# DEPARTMENT OF PUBLIC WORKS

# COUNTY OF MONO

# ROAD IMPROVEMENT STANDARDS

SEPTEMBER 1981



# RESOLUTION NO.81-154 BOARD OF SUPERVISORS, COUNTY OF MONO

RESOLUTION OF BOARD OF SUPERVISORS, COUNTY OF MONO ADOPTING MONO COUNTY ROAD IMPROVEMENT STANDARDS.

WHEREAS, Mono County, by and through the Department of Public Works, reviews and approves the plans and specifications for construction of roads to be accepted into the County system; and,

WHEREAS, in connection with the approval of road improvement plans for subdivision maps, the Public Works Department also reviews the plans and specifications for private roads; and,

9 WHEREAS, the development of road improvement standards 10 was requested by Resolution No. 81-07 of the Board of Supervisors; County of Mono; and,

WHEREAS, said Road Improvment Standards will set forth the minimum road standards in Mono County necessary to provide adequate access to land development projects.

13 NOW, THEREFORE BE IT RESOLVED, that the attached Mono
14 County Road Improvement Standards will be utilized by the
15 Department of Public Works in approving the design of county
15 road improvements and the design of private roads in connection with the subdivision of land within Mono County.

16 FURTHER BE IT RESOLVED, the Board of Supervisors, County 17 of Mono, does hereby adopt the Mono County Road Improvement Standards, a copy of which is attached.

18 PASSED AND ADOPTED THIS 25 DAY OF August, 1981, by the following vote of said Board of Supervisors.

20 AYES: Supervisors Jencks, Johnson, Maner, Stanford
 21 ABSTAIN: Supervisor Reid

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BY: <u>Colleen</u> Stone

ATTEST:

Deputy Board Clerk

Pat Peigne

Clerk to the Board

Robert Π. irman Mono County Board of Supervisors

Aùgust 20, 1981 te

Date

## CONTRES OF MORO STATE OF CALIFORNIA

### NEGATIVE DECLARATION

Resolution 81-154/Mono County Road Improvement Standards

Project Title

County of Mono

Project Location

Road Improvement Standards Project Description

On the basis of the initial study I find that this project will not have a significant effect upon the environment.

DATE: August 27, 1981

MITIGATION MEASURES INCLUDED IN THE PROJECT TO AVOID POTENTIAL SIGNIFICANT ADVERSE EFFECTS:

The project will not have a significant impact upon the environment because:

1. Road improvements, maintenance, reparis and etc. within existing

right-of-way are categorically exempt as a Class I, Exemption

2. Projects requiring dedication or offers of right-of-way would be

subject to individual CEQA review as discretionary projects.

ADOPTED AND ORDERED FILFD THIS 27th DAY OF August 19 81

**D** BOARD OF SUPERVISORS

XXX PLANNING COMMISSION

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Planning Commission

PUBLIC HEARING HELD: August 27, 1981



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MONO COUNTY

# MONO COUNTY ROAD IMPROVEMENT STANDARDS

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# APPENDIX A

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#### MONO COUNTY ROAD IMPROVEMENT STANDARDS

#### GENERAL

<u>Purpose</u>: The road improvement standards and requirements contained in this document shall be the minimum required to provide adequate access to land development projects. These standards shall apply to all road improvements required under the provisions of the Mono County Code and are adopted by reference as though contained wholly therein. All Mono County Code provisions relative to this document shall apply as though contained wholly herein except this document shall take precedent over conflicts.

<u>Conformance to General Plan:</u> The design, layout, and other aspects of road improvements for subdivisions shall conform to these improvement standards, general or specific plans, and in all cases shall provide for the advantageous development of the general planning area within which the subdivision lies.

Engineering Certification: All improvement plans and the specific details and specifications thereof shall be prepared by, or under the direction of, and signed by, a Civil Engineer licensed in the State of California and shall be subject to the review and approval of the County Director of Public Works prior to construction of the improvements. It is recognized that there may be situations where these standards cannot be reasonably applied or situations not addressed herein. In either case, it shall be the sole responsibility of the Department of Public Works to exercise sound engineering judgment in approving alternate proposals in these situations.

Assessment Districts: Formation of an assessment district to provide for construction of improvements in a new subdivision is prohibited. <u>Maintenance Districts</u>: If the roads constructed within a subdivision are to remain private, then a maintenance entity shall be formed to insure continued maintenance on the road system. The entity shall be formed in accordance with the Standard Maintenance Agreement on file with the Department of Public Works. The subdivider may be required to annex to an adjacent existing maintenance entity.

<u>Mitigation Agreements:</u> In situations where the County determines that incremental road improvement should be deferred or supplemental road improvement is necessary, the developer shall be required, as a condition to project approval, to enter into a mitigation agreement. Such agreements shall provide for contributions of funds equal to the estimated cost of the incremental improvements deferred, such funds to be deposited in an interest bearing account in the name of the road involved; or, in cases where supplemental improvements are required, the County may enter into a reimbursement agreement with the developer installing such supplemental improvements.

Offsite Access: The subdivider shall provide adequate right-of-way and shall improve any offsite roads, required for the subdivision, to the requirements specified in these standards. Adequate right-of-way is defined as right-of-way of sufficient width to contain the entire road prism including cut and fill slopes and the minimum as defined elsewhere herein.

<u>Road Drainage:</u> Road drainage concerns shall receive design consideration as shown herein and as approved by the Department of Public Works. Road drainage shall be addressed on all improvement plans, and shall, as a minimum include such drainage provisions as are included on the applicable standard drawings attached hereto.

Accepted For Maintenance: When roads are constructed to county standards, the current county policy is that they may be accepted for maintenance by the County.

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#### ROAD CATEGORIES AND TYPES

<u>Road Categories:</u> The four categories are: Residential Drives, Mammoth Lakes, Standard County, and June Lake. These four categories separate the road standards in Mono County based on snowfall, freezing, runoff, topography, development trends, general road maintenance concerns, and traffic volumes and types.

<u>Residential Drives-are a developer option for rural areas of the county</u>, and serve minimum numbers of lots in a rural setting. The County may disapprove the use of private drives if a finding of overriding public concern is made.

<u>Mammoth Lakes</u>-are roads designed for use in the Mammoth Lakes area, an urban area in a high mountainous setting.

<u>Standard County</u>- are roads designed for general use in areas of Mono County other than June Lake and Mammoth Lakes.

June Lake-are roads designed for use in the June Lake area, an area mixed with old subdivisons, mostly residential, and minor urbanization. An area nestled below high mountainous ridges with limited developable land.

<u>Road Types</u>: Road types shall conform to the appropriate descriptions listed below and the corresponding typical sections and conditions in Appendix A.

<u>Residential Drive-Class I:</u> This shall be a privately owned and/or maintained road which may serve a maximum of four (4) residential lots, 1/3 acre or greater in area. This road is designed for private residential use in terrain that has flat to rolling topography; where native soils evidence an ability to resist erosion. This road is additionally intended for use in areas which receive minimal or no snowfall (elevations below 6,000 feet msl).

<u>Residential Drive-Class II</u>: This shall be a privately owned and/or maintained road which may serve a maximum of four (4) residential lots 1/3 acre or greater in area. This road is designed for private

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residential use in terrain that has flat to mountainous topography; where native soils cannot support local traffic loads, or a road that is not hard-surfaced, or where native soils have inability to resist erosion. This road is additionally intended for use in areas which receive above minimal snowfall (elevation above 6,000 msl). <u>Residential Drive-Class III:</u> Same as Class I, except this road may serve six (6) or less residential lots 1/3 acre or greater in area. <u>Residential Drive-Class IV:</u> Same as Class II except this road may serve six (6) or less residential lots 1/3 acre or greater in area. <u>Mammoth/Residential:</u> This may be a county maintained road and serves any number of residential lots.

<u>Mammoth/Collector/Commercial</u>: This shall be a county maintained road which functions as a residential collector or provides access into and/or through a commercial area within the Mammoth Lakes area. <u>Mammoth/Arterial</u>: This shall be a county maintained road designated by the County as an arterial roadway in the Mammoth Lakes area. <u>Standard County Road/Rural Subdivision</u>: This may be a county maintained road serving any number of residential lots 1/3 acre or greater in area. Any roadway drainage concerns shall receive design consideration as approved by the Department of Public Works.

Standard County Road/Residential: This may be a county maintained road serving any number of residential lots.

<u>Standard County Road/Arterial/Commercial:</u> This shall be a county maintained road designed by the County as an arterial roadway or which provides access into and/or through a commercial area.

June Lake/Collector/Residential: This may be a county maintained road serving any number of residential lots and shall function as a residential collector in the June Lake area.

June Lake/Arterial/Commercial: This shall be a county maintained road designated by the County as an arterial roadway or which provides access into and/or through a commercial area.

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### Road Design Standards: Also refer to Sneet 7

<u>Right-of-Way:</u> The minimum right-of-way width for roads to be maintained by the County shall be sixty feet unless otherwise shown herein. Rights-of-way may be a combination of fee simple or easement as situations dictate and as approved by the Department of Public Works. Snow storage easements may be used outside the roadway prism to make up the total required right-of-way in areas where fee simple or road easements cannot be obtained.

<u>Structural Section Design</u>: Roads shall be designed with a minimum structural section as shown or with the data given on the typical sections herein. Traffic Index Values may be increased based on actual analysis but in no case shall T.I. Values be decreased from those given. Unless specifically approved by the Department of Public Works, asphalt surfacing shall be 1/2" maximum, AR 4000 plant mix; and base shall be Class 2 Aggregate Base, all as set forth in the State of California Department of Transportation Standard Specifications. <u>Drainage:</u> Roadway drainage shall be designed with considerations for the amount of runoff, erosion protection, and maintenance of facilities.

<u>Geometrics and Profiles:</u> The following standards for the design of geometrics and profiles for proposed improvements shall govern the preparation of plans for such improvements.

A. Grades and Cross Slopes:

- 1. Minimum grade on new streets shall be 0.50 percent.
- 2. Minimum grade of gutter sections constructed on existing street shall be 0.50 percent.
- Cross slope to crown on new streets shall be 2.0 percent. (Intersections and super-elevations excepted).
- 4. Maximum grade on new streets shall be 15 percent. However, all slopes in excess of 10 percent require the approval of the Director of Public Works. If County snow removal is contemplated, the desirable maximum grade should be 9 percent. In order to be acceptable to the County for snow removal, the slope should not exceed 9 percent.

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- 5. The grade of the pavement surface across an intersection shall not be more than + 2 percent.
- 6. The gradient of any street entering an intersection shall not be more than 2 percent within a distance of 30 feet from the near curb line and/or edge of shoulder of the major crossing street.

B. Vertical Curves: Changes of grade in the vertical alignment of the street shall be made with parabolic vertical curves. The length of vertical curve required shall be determined by the design speed and as approved by the Department of Public Works. The maximum grade differential permitted without a vertical curve is 1 percent (1%). C. Horizontal Curves: Changes in direction of the streets shall be made with horizontal circular curves, with the edges of the pavement and curb lines parallel to and equi-distant from the centerline of the right-of-way. The radius of curvature in the centerline of the street shall conform to County minimum standards for design speed. D. Cul-de-Sacs: The minimum radius for right-of-way lines in culde-sacs shall be equal to the right-of-way width or 45 feet, whichever is greater, and shall have a minimum radius of 35 feet to the edge of pavement and/or a radius of 37.5 feet to the back of the curb unless otherwise specified by the Director.

E. Street Grading: Earth slopes in cuts or embankment sections shall not be steeper than two (2) feet horizontal to one (1) foot vertical unless steeper slopes have been recommended by a licensed civil engineer in a report which shall be filed with and approved by the Director of Public Works.

# F. Street Intersections:

- 1. All streets shall intersect as nearly as possible at right angles.
- Streets entering on opposite sides of any given street shall have their centerlines directly opposite or shall be offset by at least 150 feet.

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	Traffic (ADT)	Under	Under 100 100-400 400-1000 1000-4000 4000-5000 Over 5000													
Dasign Feature	Topography		Desir- able		-Desir-	Mini-	Desir-	Mini-	l-Desir- able	Mini-	Deslr-	Mini-	Desir able			
-		mum			able						able					
Minimum Design Speed	Flat	40	50	45	55	50	60	60	70	60	70	<b>60</b>	70			
	Rolling	30	<b>3</b> 0	35	45	40	50	50	60 50	50	60 50	50	60 50			
	Mountalnous	20	25	25	35	30	40	40	50	40	50	40	50			
Radll (Ft.)	Flat	400	650	500	850	650	1000	1000	1500	1000	1500	1000	1500			
(Min, & Desir- able Min.).	Rolling	275	400	350	525	400	650	650	1000	700	1000	800	1000			,
	Mountainous	100	250	150	325	300	400	400	650	500	650	600	700			
Grade (≸) (Max, & Deslr⊷ able Max,)	Flat	7	4	7	5	6	5	4	3	3	3	3	2			:
	<b>.</b>	* 12	6	10	7	8	6	6	5	6	5	6	4			
	Mountainous	* 15	10	* 12	9	10	7	7	6	7	6	6	5			
ton-Passing	Flat	275	350	315	415	350	475	475	600	475	600	475	600			1
S ht Distance (Ft.)	Rolling	250	275	240	315	275	350	350	475	350	475	350	475			
	Mountainous	125	200	165	240	200	275	275	350	275	350	275	350			
R/W Width (Ft.)		60	60	60	60	60	80	60	80	80	100	80	100			
Roadbed Width (Ft.)																•
Surface Width (Ft.)										•						
Thickness Base & Surf	ace															
Minimum Bridges Clear	• Width (Ft.)	24	26	26	30	30	52	30	52	52	52	52	52			
Vertical Clearance (f	=t.)	14,5	15	14,5	5 15	14.5	15	15	18	18	18	18	18			
Design Load (A.A.S.H.	.0.)	H-20	H-20	H-20	) H-20	H-20	H-20	H-20	H-20	H-20	H-20	H-20	H-20			
*Grades Over 10\$ Requ	ulre Approval E	By The	DI recto	r									MONO	COUNT	ΓY .	
												DE	SIGN	STAN	DARD	S
											DRAW	N BY:	F. P. C.	DATE:	5-81	
											APPD	APPROVED:			WORK	SDF

# MINIMUM DESIGN STANDARDS FOR COUNTY ROADS

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# OTHER REQUIREMENTS

<u>Street Name Signs:</u> The subdivider shall furnish and install one street name sign per intersection on county maintained roads in accordance with the detail provided by the Public Works Department. Snow Stakes: The subdivider shall furnish and install standard

orange metal snow stakes twelve feet in length, for new roads within the subdivison on which the county is to provide snow removal when the subdivison is above elevation of 6,000 feet. The snow stakes shall be provided at the rate of 100 per mile of road to be plowed.

Additional Rights-of-Way: The County may require addititional rightsof-way to accommodate traffic, parking, or bus stops. The Mono County Transportation Commission or the Planning Commission may require additional rights-of-way for non-vehicular traffic, i.e, bikeway, equestrian path, bus stops, if the right-of-way is shown on an adopted plan. APPENDIX A



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PUBLIC WORKS DEPT.







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DRAWN BY: LDR DATE: 5-61 APPROVED: PUBLIC WORKS DEPT.





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