

## **Attachment H**

Additional Public Correspondence  
received after Planning Commission Decision  
and as of January 30, 2020

**From:** [gecalo@comcast.net](mailto:gecalo@comcast.net) <[gecalo@comcast.net](mailto:gecalo@comcast.net)>  
**Sent:** Sunday, January 26, 2020 1:48 PM  
**To:** Dillon, Diane  
**Subject:** HARD SIX CELLARS / COUNTY ROAD STANDARDS

Dear Diane,

I am aware that the Board will be hearing the Hard Six Cellars appeal on Diamond Mountain Road South Fork.

I attach a partial copy of the County Road Standards the application of which I have advocated at hearings (including Hard Six Cellars) when the County approves wineries, expansion of existing wineries or any other commercial establishments which increase traffic as a matter of public safety. Such roads must provide minimum standard access to fire trucks while at the same time also for panic type evacuations involving disorderly traffic of multiple vehicles all at the same time.

I draw your attention to page 12 of the Code which specifies that the minimum improved width of any county road must consist of two 10 foot traffic lanes plus one foot of shoulder on each side for a total of 22 feet. However, I turn your attention to page 26 of the Code where you will find the drawing of a "General Minor Road without Parallel Parking" (the narrowest of all standard roads) as it applies to hillsides with a down slope on one side and a cut upslope on the other.

This specification mandates two 10 foot traffic lanes as before but with a 4 foot 8:1 down slope provision (12.5%), all within a 40 foot right of way.

Having driven on Diamond Mountain Road, I am sure you have observed what happens to the road when the down slope is steeper than that. There are two locations with cones and protective sand filled sacks – not repaired for several years now - where the pavement has eroded making the drivable road surface even narrower than it is anyway (12 feet total, down from 15 feet). The 4 foot wide 8:1 downslope provision protects against that.

In addition, you will notice that Cull de Sac specifications (both Diamond Mountain Road and its South Fork qualify) mandate that they may not exceed one mile in depth for properties larger than 20 acres. Smaller maximum distances apply for smaller properties.

Notwithstanding the other four variances the project Hard Six Cellars requires, it does not adhere to either the minimum width County Road Standards nor to those of maximum distance Cull de Sacs.

George

**2019**

Adopted April 27, 1991

Revised May 10, 1977

Revised August 18, 1987

Revised June 5, 1990  
{Ordinance 854}

Revised August 2, 1999  
{Ordinance 1160}

Revised August 31, 2004  
{Resolution 04-150}

Revised November 21, 2006  
{Resolution 06-198}

Revised August 9, 2011  
{Resolution 2011-95}

Revised January 26, 2016  
{Resolution 2016-06}

Revised June 7, 2016  
{Resolution 2016-72}

Revised October 4, 2016  
{Resolution 2016-131}

Revised November 22, 2016  
{Resolution 2016-167}

Revised September 26, 2017  
{Resolution 2017-156}

Revised April 23, 2019  
{Resolution 2019-053}



**A Tradition of Stewardship  
A Commitment to Service**

# **NAPA COUNTY**

## **ROAD & STREET STANDARDS**

**Department of Planning, Building & Environmental Services**

**1195 Third Street \* 2nd Floor \* Napa, California 94559**

Phone: (707) 253-4417 \* Fax: (707) 299-4138 \* [www.countyofnapa.org](http://www.countyofnapa.org)

surfacing requirements as outlined in Detail C-10. Pavement structural sections shall be determined by the designed traffic index. The minimum structural section shall be two inches of HMA over five inches of Class 2 AB in accordance with Section 27 of these Standards.

#### **MAJOR ROADS**

|     | <u>Street or Road</u> | <u>Definition</u>   |
|-----|-----------------------|---|
| (a) | Arterial              | Connects collectors to highways, and other major arterials; functions primarily to carry traffic, estimated traffic volume 5,000 vehicles per day or more. May be two or more lanes, with or without median strips, and may have controlled access. |
| (b) | Collector             | Generally collects traffic from lesser roads and also serves as access to adjacent land. Estimated traffic volume 1,000 to 5,000 vehicles per day.  |

#### **MINOR ROADS**

|     |                                    |  |
|-----|------------------------------------|--|
| (c) | General Minor                      | Serves primarily as access to adjacent land, carries up to 1,000 vehicles per day.   |
| (d) | Loop Road and Non-Continuing Minor | Serves abutting property; carries up to 250 vehicles per day.  |
| (e) | Cul-de-Sac                         | Serves as an access road to abutting property; traffic volume up to 250 vehicles per day. (Cul-de-sac situations with lengths greater than 1,000 feet shall be provided with turnaround areas at 1,000 foot intervals and emergency access unless it is not considered feasible by the County Engineer.) |
| (f) | One Way Loop Roads                 | Special purpose roads depending on site circumstances; maximum length one-half mile; traffic volume up to 150 vehicles per day.  |
| (g) | Common Drive                       | Serves as residential access for two to six parcels based on ultimate development and as access for commercial, industrial and non-residential uses. Developments that have a legal and practical potential for re-division into more than six parcels will not qualify for use of common drives.        |
| (h) | Residential Driveway               | Serves as the minimum access to one residential parcel meeting PBES development standards, and any number of accessory buildings.  |

## OTHER ROADS

- |                                       |  |
|---------------------------------------|--|
| (i) Agricultural Special Purpose Road | Serves agricultural related single use facilities and light traffic facilities which generate up to 100 vehicle trips per day. This road is not applicable to any winery access. Applies to lightly traveled, low speed roads connecting two activity areas with no significant side traffic. Turnouts must be inter-visible.  |
| (j) Split level                       | Split level means a roadway where each direction of travel has a different vertical alignment. Split level construction is permissible in all of the above defined categories if the design is satisfactory to the County Engineer.  |
| (k) Special Purpose Way               | This applies to secondary access roads, emergency roads, bicycle paths, equestrian trails and other similar facilities when required by either the Fire Marshal, County Engineer or County Code. The design will depend on each particular situation and be approved by the County Engineer. Acceptable provisions for maintenance must be established and dedication may be required. |

## 15. DESIGN CRITERIA

Tabulated herein are the design criteria applicable to each of the street and road classifications in Section 14, (a) through (i) in terms of minimum design speed, minimum horizontal radius, minimum stopping sight distance, and maximum slopes. The radii shown are based on a negative cross slope of two percent which is typical for a newly-constructed street or road. If the street or road is super elevated, the radius can be reduced accordingly. All streets and roads shall have a minimum longitudinal slope of 0.5 percent.

Roadway Width: All streets and roads, with the exception of agricultural special purpose roads and residential driveways, shall be constructed to provide a minimum of two 10-foot traffic lanes and a minimum of one foot of shoulder on each side of the roadway providing two-way traffic flow. A common drive shall provide a minimum of two 10-foot traffic lanes and provide a horizontal clearance of 22 feet.

Roadway Surface: The surface shall provide unobstructed access to conventional drive vehicles. Road surfaces and structures shall be capable of supporting apparatus weighing 75,000 pounds. For guidance refer to Section 1411.7 of Chapter 7, Division 2, Title 21 of the California Code of Regulations for axle weight distribution. No traffic calming devices shall be installed on any private roadway surface unless approved by Fire Marshal.

Roadway Grade: The grade for all roads, streets, private lanes and driveways shall not exceed 16 percent. Roadway grades of 16 to 20 percent may be allowed on a case-by-case basis provided the following:

(a) The length of road, street, private lane or driveway that exceeds a roadway grade of 16 percent but has a roadway grade equal to or less than 18 percent shall be surfaced with a minimum of 2 inches of HMA over 5 inches of Class 2 AB.

(b) The length of road, street, private lane or driveway that exceeds a roadway grade of 18 percent but has a roadway grade equal to or less than 20 percent shall be surfaced with a minimum of 3 inches of HMA over 5 inches of Class 2 AB or approved equal designed by a licensed engineer, shall not have a length greater than 300 feet, and shall have a roadway grade not exceeding 10 percent for 100 feet immediately preceding and ensuing the section of road with the roadway grade of 18 to 20 percent.

(c) The Inspection Authority retains the discretion to deny applications that meet the above Standards if there are other concerns that lead to the determination that these mitigations do not have the same overall practical effect of a 16 percent grade.

(d) Provided subsections (a) and (b) above are met to the satisfaction of the Inspection Authority, and that the Inspection Authority has not denied the application per subsection (c), the proposed design shall be construed as meeting the same overall practical effect as meeting this standard and shall be considered an approved road exception.

Road Radius: No roadway shall have a horizontal inside radius of curvature of less than 50 feet and additional surface width of 4 feet shall be added to curves of 50 to 100 feet radius; 2 feet to those from 100 to 200 feet. A road horizontal inside radius of curvature less than 50 feet may be approved for residential driveways (excluding driveways serving commercial, industrial, or non-residential uses) provided the following:

(a) The horizontal curve is designed and modeled by a licensed professional engineer demonstrating that a fire apparatus (fire apparatus to be determined by the Fire Marshal) can negotiate the proposed horizontal inside radius, and

(b) Clearance of 3 feet shall be provided on the far front bumper radius and provide 2 feet of additional clearance for the inside rear wheel radius.

(c) The Inspection Authority retains the discretion to deny applications that meet the above Standards if there are other concerns that lead to the determination that these mitigations do not have the same overall practical effect as intended.

(d) Provided subsections (a) and (b) above are met to the satisfaction of the Inspection Authority, and that the Inspection Authority has not denied the application per subsection (c), the proposed design shall be construed as meeting the same overall practical effect as meeting this standard and shall be considered an approved road exception.

Vertical Curves: The length of vertical curves in roadways, exclusive of gutters, ditches, and drainage structures designed to hold or divert water shall not be less than 100 feet. A vertical curve less than 100 feet in length may be approved provided the following:



(a) The vertical curve is designed by a licensed professional engineer demonstrating that a fully loaded fire apparatus (fire apparatus to be determined by the Fire Marshal) can negotiate the sag and crown with a minimum clearance of 4 inches.

(b) The Inspection Authority retains the discretion to deny applications that meet the above Standards if there are other concerns that lead to the determination that these mitigations do not have the same overall practical effect as intended.

(c) Provided subsection (a) above is met to the satisfaction of the Inspection Authority, and that the Inspection Authority has not denied the application per subsection (b), the proposed design shall be construed as meeting the same overall practical effect as meeting this standard and shall be considered an approved road exception.

Roadway Turnarounds: Turnarounds are required on driveways and dead-end roads. The minimum turning radius for a turnaround shall be 40 feet from the center line of the road (Detail C-12). If a hammerhead is used, the top of the hammerhead shall be a minimum of 60 feet in length (Detail C-13). An alternative to the hammerhead turnaround is the shunt turnaround (Detail C-14). A turnaround other than those listed above can be designed and proposed for review to the County Engineer and Fire Marshal for possible acceptance of use.

Roadway Turnouts: Turnouts shall be a minimum of 22 feet wide and 30 feet long with a minimum 25 foot taper on each end. See Detail C-11.

Roadway Structures:

(a) All driveway, road, and private lane roadway structures shall be constructed to carry at least the maximum load as required by Vehicle Code Sections 35550 and 35750, and provide the minimum vertical clearance of 15 feet;

(b) Appropriate signing including, but not limited to, weight or vertical clearance limitations, one-way road or single lane conditions, shall reflect the capability of each bridge;

(c) Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and Highway Transportation Officials Standard Specifications for Highway Bridges, 17th Edition, published 2002 (known as AASHTO HB-17) hereby incorporated by reference. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by Napa County. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by Napa County, shall be installed and maintained. A bridge with only one traffic lane may be authorized by Napa County; however, the bridge shall have unobstructed visibility from one end to the other and turnouts at both ends.

One-Way Roads: All one-way roads shall be constructed with a minimum of one 12-foot travel lane, and have a minimum of 14-feet of horizontal clearance. Shoulder requirements shall apply per Detail C-6. All one-way roads shall connect to a two-lane roadway at both ends, and shall provide access to an area zoned for no more than 10 dwelling units. In no case shall a one-way



road exceed 2,640 feet in length. A turnout shall be placed and constructed at approximately the midpoint of each one-way road.

Dead-End Roads:

(a) The maximum length of a dead-end road, or system of roads which are served by a single point of vehicular ingress/egress, shall not exceed the following cumulative lengths, regardless of the number of parcels served:

|  |            |
|--|------------|
| Parcels zoned for less than one acre     | 800 feet   |
| Parcels zoned for 1 acre to 4.99 acres   | 1,320 feet |
| Parcels zoned for 5 acres to 19.99 acres | 2,640 feet |
| Parcels zoned for 20 acres or larger     | 5,280 feet |

All lengths shall be measured from the edge of the roadway surface at the intersection that provides the single point of vehicular ingress/egress, to the end of the road surface at its farthest point. Where a dead-end road crosses areas of differing zoned parcel sizes, requiring different length limits, the shortest allowable length shall apply.

(b) Where parcels are zoned 5 acres or larger, turnarounds shall be provided at a maximum of 1,320 foot intervals.

(c) Each dead-end road shall have a turnaround constructed at its terminus.

Special Purpose Roads: All special purpose roads shall have a minimum 10 foot travel lane, an unobstructed vertical clearance of 15 feet, and an unobstructed horizontal clearance of 14 feet along their entire length. Special purpose roads exceeding 150 feet in length, but less than 800 feet in length, shall have a standard turnout near the midpoint of the driveway. Where the special purpose road exceeds 800 feet, standard turnouts shall be provided no more than 400 feet apart. A turnaround shall be provided at all building sites as required by the County Engineer and Fire Marshal on special purpose roads exceeding 300 feet in length, and shall be within 50 feet of the building.

Residential Driveways: New residential driveways shall be constructed to provide 14 feet of travel way and unobstructed vertical clearance of 15 feet along its entire length. The travel way shall, at a minimum, consist of a 10 foot wide all weather surfaced travel lane with 4 feet of drivable shoulder (see Detail C-10). The drivable shoulder may be placed on both sides of the travel lane with the total shoulder width summing to 4 feet. For new residential driveways between 150 and 800 feet in length, a standard inter-visible turnout shall be provided near the midpoint of the driveway as approved by the County Engineer. Where new residential driveways exceed 800 feet in length, standard inter-visible turnouts shall be provided no more than 400 feet apart (see Detail C-11).

There are two types of Residential Driveways defined below:

Rural Area – A residential driveway connected to a rural County road per Detail P-2.

Urban Area – A residential driveway connected to a County road with curb, gutter and sidewalk improvements, and has a driveway approach per Detail P-3.

For structure improvements, as defined in Section 12 of these Standards, that are served by an existing common drive and/or residential driveway that does not meet current common drive and/or residential driveway Standards, respectively, the existing common drive and/or residential driveway shall be improved with turnouts only, spaced as shown in Table 15.1. Residential projects that fully comply with the turnout spacing requirements listed in Table 15.1 for existing residential driveways and residential common driveways shall be construed as meeting the same overall practical effect as meeting these Standards for residential driveway and residential common driveway width. The determination of compliance with the turnout spacing in Table 15.1 shall be made by the Fire Marshal and the County Engineer.

A turnaround shall be provided at all building sites on residential driveways and common drives exceeding 300 feet in length, and shall be within 50 feet of the building (see Details C-12, C-13 or C-14).

Table 15.1

## Turnout Spacing on Existing Residential Driveways

| Level of Improvement   | Number of Residential Units Served by Existing Driveway |        |        |        |        |        |
|--|---|--------|--------|--------|--------|--------|
|  | 6+  | 5      | 4      | 3      | 2      | 1      |
| <i>Improvement increases enclosed Group R area by 50% or more.</i> | 300 ft  | 300 ft | 300 ft | 400 ft | 400 ft | 400 ft |
| <i>2<sup>nd</sup> Dwelling Unit</i>                                | 300 ft  | 300 ft | 300 ft | 300 ft | 400 ft | 400 ft |
| <i>Primary Residence</i>   | 250 ft  | 250 ft | 250 ft | 300 ft | 300 ft | 400 ft |
| <i>Primary Residence with a 2<sup>nd</sup> Dwelling Unit</i>       | 200 ft  | 200 ft | 200 ft | 250 ft | 250 ft | 400 ft |

While turnouts spaced at the above noted distances would be ideal, the Fire Marshal and the County Engineer will work with the developer to space turnouts per site conditions. The standard number of turnouts required shall be determined by dividing the total length of the driveway by the applicable spacing in the above table and rounding up to a whole number. The number of turnouts may be reduced through an Exception to the Standards, as defined in Section 3. The intent of requiring turnouts noted above is to improve an otherwise non-compliant residential driveway or common drive to the maximum extent practicable through individual development with the goal of achieving a driveway that is compliant with the Standards for its entire length.

## DESIGN CRITERIA CHART

| Street                                | Min. Design<br>Speed (mph) | Min. Centerline<br>Radius (ft) | Min. Stopping<br>Sight Distance (ft) | Max. Grade<br>( percent) |
|---------------------------------------|----------------------------|--------------------------------|--------------------------------------|--------------------------|
| Arterial                              | 40                         | 825                            | 275                                  | 8                        |
| Collector                             | 35                         | 585                            | 225                                  | 10                       |
| General Minor                         | 20                         | 220                            | 150                                  | 16                       |
| Loop Road and Non<br>Continuous Minor | 20                         | 120                            | 110                                  | 16                       |
| Cul-de-Sac                            | 20                         | 120                            | 110                                  | 16                       |
| One Way Loop road                     | 20                         | 120                            | 110                                  | 16 <sup>5</sup>          |
| Common Drives                         | 15                         | 50 <sup>6</sup>                | 75                                   | 16                       |
| Residential Driveway                  | 15                         | 50 <sup>6</sup>                | 75                                   | 16                       |
| Agricultural Special<br>Purpose Road  | Level<br>30 mph            | 400                            | 400                                  | 16                       |
|                                       | Rolling<br>20 mph          | 120                            | 250                                  | 16                       |
|                                       | Mountain<br>10 mph         | 50 <sup>6</sup>                | 100                                  | 16                       |

<sup>5</sup> When the sight distance falls below 220 feet for One Way Loop, the minimum paved width shall not be less than 18 feet.

<sup>6</sup> Minimum horizontal inside radius

## **16. INDUSTRIAL AND COMMERCIAL DEVELOPMENT**

Industrial references in these Standards are applicable to all appropriately zoned lands.

Road cross sections for existing County roads and State highways which have full improvement widths different from these Standards shall be improved to provide additional pavement width and thickness plus additional right of way, all as determined by the County Engineer.

Structural pavement sections shall be based upon a minimum traffic index of 6.0 and appropriate "R" value.

Bus turnouts and related sidewalks may be required as a condition of development.

Where on-street parking is allowed, a sidewalk shall be provided on the same side of the street as the parking lane. The sidewalk shall be Portland cement concrete. Where no sidewalk is required, an unpaved, clear walkway shall be provided.

Consistent with the Board policy of accepting into the road system only those roads improved to County Standards, any new roads or drainage improvements proposed under a parcel map or final map to be accepted for maintenance by the County or by a County Service Area shall first be improved to full improvement in accordance with the Standards.

In any land divisions where road and drainage improvements are proposed to be privately maintained, the developer shall furnish covenants calling for maintenance of such improvements. Covenants shall run with the land and be recorded with the final map or parcel map.

## **17. TRAFFIC CONTROL DEVICES**

The California Manual on Uniform Traffic Control Devices, the Caltrans Standard Specs and the Caltrans Highway Design manual shall be utilized to determine traffic warrants, design and construction procedures for all traffic control devices with the exception of left-turn lanes. Warrants for construction of a left-turn lane on County maintained roads as defined in Sections 18.112.040 through 18.112.080 of the County Code shall be as follows:

Left-Turn Lane Warrants: Use Permits or modifications thereof shall trigger the application of the following warrants to determine the necessity for a left-turn lane for the proposed use.

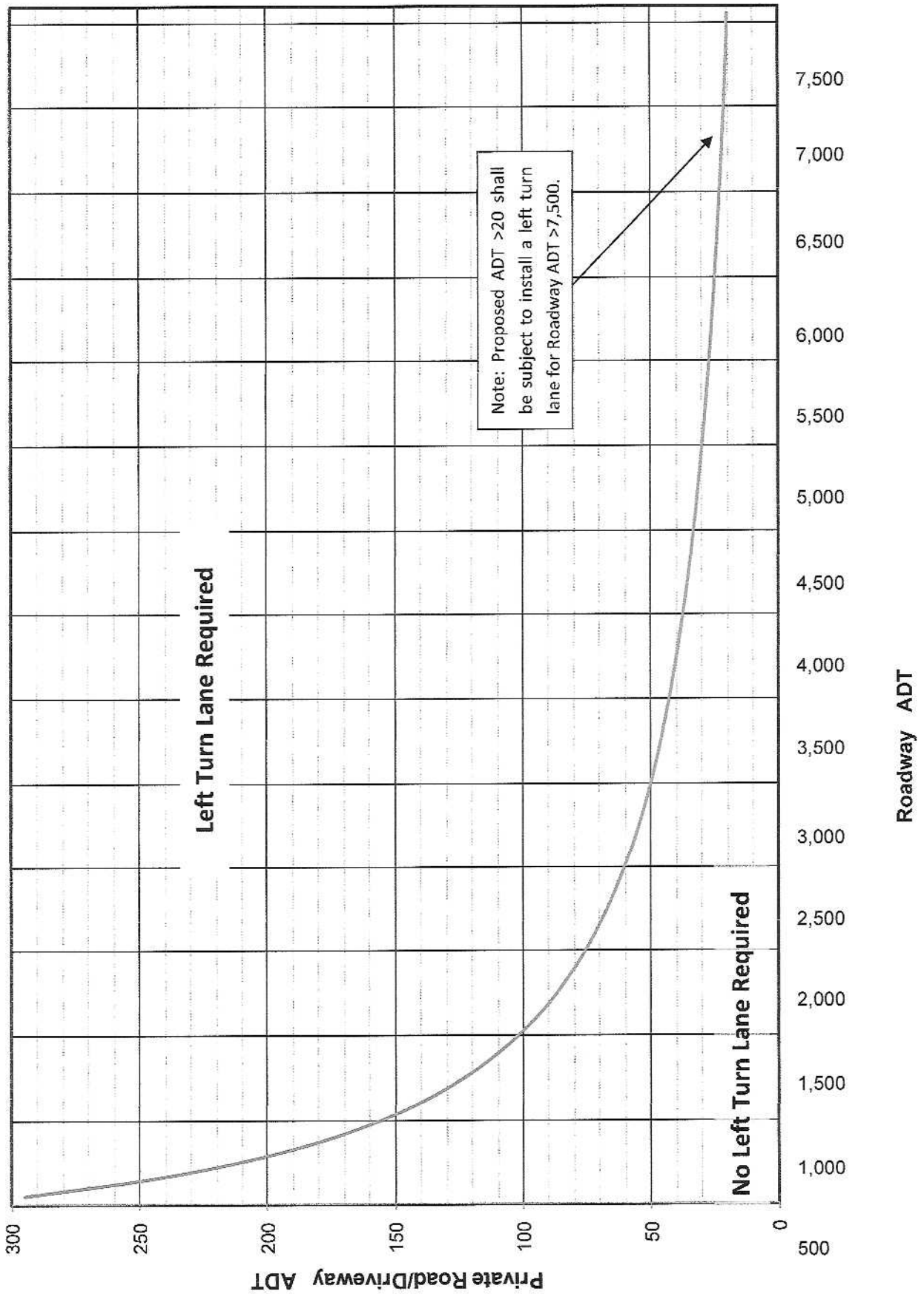
(a) Application of the following Left-Turn Lane Warrant Graph based on road average daily trips (ADT) and the projected ADT of the proposed use. The chart is a representation of probable conflict between turning traffic and advancing traffic. Private Road or Driveway ADT is the total average daily traffic utilizing the facility. A left-turn lane will not be considered for uses generating an ADT of 10 or less.

(b) If the corner sight distance in advancing direction, measured from the driveway, is less than required per Caltrans design standards (usually the posted speed limit multiplied by 11, read in feet) a left-turn lane shall be installed.

(c) If traffic conditions or turning movements pose a considerable threat to public safety, as determined by the Director of Public Works, a left-turn lane shall be installed.

Design: Design of the left-turn lane shall be prepared by a Licensed Civil Engineer and be based on the County Standard Detail LTL-1, available at the PBES Department. Installation of a left-turn lane on a County public road shall require an encroachment permit issued by the Department of Public Works and the property owner shall be required to enter into a one year maintenance agreement including appropriate bonding. Installation of a left-turn lane on a State highway requires an encroachment permit issued by Caltrans.

# LEFT TURN LANE WARRANT GRAPH



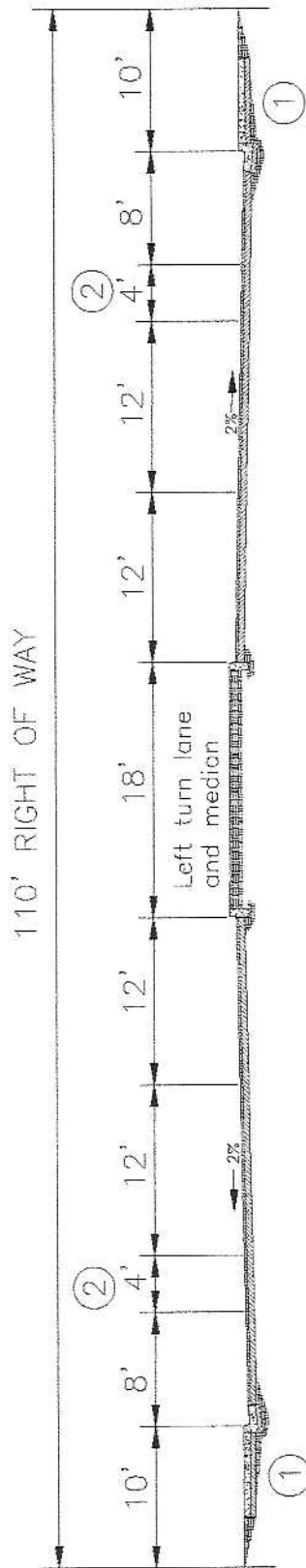


## **18. TYPICAL CROSS SECTIONS**

The cross sections which follow are intended to represent typical applications in land development and do not include all possibilities or elements of design that may be required or permitted. The minimum right of way for any public street or road will not be less than 40 feet. In addition, slope easements extending 10 feet beyond the top of cut or toe of fill will be required whenever the vertical height of the cut or fill exceeds 5 feet. Easements are not required when cut or fill slopes are flatter than 3:1.

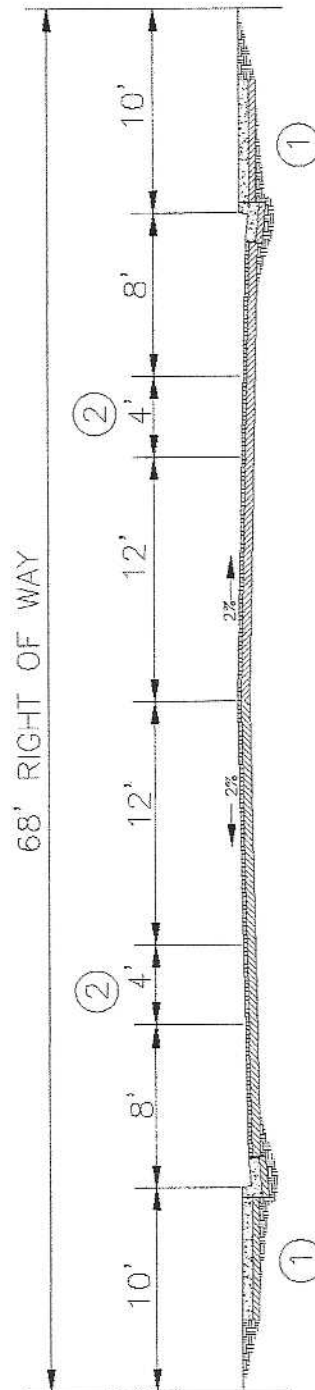
Please note that for simplification, mountable curb is not shown on the typical sections. When it is used, the sidewalks must be located as shown on the Standard Details.

Fill slopes higher than 10 feet will be protected with asphalt concrete dikes or other acceptable means. Super elevations and continuous cross slope streets without a crown may be permitted and encouraged in specific cases upon the approval of the County Engineer.



4 LANE ARTERIAL WITH MEDIAN

1. 10' P.C.C. SIDEWALK IN COMMERCIAL AREAS. 6' P.C.C. SIDEWALK IN RESIDENTIAL AREAS.
2. BIKE LANE



2 LANE ARTERIAL WITH PARKING

1. 6' P.C.C. SIDEWALK.
2. BIKE LANE.

NOT TO SCALE

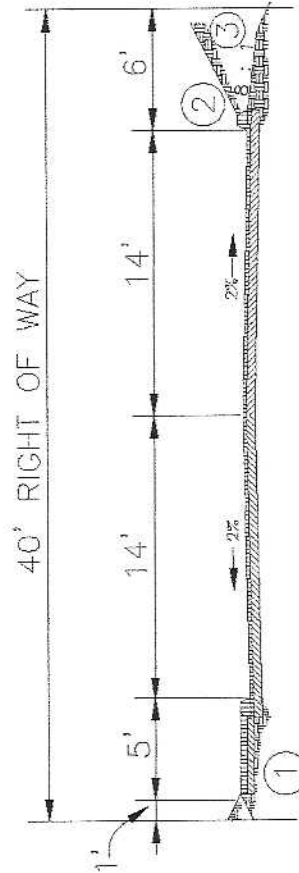
DESIGN SPEED - 40 M.P.H.  
A.D.T. 5,000 OR MORE VEHICLES PER DAY

DATE: JUNE 2016

ARTERIAL  
CROSS SECTIONS

COUNTY OF NAPA  
DEPARTMENT OF PBES

*Nathaniel R. Salas*  
ENGINEERING MANAGER  
RCE 57273



2 LANE ARTERIAL WITHOUT  
PARALLEL PARKING LANES

1. 4' A.C. SIDEWALK ON FILL SIDE.
2. A.C. DIKE IN CUT AREAS. BERM REQUIRED WHERE FILL HEIGHT EXCEEDS 10 FEET.
3. 4' SHOULDER IN FILL AREA.

NOT TO SCALE

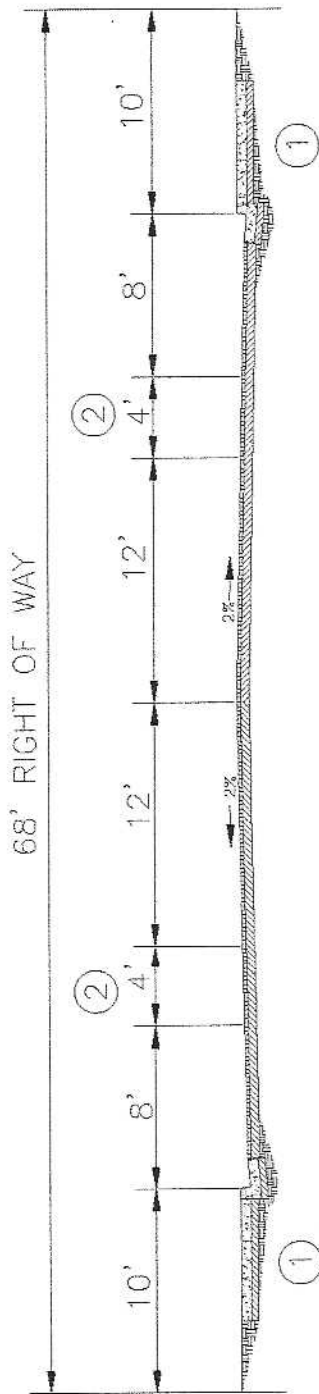
DESIGN SPEED - 40 M.P.H.  
A.D.T. 5,000 OR MORE VEHICLES PER DAY

DATE: JUNE 2016

ARTERIAL  
CROSS SECTIONS

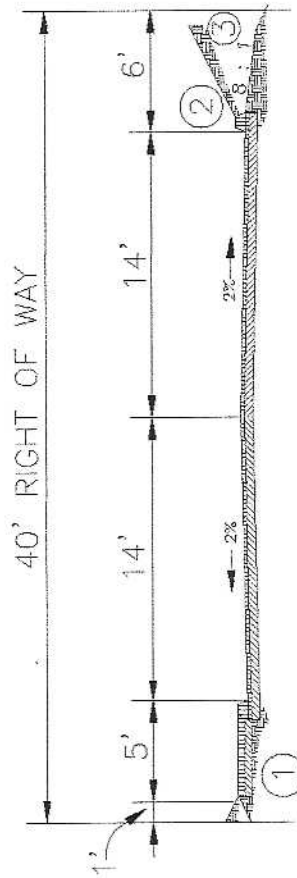
COUNTY OF NAPA  
DEPARTMENT OF PBES

*Nathaniel Ryland*  
ENGINEERING MANAGER  
RCE 57273



COLLECTOR WITH PARALLEL PARKING LANES

1. 5' P.C.C. SIDEWALK.
2. BIKE LANE.



COLLECTOR WITHOUT PARALLEL PARKING LANES

1. 4' A.C. SIDEWALK ON FILL SIDE.
2. A.C. DIKE IN CUT AREA. BERM REQUIRED WHERE FILL HEIGHT EXCEEDS 10 FEET.
3. 4' SHOULDER IN FILL AREA.

NOT TO SCALE

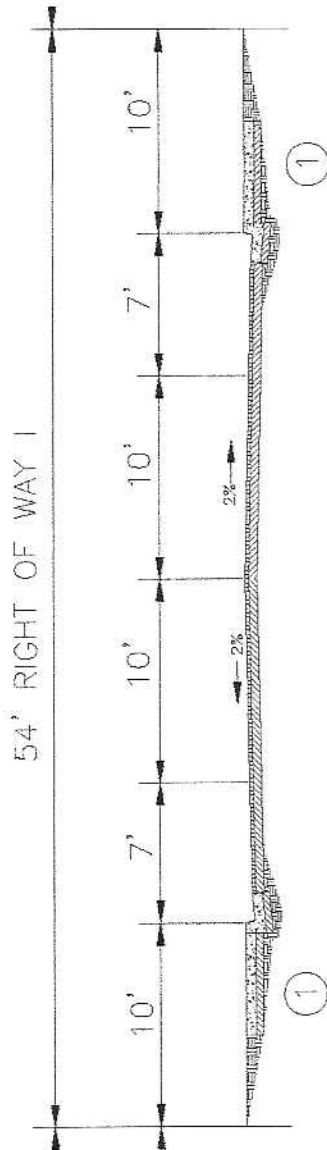
DESIGN SPEED - 35 M.P.H.  
A.D.T. 1,000 TO 5,000 VEHICLES PER DAY

COLLECTOR CROSS SECTIONS

DATE: JUNE 2016

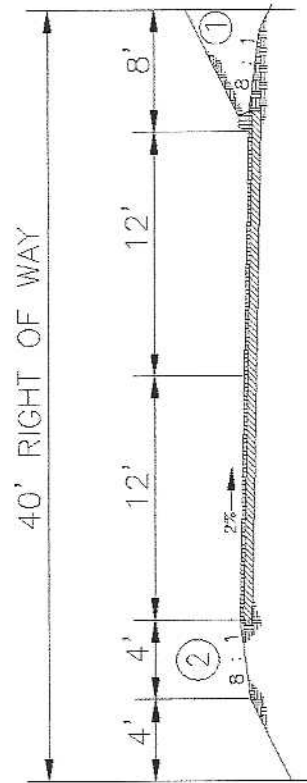
COUNTY OF NAPA  
DEPARTMENT OF PBES

*Nathaniel Ryland*  
ENGINEERING MANAGER  
RCE 57273



GENERAL MINOR WITH PARALLEL  
PARALLEL PARKING LANES

1. 5' P.C.C. SIDEWALK.



GENERAL MINOR WITHOUT PARALLEL  
PARALLEL PARKING LANES

1. A.C. DIKE IN CUT AREAS. BERM REQUIRED WHERE FILL HEIGHT EXCEEDS 10 FEET.
2. 4' SHOULDER IN FILL AREAS.

NOT TO SCALE

DESIGN SPEED - 25 M.P.H.  
A.D.T. UP TO 1,000 VEHICLES PER DAY

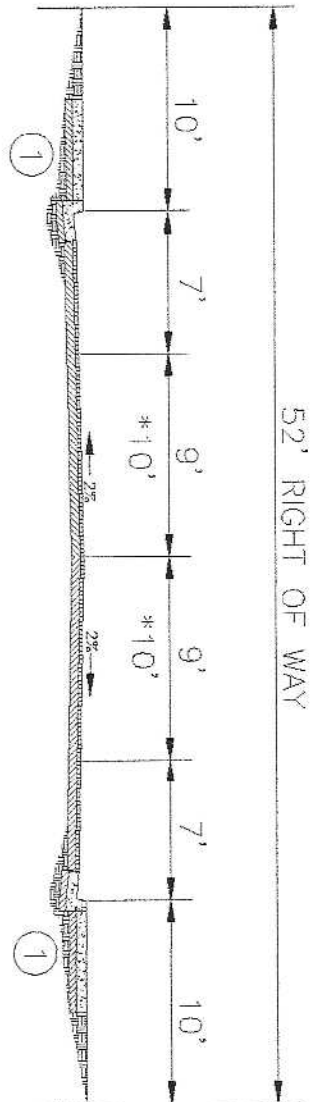
DATE: JUNE 2016

GENERAL MINOR  
CROSS SECTIONS

COUNTY OF NAPA  
DEPARTMENT OF PBES

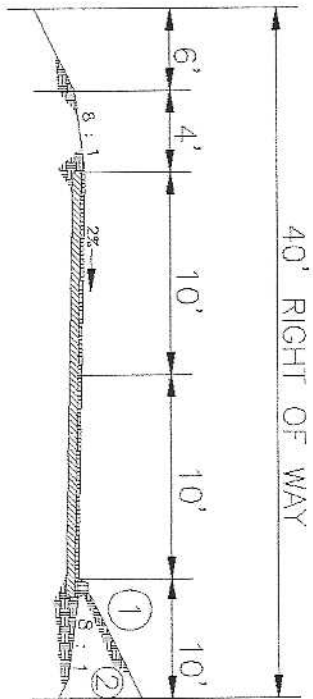
*North-Seymour*  
ENGINEERING MANAGER

RCE 57273



WITH PARALLEL PARKING LANES  
MINIMUM CUL-DE-SAC RADIUS IS 40' TO FACE OF CURB.

1. 5' P.C.C. SIDEWALK.
- \*NOTE: INCREASE DRIVING LANE WIDTH TO 10' WHEN LENGTH EXCEEDS 1,000' & EMERGENCY ACCESS IS NOT PROVIDED.



WITHOUT PARALLEL PARKING LANES  
MINIMUM CUL-DE-SAC RADIUS IS 40' TO EDGE OF PAVEMENT.

1. A.C. DIKE IN CUT AREAS. BERM REQUIRED WHERE FILL HEIGHT EXCEEDS 10 FEET.
2. 4' SHOULDER IN FILL AREAS.

NOT TO SCALE

NON-CONTINUING MINOR,  
LOOP ROAD & CUL-DE-SAC

DESIGN SPEED - 20 M.P.H.  
A.D.T. UP TO 250 VEHICLES PER DAY

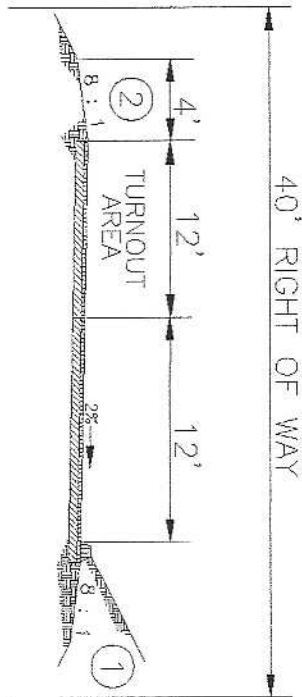
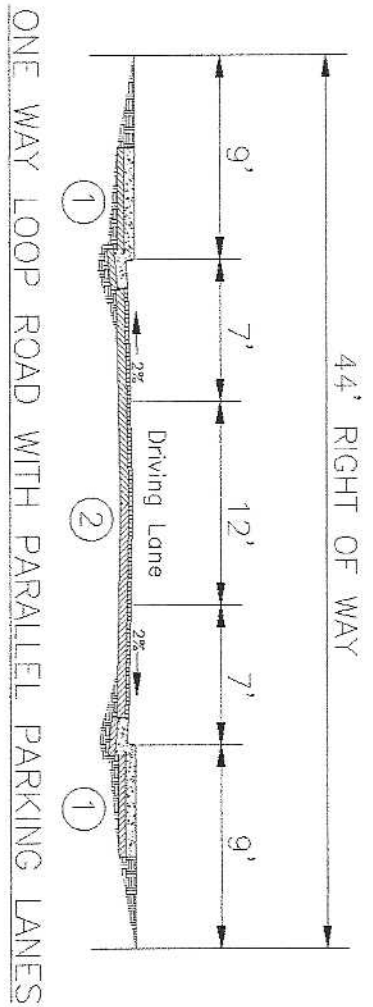
COUNTY OF NAPA  
DEPARTMENT OF PBES

DATE: JUNE 2016

ENGINEERING MANAGER  
*Mark S. Johnson*

RCE 5/2/23

1. 5' P.C.C. SIDEWALK.
2. PARKING LANES MUST BE DELINEATED.



1. A.C. DIKE IN CUT AREAS. BERM REQUIRED WHERE FILL HEIGHT EXCEEDS 10'.
  2. 4' SHOULDER IN FILL AREAS FOR PUBLIC ROADS AND AS REQUIRED BY COUNTY ENGINEER FOR PRIVATE ROADS AND DRIVEWAYS.
- NOTE: INCREASE PAVEMENT WIDTH TO 18' WHEN STOPPING SIGHT DISTANCE IS LESS THAN 220'.

ONE WAY LOOP  
CROSS SECTIONS

DESIGN SPEED - 20 M.P.H.  
A.D.T. UP TO 100 VEHICLES PER DAY

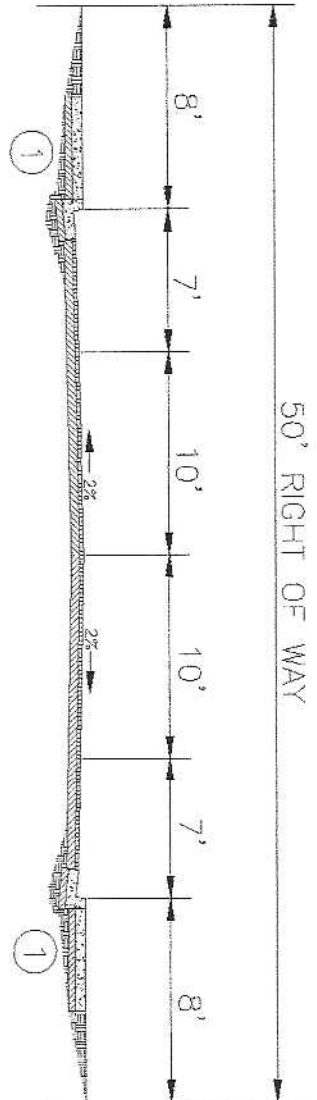
COUNTY OF NAPA  
DEPARTMENT OF PBES

DATE: APRIL 2016

ENGINEERING MANAGER

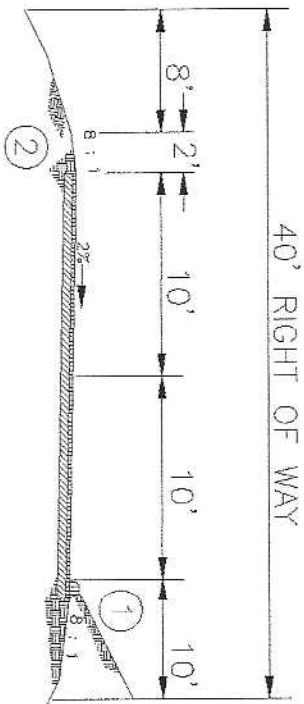
RCE 57273





COMMON DRIVE WITH PARALLEL PARKING LANES

1. 5' P.C.C. SIDEWALK FOR TYPE I OR 4' P.C.C. SIDEWALK FOR TYPE II



COMMON DRIVE WITHOUT PARALLEL PARKING LANES

1. A.C. DIKE IN CUT AREAS. BERM REQUIRED WHERE FILL HEIGHT EXCEEDS 10 FEET.
2. 2' OF ADDITIONAL HORIZONTAL CLEARANCE CAN BE LOCATED ON ONE SIDE OR SPLIT BETWEEN BOTH SIDES.

NOT TO SCALE

COMMON DRIVE  
CROSS SECTIONS

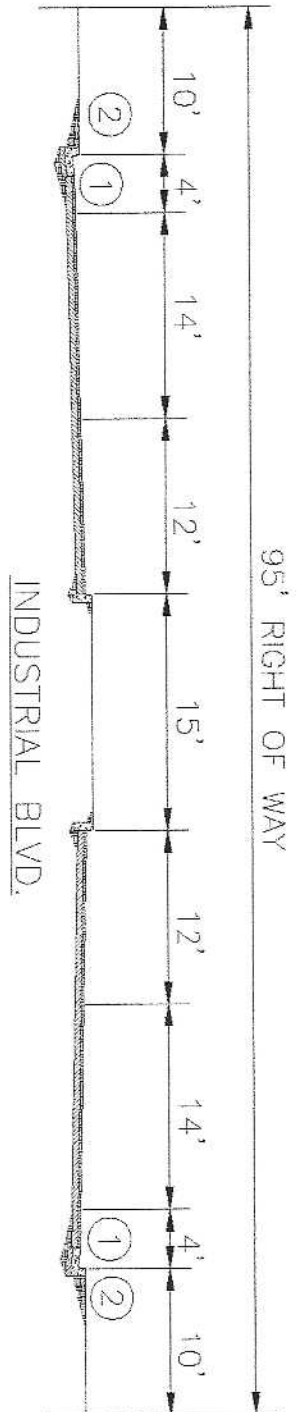
DESIGN SPEED - 15 M.P.H.  
SERVES UP TO 6 DWELLING UNITS

COUNTY OF NAPA  
DEPARTMENT OF PBES

DATE: APRIL 2016

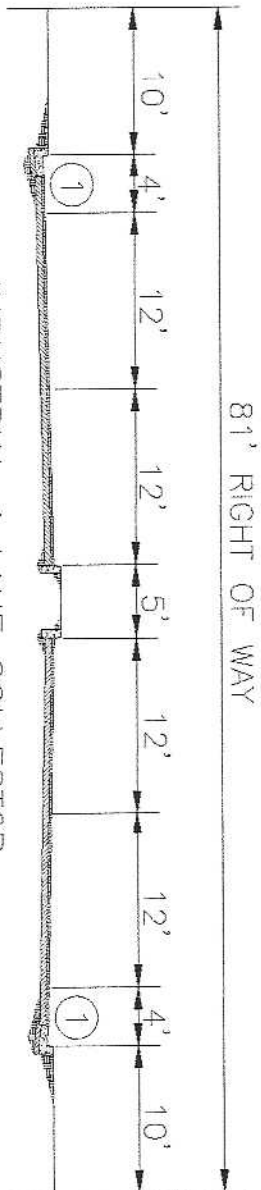
ENGINEERING MANAGER  
*Mark A. Adams*

RCE 5/2/73

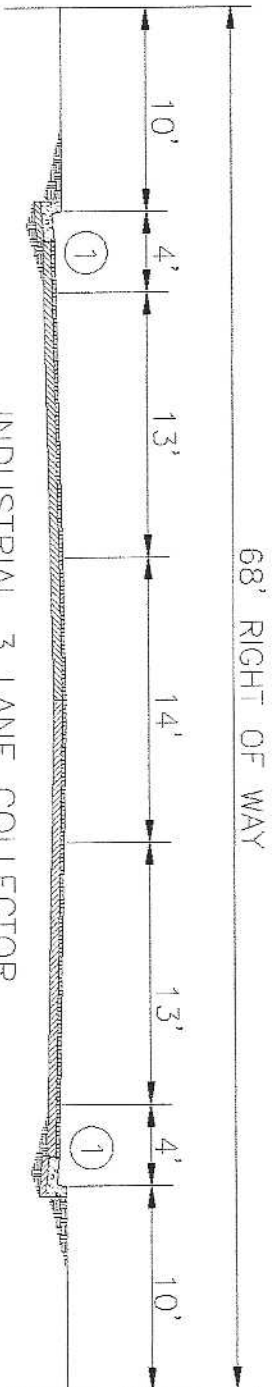


1. BIKE LANE AND EMERGENCY PARKING.

2. NO PRIVATE DRIVEWAY CONNECTIONS.



1. BIKE LANE AND EMERGENCY PARKING.



1. BIKE LANE AND EMERGENCY PARKING.

NOT TO SCALE

INDUSTRIAL COLLECTORS

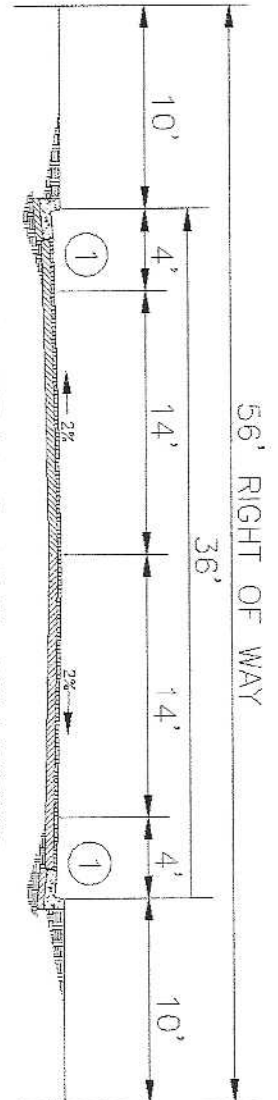
COUNTY OF NAPA  
DEPARTMENT OF PBES

DATE: JUNE 2016

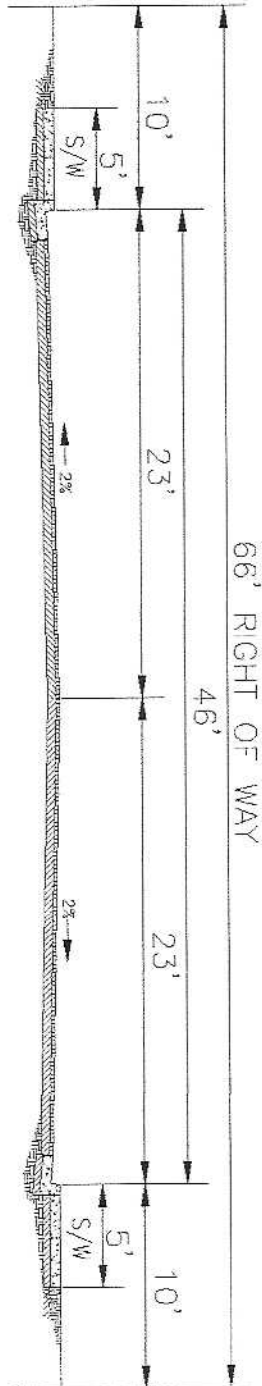
ENGINEERING MANAGER  
*Mark Delaney*

RCE 57273

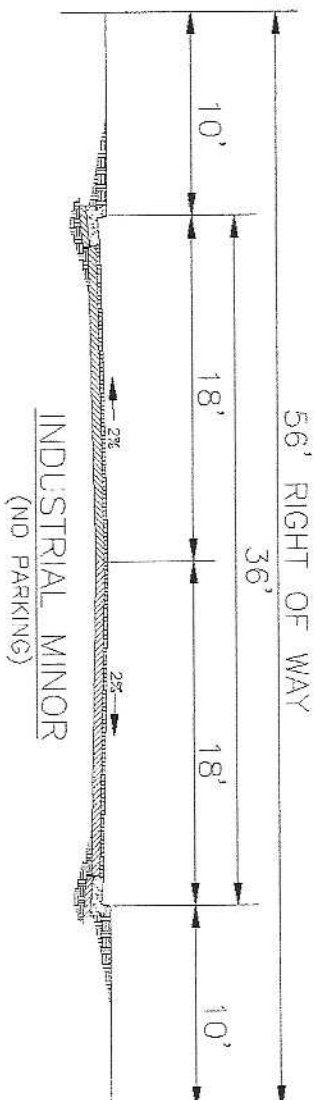
1. BIKE LANE AND EMERGENCY PARKING.



INDUSTRIAL 2 LANE COLLECTOR



INDUSTRIAL MINOR  
(ON-STREET PARKING)



INDUSTRIAL MINOR  
(NO PARKING)

NOT TO SCALE

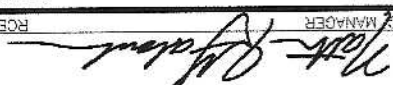
INDUSTRIAL COLLECTOR AND INDUSTRIAL MINOR

COUNTY OF NAPA  
DEPARTMENT OF PBES

DATE: JUNE 2016

ENGINEER  
*Mark S. Adams*

RCE 5/2/23

|   |            |
|---|------------|
| APRIL 2016  |            |
| ENGINEERING MANAGER   | ROE 5/2/73 |
|                        |            |
| COUNTY OF NAPA<br>DEPARTMENT OF PDES<br>RESIDENTIAL DRIVEWAY OR<br>AGRICULTURAL SPECIAL<br>PURPOSE ROAD |            |

NOT TO SCALE

AREA FIRE SAFE REGULATIONS.  
 LATEST VERSION OF THE CBOF STATE RESPONSIBILITY  
 4. PROVIDE REFLECTOR TYPE ADDRESS NUMBER

> STANDARD DRIVEWAY TURNAROUND -  
 DETAIL C-12, C-13 OR C-14

> STANDARD DRIVEWAY TURNOUT -  
 DETAIL C-11

> CONNECTION TO COUNTY ROAD -  
 DETAIL P-2 (RURAL) OR DETAIL P-5 (URBAN)

3. SEE THE FOLLOWING DETAILS FOR DESIGN OF  
 DRIVEWAY APPURTENANCES:

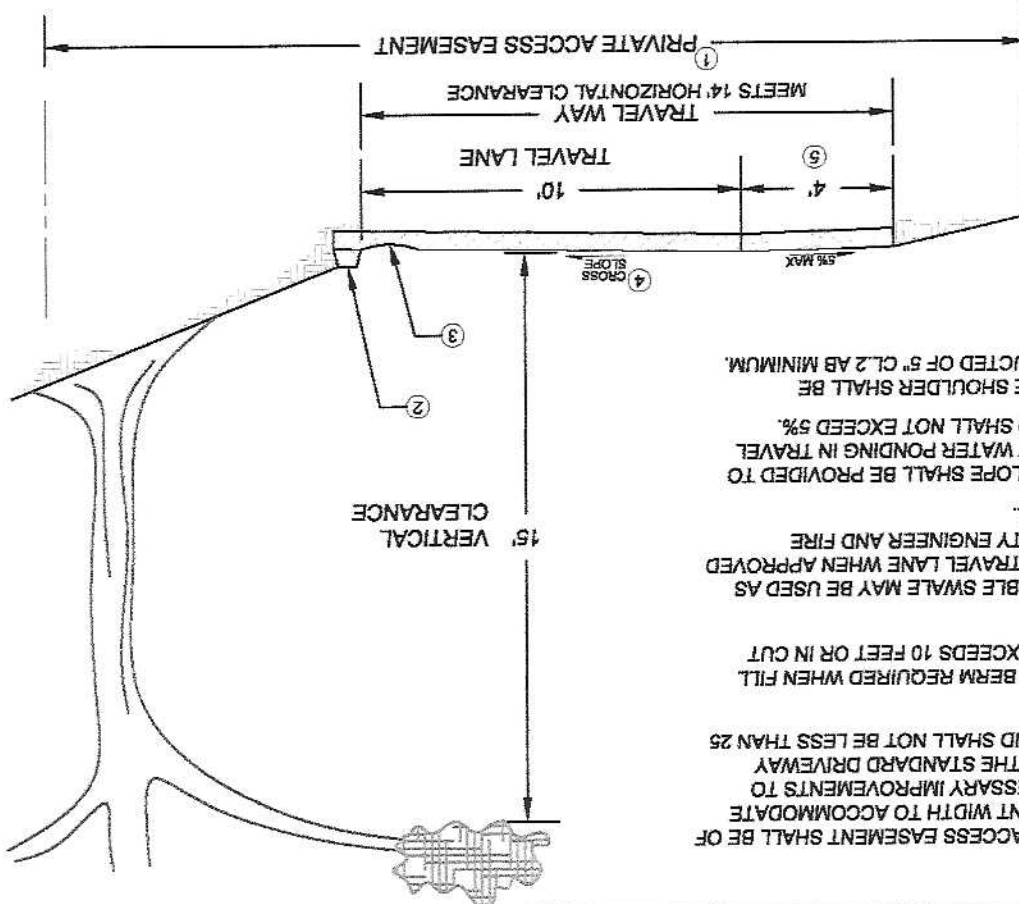
|                                   |                  |
|-----------------------------------|------------------|
| 3" HMA / 5" CL. 2 AB              | 0% - 20% (MAX)   |
| 2" HMA / 5" CL. 2 AB              | 0% to <18% (MAX) |
| 5" CL. 2 AB WITH DOUBLE SEAL COAT | 0% - 16% (MAX)   |
| 5" CL. 2 AB                       | 0% - 5% (MAX)    |

TRAVEL LANE  
 ALL WEATHER SURFACE OPTIONS  
 RANGE OF  $\frac{1}{4}$  GRADE  
 FOR SURFACE OPTION

2. ROAD SURFACING REQUIREMENTS FOR TRAVEL LANE (APPLIES TO RESIDENTIAL DRIVEWAYS  
 AND AGRICULTURAL SPECIAL PURPOSE ROADS):

1. SEE SECTION 15 OF THESE STANDARDS FOR DESIGN CRITERIA.

NOTES:



- ① PRIVATE ACCESS EASEMENT SHALL BE OF SUFFICIENT WIDTH TO ACCOMMODATE ALL NECESSARY IMPROVEMENTS TO ACHIEVE THE STANDARD DRIVEWAY WIDTH AND SHALL NOT BE LESS THAN 25 FEET.
- ② ASPHALT BERM REQUIRED WHEN FILL HEIGHT EXCEEDS 10 FEET OR IN CUT AREAS.
- ③ A DRIVEABLE SWALE MAY BE USED AS PART OF TRAVEL LANE WHEN APPROVED BY COUNTY ENGINEER AND FIRE MARSHAL.
- ④ CROSS SLOPE SHALL BE PROVIDED TO PREVENT WATER PONDING IN TRAVEL WAY AND SHALL NOT EXCEED 5%.
- ⑤ DRIVEABLE SHOULDER SHALL BE CONSTRUCTED OF 5" CL. 2 AB MINIMUM.

APRIL 2016

ENGINEERING MANAGER  
RCE 5/2/73

*Not a signature*

STANDARD DRIVEWAY  
TURN OUT

COUNTY OF NAPA  
DEPT. OF PBES

NOT TO SCALE

- NOTES:
1. TURNOUTS SHALL BE SPACED A MAXIMUM OF 400-FT APART.
  2. MULTIPLE TURNOUTS MUST BE INTER-VISIBLE TO SATISFY SPACING REQUIREMENTS UNLESS ALLOWED BY COUNTY ENGINEER AND FIRE MARSHAL.
  - ① BERM REQUIRED WHEN FILL HEIGHT EXCEEDS 10 FEET OR IN CUT AREAS.
  - ② A DRIVEABLE SWALE MAY BE USED AS PART OF TRAVEL LANE WHEN APPROVED BY COUNTY ENGINEER AND FIRE MARSHAL.

① ASPHALT  
BERM

② DRIVEABLE  
SWALE

SECTION A-A

22'

