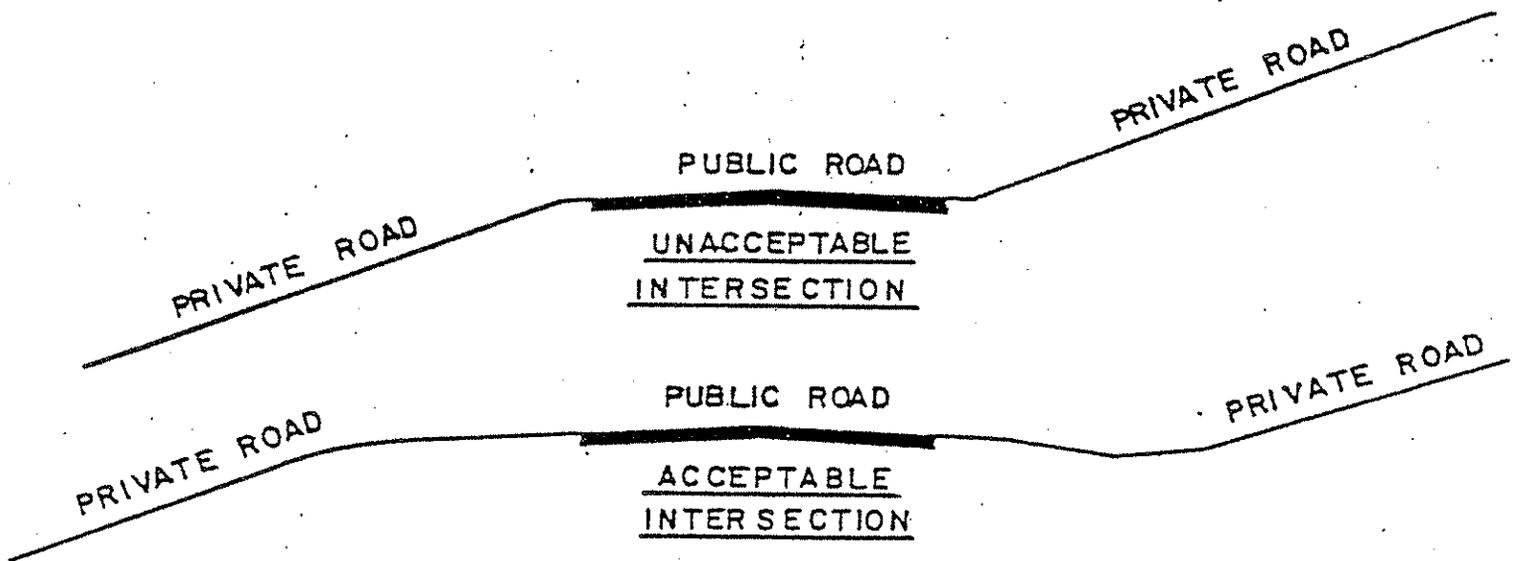
The grade of the road should not exceed 12 percent because of the difficulty of operating vehicles on such a steep road and the high potential for erosion of the travelway and ditches. Where possible, the road should be constructed along the contour of the land to avoid steep grades.

In exceptional circumstances a variance may be granted for a grade greater than 12 percent, as may be approved by the Erosion Control Officer prior to construction. Circumstances where a variance will be considered are: there is no other reasonable access or location of the road, relocating the road would create other, more serious problems with drainage, stabilization, or environmental impact, and/or the length of the segment with grade greater than 12 percent is no longer than 100 feet.

Intersection with Public Road

The intersection of the Private Road with the existing public road shall permit a safe entrance and exit. Adequate sight distances along the public road shall be provided by choosing a good location for the right-of-way and clearing sight triangles when building the road.

The intersection of a Private Road with a public road must provide an adequate place for cars to stop before entering the public road. See the diagram below.



The Private Road must flare at the public road in order to permit a vehicle to enter the Private Road when another vehicle is waiting on the Private Road. The dimensions of the required flare are shown on the specifications sheet for each class of road.

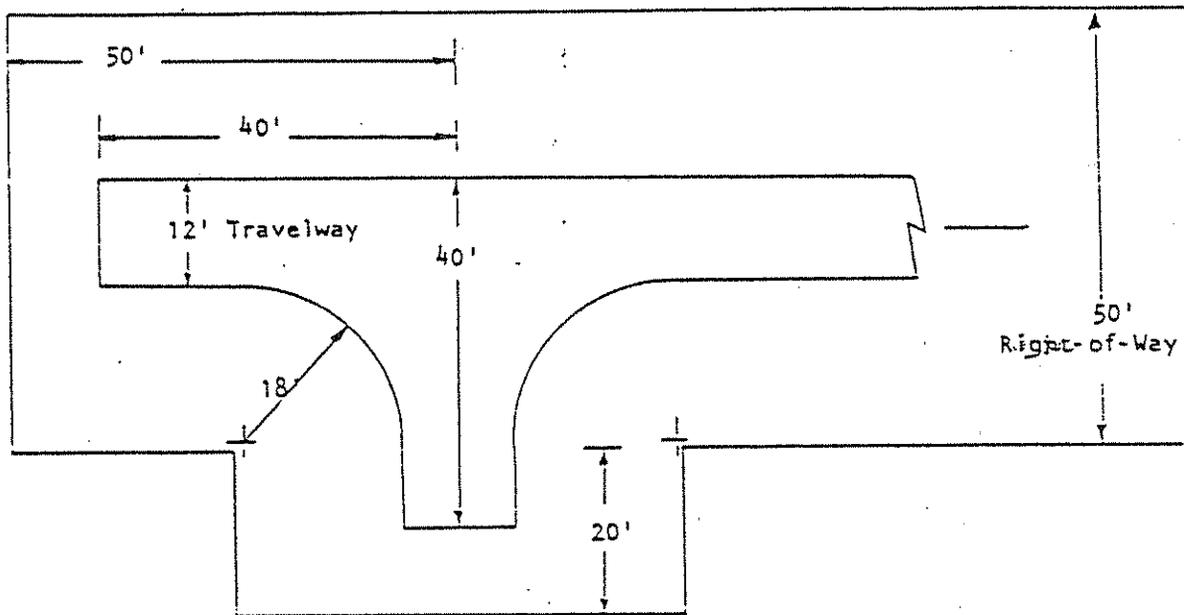
Drainage

Ditches shall be constructed to provide drainage from the road and adjacent areas. The ditches shall be built with sufficient depth and width to carry the expected volume of water. The side slopes shall be graded so that they can be stabilized and to prevent vehicles from becoming stuck if they slide into the ditch.

Where the road crosses streams or minor watercourses, culverts shall be installed to prevent ponding and washouts of the road for the five-year design storm. On streams where it is not economical to install a large culvert of the required size, the Erosion Control Officer may allow the installation of a smaller culvert if engineering equivalent provisions are made to protect the road surface and fill slopes from erosion when runoff tops the road.

Turn-Arounds

Vehicle turn-around areas shall be provided at the end of all dead end roads. This can be accomplished by ending the road in a cul-de-sac or a "T". Cul-de-sacs shall have a minimum diameter of 70 feet. A "T" turn-around must conform to the dimensions in the diagram below. The "T" type turn-around is preferred. The location of the turn-around will depend on the arrangement of the lots in the subdivision. If the Private Road serves only one lot the turn-around should be located near the building site. In a subdivision with several lots the turn-around should be at the end of the road and the necessary right-of-way provided.



Road Name and Sign

The road name shall be verified with the Orange County Planning Department to insure that the proposed name does not duplicate an existing name. The road sign must have one blade showing the name of the Private Road and another showing the name of the existing State maintained road. Class B roads of any length are required to be named and to have a road sign posted.

Right-of-Way

The right-of-way shall be 50' wide and indicated on the final plat. Requests for rights-of-way less than 50' wide, but at least 25' wide, must be approved by the Board of Commissioners. Bends in the right-of-way must be at angles that will permit construction of curves with a 125' minimum centerline radius. See "Minimum Curve Radius."

Permanent Vegetation

All areas disturbed by the construction of the road, including the shoulders, ditch banks, cut and fill slopes and any borrow areas, shall be seeded in permanent vegetation to stabilize the soil and prevent erosion. Seeding should be done immediately after grading is completed and before the final inspection by the Planning Department.

This disturbed area shall be smoothed and lightly harrowed to break up the soil and prepare a good seedbed. The following materials are recommended per 1,000 square feet. Other types of permanent vegetation may be substituted as long as they provide adequate cover to prevent erosion.

- 1.4 lbs. Fescue grass seed
- 0.4 lbs. German or Browntop millet (to provide temporary cover until the grass becomes established)
- 90 lbs. lime
- 23 lbs. 10-10-10 Fertilizer
- (2) 40 lb. Bales of straw for mulch (use enough to cover 75% of the ground)

Maintenance

Maintenance of the Private Road must be provided by the lot owners that are served by the road. The Road Maintenance Agreement between the lot owners is required to insure that the cost is shared equally and a mechanism for maintenance is set up. This responsibility for maintenance is the property owners and neither the State nor Orange County will maintain the road.

Regular attention shall be given to the following items in order to assure that the road will remain in good condition:

1. Vegetation: The vegetation should be mowed, limed and fertilized as needed. Areas that erode or where seeding is unsuccessful should be reseeded.
2. Drainage: Culverts shall be kept clear of trash and other obstructions that could prevent or reduce the culverts function. If culverts are not kept clear it will cause runoff to flow over the road and may cause flooding upstream. Ditch banks and bottoms shall be protected from erosion by maintaining good vegetation.
3. Travelway: The travelway shall be maintained by grading the surface material to fill any potholes that develop and to evenly spread the surface material where the soil has been uncovered because of erosion.
4. Road Name Sign: The sign shall be kept visible and legible so that visitors and emergency personnel can easily locate the road.

Vertical Clearance

A minimum of 14' vertical clearance must be provided above the travelway to permit the passage of large vehicles under power lines and tree limbs.

N.C. Department of Transportation Driveway Permit

The property owner is responsible for obtaining the required permit for access to the state maintained road. This permit can be obtained from the DOT in Hillsborough. Permits are normally granted on request.

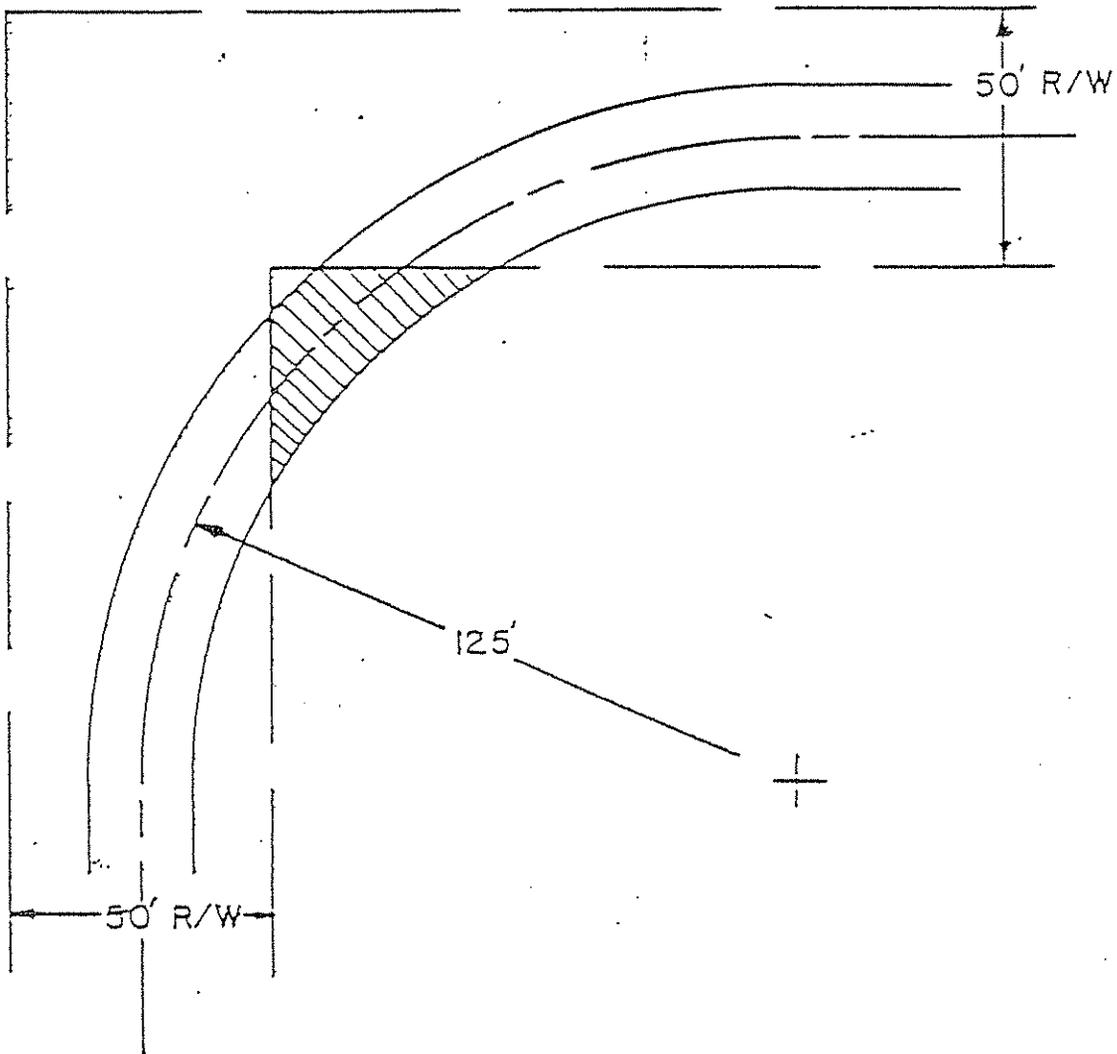
Minimum Curve Radius

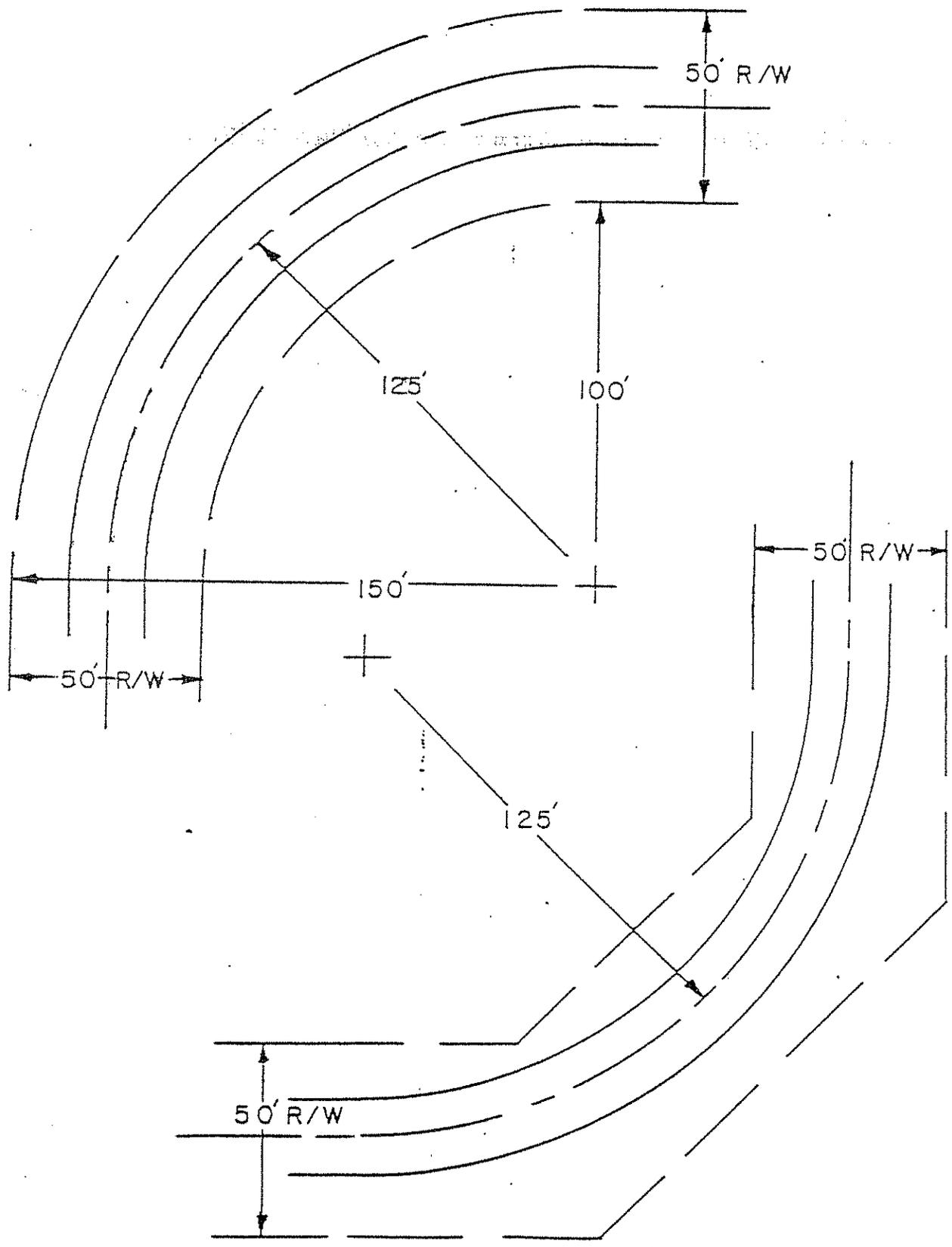
New curves shall be constructed with a minimum centerline radius of 125'. The right-of-way must be designed with bends that will provide sufficient width to construct the road to this minimum radius. For example, a 90 bend in a 50' right-of-way will not provide enough area to construct a road 18' wide. The right-of-way must include sufficient width for the travelway and the necessary shoulders, ditches and slopes.

A curve radius of less than 125 feet may be approved if all of the following conditions are met:

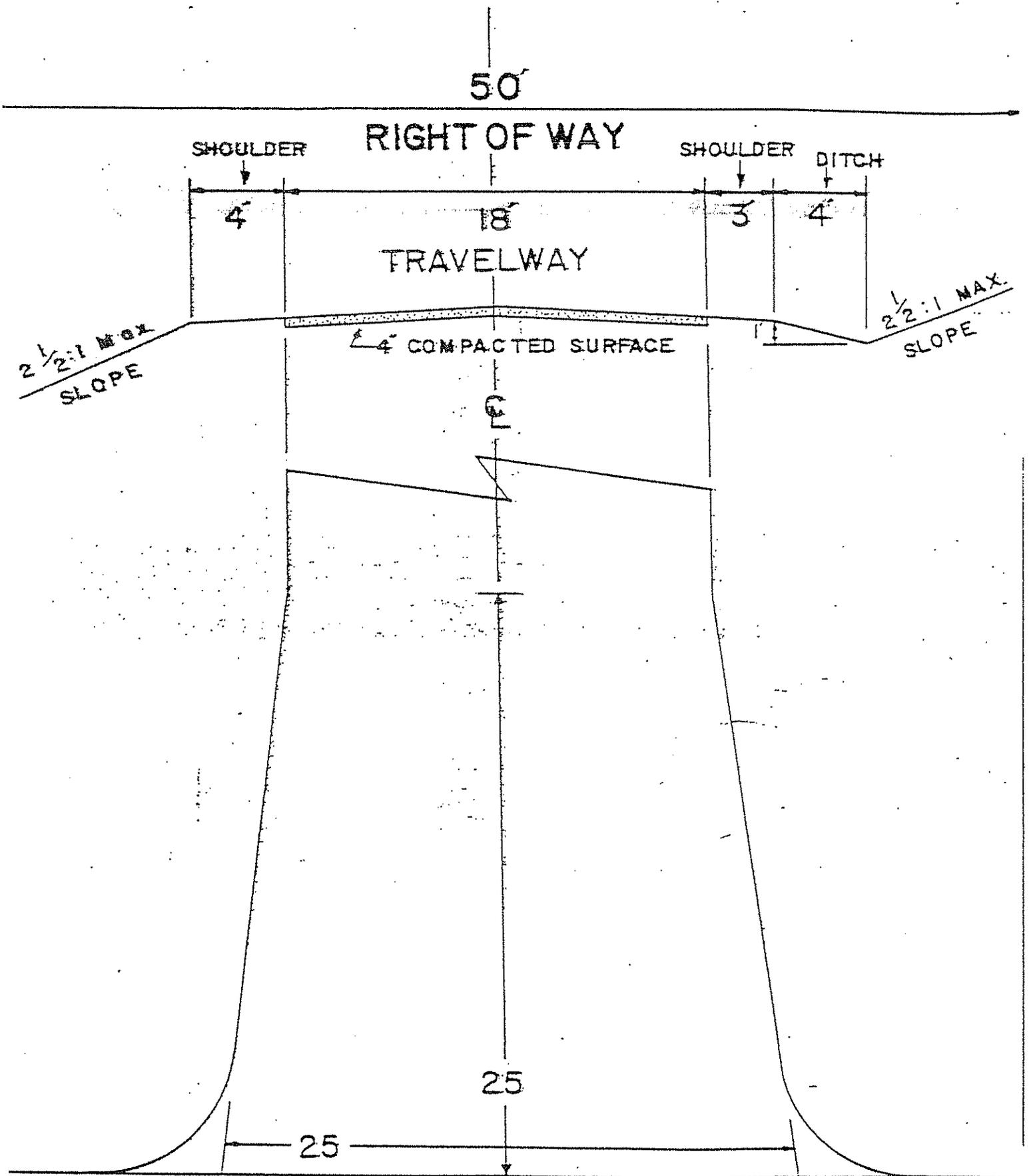
1. The road existed prior to the adoption of subdivision regulations or was approved as part of an earlier subdivision;
2. Reconstruction of the existing road to meet a 125' curve radius is not feasible due to the extent of earthwork which would be required and/or the inability to reconfigure the existing right-of-way location due to ownership or the location of existing structures, wells or septic systems;
3. Standards pertaining to road width and grade will be met;
4. The subdivision can be approved with a Class B private road;
5. Documentation is received from the Erosion Control Division that the proposed curve radius would provide for adequate vehicular access and circulation;
6. Documentation is received from the Department of Emergency Services stating that the proposed curve radius would provide access for the largest emergency vehicle, which would use the road.

The drawing below illustrates how a curve with a 125' centerline radius cannot be contained in a 90° bend of a 50' right-of-way. The other drawings illustrate alternative bends that will contain a curve of the minimum centerline radius.



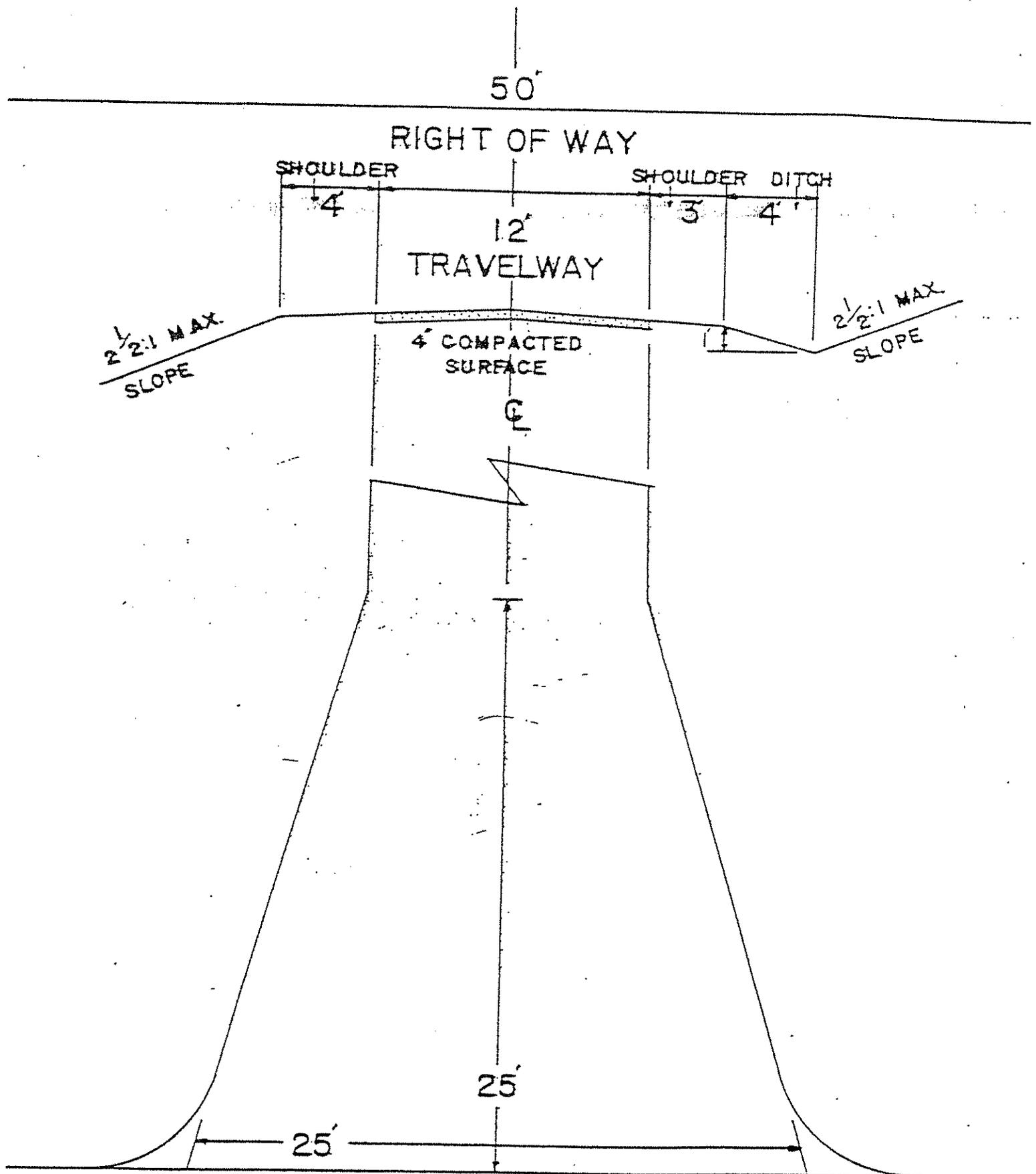


CLASS "A" PRIVATE ROAD



FLARE AT INTERSECTION WITH PUBLIC ROAD

CLASS B PRIVATE ROAD



FLARE AT INTERSECTION WITH PUBLIC ROAD