

**SAN DIEGO COUNTY  
STANDARDS FOR PRIVATE ROADS**

**COUNTY OF SAN DIEGO  
DEPARTMENT OF PUBLIC WORKS**

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# ARTICLE I

## INTRODUCTION

### Section 1.1 PURPOSE

These standards are to establish minimum design and construction requirements for private road improvements required as conditions of land development approval in the unincorporated areas of the County. It is the intent that these standards supplement and clarify the requirements set forth in County of San Diego Subdivision Ordinance (Title 8, Division 1 of the San Diego County Code of Regulatory Ordinances), and the conditions set forth by the approving authority. Wherever these standards conflict with either the Subdivision Ordinance; Board of Supervisors Policy Number I-18 entitled “Right-of-Way Dedication and Public Improvement Requirements in Connection with Major and Minor Use Permits”, or the approving authority, the requirements of the Subdivision Ordinance and the conditions set forth by the approving authority shall govern. These standards are not intended to apply to private roads for, Condominiums,<sup>1</sup> or private residential driveways.

### Section 1.2 STANDARDS

The requirements set forth in these standards are considered minimum design standards. They may be exceeded at the option of the developer, subject to the approval of the Director of Public Works.

### Section 1.3 APPLICABILITY

The modifications included in this update of the standards apply only to those projects which have applied for discretionary actions after June 30, 1999, which will necessitate the construction of a new private road and/or will add additional traffic to an existing private road. Any project submitted for discretionary action prior to the approval of these standards shall conform to the standards that were in place at the time the project was submitted to the County of San Diego for review.

### Section 1.4 MODIFICATIONS

It is recognized that these standards will not be applicable to every situation that may arise on a particular project. It is also recognized that all specific design or construction problems may not be recognized in the review of the project prior to the conditional approval. The Director of Public Works may make modifications to these standards where the application of the standards to a specific situation will result in an unusual and unreasonable hardship; provided, however, that the Director of Public Works determines that such modification is in conformity with the spirit and intent of applicable ordinances and the approving authority.

<sup>1</sup> San Diego County Standard Conditions for Tentative Subdivision Maps, Document No. 740858(a) (Item No. 11) approved by the Board of Supervisors on April 10, 1991.

In Recognition that strict adherence to these standards in every situation might result in impractical applications and unreasonable hardships, the following procedure is provided to properly respond to unique situations. A project proponent may request a modification by completing a "Request for a Modification of a Road Standard" form which details the location of the requested exception, alternatives considered, hardship of compliance with standard, and cost estimates. In some instances, it may be necessary for the applicant to provide an engineer's sketch to properly describe the requested exception. In addition to engineering and regulatory concerns, the following factors may be considered: consistency with existing road characteristics in the project vicinity, likelihood of future public or private upgrades to the affected roads, potential environmental impacts, utility relocations, and previously established community character guidelines in the area. All requests for modifications involving road widths, grades, angle of departure and/or vertical clearance will require a letter from the Fire Authority having jurisdiction that approves such change, unless the Board of Supervisors determines that the Fire District requirements are excessive.

The Director's final decision will be in the form of a letter to the applicant and project engineer explaining the decision and the justifications used in making that decision. Prior to making his final decision the Director may also obtain input from the local fire protection district, community planning and/or sponsor groups, design review board, and/or the general public. A copy of the Director's final decision, along with the completed application will be forwarded to the DPW Project Manager, the project inspector, the local fire authority and the project file.

If required road improvements are associated with a discretionary permit, County staff shall assess the appropriateness of applying these standards to each existing improved road. In cases where, in staff's professional judgement, strict adherence to these standards will be difficult to achieve, staff will prepare the draft conditions of approval so as to include a modification. In these cases, the specific modification will be identified in the draft conditions. Absence of any such specific modification in the conditions will mean that, unless a modification is later granted, these standards apply to all affected private roads.

## Section 1.5 PRIVATE ROADS

Many of the requirements of these standards for private roads do not meet the minimum standards for roads to be accepted into the County system of publicly maintained roads. Any road constructed under these standards shall remain privately owned and maintained until dedications of right-of-way are granted and accepted by the County, and the roads are improved to County Standards and are accepted into the County system of maintained public roads; or the roads are accepted as public roads by the County Board of Supervisors and are maintained through a County Service Area (CSA), as provided for in the Subdivision Ordinance, or a Community Services District (CSD).

ARTICLE II  
DEFINITIONS

Section 2.1 The following definitions shall be applicable to these standards:

- A) "AGRICULTURAL SUBDIVISION" means a subdivision located within the boundaries of an Agricultural Preserve established by the Board of Supervisors, and the owner thereof has entered into a currently effective Land Conservation Contract with the County.
- B) "AC/AB" means asphalt concrete over aggregate base.
- C) "CIRCULATION ELEMENT ROAD" means a corridor shown on the Circulation Element of the San Diego County General Plan. The plan includes both existing and proposed roads. The corridors are grouped into classes according to the character of service they are intended to provide at ultimate build-out of the County's General Plan.
- D) "COUNTY STANDARDS" means the requirements set forth in Ordinance 2809 (New Series) and as amended by any subsequent ordinance; State of California, Department of Transportation CALTRANS Standard Specifications (latest adopted edition); Standard Specifications for Public Works Construction with Regional Supplement Amendments (latest adopted edition); San Diego Area Regional Standard Drawings (latest adopted edition); San Diego County Public Road Standards (latest adopted edition); County of San Diego, Department of Public Works Special Provisions and Specifications for the Improvement of New Streets (latest adopted edition); County of San Diego, Department of Public Works Special Provisions for Work under an Excavation Permit; County of San Diego Department of Public Works, Design and Procedure Manual for Flood Control, County of San Diego Department of Public Works Hydrology Manual (latest adopted edition), and County of San Diego Design Standards (latest edition).
- E) "CROSS-SLOPE" is the gradient determined by dividing the difference in elevation from crown to pavement edge by the horizontal distance from crown to pavement edge, expressed as a percentage.
- F) "CROWN" is the highest part of the road surface between pavement edges.
- G) "DEVELOPER" includes a property owner or owner-authorized agent seeking to divide property through the subdivision process or seeking approval to change the existing use, or improve the condition, of property through the discretionary permit process.
- H) "DIRECTOR OF PUBLIC WORKS" means the Director, Department of Public Works of San Diego County or an authorized representative.

- I) “ENGINEER” means a Civil Engineer licensed to practice in the State of California who has been authorized by the developer to prepare plans and specifications and through his/her acceptance of the work assignment has assumed responsible charge for the preparation of the plans and specifications.
- J) “GRADE” is the slope of the longitudinal road profile generally measured along the centerline, expressed as a percentage.
- K) “GRADED WIDTH” means the width of the road to be graded measured from the top of the bank in embankment to the toe of the slope in excavation. All slopes shall be outside of, and not included in, the graded width.
- L) “IMPROVEMENT WIDTH” means the specified width of pavement or disintegrated granite measured from the edges of the pavement or edges of the disintegrated granite. Where asphalt concrete dikes or portland cement concrete curbs are used, the measurement shall be from curb or dike face to curb or dike face. When transitional curbing is used, such as mountable or rolled curbs, on roads 24 feet or wider, the measurement shall be from the outer edge.
- M) “INTERSECTION” is the area at the joining of two roadways within which vehicles making through or turning movements may come in conflict.
- N) “NON-URBAN DEVELOPMENT AREA” for the purpose of these standards means: Urban Residential #1, #2, #3 and all of the Non-Urban Residential, Agricultural and Special Purpose designations, #17 through #25, except #21 Specific Planning Area, as defined by the Land Use Element of the County General Plan.
- O) “NUMBER OF VEHICLE TRIPS PER DAY” [Average Daily Trips (ADT)] means the ultimate number of vehicle trips per 24-hour period forecast on the road under consideration. The number of trips shall include trips generated by all present, all proposed and all potential development when the study area is fully developed. The General Plan in effect at the time the development is approved shall be used for the purpose of determining the ultimate development. The number of trips shall be determined by using trip generation data per San Diego Traffic Generators (latest Edition) for the San Diego Region, reported by the San Diego Association of Governments (SANDAG) and CALTRANS, District 11.
- P) “OFF-SITE ACCESS” means rights-of-way for public highways, roads, streets or private road easements which provide legal vehicular access from a publicly maintained road to the boundary of the subject property.
- Q) “ON-SITE ACCESS” means rights-of-way for public highways, roads, streets or private road easements within the boundaries of the subject land division, which provide legal vehicular access to each of the lots/parcels of land within the subdivision.
- R) “PRIVATE RESIDENTIAL DRIVEWAY” is an individual or shared access way from a public or private road which will serve, now or any time in the future, no more than two residential lots. Construction of the access-way shall conform to the County of San

Diego Driveway standards. Easements for any off-site portion of the access-way shall be provided according to sections 81.402 and 81.703 of the County of San Diego Subdivision Ordinance (Title 8, Division 1 of the San Diego County Code of Regulatory Ordinances). Note; per the San Diego County Fire Code the minimum improved width for a residential driveway serving no more than two lots is sixteen feet (16') with a minimum graded width of twenty feet (20').

- S) "PRIVATE ROAD" when referenced in these Standards means any road which has not been declared or accepted for public use and/or County-maintenance by the County Board of Supervisors. This includes roads and/or portions of roads for which grants of easements, dedications, offers of dedication, or irrevocable offers of dedication for public roadway purposes are not granted for public use and/or County-maintenance. It also includes roads where offers of dedication or irrevocable offers of dedications for roadway purposes are not accepted for public use and/or County-maintenance. This applies to all or any parts of the entire area of private road easements which are to provide legal access for use as ingress and egress for vehicular traffic onsite or offsite to the lots/parcels. Private roads shall not include private residential driveways, as defined herein; nor does it include roads or portions of roads which lie within a County Service Area (CSA) or Permanent Road Division.
- T) "PUBLIC ROAD" means a State highway, City street or alley, County highway, road, street, alley, thoroughfare, or bridge and refers to all or any part of the entire width of public right-of-way used for vehicular traffic, bicycle traffic, pedestrian traffic, equestrian trails, or other approved for public use and/or County-maintenance by the Board of Supervisors.
- U) "RECORD PLAN" means the final as constructed plan, prepared after construction, in substantial conformance with the improvement plans and all County approved plan changes.
- V) "RIGHT-OF-WAY" means the area which is available for provision of road improvements such as portland cement concrete curbs, gutters, sidewalks, asphaltic concrete graded walkways, dikes and berm, roadbed pavement, grading, drainage facilities, and other underground and overhead improvements. For the purpose of these standards, there is no differentiation between the terms "right-of-way," "road easement," and "private road easement."
- W) "ROAD" includes roads and highways both public and private. The terms streets, roads, and highways are used interchangeably.
- X) "SPECIFIC PLANNING AREA" means Specific Planning Area as defined by the Land Use Element of the San Diego County General Plan.
- Y) "STREET KNUCKLE" means a bulbous widening of the improved road width at an area where the road makes a right angle turn (See County Road Standard Drawing DS-15).

- Z) “URBAN DEVELOPMENT AREA” for the purpose of these standards means: areas designated by the following land use designations on the San Diego County General Plan; Urban Residential #4 through Urban Residential #10.



ARTICLE III  
IMPROVEMENT & DESIGN STANDARDS

Section 3.1 DESIGN STANDARDS

Roads shall be designed and improved in conformance with the following:

- A) Where offers of dedication are to be accepted, the roads shall be designed and constructed in conformance with “COUNTY STANDARDS” corresponding to the road classification required.
- B) Where offers of dedication are not to be accepted, the roads shall be designed and constructed in conformance with the following minimum standards:

NUMBER OF VEHICLE TRIPS PER DAY (ADT)

	750 or Less	751-2500
Graded Width	32ft. <sup>1</sup>	32ft. <sup>1</sup>
Improvement Width	24ft. <sup>1</sup>	24ft. <sup>1</sup>
Horizontal Radius	200ft.	300ft.
Vertical Design Speed	25 MPH	30 MPH
Maximum Grade	15%	15%
Minimum Length-Vertical Curve	40'	40'
Maximum Angle of Departure	7% <sup>2</sup>	7% <sup>2</sup>
Minimum Vertical Clearance	14.5"	14.5"

1 Based upon input from the local fire protection district, community planning and/or sponsor groups and the general public, the Director of Public Works may require that on-street parking be provided on roads serving areas with a minimum lot size of less than one (1) acre. Whenever on-street vehicle parking is required, on-street parking shall be provided by increasing the graded and improved width by six feet (6') for each side of the road in which on-street parking is to be provided in accordance with Sections 81.402 of Chapter 4, and 81.703 of Chapter 7, of the County Subdivision Ordinance. In order to accommodate on-street parking, the Director of Public Works may also, on a case by case basis, authorize the use of parking bays or mountable curbs (berms) in lieu of additional road widening. Where parking bays are provided, they shall be located to best accommodate the parking demand. Landscaping and/or curbing may be provided between parking bays provided that they will not obstruct required sight distance and/or restrict ingress and/or egress to and from the parking bays. In order to designate no-parking areas, striping and/or appropriate signage may be required.

2 The angle of departure is the smallest angle made between the road surface and a line drawn from the front point of the ground contact of the front tire for a pumper fire apparatus (as per Standard NFPA 1901) to any projection of the apparatus in front of the front axle. The angle of approach affects the road clearance of the vehicle when going over short steep grades such as found in a driveway entrance or crossing a high crowned road at right angles. Too low an angle of approach will result in scraping the apparatus body.

- C) Where no dedications, offers of dedication, or irrevocable offers of dedication are required, the roads shall be designed and constructed to the following minimum standards:

NUMBER OF VEHICLE TRIPS PER DAY (ADT)

	100 or Less	101-750	751-2500
Graded Width	28ft. <sup>2,3</sup>	28 ft. <sup>2,3</sup>	28ft. <sup>2,3</sup>
Improvement Width	24ft. <sup>1,2</sup>	24ft. <sup>1,2</sup>	24ft. <sup>1,2</sup>
Horizontal Radius	100ft. <sup>1</sup>	150ft. <sup>1</sup>	200ft. <sup>1</sup>
Vertical Design Speed	20 MPH <sup>1</sup>	25 MPH <sup>1</sup>	30 MPH <sup>1</sup>
Maximum Grade	20%	20%	20%
Minimum Length-Vertical Curve	40'	40'	40'
Maximum Angle of Departure	7% <sup>1</sup>	7% <sup>4</sup>	7% <sup>4</sup>
Minimum Vertical Clearance	14.5"	14.5"	14.5"

- D) Where it is determined that the number of trips per day on a particular road will exceed 2500 the Director of Public Works may require that the road be dedicated and improved in conformance with the "COUNTY OF SAN DIEGO PUBLIC ROAD STANDARDS".

1 May be reduced upon approval of the Director of Public Works. In such cases, the vertical design speed and the horizontal radius of curvature shall be a minimum of 15 MPH and a 60-foot horizontal radius, respectively.

2 Based upon input from the local fire protection district, community planning and/or sponsor groups and the general public, the Director of Public Works may require that on-street parking be provided on roads serving areas with a minimum lot size of less than one (1) acre. Whenever on-street vehicle parking is required, on-street parking shall be provided by increasing the graded and improved width by six feet (6') for each side of the road in which on-street parking is to be provided in accordance with Sections 81.402 of Chapter 4, and 81.703 of Chapter 7, of the County Subdivision Ordinance. In order to accommodate on-street parking, the Director of Public Works may also, on a case by case basis, authorize the use of parking bays or mountable curbs (berms) in lieu of additional road widening. Where parking bays are provided, they shall be located to best accommodate the parking demand. Landscaping and/or curbing may be provided between parking bays provided that they will not obstruct required sight distance and/or restrict ingress and/or egress to and from the parking bays. In order to designate no-parking areas, striping and/or appropriate signage may be required.

3 The graded width for on-site and off-site roads may be reduced, at the discretion of the Director of Public Works. However, the graded width shall not be less than the required improvement width as required by these standards.

4 The angle of departure is the smallest angle made between the road surface and a line drawn from the front point of the ground contact of the front tire for a pumper fire apparatus (as per Standard NFPA 1901) to any projection of the apparatus in front of the front axle. The angle of approach affects the road clearance of the vehicle when going over short steep grades such as found in a driveway entrance or crossing a high crowned road at right angles. Too low an angle of approach will result in scraping the apparatus body.

- E) Where offers of dedication or irrevocable offers of dedication have been granted, the road shall be constructed on the centerline of such dedication.
- F) All private roads shall be surfaced with asphaltic concrete over an aggregate base, except for private roads serving properties which are designated #18, #20, #23 or #24 on the County General Plan or serving an agricultural subdivision. The above private roads, which are not required to be surfaced with asphaltic concrete, shall be surfaced with a minimum of 6 inches of disintegrated granite.

Section 3.2 GENERAL REQUIREMENTS

- A) Grading beyond the minimum graded width may be required to provide for adequate sight distance ( See Section 3.2.H ).
- B) Where disintegrated granite (D.G.) surfacing is allowed, AC/AB in conformance with Section 3.11 of these standards shall be required where the road grades are 8.0% or greater, or under 1.0%.
- C) The structural section shall be designed in conformance with Section 3.11 of these Standards.

D) RIGHT-OF-WAY RETURNS

- 1) The radii for right-of-way returns at the intersection of a private road with a public road or future public roads shall be a minimum 20 feet.
- 2) Where the angle of intersection of easement right-of-way lines is other than 90 degrees, or where a sight distance problem may be anticipated, an increased right-of-way line radius may be required.

E) STREET KNUCKLE ALLOWED

- 1) In any road dedicated, offered for dedication, or irrevocably offered for dedication, street knuckles may be used in accordance with County of San Diego Public Road Standards and San Diego County Design Standard Number DS-15.
- 2) Where no dedication, offer of dedication, or irrevocable offer of dedication is required, street knuckles may be used on a case by case basis.

F) MAXIMUM GRADE ALLOWED

Where no dedication, offer of dedication or irrevocable offer of dedication is required, the maximum gradient should not exceed 20.0%. Grades above 15% may also require mitigation from the local fire protection district, which will be enforced by the local fire authority. Based upon existing road conditions, topography, placement of existing utilities, environmental constraints and/or other pertinent factors the Director of Public Works may authorize a steeper grade (for a specified length), provided the maximum grade does not exceed 25%. Prior to any authorization, however, the Director shall obtain input from the local fire protection district.

G) SIGHT DISTANCE

- 1) Intersections of private roads with existing public roads (including those roads in which dedications and/or irrevocable offers of dedication have been offered)
  - a) Sight distance requirements at all intersections of private roads with public roads, shall conform to the intersectional sight distance criteria as provided below:

DISTANCE AT INTERSECTIONS	STANDARD CORNER SIGHT
Design Speed, MPH	Minimum Corner Intersection Sight Distance in Feet*
20	200
30	300
40	400
50	500
60	600

\* Corner sight distance measured from a point on the minor road at least 10 feet from the edge of the major road pavement and measured from a height of eye of 3.5 feet on the minor road to a height of object of 4.25 feet on the major road. San Diego County Design Standards DS-20A and DS 20B shall also apply. The design speed used to determine the minimum sight distance requirement shall be the greater of the current prevailing speed (if known) and the minimum design speed of the respective road classification shown in Table 2 of the County of San Diego Public Road Standards

- b) The line of sight shall be entirely within the dedications, or irrevocable offers of dedications provided, or, if there are no offers of dedication required, within the private easements provided.
- 2) Intersections of private roads with private roads
  - a) Engineer shall use appropriate engineering judgement to determine the appropriate corner sight distance. As a minimum, corner sight distance shall be provided in accordance with the stopping sight distance as determined by the American Association of State highway Officials (AASHTO) in the publication "A Policy on Geometric Design of Highways and Streets" dated 1984.

3) Modifications

The above sight distance standards will be applicable to the vast majority of cases, but they are not inflexible rules to which there is no modification. Occasionally, the Board of Supervisors or Director of Public Works may make modifications where the application of the standards is impractical or results in unreasonable hardship, such as to account for existing intersections which have been designed and constructed according to previous standards. Procedures for processing a modification request are provided in Section 1.4.

H) ROAD INTERSECTIONS

- 1) Intersections of private roads with a public non-Circulation Element road shall be offset at least 200 feet from the nearest adjacent road (measured centerline to centerline).
- 2) Intersections of private roads with roads shown on the Circulation Element of the San Diego County General Plan shall be offset at least 300 feet from the nearest adjacent road measured (centerline to centerline).
- 3) The angle between centerlines of an intersecting private road with a public road shall be as nearly a right angle as possible, but in no case less than 70 degrees or greater than 110 degrees. Where the angle between the centerlines is between 70 and 80 degrees or between 100 and 110 degrees, there shall be required on the acute angle corner of the intersection a taper to accommodate right-hand turning movements. Said taper shall be set back 5 feet at the exiting point of the curb return and extend 40 feet in such a manner as to safely allow completion of the right-hand turning movement.

I) ROAD NAME SIGNS

All private roads within major subdivisions and private roads serving four or more parcels shall be named. The developer shall install one road name sign at each intersection as a part of the improvements. Installation shall be in accordance with San Diego County Design Standard Number DS-13.

J) LIGHTING REQUIREMENTS

All development projects shall be required to transfer to Zone A of the San Diego County Street Lighting District, irrespective of roadway lighting requirements.

Section 3.3 CUL-DE-SACS/TURNAROUNDS

Cul-de-sacs or approved turnarounds shall be required at the end of all private roads except where the road will ultimately serve no more than 2 residences and the length of the private road is 150 feet or less.

- A) Where dedications, offers of dedications, or irrevocable offers of dedications are required, the cul de sacs shall be designed and improved to “COUNTY STANDARDS” for the road classification involved.
- B) Where dedications, offers of dedication or irrevocable offers of dedication are not required, the cul de sacs shall be designed and improved as follows:
  - 1. Minimum Graded Radius - 38 feet.
  - 2. Minimum Surfaced Radius - 36 feet.
  - 3. Minimum Return Radii - 30 feet.
  - 4. Minimum Centerline Grade - 1 percent.
  - 5. Maximum Centerline Grade - 10 percent.
  - 6. Maximum Cross Slope - 5 percent
- C) Hammerhead and/or other types of turnarounds shall be designed and improved to the satisfaction of the Director of Public Works. Prior to approving a turnaround design, the Director shall obtain input from the local fire protection district.

#### Section 3.4 BRIDGES

- A) Whenever a bridge is provided as part of a private road, it shall be designed in accordance with the American Association of State Highways Officials (AASHTO) design standards for a HS15-44 loading and per Department of Planning and Land Use Policy MP-21 (Bridges on Private Property). Inspection and maintenance of the bridge, as necessary, shall be the responsibility of the owner(s) and shall be included within the provisions of a private road maintenance agreement. The local fire protection district may also require that vehicle load limits be posted at the entrances to the bridge.

#### Section 3.5 SPEED CONTROL DESIGN FEATURES

- A) Speed control design features such as speed bumps, speed humps, speed control dips, etc. may interfere with the response of emergency vehicles and other emergency apparatus and shall be discouraged. Speed control design features shall not be approved and/or installed on private roads unless authorized by the Director of Public Works and/or County of San Diego Board of Supervisors. Prior to approving any design or authorizing the installation for a speed control design feature, input shall be obtained from the local fire protection district, which may prohibit the installation of such design features within certain areas.

### Section 3.6 GATES

- A) If a private road is to be gated in close proximity to a public road, then a thirty-foot (30') minimum radius turnaround shall be provided at the gated entrance. A minimum storage space shall also be provided to accommodate two vehicles. The gated driveway entrance and card reader location shall be designed according to San Diego County Design Standards (such as DS 17, DS 18 or DS 19) and to the satisfaction of the Director of Public Works.
- B) Gates, if provided across private roads, shall be designed, placed, installed, and accessory features (such as key boxes, "break-away" devices, automatic openers, etc.) provided to the satisfaction of the Director of Public Works and in accordance with provisions outlined by the local fire protection district.

### Section 3.7 FUEL MODIFICATION ZONES

- A) Per the Fire Code, fuel modification zones are required on each side of a private road. A fuel modification zone consists of the clearing of flammable vegetation on each side of the road. Its purpose is to create a more defensible space for ingress and egress. Review and enforcement of fuel modifications is performed by the local fire protection district. The required clearances for a fuel modification zone may exceed the overall graded width required by the private road standards established herein.

### Section 3.8 DRAINAGE REQUIREMENTS

New roads shall be designed to carry the anticipated drainage, which may occur along and/or across the road, as per County standards. Additional drainage shall not be diverted onto and/or across an existing road without adequate drainage improvements unless it is shown, to the satisfaction of the Director of Public Works, that the existing road and/or its drainage structures are adequate to carry the additional drainage.

- A) Drainage improvements constructed in any road dedicated, offered for dedication, or irrevocably offered for dedication shall be in conformance to "COUNTY STANDARDS" and the following:
  - 1) Roads shall be designed to carry the anticipated drainage within the road easement without significant erosion. Crown or cross slopes shall be 2.0% except the minimum cross-slope may be 1.0% and the maximum cross-slope may be 5.0% where physical conditions do not warrant 2.0%. Where drainage is carried in unpaved roads, lined ditches may be required as part of the design.
  - 2) An energy dissipator shall be installed at the outlet of each culvert or ditch to reduce the velocity to less than 6.0 feet per second.

- B) Roads not to be dedicated, offered for dedication, or irrevocably offered for dedication, shall conform to the above except as follows:
- 1) All culverts and dip sections shall be designed to carry the one hundred (100) year frequency storm. Storm drains shall carry the ten (10) year design flow without headwater above the top of the pipe entrance or, if a headwall is provided, to the top of the headwall.
  - 2) All culvert pipe to be installed shall be new with a design life expectancy of a minimum of 25 years. Where existing culvert pipe is proposed to be left in place, it shall be inspected for serviceability by the engineer. If, in the opinion of the engineer, the existing culvert does not have a remaining service life of 25 years, the culvert shall be repaired or replaced.
  - 3) Dip sections may be allowed in roads not to be accepted for maintenance by the County. Dip sections shall conform to San Diego County Design Standard Number DS-14.
- C) General Requirements
- 1) No diversion of drainage shall be allowed unless a waiver and release is obtained from the affected property owner(s).
  - 2) Drainage discharge shall be into a natural channel or drainage structure designed and constructed to accept the drainage.
  - 3) Where landscaping is proposed adjacent to the road, additional drainage subdrainage and erosion protective measures may be required to prevent damage to the structural section by removing surface water and seepage.

### Section 3.9 EARTHWORK

All earthwork shall conform with the applicable provisions of Title 7 of the County Code of Regulatory Ordinances (Grading Ordinance) with the following exceptions:

- A) No grading permit will be required for the construction of required roads provided the work is in conformance with, and pursuant to, an approved discretionary permit.
- B) Permanent irrigation systems will not be required for slopes created with the construction of roads, provided that slope protection is provided by means of either a non-irrigated hydro-seed or ground cover, watered to establishment. Hydroseed slopes shall be irrigated by water truck until the mixture germinates and growth is established. Note: the local fire protection district may also require that fire resistive planting be provided. This is enforced by the local fire authority.

It is the developer's responsibility to obtain legal permission from property owners that will be affected by any grading and/or drainage work outside the easements or outside the developer's property lines. Evidence that the developer has contacted the affected property



owners may be required by the Director of Public Works prior to the issuance of any grading and/or improvement plan for work to be done outside the easements or outside the developer's property lines.

### Section 3.10 DISINTEGRATED GRANITE (D.G.)

Where roads are not to be paved with hot mix A.C., disintegrated granite shall conform to the following requirements:

Resistance Value (R-Value)	73 Minimum
Sand Equivalent	30 Minimum

As determined by California Test Method No. 202, disintegrated granite not used as base with hot mix A.C. shall conform to the following gradation:

#### Percentage Composition by Weight

Passing 1 ½" sieve	100%
Passing 1" sieve	90 -100%
Passing a #4 sieve	50 -100%
Passing a #3 sieve	25 - 55%
Passing a #200 sieve	5 -18%

All disintegrated granite shall be compacted to 95 percent relative compaction, as per ASTM D-1557.

### Section 3.11 AC/AB PAVEMENT, STRUCTURAL SECTION DESIGN

The engineer shall design the structural section of all roads to be paved and submit the design to the County for approval. The engineer should use appropriate engineering judgement to determine if the project's site conditions, expected usage, desired maintenance intervals and cost levels dictate whether these standards should be exceeded. The structural section shall be designed to accommodate expected vehicle loads, types and volumes. Construction traffic, garbage trucks, moving vans and other expected uses shall be considered. An appropriate traffic index (TI) shall be calculated. The structural section shall also be in accordance with the following specifications:

- A) All designs shall conform to the State of California, Highway Design Manual, using the R-Value of the native soil and the following minimum traffic indices, unless it is determined that a higher traffic index is warranted:
  - 1) For all classes of residential roads constructed under these standards a minimum Traffic Index of 4.5 (Minimum Structural Section, 2 ½" AC over 4" AB) shall be used.
  - 2) For all classes of industrial and commercial roads a minimum Traffic Index of 7.0 (Minimum Structural Section, 3" AC over 7" AB) shall be used.

- B) The California Bearing Ratio design Method may be used as an alternate to the California Stabilometer “R” Value Design Method in the design of the structural section.
- C) Asphalt concrete shall conform with either:
- 1) State of California CALTRANS Standard Specifications (latest adopted edition); or
  - 2) Standard Specification for Public Works Construction with Regional Supplement Amendments (latest adopted edition).
- (The engineer shall specify the type, class, and grade of asphalt to be used.)
- D) Aggregate base shall conform with either:
- 1) State of California CALTRANS Standard Specifications (latest adopted edition); or
  - 2) Standard Specification for Public Works Construction with Regional Supplement Amendments (latest adopted edition), and shall be Aggregate base conforming to Section 400-2.4 “CLASS 2 AGGREGATE BASE” of the Standard Specifications for Public Works Construction, Regional Supplement Amendments except for properties designated #18, #20, #23 or #24 on the County General Plan or where an agricultural subdivision is proposed. In these areas disintegrated granite conforming to the requirements of Section 3.10 of these standards may be used provided the placement and compaction is in conformance with the above standard specifications.

### Section 3.12 SAFETY

The developer shall be responsible for maintaining a safe work area at all times and shall install all signs, striping, trench shoring, and other safety devices.

### Section 3.13 EXCEPTIONS

All improvements shall be made in accordance with these standards unless the following exceptions are approved by the approving authority after receipt of recommendations from the Director of Public Works:

- A) No surfacing is required on any PRIVATE ROAD where each parcel shown on the tentative map contains a gross area of 20 acres or more, or is located within the boundaries of an Agricultural Subdivision in accordance with Section 81.708, Chapter 7, of the County Subdivision Ordinance, except where road grades are 11% or greater or under 1%, asphaltic pavement shall be required in accordance with Section 3.11 of these standards. Drainage improvements shall be constructed in accordance with the drainage requirements of Section 3.8 of these standards.

- B) Where a private road easement not less than 20 feet is allowed as provided for under Section 81.703 L (1) of the Subdivision Ordinance, the graded width and improvement width shall not exceed the width of the easement provided.
- C) Irrevocable Offers of Dedication may be required for proposed or existing private easement roads within the boundary of a County Service Area or Permanent Road Division that are non-maintained. Where required, these roads shall be designed and constructed as per Section 3.1(C) unless otherwise specified by the Director of Public Works to be designed and constructed according to Section 3.1(B).
- D) Where the access serves no more than 2 dwelling units on property, which cannot be further subdivided, the road surface width shall be 16 feet improved on 20 feet graded width, and conform to private residential driveway standards.
- E) Assuming all other development criteria are met and upon concurrence of the local Fire Authority having jurisdiction, the improved width of private roads may be reduced to 20 feet. The Fire Authority may require subsequent structures to be protected with automatic fire sprinklers, defensible space and/or other building features as required by the Fire Authority.

ARTICLE IV  
PROJECT PROCESSING

Section 4.1 PLANS

Where a privately maintained road is to be improved, and where dedication, an offer of dedication, an irrevocable offer of dedication, or drainage easement is granted, the developer shall cause road improvement plans to be prepared in accordance with "COUNTY STANDARDS," and submitted to the County for approval. Where the dedication, offer of dedication, or the irrevocable offer of dedication is not accepted, the roads shall be constructed in conformance with Section 3.1(B) of these Standards. The developer shall obtain approval of said plans by the County prior to commencement of any construction.

Where a private road is to be improved and no dedication, offer of dedication, irrevocable offer of dedication, or drainage easement is granted, the developer shall cause plans to be prepared in conformance with these standards. It shall be the responsibility of the engineer to assure that the work proposed on the plans conforms to the requirements of the standards and the conditions of approval.

The plans shall be designed by the engineer and submitted to the County for record keeping and inspection purposes. Any plan submitted that does not comply with the conditions of approval or is not of sufficient clarity and detail for microfilming purposes will be rejected and returned to the engineer for correction. No inspections will be performed by the county until an acceptable plan is received.

Section 4.2 INSPECTION

Where the work to be done is within dedications, or offers of dedication for right-of-way, all work and materials shall be subject to inspection by a representative of the Department of Public Works. All work or materials that does not meet "COUNTY STANDARDS" shall be removed, repaired or restored to the satisfaction of the Director of Public Works.

Where PRIVATE ROADS are being constructed, the engineer shall be responsible for the inspection of the work and materials and shall assure that all work and materials are in conformance with these Standards for Private Roads. The Director of Public Works reserves the right to make any inspections deemed necessary to check the progress of the work, investigate complaints and inquiries, or to determine the acceptability of the work and materials. Upon notification that the work is completed, the Director of Public Works shall make a final inspection. Any noted deficiencies in workmanship or materials shall be removed, repaired or restored to the satisfaction of the Director of Public Works.

At the option of the developer or the engineer, the Department of Public Works may assume the inspection and laboratory testing responsibilities for PRIVATE ROADS. The request shall be in writing and received by the Director of Public Works a minimum of ten days prior to the start of work. The Director of Public Works reserves the right to accept or reject the request to assume inspection responsibilities.

### Section 4.3 ENGINEER'S STATEMENTS

At the time the plans for PRIVATE ROADS are submitted to the County, the engineer shall enclose a written statement that the work shown on the plans conforms to the requirements of the conditions of approval of the tentative map/tentative parcel map and the "San Diego County Standards for Private Roads." The engineer shall also submit two copies of any related reports such as geology reports and/or preliminary soils investigation reports.

Prior to construction, the engineer shall submit the following to the Improvements and Grading Group, Department of Public Works:

1. Signed blue-line Improvement Plans.
2. Inspection Deposit.
3. Two (2) copies of Resolution or Notice of Approval.

At the time of requesting the final inspection by the Department of Public Works, the engineer shall submit the following to Improvements and Grading Group:

1. Two copies of the final soils report and/or compaction report.
2. Two blue-line copies of the "Record" plans.
3. The original tracing of the "Record" plans (which becomes the property of the County of San Diego).
4. A statement that the work has been done in substantial conformance with the "Record" plans and the "San Diego County Standards for Private Roads."

### Section 4.4 DEPOSITS

The developer shall be responsible for paying to the County the full cost of processing the plans and for inspection of the work. Prior to any plan checking or construction inspection work being done by the County, the developer shall place a deposit with the County in an amount to be determined by the Director of Public Works. If the cost to the County exceeds the initial deposit during the processing of the plans or inspection of the improvements, the developer shall deposit additional funds with the County prior to any further work being done by the County. Any unused portion of the deposits will be returned to the developer upon acceptance of the work.

### Section 4.5 PERMITS

- A) A construction, excavation, and/or encroachment permit is required for all work to be done within existing public right-of-way.
- B) Other permits for work performed within and/or outside of the public right-of-way may be required by the County and/or other agency (ies) having jurisdiction.

- C) Whenever street lights are installed on private roads, the street lights are private and require a miscellaneous electrical permit. This permit is obtained from the Department of Planning and Land Use (Building Division) who will also inspect the installations and issue final approval for the street lights.