

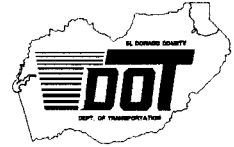


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JAMES W. WARE, P.E.
Director of Transportation

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Placerville CA 95667
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Fax: (530) 626-0387



Date: 9/29/10

To: Roger Trout, Director, Development Services Department;
Craig McKibbin, P.E., Deputy Director,
Transportation Planning and Land Development

From: Dave Spiegelberg, P.E., Senior Civil Engineer 

Subject: **Standard Plans for Adoption with Land Development Manual**

Attached for your use and review are my final draft Standard Plans:

Roadway Design (RD) Series –

- RD-01 Notes, General Design
- RD-02 Notes, Horizontal Alignment and Superelevation
- RD-03 Notes, Grade Breaks and Vertical Curvature

Roadway Cross Sections, General Plan Roadways –

- RS-01 Six-Lane Divided Road
- RS-02 Six-Lane Divided Road Bridge Sections
- RS-03 Four-Lane Divided Road
- RS-04 Four-Lane Divided Road Bridge Sections
- RS-05 Four-Lane Undivided Road
- RS-06 Four-Lane Undivided Road Bridge Sections.
- RS-07 Major Two-Lane Undivided Road
- RS-08 Major Two-Lane Undivided Road Bridge Sections

Roadway Cross Sections, Local Roads –

- RS-20 Local Roads, El Dorado Hills Community Region
- RS-21 Local Roads, Cameron Park / Placerville / Diamond Springs / El Dorado / Shingle Springs Community Regions
- RS-22 Local Roads, Camino / Pollock Pines Community Region
- RS-23 Local Roads, Rural Regions and Rural Centers
- RS-25 Local Roads, Tahoe Region
- RS-30 Private Roads, Rural Regions and Rural Centers

Cc: Char Tim (w/originals of attachments)

ATTACHMENT 4

NOTES:

Design Practice:

Design of Streets and Highways shall be performed under the direction of a professional Civil Engineer, licensed in accordance with the California Business and Professions Code. Use of these standards or referenced documents are not a substitute for sound professional engineering design.

Reference Documents

The County of El Dorado requires the design of streets and highways in accordance with the following reference documents:

1. County of El Dorado Standard Plans
2. A Policy on Geometric Design of Highways and Streets – American Association of State Highway and Transportation Officials
3. Caltrans Highway Design Manual, and Design Memorandums
4. Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT <= 400) American Association of State Highway and Transportation Officials
5. California Manual of Uniform Traffic Control Devices (California MUTCD)
6. Highway Capacity Manual – Special Report No. 209 – Transportation Research Board
7. AASHTO Roadside Design Guide
8. Caltrans Standard Specifications and Standard Special Provisions

The most current adopted version of these documents should be consulted when performing design of Streets and Highways.

The county engineer may approve deviations or modifications to the application of the standard plans in accordance with the Department of Transportation design exception policy.

Applicability

RD Series Standard Plans shall be used for the design of Local Roads and Collectors carrying less than 4000 ADT.

The Department of Transportation should be consulted for design standards required for General Plan Roadways and Collectors carrying more than 4000 ADT.

STD.
PLAN
RD-01

GENERAL DESIGN
REQUIREMENTS



EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

APPROVED BY: _____

JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

DATE: _____

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

NOTES:

Horizontal Alignment

Design speed of the highway shall be controlled by the horizontal alignment whenever feasible.

Whenever possible, reversing curves shall be connected by a tangent with a minimum length of 100'.

In no case shall tangents between reversing curves be less than required for superelevation runoff or runoff.

Maximum angle point without a horizontal curve is 30 minutes.

The minimum radii of horizontal curves is determined by the formula

$$R_{min} = V^2 / 15 (e+f)$$

R_{min} = minimum design curve radius in feet

V = design speed in miles per hour

e = superelevation rate in feet per foot

f = design friction factor.

Design friction factors (f) are presented in the following table:

| DESIGN SPEED (MPH) | FRICION FACTOR (f) |
|--------------------|--------------------|
| 20 | 0.27 |
| 25 | 0.23 |
| 30 | 0.20 |
| 35 | 0.18 |
| 40 | 0.16 |
| 45 | 0.15 |
| 50 | 0.14 |

In a normal crown section, superelevation (e) value is -0.02.

Where practical and feasible, curve radii in excess of the minimum required values should be used.

Superelevation

Superelevation for Local Streets is discouraged.

Superelevation for collector streets and highways with ADT's below 2500 may be designed in accordance with Method 2 of Reference Document 3 (Page 148, Design for Low-Speed Urban Streets)

For new construction, a standard superelevation rate of Normal Crown, 2%, 4% or 6% should be selected.

At intersections on local streets within Community Regions, or intersections where high truck volumes are anticipated, the maximum superelevation rate is 4%.

STD. PLAN
RD-02

HORIZONTAL ALIGNMENT AND SUPERELEVATION REQUIREMENTS



EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

APPROVED BY:

DATE:

JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

BOARD OF SUPERVISOR'S RESOLUTION NO.

NOTES:

- The vertical profiles shall be designed to exceed the design speed of the horizontal alignment whenever feasible.
- Maximum Grade Break
 - Local Roads - 2%
 - Collectors - 0.5%
- Vertical Curves

Vertical curves shall be designed based on the formula $L = K \times A$, where L is the required length of vertical curve, K is the distance required to achieve a 1% change in grade, and A is the algebraic grade difference between the incoming and outgoing profile tangents.

Design K values shall be selected from the following table based on design speed:

| DESIGN SPEED (MPH) | STOPPING SIGHT DISTANCE (Ft) | MINIMUM K VALUE for CREST VERTICAL CURVES (Ft/%) | MINIMUM K VALUE for SAG VERTICAL CURVES (Ft/%) |
|--------------------|------------------------------|--|--|
| 20 | 115 | 7 | 17 |
| 25 | 155 | 12 | 26 |
| 30 | 200 | 19 | 37 |
| 35 | 250 | 29 | 49 |
| 40 | 305 | 44 | 64 |
| 45 | 360 | 61 | 79 |
| 50 | 425 | 84 | 96 |

Selected from Exhibit 5-2. Design Controls for Stopping Sight Distance and for Crest and Sag Vertical Curves (A Policy on Geometric Design of Highways and Streets, AASHTO, 2004)

For small changes in grade where sight distance is not infringed by the vertical curve, a minimum length vertical curve of 100' is suggested.

STD. PLAN
RD-03

GRADE BREAKS AND VERTICAL CURVATURE REQUIREMENTS



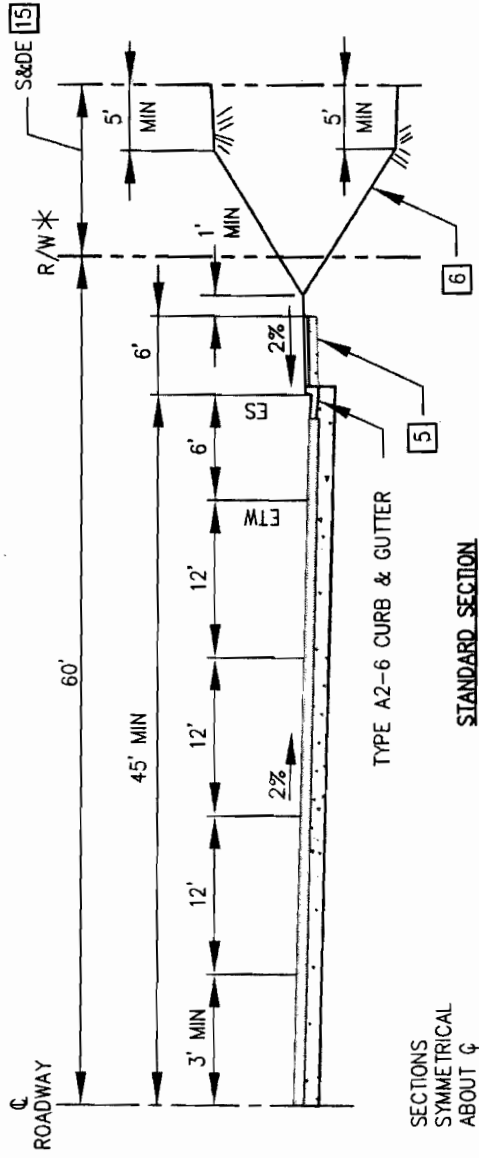
EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

APPROVED BY:

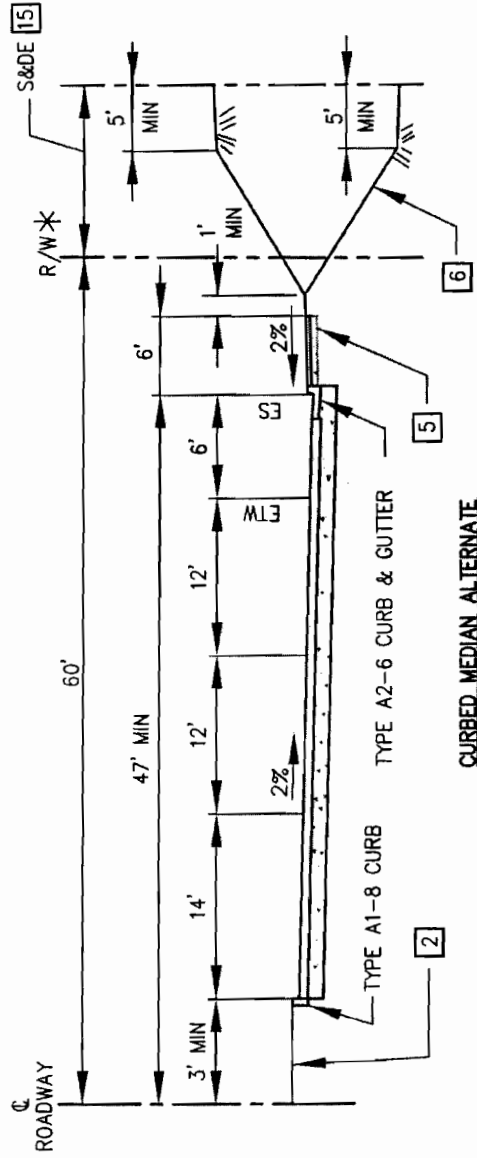
DATE:

JAMES W. WARE, P.E., NO. CE1036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

BOARD OF SUPERVISOR'S RESOLUTION NO.

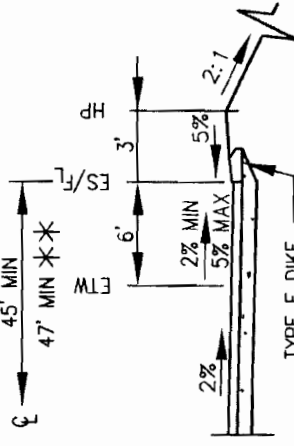


SECTIONS SYMMETRICAL ABOUT CL



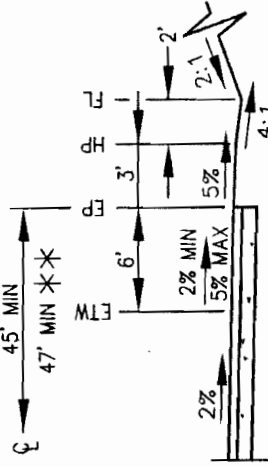
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** DIMENSIONS FOR CURBED MEDIAN ALTERNATIVE



STANDARD SECTION IN EMBANKMENT

- RURAL FILL SECTION - SEE NOTE 9



STANDARD SECTION IN EXCAVATION

- RURAL CUT SECTION - SEE NOTE 9

NOT TO SCALE

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

STD. PLAN
RS-01

SIX-LANE
DIVIDED ROAD



APPROVED BY: _____
 JAMES W. WARE, P.E. NO. C61036
 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION
 DATE: _____
 BOARD OF SUPERVISOR'S RESOLUTION NO. _____

NOTES:

1. THE STANDARD SECTION SHALL BE USED EXCEPT AS NOTED BELOW. THE CURBED MEDIAN ALTERNATE MAY BE ACCEPTABLE UNDER ANY OF THE FOLLOWING CONDITIONS AND SUBJECT TO APPROVAL OF THE COUNTY.
 - A. WHEN IT FILLS A GAP ON A STRETCH OF ROADWAY ALREADY BUILT WITH CURBED MEDIAN.
 - B. WHEN IT IS A SHORT SECTION NEAR INTERSECTION FOR DELINEATION AND/OR PLACING TRAFFIC CONTROL DEVICES.
 - C. WHEN NECESSARY TO CONTROL TURN MOVEMENTS AND ACCESS ON HEAVILY TRAVELED ROADS WITH MULTIPLE DRIVEWAYS.
 - D. WHEN IT IS TO BE LANDSCAPED
2. IF THE CURBED MEDIAN ALTERNATIVE IS USED, THE FOLLOWING APPLIES:
 - A. SEE STANDARD PLAN RS-45 FOR MEDIAN DETAILS.
 - B. SEE STANDARD PLAN MC-20 FOR TYPE A1-8 CURB.
 - C. THE MEDIAN SHALL BE PAVED WITH 2" HMA AND APPROVED SOIL STERILANT UNLESS LANDSCAPING OR OTHER SURFACING IS APPROVED BY THE COUNTY.
 - D. LANDSCAPED MEDIANS SHALL NOT BE MAINTAINED WITH ROAD FUNDS; AN APPROVED METHOD OF FUNDING MAINTENANCE SHALL BE ESTABLISHED PRIOR TO APPROVAL OF STREET IMPROVEMENT PLANS.
3. 6' MEDIAN WIDTH IS MINIMUM FOR A DIVIDED ROADWAY. ADDITIONAL WIDTH IS REQUIRED FOR TWO-WAY LEFT-TURN LANES (TWLTL) AND AT INTERSECTIONS WHERE LEFT-TURN POCKETS ARE NECESSARY.
4. SEE STANDARD PLAN MC-20 FOR CURBS (A2-6, A1-8).
5. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATION MAY VARY. MAINTAIN MIN. 6" CLEARANCE FROM R/W LINE.
6. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
7. MAXIMUM STREET GRADES WITHOUT APPROVED DESIGN EXCEPTION:

BELOW 3000' ELEVATION:

GENERAL PLAN ROADWAYS AND COLLECTOR ROADWAYS WHERE ADT >10,000 = 8%
 COLLECTOR ROADWAYS WHERE ADT >4000 AND <10,000 = 10%
 LOCAL ROADWAYS AND COLLECTOR ROADWAYS WHERE ADT <4000 = 12%

ABOVE 3000' ELEVATION:

10% ALL ROADWAYS
8. MINIMUM STREET FLOW LINE GRADES SHALL BE 0.5% REVERSE GRADE, VERTICAL CURVES EXCEPTED.
9. ROADS IN RURAL REGIONS, RURAL CENTERS, AND THE CAMINO/POLLOCK PINES COMMUNITY REGION ARE NOT REQUIRED TO HAVE PCC CURB, GUTTER AND SIDEWALK. SHOULDERS SHALL BE PAVED TO THE WIDTH SHOWN (6'). ALTERNATE DITCH SECTIONS MAY BE APPROVED OR REQUIRED.
10. STRUCTURAL SECTION SHALL BE BASED ON "R" VALUE AND "T.I.". DESIGN TO BE SUBMITTED TO DOT FOR REVIEW AND APPROVAL.
11. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4"
12. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUBBASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
13. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
14. FOUNDATION SLOPES STEEPER THAN FIVE HORIZONTAL TO ONE VERTICAL ARE TO BE KEYED WHEN PLACING EMBANKMENT FILL. KEYS PER GRADING REQUIREMENTS.
15. SLOPE & DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' MIN. BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES. SEE STANDARD PLAN RS-11 FOR ADDITIONAL SLOPE DETAILS.

STD. PLAN RS-01
SHT 2 OF 2

SIX-LANE DIVIDED ROAD



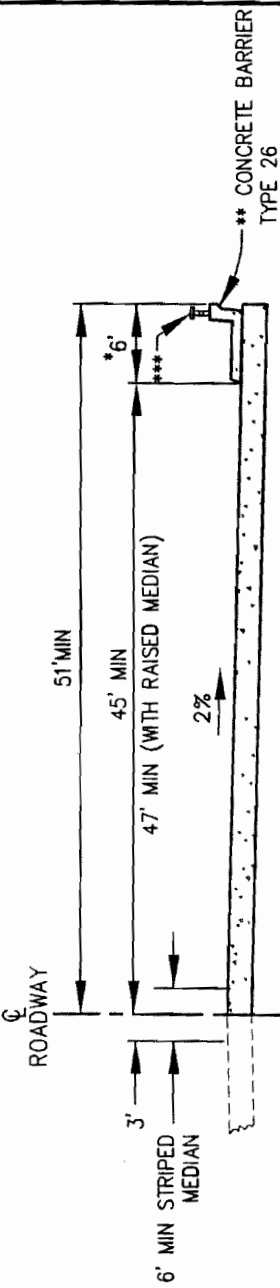
EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

APPROVED BY:

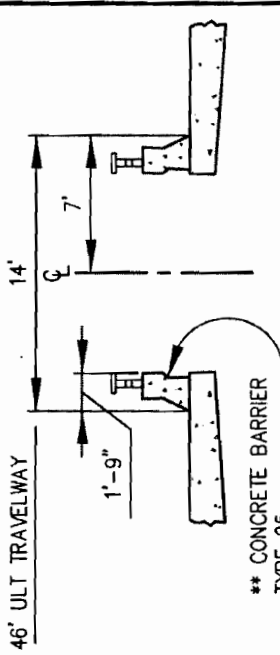
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JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

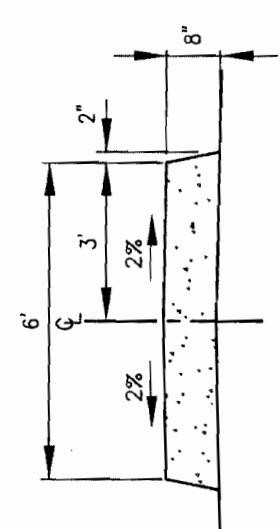
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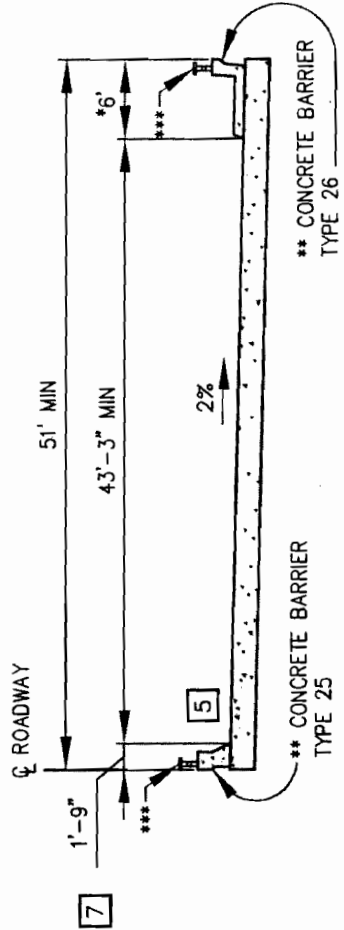
STANDARD SECTION
SECTION SYMMETRICAL ABOUT ϕ



OPEN MEDIAN ALTERNATE



CURBED MEDIAN ALTERNATE



TWO LANES
(PHASED CONSTRUCTION-INITIAL PHASE)

- * RAISED SIDEWALK TO BE PROVIDED WHEN WARRANTED
- ** SEE CALTRANS STANDARD PLANS
- *** TYPE 7 CHAIN LINK FENCE RAILING REQUIRED IN LIEU OF TUBULAR HAND RAILING WHEN STRUCTURE SPANS OVER A PUBLIC ROADWAY

NOTES:

1. ULTIMATE BRIDGE TYPICAL SECTIONS TO BE APPROVED BY THE COUNTY.
2. BRIDGE TYPE TO BE APPROVED BY THE COUNTY.
3. MEDIAN WIDTH SUBJECT TO VARIATION DEPENDING ON INTERSECTION PROXIMITY.
4. CURBED MEDIAN OR OPEN MEDIAN ALTERNATE TO BE USED ONLY WHEN APPROACHING ROAD ALSO HAS A RAISED MEDIAN.
5. WHERE BIKE LANE IS ADJACENT TO TYPE 25 BARRIER, USE CALTRANS BRIDGE STANDARD DETAIL SHEET XS16-500e, "TUBULAR BICYCLE RAILING".
6. WIDTH OF BRIDGE STRUCTURE SHALL BE CONSISTENT WITH APPROVED ROADWAY UNLESS OTHERWISE APPROVED BY COUNTY.
7. ALTERNATE DESIGNS ALLOWED/REQUIRED WHERE FUTURE MEDIAN IS PLANNED.

APPROVED BY:

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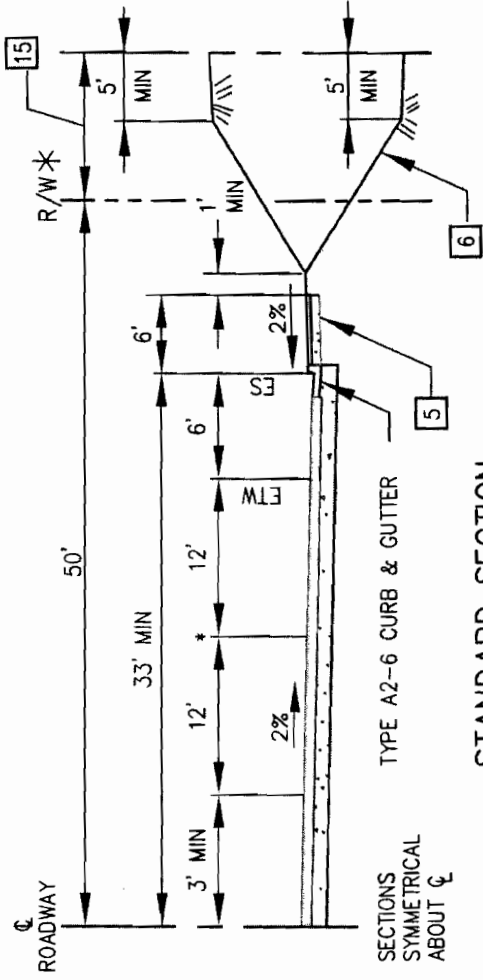
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EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

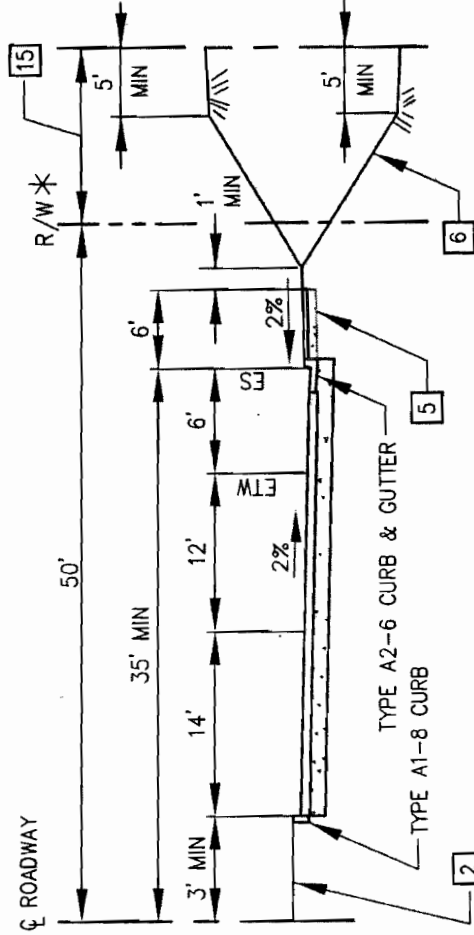


SIX-LANE
DIVIDED ROAD
BRIDGE SECTIONS

STD. PLAN
RS-02



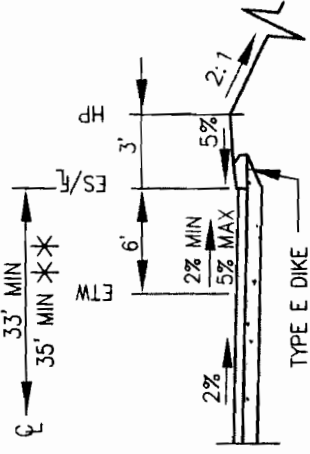
STANDARD SECTION



CURBED MEDIAN ALTERNATE

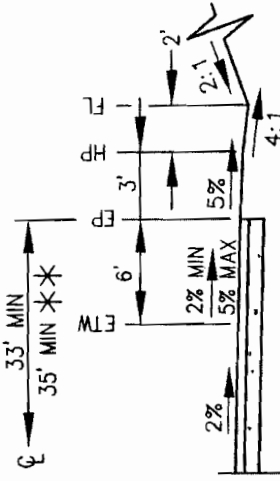
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** DIMENSIONS FOR CURBED MEDIAN ALTERNATIVE



STANDARD SECTION IN EMBANKMENT

- RURAL FILL SECTION -
SEE NOTE 9



STANDARD SECTION IN EXCAVATION

- RURAL CUT SECTION -
SEE NOTE 9

NOT TO SCALE

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



FOUR-LANE
DIVIDED ROAD

STD.
PLAN
RS-03
SHT. 1 OF 2

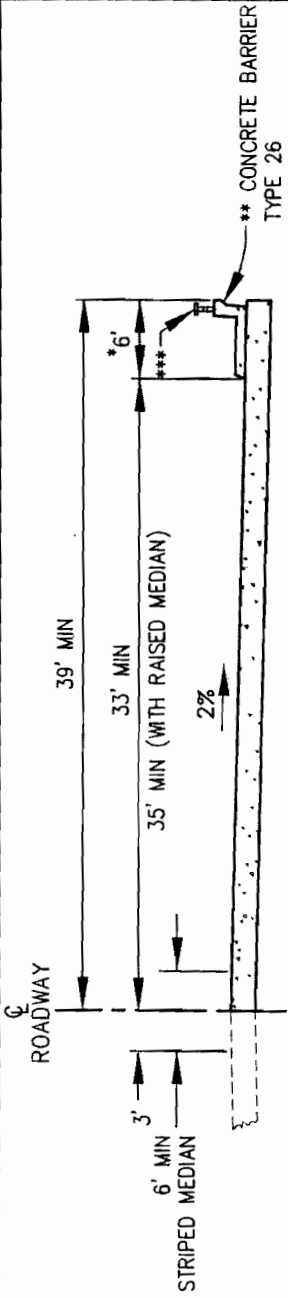
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BOARD OF SUPERVISOR'S RESOLUTION NO. _____

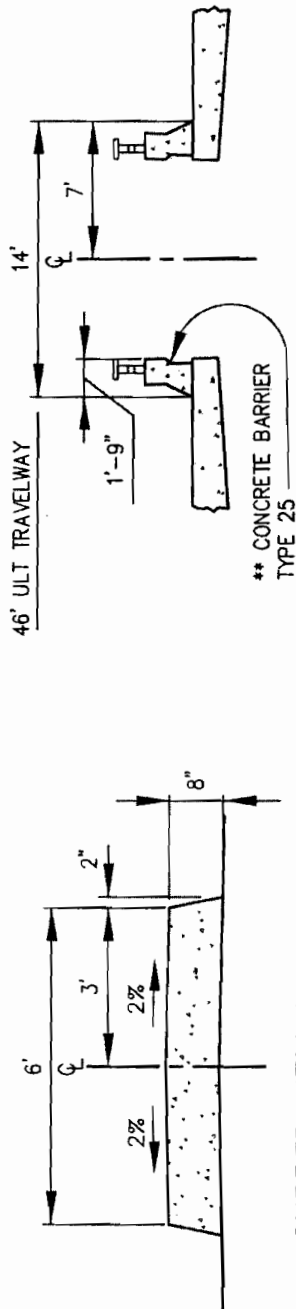
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6. WIDTH OF BRIDGE STRUCTURE SHALL BE CONSISTENT WITH APPROVED ROADWAY UNLESS OTHERWISE APPROVED BY COUNTY.
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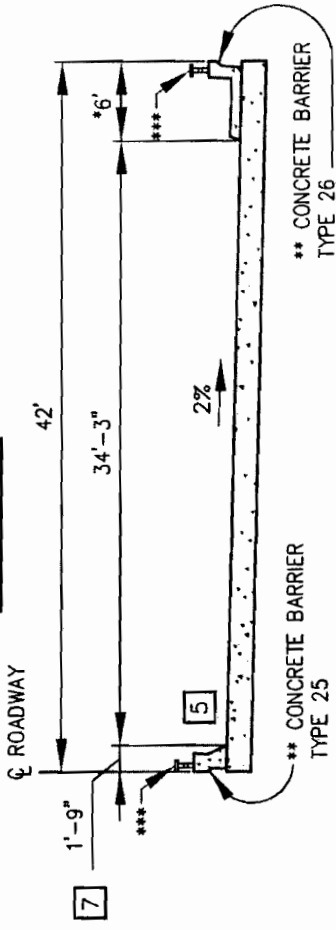
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STANDARD SECTION



CURBED MEDIAN ALTERNATE

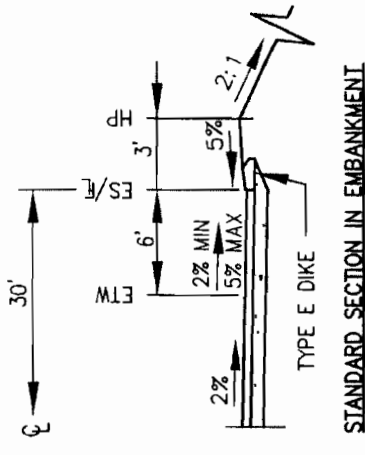
OPEN MEDIAN ALTERNATE



- * RAISED SIDEWALK TO BE PROVIDED WHEN WARRANTED
- ** SEE CALTRANS STANDARD PLANS
- *** TYPE 7 CHAIN LINK FENCE RAILING REQUIRED IN LIEU OF TUBULAR HAND RAILING WHEN STRUCTURE SPANS OVER A PUBLIC ROADWAY

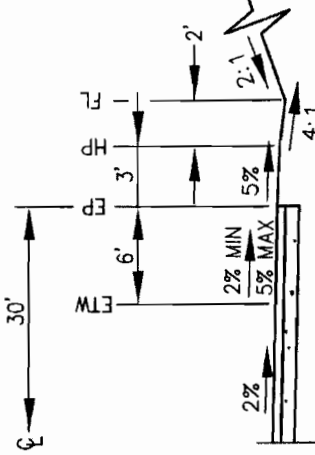
TWO LANES
(PHASED CONSTRUCTION—INITIAL PHASE)
NOT TO SCALE

| | | | |
|---|---|--|-----------------------------------|
|  | <p>EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION</p> | <p>FOUR-LANE DIVIDED ROAD BRIDGE SECTIONS</p> | <p>STD. PLAN RS-04</p> |
| <p>DESIGN STANDARDS</p> | | | |
| <p>APPROVED BY: _____</p> <p>JAMES W. WARE, P.E. NO. C61036 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION</p> <p>BOARD OF SUPERVISOR'S RESOLUTION NO. _____</p> | | <p>DATE: _____</p> | |



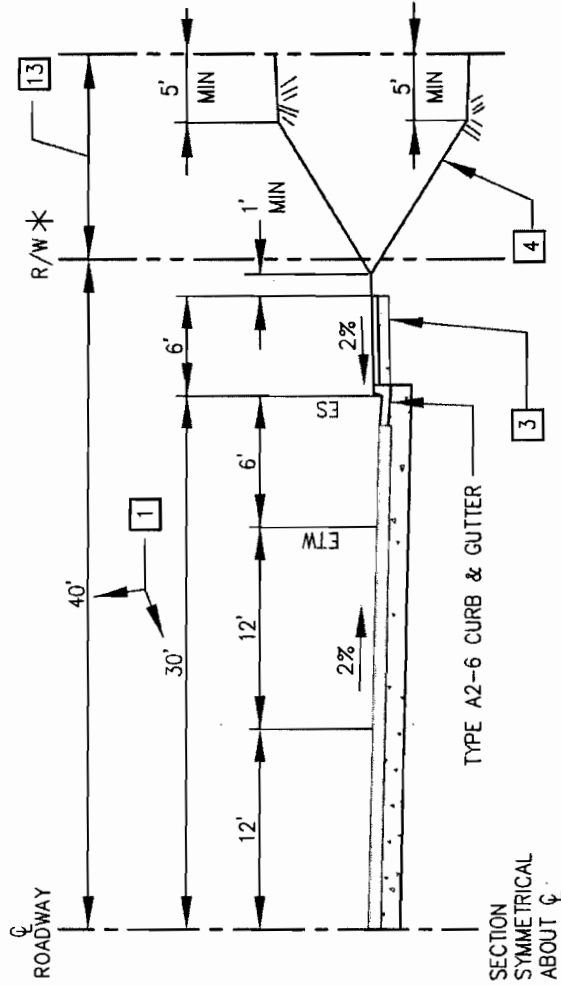
STANDARD SECTION IN EMBANKMENT

- RURAL FILL SECTION -
SEE NOTE 7



STANDARD SECTION IN EXCAVATION

- RURAL CUT SECTION -
SEE NOTE 7



TYPE A2-6 CURB & GUTTER

SECTION SYMMETRICAL ABOUT CL

* ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED WHEN ROAD COINCIDES WITH A DESIGNATED ROUTE FOR AN ADDITIONAL PUBLIC FACILITY (I.E. PEDESTRIAN, BICYCLE, OR EQUESTRIAN TRAIL)

NOT TO SCALE



EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

STD. PLAN
RS-05
SHT 1 OF 2

FOUR-LANE
UNDIVIDED ROAD

APPROVED BY:

DATE:

JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

NOTES:

1. PROVIDE FOR A TWELVE (12') FOOT LEFT TURN POCKET WITHIN 400' OF ANY INTERSECTION WITH A GENERAL PLAN DESIGNATED ROAD OR HIGH-VOLUME (GREATER THAN 400 PEAK HOUR) LOCAL ROAD, UNLESS OTHERWISE APPROVED BY THE COUNTY.
2. SEE STANDARD PLAN MC-20 FOR CURBS (A2-6, A1-8).
3. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATIONS MAY VARY. MAINTAIN 6" MIN. CLEARANCE FROM R/W LINE.
4. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
5. MAXIMUM STREET GRADES WITHOUT APPROVED DESIGN EXCEPTION:
 BELOW 3000' ELEVATION:
 GENERAL PLAN ROADWAYS AND COLLECTOR ROADWAYS WHERE ADT >10,000 = 8%
 COLLECTOR ROADWAYS WHERE ADT >4000 AND <10,000 = 10%
 LOCAL ROADWAYS AND COLLECTOR ROADWAYS WHERE ADT <4000 = 12%
 ABOVE 3000' ELEVATION:
 10% ALL ROADWAYS
6. MINIMUM STREET FLOW LINE GRADES SHALL BE 0.5% REVERSE GRADE VERTICAL CURVES EXCEPTED.
7. ROADS IN RURAL REGIONS, RURAL CENTERS, AND THE CAMINO/POLLOCK PINES COMMUNITY REGION ARE NOT REQUIRED TO HAVE PCC CURB, GUTTER AND SIDEWALK. SHOULDERS SHALL BE PAVED TO THE WIDTH SHOWN (6'). ALTERNATE DITCH SECTIONS MAY BE APPROVED OR REQUIRED.
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9. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4"
10. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUBBASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
11. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R--VALUES LESS THAN 20.
12. FOUNDATION SLOPES STEEPER THAN FIVE HORIZONTAL TO ONE VERTICAL SHALL BE KEYED WHEN PLACING EMBANKMENT FILL. KEYS PER GRADING REQUIREMENTS.
13. SLOPE & DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' MIN. BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES. SEE STANDARD PLAN RS-11 FOR ADDITIONAL SLOPE DETAILS.

APPROVED BY:

JAMES W. WARE, P.E. NO. C61036
 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

DATE: _____

EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



FOUR-LANE
 UNDIVIDED ROAD

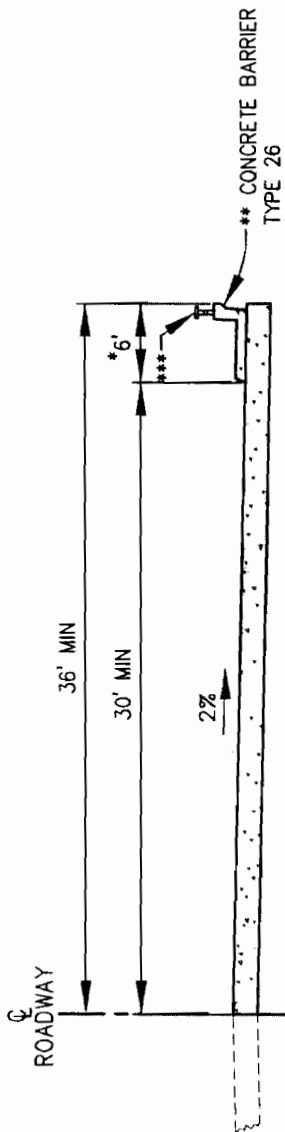
STD.
 PLAN

RS-05

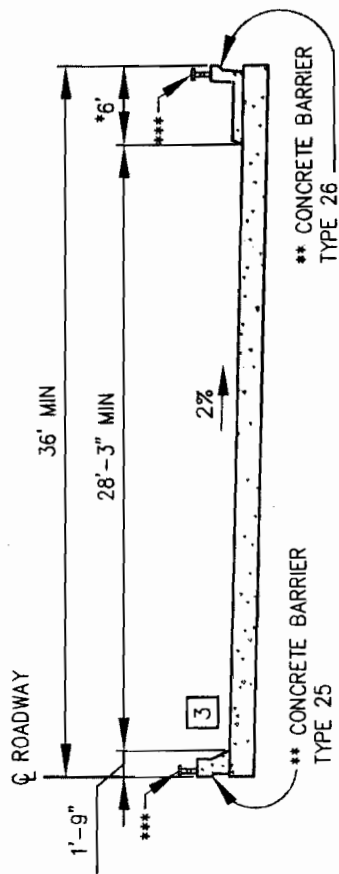
SHT. 2 OF 2

NOTES:

1. ULTIMATE BRIDGE TYPICAL SECTIONS TO BE APPROVED BY THE COUNTY.
2. BRIDGE TYPE TO BE APPROVED BY THE COUNTY.
3. WHERE BIKE LANE IS ADJACENT TO TYPE 25 BARRIER, USE CALTRANS BRIDGE STANDARD DETAIL SHEET XS16-500e, "TUBULAR BICYCLE RAILING". ADDITIONAL WIDTH MAY BE REQUIRED.
4. WIDTH OF BRIDGE STRUCTURE SHALL BE CONSISTENT WITH APPROVED ROADWAY UNLESS OTHERWISE APPROVED BY COUNTY.



STANDARD SECTION
SECTION SYMMETRICAL ABOUT CL



TWO LANES
(PHASED CONSTRUCTION—INITIAL PHASE)

- * RAISED SIDEWALK TO BE PROVIDED WHEN WARRANTED
- ** SEE CALTRANS STANDARD PLANS
- *** TYPE 7 CHAIN LINK FENCE RAILING REQUIRED IN LIEU OF TUBULAR HAND RAILING WHEN STRUCTURE SPANS OVER A PUBLIC ROADWAY

NOT TO SCALE

APPROVED BY:

JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

DATE:

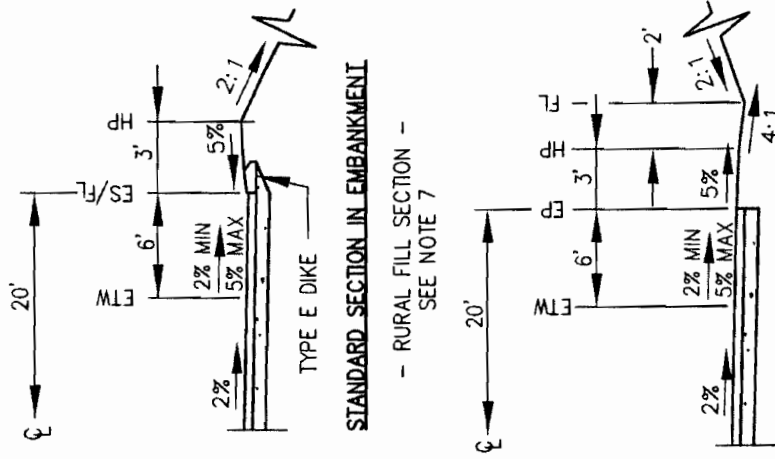
BOARD OF SUPERVISOR'S RESOLUTION NO.

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



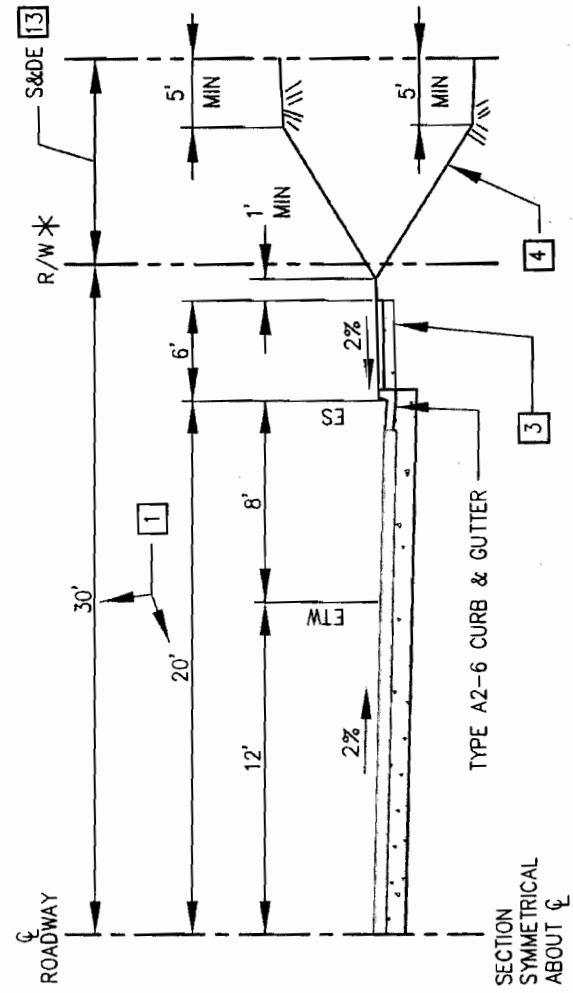
FOUR-LANE
UNDIVIDED ROAD
BRIDGE SECTIONS

STD.
PLAN
RS-06



TYPE E DIKE
STANDARD SECTION IN EMBANKMENT
- RURAL FILL SECTION -
SEE NOTE 7

STANDARD SECTION IN EXCAVATION
- RURAL CUT SECTION -
SEE NOTE 7



SECTION SYMMETRICAL ABOUT CL
TYPE A2-6 CURB & GUTTER

* ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED WHEN ROAD COINCIDES WITH A DESIGNATED ROUTE FOR AN ADDITIONAL PUBLIC FACILITY (I.E. PEDESTRIAN, BICYCLE, OR EQUESTRIAN TRAIL)

NOT TO SCALE

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

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DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION
BOARD OF SUPERVISOR'S RESOLUTION NO. _____



MAJOR TWO-LANE
UNDIVIDED ROAD

STD. PLAN
RS-07
SHT 1 OF 2

NOTES:

1. PROVIDE FOR A TWELVE (12') FOOT LEFT TURN POCKET WITHIN 400' OF ANY INTERSECTION WITH A GENERAL PLAN DESIGNATED ROAD OR HIGH-VOLUME (GREATER THAN 400 PEAK HOUR) LOCAL ROAD, UNLESS OTHERWISE APPROVED BY THE COUNTY.
2. SEE STANDARD PLAN MC-20 FOR CURBS (A2-6, A1-8).
3. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATIONS MAY VARY. MAINTAIN 6" MIN. CLEARANCE FROM R/W LINE.
4. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
5. MAXIMUM STREET GRADES WITHOUT APPROVED DESIGN EXCEPTION:
 - BELOW 3000' ELEVATION:
 - GENERAL PLAN ROADWAYS AND COLLECTOR ROADWAYS WHERE ADT >10,000 = 8%
 - COLLECTOR ROADWAYS WHERE ADT >4000 AND <10,000 = 10%
 - LOCAL ROADWAYS AND COLLECTOR ROADWAYS WHERE ADT <4000 = 12%
 - ABOVE 3000' ELEVATION:
 - 10% ALL ROADWAYS
6. MINIMUM STREET FLOW LINE GRADES SHALL BE 0.5% REVERSE GRADE VERTICAL CURVES EXCEPTED.
7. ROADS IN RURAL REGIONS, RURAL CENTERS, AND THE CAMINO/POLLOCK PINES COMMUNITY REGION ARE NOT REQUIRED TO HAVE PCC CURB, GUTTER AND SIDEWALK. SHOULDERS SHALL BE PAVED TO THE WIDTH SHOWN (6'). ALTERNATE DITCH SECTIONS MAY BE APPROVED OR REQUIRED.
8. STRUCTURAL SECTION SHALL BE BASED ON "R" VALUE AND "T.I.". DESIGN TO BE SUBMITTED TO DOT FOR REVIEW AND APPROVAL.
9. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4"
10. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUBBASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
11. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
12. FOUNDATION SLOPES STEEPER THAN FIVE HORIZONTAL TO ONE VERTICAL SHALL BE KEYED WHEN PLACING EMBANKMENT FILL. KEYS PER GRADING REQUIREMENTS.
13. SLOPE & DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' MIN. BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES. SEE STANDARD PLAN RS-11 FOR ADDITIONAL SLOPE DETAILS.

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DATE: _____

EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

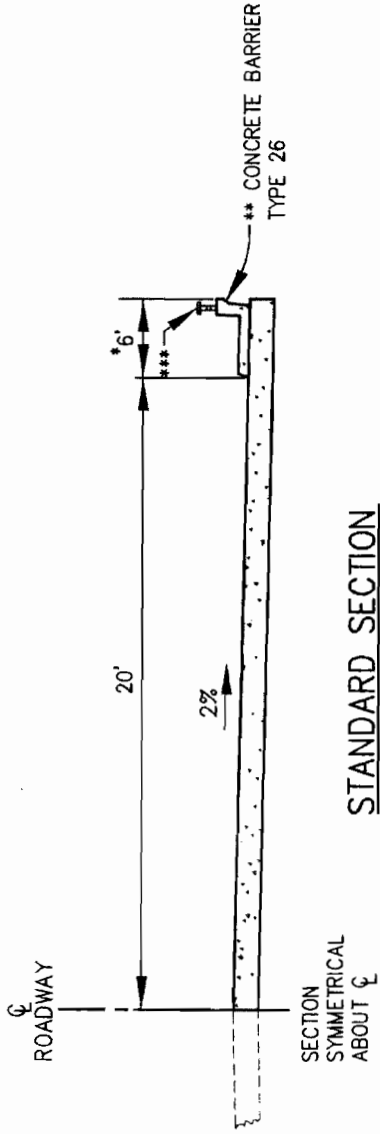


MAJOR TWO-LANE
 UNDIVIDED ROAD

STD. PLAN
 RS-07
 SHT. 2 OF 2

NOTES:

1. ULTIMATE BRIDGE TYPICAL SECTIONS TO BE APPROVED BY THE COUNTY.
2. BRIDGE TYPE TO BE APPROVED BY THE COUNTY.
3. WIDTH OF BRIDGE STRUCTURE SHALL BE CONSISTENT WITH APPROVED ROADWAY UNLESS OTHERWISE APPROVED BY COUNTY.



* RAISED SIDEWALK TO BE PROVIDED WHEN WARRANTED

** SEE CALTRANS STANDARD PLANS

*** TYPE 7 CHAIN LINK FENCE RAILING REQUIRED IN LIEU OF TUBULAR HAND RAILING WHEN STRUCTURE SPANS OVER A PUBLIC ROADWAY

NOT TO SCALE

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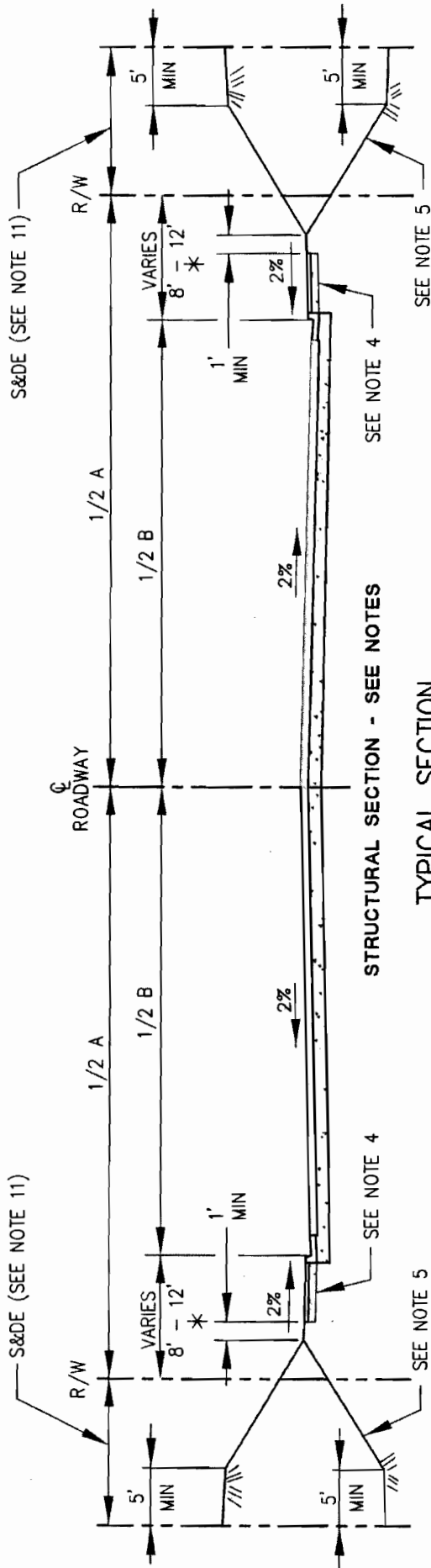
DATE: _____

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



MAJOR TWO-LANE
UNDIVIDED ROAD
BRIDGE SECTIONS

STD. PLAN
RS-08



STRUCTURAL SECTION - SEE NOTES

TYPICAL SECTION

LEGEND

- A = WIDTH OF RIGHT OF WAY IN FEET
- B = WIDTH OF ROADWAY IN FEET

* ADDITIONAL RIGHT OF WAY MAY BE REQUIRED WHEN ROAD COINCIDES WITH A DESIGNATED ROUTE FOR AN ADDITIONAL PUBLIC FACILITY (I.E. PEDESTRIAN, BICYCLE, OR EQUESTRIAN TRAIL)

| AVG DAILY TRAFFIC | CLASSIFICATION | TYPICAL ACCESS BY: | RESIDENTIAL FRONTAGE ALLOWED | MINIMUM DESIGN SPEED | A | B | SIDEWALK | MAX GRADE | CURB TYPE |
|-------------------|--------------------------|--|------------------------------|----------------------|----|----|------------|-----------|-----------|
| 4000-10,000 | NON-RES. COLLECTOR | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 35 | 70 | 54 | BOTH SIDES | 10% | A2-6 |
| <4,000 | NON-RES. LOCAL COLLECTOR | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 25 | 60 | 44 | BOTH SIDES | 10% | A2-6 |
| 4000-10,000 | COLLECTOR | LOCAL STREETS | NONE | 35-45 | 60 | 40 | BOTH SIDES | 10% | A2-6 |
| 2500-4000 | COLLECTOR | LOCAL STREETS | NONE | 35 | 60 | 36 | BOTH SIDES | 12% | A2-6 |
| 500-2500 | LOCAL | LOCAL STREETS AND DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 60 | 36 | BOTH SIDES | 12% | C-2 |
| <500 | LOCAL | DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 32 | BOTH SIDES | 12% | C-2 |

◆ MAXIMUM GRADE FOR ALL STREETS ABOVE 3000' ELEVATIONS = 10%

NOT TO SCALE

APPROVED BY:

JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

DATE:

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



LOCAL ROADS
EL DORADO HILLS
COMMUNITY REGION

STD.
PLAN

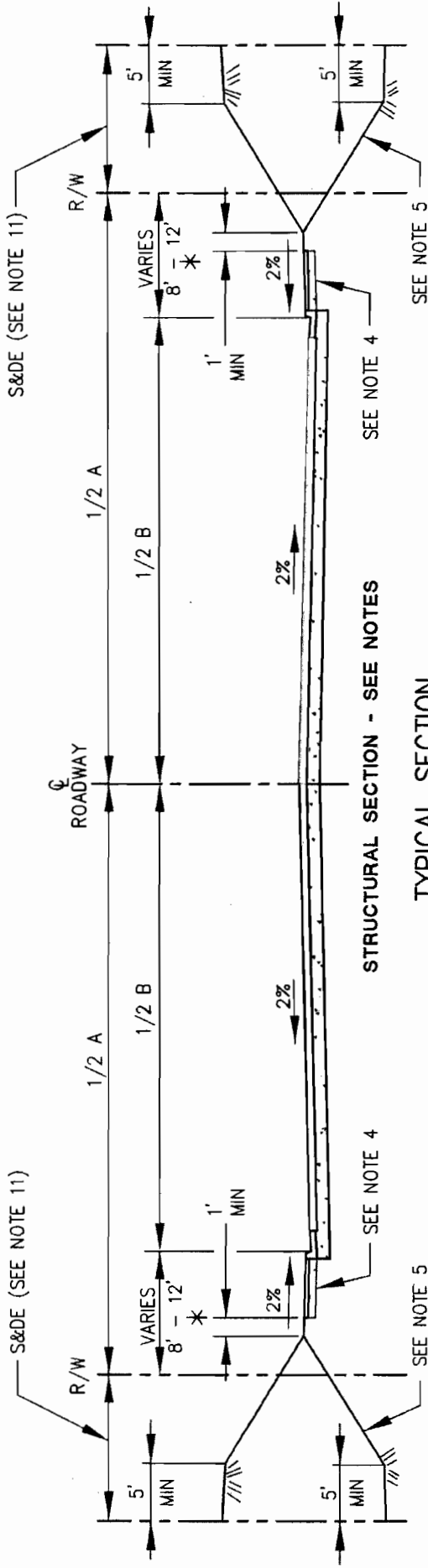
RS-20
SHT 1 OF 2

GENERAL NOTES:

1. SIDEWALKS, IN ADDITION TO THOSE INDICATED ABOVE, MAY BE REQUIRED TO PROVIDE CONTINUOUS PEDESTRIAN ROUTES.
2. BASIC CRITERIA:
 12' TRAVEL LANES FOR VOLUMES GREATER THAN 500 ADT.
 10' MINIMUM TRAVEL LANES FOR VOLUMES LESS THAN 500 ADT.
 ROADWAY WIDTH, R, SHALL BE 50' WITHIN 100' OF CURB RETURN OF AN INTERSECTION WITH A HIGHER CLASSIFICATION ROAD. CURB & GUTTER TRANSITION SHALL BE CONSTRUCTED BETWEEN 100' & 140' FROM CURB RETURN. FOR NON-RESIDENTIAL ROADWAYS, AND LOCAL COLLECTOR ROADWAYS, PAVEMENT CROWNLINE SHALL BE CENTERED BETWEEN CURBS.
3. MINIMUM STREET FLOW LINE GRADE SHALL BE 0.5% REVERSE GRADE VERTICAL CURVES EXCEPTED.
4. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATION MAY VARY. MAINTAIN MIN. 6" CLEARANCE FROM R/W LINE.
5. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
6. STRUCTURAL SECTION SHALL BE BASED ON "R" VALUE AND "T.I.". DESIGN TO BE SUBMITTED TO DOT FOR REVIEW AND APPROVAL.
7. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4".
8. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUB-BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
9. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
10. SLOPES OVER FIVE HORIZONTAL TO ONE VERTICAL SHALL BE KEYED WHEN PLACING EMBANKMENT FILL. KEYS PER GRADING REQUIREMENTS.
11. SLOPE AND DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES.
12. DESIGN SPEED FOR LOCAL STREETS WITH RESIDENTIAL FRONTAGE SHALL BE 25 MILES PER HOUR. DESIGN SPEED FOR STREETS WITHOUT RESIDENTIAL FRONTAGE SHALL BE 35 MILES PER HOUR. STREET ALIGNMENT AND PROFILE SHALL COMPLY WITH THE CRITERIA FOR SAFE STOPPING SIGHT DISTANCE FOR THESE DESIGN SPEEDS.
13. STREET SYSTEMS SHOULD BE LAID OUT TO DISCOURAGE TRAVEL AT HIGHER THAN DESIGN SPEEDS BY INCORPORATING CURVES, KNUCKLES AND "T" INTERSECTIONS AT NO MORE THAN 1000' INTERVALS, DEPENDING ON TERRAIN. CONTINUOUS STRAIGHT STREETS CONNECTING TWO ARTERIAL HIGHWAYS, WHICH WOULD ACT AS A "SHORTCUT" THROUGH A RESIDENTIAL AREA, SHALL BE AVOIDED.
14. STREETS SHALL INTERSECT AT RIGHT ANGLES WHEREVER POSSIBLE. STREETS SHALL NOT INTERSECT AT GREATER THAN 20° SKEW TO RIGHT ANGLE. FOUR-LEGGED INTERSECTIONS SHALL BE AVOIDED EXCEPT AT SIGNALIZED LOCATIONS. INTERSECTIONS SHALL HAVE ADEQUATE SIGHT DISTANCE IN CONFORMANCE WITH STD PLAN MC-40. INTERSECTIONS ON CREST VERTICAL CURVES OR ON THE INSIDE OF HORIZONTAL CURVES SHALL BE AVOIDED. THE MINIMUM DISTANCE BETWEEN INTERSECTIONS ON LOCAL COLLECTOR ROADWAYS AND 250 FEET ON LOCAL ROADWAYS MEASURED FROM CENTERLINE.
15. THE LOCATION OF ANY INTERSECTION SHALL BE REVIEWED BY THE COUNTY ENGINEER TO DETERMINE SAFETY AND COMPATIBILITY FOR SIGNAL PROGRESSION. TRAFFIC AT ANY INTERSECTION MAY BE ULTIMATELY RESTRICTED TO RIGHT TURN IN AND OUT ONLY.
 16. FUELS REDUCTION ZONE, OF 20 FEET ON EITHER SIDE OF THE ROAD CENTERLINE, MUST BE CLEARED INCLUDING THE FOLLOWING:
 - ALL BRUSH REMOVED.
 - ALL TREES LIMBED UP TO 10 FEET.
 - WEEDS AND GRASS MOWED TO A 2 INCH STUBBLE.
 - 15 FOOT VERTICAL CLEARANCE CREATED DIRECTLY ABOVE THE HORIZONTALLY CLEARED AREA.

NOT TO SCALE

| | | | | |
|---|---|---|---|--|
| <p>APPROVED BY:</p> <p>_____ JAMES W. WARE, P.E. NO. C61036 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION</p> <p>DATE: _____</p> <p>BOARD OF SUPERVISOR'S RESOLUTION NO. _____</p> |  | <p>EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION</p> <hr/> <p>DESIGN STANDARDS</p> | <p>LOCAL ROADS EL DORADO HILLS COMMUNITY REGION</p> | <p>STD. PLAN RS-20</p> <p>SHT 2 OF 2</p> |
|---|---|---|---|--|



STRUCTURAL SECTION - SEE NOTES

TYPICAL SECTION

* ADDITIONAL RIGHT OF WAY MAY BE REQUIRED WHEN ROAD COINCIDES WITH A DESIGNATED ROUTE FOR AN ADDITIONAL PUBLIC FACILITY (I.E. PEDESTRIAN, BICYCLE, OR EQUESTRIAN TRAIL)

| LEGEND | |
|--------|---------------------------------|
| A | = WIDTH OF RIGHT OF WAY IN FEET |
| B | = WIDTH OF ROADWAY IN FEET |

| AVG DAILY TRAFFIC | CLASSIFICATION | TYPICAL ACCESS BY: | RESIDENTIAL FRONTAGE ALLOWED | MINIMUM DESIGN SPEED | A | B | SIDEWALK | MAX GRADE | CURB TYPE |
|-------------------|--------------------|--|------------------------------|----------------------|----|----|------------|-----------|-----------|
| 4000-10,000 | NON-RES. COLLECTOR | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 35 | 70 | 54 | BOTH SIDES | 10% | A2-6 |
| <4,000 | NON-RES. LOCAL | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 25 | 60 | 44 | BOTH SIDES | 10% | A2-6 |
| 4000-10,000 | COLLECTOR | LOCAL STREETS | NONE | 35-45 | 60 | 40 | BOTH SIDES | 10% | A2-6 |
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| 500-2500 | LOCAL | LOCAL STREETS AND DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 32 | BOTH SIDES | 12% | C-2 |
| <500 | LOCAL | DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 28 | BOTH SIDES | 12% | C-2 |

◆ MAXIMUM GRADE FOR ALL STREETS ABOVE 3000' ELEVATIONS = 10%

NOT TO SCALE

| | | | |
|--|--|--|--|
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| | | | <p>STD. PLAN</p> <p>RS-21</p> <p>SHT 1 OF 2</p> |

GENERAL NOTES:

1. SIDEWALKS, IN ADDITION TO THOSE INDICATED ABOVE, MAY BE REQUIRED TO PROVIDE CONTINUOUS PEDESTRIAN ROUTES.
2. BASIC CRITERIA:
 12' TRAVEL LANES FOR VOLUMES GREATER THAN 500 ADT.
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3. MINIMUM STREET FLOW LINE GRADE SHALL BE 0.5%, REVERSE GRADE. VERTICAL CURVES EXCEPTED.
4. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATION MAY VARY. MAINTAIN MIN. 6" CLEARANCE FROM R/W LINE. CURB, GUTTER AND SIDEWALKS MAY BE WAIVED WHERE ALL LOTS ARE LARGER THAN ONE ACRE.
5. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
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11. SLOPE AND DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES.
12. DESIGN SPEED FOR LOCAL STREETS WITH RESIDENTIAL FRONTAGE SHALL BE 25 MILES PER HOUR. DESIGN SPEED FOR STREETS WITHOUT RESIDENTIAL FRONTAGE SHALL BE 35 MILES PER HOUR. STREET ALIGNMENT AND PROFILE SHALL COMPLY WITH THE CRITERIA FOR SAFE STOPPING SIGHT DISTANCE FOR THESE DESIGN SPEEDS.
13. STREET SYSTEMS SHOULD BE LAID OUT TO DISCOURAGE TRAVEL AT HIGHER THAN DESIGN SPEEDS BY INCORPORATING CURVES, KNUCKLES AND "T" INTERSECTIONS AT NO MORE THAN 1000' INTERVALS, DEPENDING ON TERRAIN. CONTINUOUS STRAIGHT STREETS CONNECTING TWO ARTERIAL HIGHWAYS, WHICH WOULD ACT AS A "SHORTCUT" THROUGH A RESIDENTIAL AREA, SHALL BE AVOIDED.
14. STREETS SHALL INTERSECT AT RIGHT ANGLES WHEREVER POSSIBLE. STREETS SHALL NOT INTERSECT AT GREATER THAN 20° SKEW TO RIGHT ANGLE. FOUR-LEGGED INTERSECTIONS SHALL BE AVOIDED EXCEPT AT SIGNALIZED LOCATIONS. INTERSECTIONS SHALL HAVE ADEQUATE SIGHT DISTANCE IN CONFORMANCE WITH STD PLAN MC-40. INTERSECTIONS ON CREST VERTICAL CURVES OR ON THE INSIDE OF HORIZONTAL CURVES SHALL BE AVOIDED. THE MINIMUM DISTANCE BETWEEN INTERSECTIONS ON SHALL BE 300 FEET ON COLLECTOR ROADWAYS AND 250 FEET ON LOCAL ROADWAYS MEASURED FROM CENTERLINE.
15. THE LOCATION OF ANY INTERSECTION SHALL BE REVIEWED BY THE COUNTY ENGINEER TO DETERMINE SAFETY AND COMPATIBILITY FOR SIGNAL PROGRESSION. TRAFFIC AT ANY INTERSECTION MAY BE ULTIMATELY RESTRICTED TO RIGHT TURN IN AND OUT ONLY.
 16. A FUELS REDUCTION ZONE, OF 20 FEET ON EITHER SIDE OF THE ROAD CENTERLINE, MUST BE CLEARED INCLUDING THE FOLLOWING:
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EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



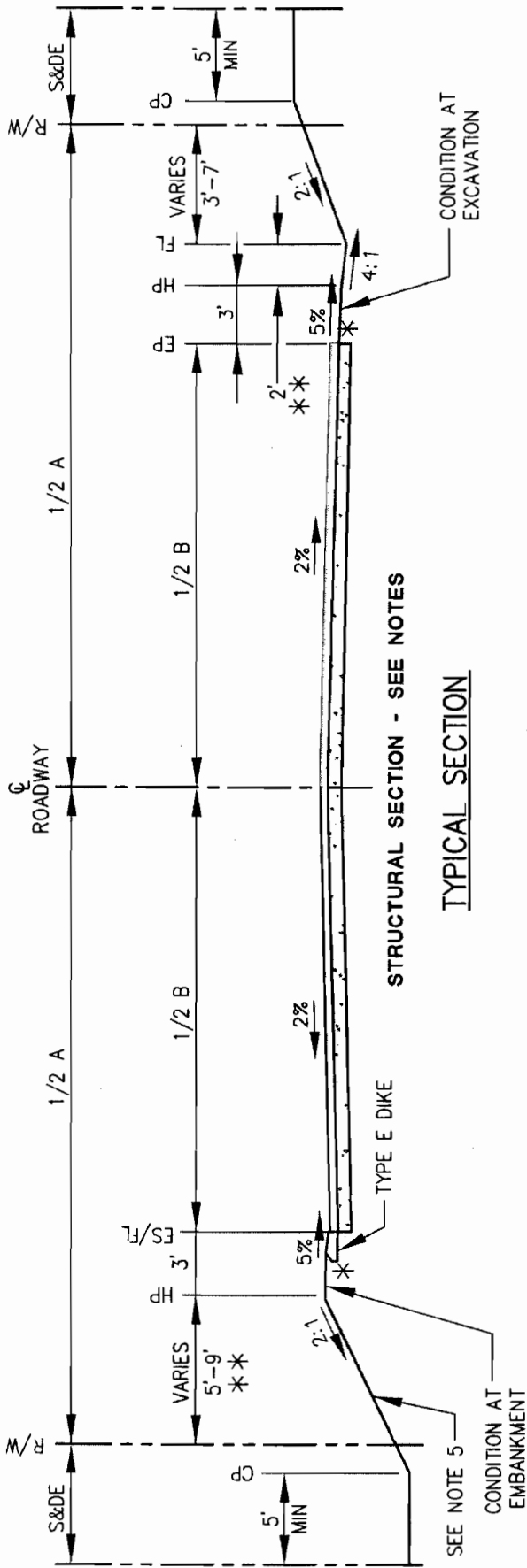
LOCAL ROADS
 CAMERON PARK/PLACERVILLE/
 DIAMOND SPRINGS/EL DORADO/
 SHINGLE SPRINGS
 COMMUNITY REGIONS

STD.
 PLAN

RS-21

SHT 2 OF 2

NOT TO SCALE



* SPECIAL CONDITIONS MAY REQUIRE CURB AND GUTTER

** ALTERNATE DITCH SECTIONS MAY BE APPROVED OR REQUIRED

| LEGEND | |
|--------|---------------------------------|
| A | = WIDTH OF RIGHT OF WAY IN FEET |
| B | = WIDTH OF ROADWAY IN FEET |

| AVG DAILY TRAFFIC | CLASSIFICATION | TYPICAL ACCESS BY: | RESIDENTIAL FRONTAGE ALLOWED | MINIMUM DESIGN SPEED | A | B | MAX GRADE |
|-------------------|--------------------|--|------------------------------|----------------------|----|----|-----------|
| 4000-10,000 | NON-RES. COLLECTOR | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 35 | 70 | 54 | 10% |
| <4,000 | NON-RES. LOCAL | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 25 | 60 | 44 | 10% |
| 4000-10,000 | COLLECTOR | LOCAL STREETS | NONE | 35-45 | 60 | 40 | 10% |
| 2500-4000 | COLLECTOR | LOCAL STREETS | NONE | 35 | 60 | 36 | 12% |
| 500-2500 | LOCAL | LOCAL STREETS AND DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 32 | 12% |
| <500 | LOCAL | DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 28 | 12% |

◆ MAXIMUM GRADE FOR ALL STREETS ABOVE 3000' ELEVATIONS = 10%

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EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



LOCAL ROADS
CAMINO/POLLOCK PINES
COMMUNITY REGION

STD.
PLAN

RS-22

SHT 1 OF 2

GENERAL NOTES:

1. SIDEWALKS MAY BE REQUIRED TO PROVIDE CONTINUOUS PEDESTRIAN ROUTES.
2. BASIC CRITERIA:
 12' TRAVEL LANES FOR VOLUMES GREATER THAN 500 ADT.
 10' MINIMUM TRAVEL LANES FOR VOLUMES LESS THAN 500 ADT.
 ROADWAY WIDTH, R, SHALL BE 50' WITHIN 100' OF CURB RETURN OF AN INTERSECTION WITH A HIGHER CLASSIFICATION ROAD. CURB & GUTTER TRANSITION SHALL BE CONSTRUCTED BETWEEN 100' & 140' FROM CURB RETURN. FOR NON-RESIDENTIAL ROADWAYS, AND LOCAL COLLECTOR ROADWAYS, PAVEMENT CROWNLINE SHALL BE CENTERED BETWEEN CURBS.
3. MINIMUM STREET FLOW LINE GRADE SHALL BE 0.5% REVERSE GRADE VERTICAL CURVES EXCEPTED.
4. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATION MAY VARY. MAINTAIN MIN. 6" CLEARANCE FROM R/W LINE.
5. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
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9. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
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11. SLOPE AND DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES.
12. DESIGN SPEED FOR LOCAL STREETS WITH RESIDENTIAL FRONTAGE SHALL BE 25 MILES PER HOUR. DESIGN SPEED FOR STREETS WITHOUT RESIDENTIAL FRONTAGE SHALL BE 35 MILES PER HOUR. STREET ALIGNMENT AND PROFILE SHALL COMPLY WITH THE CRITERIA FOR SAFE STOPPING SIGHT DISTANCE FOR THESE DESIGN SPEEDS.
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14. STREETS SHALL INTERSECT AT RIGHT ANGLES WHEREVER POSSIBLE. STREETS SHALL NOT INTERSECT AT GREATER THAN 20° SKEW TO RIGHT ANGLE. FOUR-LEGGED INTERSECTIONS SHALL BE AVOIDED EXCEPT AT SIGNALIZED LOCATIONS. INTERSECTIONS SHALL HAVE ADEQUATE SIGHT DISTANCE IN CONFORMANCE WITH STD PLAN MC-40. INTERSECTIONS ON GREST VERTICAL CURVES OR ON THE INSIDE OF HORIZONTAL CURVES SHALL BE AVOIDED. THE MINIMUM DISTANCE BETWEEN INTERSECTIONS ON SHALL BE 300 FEET ON COLLECTOR ROADWAYS AND 250 FEET ON LOCAL ROADWAYS MEASURED FROM CENTERLINE.
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 16. A FUELS REDUCTION ZONE, OF 20 FEET ON EITHER SIDE OF THE ROAD CENTERLINE, MUST BE CLEARED INCLUDING THE FOLLOWING:
 - ALL BRUSH REMOVED.
 - ALL TREES LIMBED UP TO 10 FEET.
 - WEEDS AND GRASS MOWED TO A 2 INCH STUBBLE.
 - 15 FOOT VERTICAL CLEARANCE CREATED DIRECTLY ABOVE THE HORIZONTALLY CLEARED AREA.

NOT TO SCALE

APPROVED BY:

JAMES W. WARE, P.E. NO. C61036
 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

DATE:

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

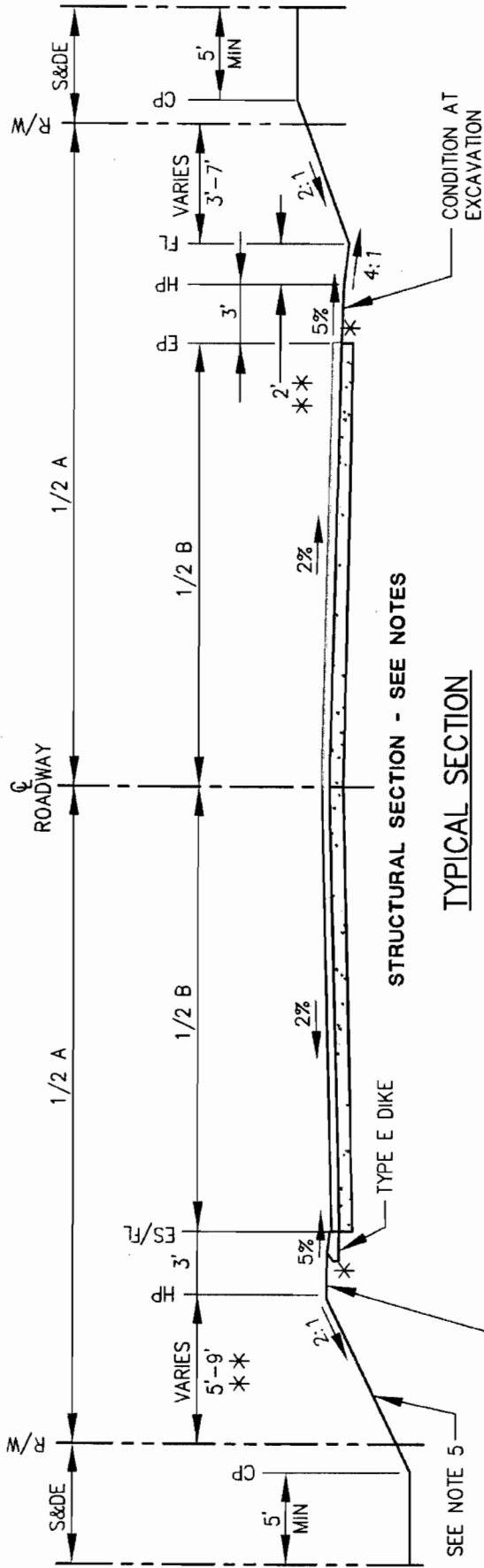


LOCAL ROADS
 CAMINO/POLLOCK PINES
 COMMUNITY REGION

STD.
 PLAN

RS-22

SHT 2 OF 2



* SPECIAL CONDITIONS MAY REQUIRE CURB AND GUTTER
 ** ALTERNATE DITCH SECTIONS MAY BE APPROVED OR REQUIRED

| LEGEND | |
|--------|---------------------------------|
| A | = WIDTH OF RIGHT OF WAY IN FEET |
| B | = WIDTH OF ROADWAY IN FEET |

| AVG DAILY TRAFFIC | CLASSIFICATION | TYPICAL ACCESS BY: | RESIDENTIAL FRONTAGE ALLOWED | MINIMUM DESIGN SPEED | A | B | MAX GRADE |
|-------------------|--------------------|--|------------------------------|----------------------|----|----|-----------|
| 4000-10,000 | NON-RES. COLLECTOR | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 40 | 70 | 54 | 10% |
| 400-4,000 | NON-RES. LOCAL | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 40 | 60 | 44 | 10% |
| <400 | NON-RES. LOCAL | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 25 | 60 | 44 | 10% |
| 4000-10,000 | COLLECTOR | LOCAL STREETS | NONE | 40 | 60 | 40 | 10% |
| 2500-4000 | COLLECTOR | LOCAL STREETS | NONE | 40 | 60 | 36 | 12% |
| 500-2500 | LOCAL | LOCAL STREETS AND DRIVEWAY BOTH SIDES | BOTH SIDES | 40 | 50 | 28 | 12% |
| <500 | LOCAL | DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 24 | 12% |

◆ MAXIMUM GRADE FOR ALL STREETS ABOVE 3000' ELEVATIONS = 10%

NOT TO SCALE

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 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

DATE:

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



LOCAL ROADS
 RURAL REGIONS
 & RURAL CENTERS

STD.
 PLAN

RS-23

SHT. 1 OF 2

GENERAL NOTES:

1. SIDEWALKS MAY BE REQUIRED TO PROVIDE CONTINUOUS PEDESTRIAN ROUTES.
2. BASIC CRITERIA:
 12' TRAVEL LANES FOR VOLUMES GREATER THAN 500 ADT.
 10' MINIMUM TRAVEL LANES FOR VOLUMES LESS THAN 500 ADT.
 ROADWAY WIDTH, R, SHALL BE 50' WITHIN 100' OF CURB RETURN OF AN INTERSECTION WITH A HIGHER CLASSIFICATION ROAD. CURB & GUTTER TRANSITION SHALL BE CONSTRUCTED BETWEEN 100' & 140' FROM CURB RETURN. FOR NON-RESIDENTIAL ROADWAYS, AND LOCAL COLLECTOR ROADWAYS, PAVEMENT CROWNLINE SHALL BE CENTERED BETWEEN CURBS.
3. MINIMUM STREET FLOW LINE GRADE SHALL BE 0.5% REVERSE GRADE VERTICAL CURVES EXCEPTED.
4. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATION MAY VARY. MAINTAIN MIN. 6" CLEARANCE FROM R/W LINE.
5. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
6. STRUCTURAL SECTION SHALL BE BASED ON "R" VALUE AND "T.I.". DESIGN TO BE SUBMITTED TO DOT FOR REVIEW AND APPROVAL.
7. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4".
8. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUB-BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
9. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
10. SLOPES OVER FIVE HORIZONTAL TO ONE VERTICAL SHALL BE KEYED WHEN PLACING EMBANKMENT FILL. KEYS PER GRADING REQUIREMENTS.
11. SLOPE AND DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES.
12. DESIGN SPEED FOR LOCAL STREETS WITH RESIDENTIAL FRONTAGE SHALL BE 25 MILES PER HOUR. DESIGN SPEED FOR STREETS WITHOUT RESIDENTIAL FRONTAGE SHALL BE 35 MILES PER HOUR. STREET ALIGNMENT AND PROFILE SHALL COMPLY WITH THE CRITERIA FOR SAFE STOPPING SIGHT DISTANCE FOR THESE DESIGN SPEEDS.
13. STREET SYSTEMS SHOULD BE LAID OUT TO DISCOURAGE TRAVEL AT HIGHER THAN DESIGN SPEEDS BY INCORPORATING CURVES, KNUCKLES AND "T" INTERSECTIONS AT NO MORE THAN 1000' INTERVALS, DEPENDING ON TERRAIN. CONTINUOUS STRAIGHT STREETS CONNECTING TWO ARTERIAL HIGHWAYS, WHICH WOULD ACT AS A "SHORTCUT" THROUGH A RESIDENTIAL AREA, SHALL BE AVOIDED.
14. STREETS SHALL INTERSECT AT RIGHT ANGLES WHEREVER POSSIBLE. STREETS SHALL NOT INTERSECT AT GREATER THAN 20° SKEW TO RIGHT ANGLE. FOUR-LEGGED INTERSECTIONS SHALL BE AVOIDED EXCEPT AT SIGNALIZED LOCATIONS. INTERSECTIONS SHALL HAVE ADEQUATE SIGHT DISTANCE IN CONFORMANCE WITH STD PLAN MC-40. INTERSECTIONS ON CREST VERTICAL CURVES OR ON THE INSIDE OF HORIZONTAL CURVES SHALL BE AVOIDED. THE MINIMUM DISTANCE BETWEEN INTERSECTIONS ON LOCAL COLLECTOR ROADWAYS AND 250 FEET ON LOCAL ROADWAYS MEASURED FROM CENTERLINE.
15. THE LOCATION OF ANY INTERSECTION SHALL BE REVIEWED BY THE COUNTY ENGINEER TO DETERMINE SAFETY AND COMPATIBILITY FOR SIGNAL PROGRESSION. TRAFFIC AT ANY INTERSECTION MAY BE ULTIMATELY RESTRICTED TO RIGHT TURN IN AND OUT ONLY.
 - ALL BRUSH REMOVED.
 - ALL TREES LIMBED UP TO 10 FEET.
 - WEEDS AND GRASS MOWED TO A 2 INCH STUBBLE.
 - 15 FOOT VERTICAL CLEARANCE CREATED DIRECTLY ABOVE THE HORIZONTALLY CLEARED AREA.
16. A FUELS REDUCTION ZONE, OF 20 FEET ON EITHER SIDE OF THE ROAD CENTERLINE, MUST BE CLEARED INCLUDING THE FOLLOWING:
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 - 15 FOOT VERTICAL CLEARANCE CREATED DIRECTLY ABOVE THE HORIZONTALLY CLEARED AREA.

NOT TO SCALE

APPROVED BY:

JAMES W. WARE, P.E. NO. C61036
 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

DATE:

BOARD OF SUPERVISOR'S RESOLUTION NO. _____

EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

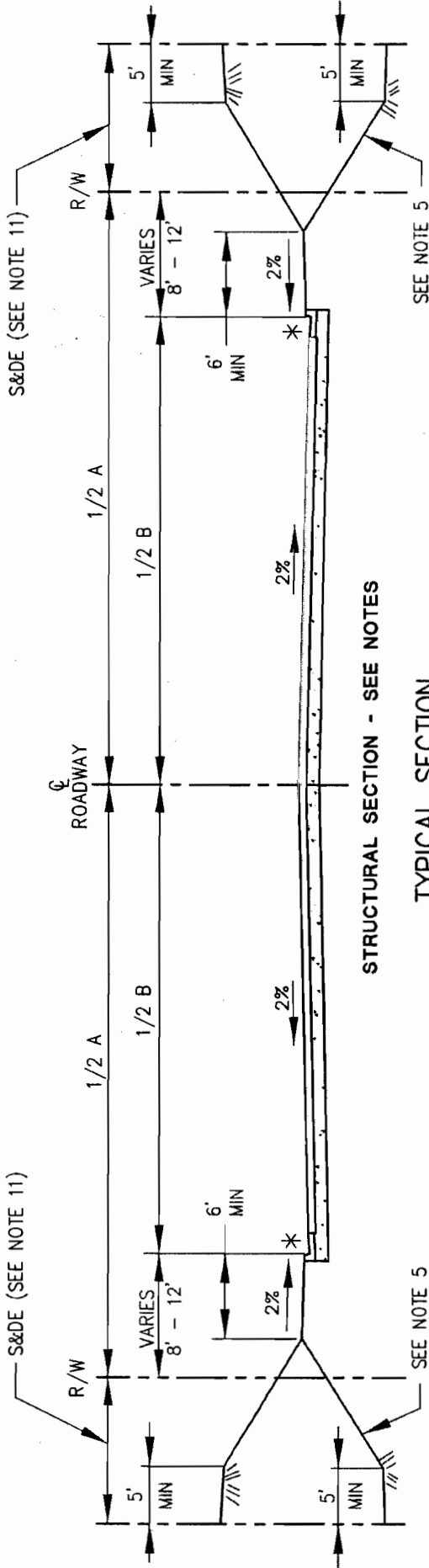


LOCAL ROADS
 RURAL REGIONS
 & RURAL CENTERS

STD.
 PLAN

RS-23

SHT 2 OF 2



STRUCTURAL SECTION - SEE NOTES

TYPICAL SECTION

* ROLLED CURB AND GUTTER SHALL BE COUNTY TYPE 1.
 SPECIAL CONDITIONS MAY REQUIRE OTHER TYPES OR ROADSIDE DITCHES

| LEGEND | |
|--------|---------------------------------|
| A | = WIDTH OF RIGHT OF WAY IN FEET |
| B | = WIDTH OF ROADWAY IN FEET |

| AVG DAILY TRAFFIC | CLASSIFICATION | TYPICAL ACCESS BY: | RESIDENTIAL FRONTAGE ALLOWED | MINIMUM DESIGN SPEED | A | B | MAX GRADE |
|-------------------|--------------------|--|------------------------------|----------------------|----|----|-----------|
| 4000-10,000 | NON-RES. COLLECTOR | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 35 | 70 | 54 | 10% |
| <4,000 | NON-RES. LOCAL | NON-RES. LOCAL STREETS AND DRIVEWAY BOTH SIDES | N/A | 25 | 60 | 44 | 10% |
| 4000-10,000 | COLLECTOR | LOCAL STREETS | NONE | 35-45 | 60 | 40 | 10% |
| 2500-4000 | COLLECTOR | LOCAL STREETS | NONE | 35 | 60 | 36 | 10% |
| 500-2500 | LOCAL | LOCAL STREETS AND DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 32 | 10% |
| <500 | LOCAL | DRIVEWAY BOTH SIDES | BOTH SIDES | 25 | 50 | 28 | 10% |

NOT TO SCALE

STD. PLAN
 RS-25
 SHT 1 OF 2



EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS

APPROVED BY: _____ DATE: _____
 JAMES W. WARE, P.E. NO. C61036
 DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION
 BOARD OF SUPERVISOR'S RESOLUTION NO. _____

LOCAL ROADS
 TAHOE REGION

GENERAL NOTES:

1. SIDEWALKS MAY BE REQUIRED TO PROVIDE CONTINUOUS PEDESTRIAN ROUTES.
2. BASIC CRITERIA:
 12' TRAVEL LANES FOR VOLUMES GREATER THAN 500 ADT.
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3. MINIMUM STREET FLOW LINE GRADE SHALL BE 0.5% REVERSE GRADE VERTICAL CURVES EXCEPTED.
4. SEE STANDARD PLAN MC-01 FOR SIDEWALK DETAILS. SIDEWALK LOCATION MAY VARY. MAINTAIN MIN. 6" CLEARANCE FROM R/W LINE.
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6. STRUCTURAL SECTION SHALL BE BASED ON "R" VALUE AND "I.I.". DESIGN TO BE SUBMITTED TO DOT FOR REVIEW AND APPROVAL.
7. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4".
8. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUB-BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
9. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
10. SLOPES OVER FIVE HORIZONTAL TO ONE VERTICAL SHALL BE KEYED WHEN PLACING EMBANKMENT FILL. KEYS PER GRADING REQUIREMENTS.
11. SLOPE AND DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES.
12. DESIGN SPEED FOR LOCAL STREETS WITH RESIDENTIAL FRONTAGE SHALL BE 25 MILES PER HOUR. DESIGN SPEED FOR STREETS WITHOUT RESIDENTIAL FRONTAGE SHALL BE 35 MILES PER HOUR. STREET ALIGNMENT AND PROFILE SHALL COMPLY WITH THE CRITERIA FOR SAFE STOPPING SIGHT DISTANCE FOR THESE DESIGN SPEEDS.
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14. STREETS SHALL INTERSECT AT RIGHT ANGLES WHEREVER POSSIBLE. STREETS SHALL NOT INTERSECT AT GREATER THAN 20' SKEW TO RIGHT ANGLE. FOUR-LEGGED INTERSECTIONS SHALL BE AVOIDED EXCEPT AT SIGNALIZED LOCATIONS. INTERSECTIONS SHALL HAVE ADEQUATE SIGHT DISTANCE IN CONFORMANCE WITH STD PLAN MC-40. INTERSECTIONS ON CREST VERTICAL CURVES OR ON THE INSIDE OF HORIZONTAL CURVES SHALL BE AVOIDED. THE MINIMUM DISTANCE BETWEEN INTERSECTIONS ON LOCAL COLLECTOR ROADWAYS AND 250 FEET ON LOCAL ROADWAYS MEASURED FROM CENTERLINE.
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 - ALL TREES LIMBED UP TO 10 FEET.
 - WEEDS AND GRASS MOWED TO A 2 INCH STUBBLE.
 - 15 FOOT VERTICAL CLEARANCE CREATED DIRECTLY ABOVE THE HORIZONTALLY CLEARED AREA.

NOT TO SCALE

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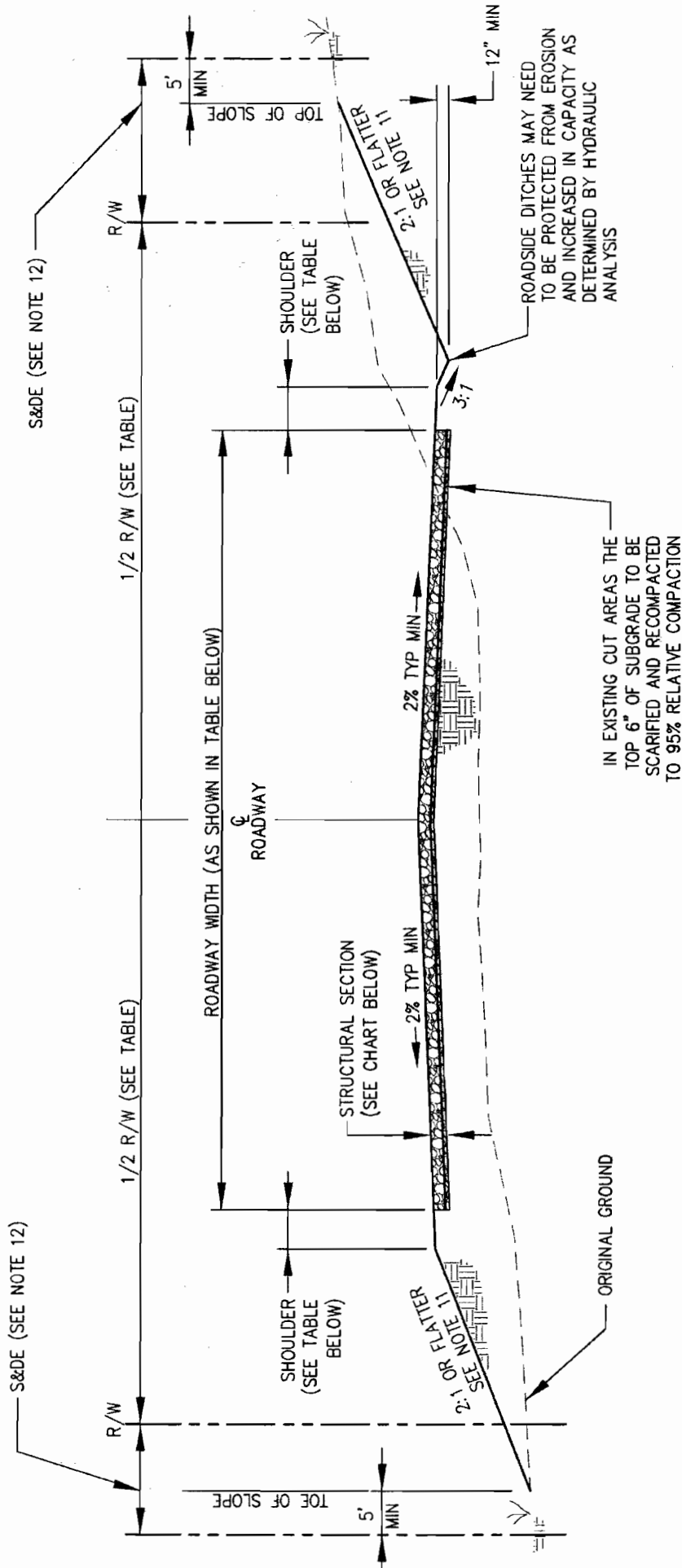
BOARD OF SUPERVISOR'S RESOLUTION NO. _____

EL DORADO COUNTY
 DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



LOCAL ROADS
 TAHOE REGIONS

STD.
PLAN
 RS-25
 SHT 2 OF 2



| ADT | R/W | ROADWAY WIDTH | SHOULDER WIDTH | SHOULDER (EACH SIDE) | DESIGN SPEED | MAX GRADE | STRUCTURAL SECTION |
|-----------|-----|---------------|----------------|----------------------|--------------|--|--------------------------------|
| 1-150 | 50' | 20' | 1' | (EACH SIDE) | 20 MPH | 15% PAVED 12% UNPAVED (SEE NOTE 5) * | 6" CLASS 2 AB (SEE NOTE 10) |
| 151-600 | 50' | 20' | 2' | (EACH SIDE) | 25 MPH | | SEE NOTE 7 |
| 601-1500 | 60' | 20' | 5' | (EACH SIDE) | 40 MPH | 13% * | SEE NOTE 7 |
| 1501-2500 | 60' | 22' | 6' | (EACH SIDE) | 40 MPH | | SEE NOTE 7 |

* 15% WITH COUNTY ENGINEER'S APPROVAL (NOT TO EXCEED 600 L.F.)

NO DESIGN EXCEPTION OR WAIVER WILL BE ALLOWED FOR ROADWAY WIDTH LESS THAN 20'

NOT TO SCALE

APPROVED BY:

JAMES W. WARE, P.E. NO. C61036
DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

BOARD OF SUPERVISOR'S RESOLUTION NO.

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



PRIVATE ROADS
RURAL REGIONS &
RURAL CENTERS

STD.
PLAN

RS-30

SHT 1 OF 2

NOTES:

1. THIS STANDARD PLAN (RS-30) REPLACES PRIOR STANDARD PLAN 101C. STANDARD PLAN RS-23 SHALL BE USED FOR ALL COUNTY MAINTAINED LOCAL ROADS IN RURAL REGIONS AND RURAL CENTERS. COUNTY MAINTAINED LOCAL ROADS WITHIN COMMUNITY REGIONS SHALL USE STANDARD PLAN RS-20 THROUGH 22, AS APPROPRIATE.
2. ADT DATA SHOWN IN THE TABLE ARE THE FORECASTED FOR 20-YEAR OUT DAILY VOLUMES.
3. ROADS ABOVE 3000 FT ELEVATION SHALL BE PAVED REGARDLESS OF ADT.
4. MAXIMUM ROAD GRADE IS 15%. ROADS STEEPER THAN 12% SHALL BE PAVED REGARDLESS OF ADT OR LOCATION.
5. DOUBLE-CHIP SEAL MAY BE SUBSTITUTED FOR 2" OF AB FOR ROADS WITH ADT BELOW 601.
6. WIDENING OF EXISTING ON-SITE ROADS SHALL COMPLY WITH STRUCTURAL SECTION REQUIRED AND MEET OR EXCEED THE SURFACING OF THE EXISTING ROAD.
7. STRUCTURAL SECTION SHALL BE BASED ON "R" VALUE AND "T.I." DESIGN TO BE SUBMITTED TO DOT FOR REVIEW AND APPROVAL. ALL ROADS SHALL BE CAPABLE OF SUPPORTING LEGAL WEIGHT VEHICLES AND EXEMPT VEHICLES PURSUANT TO SECTION 35550 et.seq. OF THE CALIFORNIA VEHICLE CODE.
8. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, 1/2"; AGGREGATE BASE (AB) SHALL BE CLASS 2, 3/4".
9. THE TOP 6" OF SUBGRADE AND ALL BASE AND SUB-BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
10. SUBGRADE ENHANCEMENT GEOTEXTILE SHOULD BE CONSIDERED FOR NATIVE SOIL R-VALUES LESS THAN 20.
11. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE AND WILL NOT BE SUSCEPTIBLE TO EROSION. SLOPES CONSTRUCTED FOUR HORIZONTAL TO ONE VERTICAL OR FLATTER DO NOT REQUIRE SLOPE EASEMENTS.
12. SLOPE & DRAINAGE EASEMENTS (S&DE) SHALL EXTEND 5' BEYOND HINGE POINTS, TOE OF SLOPES, AND DRAINAGE STRUCTURES.
13. SHOULDERS SHALL BE DRIVABLE SURFACES BUT DO NOT REQUIRE PAVING.
14. DEAD END ROADS IN EXCESS OF 500' SHALL HAVE A MINIMUM ROADWAY WIDTH OF 26', NOT INCLUDING THE SHOULDER WIDTH REQUIREMENT SHOWN IN THE TABLE, FOR THE ENTIRE LENGTH OF THE ROAD. THIS REQUIREMENT CANNOT BE MODIFIED BY DESIGN EXCEPTION OR WAIVER.
15. A FUELS REDUCTION ZONE, OF 20 FEET ON EITHER SIDE OF THE ROAD CENTERLINE, MUST BE CLEARED INCLUDING THE FOLLOWING:
 - ALL BRUSH REMOVED.
 - ALL TREES LIMBED UP TO 10 FEET.
 - WEEDS AND GRASS MOWED TO A 2 INCH STUBBLE.
 - 15 FOOT VERTICAL CLEARANCE CREATED DIRECTLY ABOVE THE HORIZONTALLY CLEARED AREA.
 - THIS REQUIREMENT CANNOT BE MODIFIED BY DESIGN EXCEPTION OR WAIVER.

APPROVED BY:

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DIRECTOR, EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION

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EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS



PRIVATE ROADS
RURAL REGIONS &
RURAL CENTERS

STD. PLAN
RS-30
SHT 2 OF 2