

*EL DORADO COUNTY*



*DEPT. OF TRANSPORTATION*

**VOLUME V**

**DESIGN STANDARD DETAILS**

**2411 HEADINGTON ROAD, PLACERVILLE, CA 95667 (916) 621-5900**

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## STATEMENT OF DISCLOSURE

THESE STANDARDS ARE IN CONFORMANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES. THE INTENT OF THESE STANDARDS IS TO ESTABLISH GUIDELINES FOR PUBLIC WORKS APPLICATIONS. IT IS UNDERSTOOD THAT THESE STANDARDS WILL NOT BE APPLICABLE TO EVERY SITUATION. THE COUNTY ENGINEER HAS THE AUTHORITY TO MAKE EXCEPTIONS TO THESE STANDARDS.

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



TABLE  
OF  
CONTENTS

# SYMBOLS

	CENTERLINE
	PROPERTY LINE
	FENCE LINE
	RIGHT OF WAY
	OVERHEAD ELECTRICAL
	UNDERGROUND ELECTRICAL
	SEWER LINE
	WATER LINE
	GAS LINE
	FLOWLINE
	GUARDRAIL
	AC DIKE
	EXISTING EMBANKMENT SLOPE
	NEW EMBANKMENT SLOPE
	EXISTING PIPE IN SECTION
	NEW PIPE IN SECTION

# DEFINITIONS

AB	- AGGREGATE BASE
A.C.	- ASPHALT CONCRETE
ADT	- AVERAGE DAILY TRAFFIC COUNT
ASTM	- AMERICAN SOCIETY FOR TESTING AND MATERIALS
BC	- BEGIN CURVE
C & G	- CURB AND GUTTER
CIP	- CAPPED IRON PIPE
☉	- CENTERLINE
CMP	- CORRUGATED METAL PIPE
C.O.S.	- CLEANOUT STRUCTURE
CSP	- CORRUGATED STEEL PIPE
EC	- END CURVE
EP	- EDGE OF PAVEMENT
FL	- FLOWLINE
FC	- FACE OF CURB
F.E.S.	- FLARED END SECTION
I.D.	- INSIDE DIAMETER
O.C.	- ON CENTER
O.D.	- OUTSIDE DIAMETER
P.C.C.	- PORTLAND CEMENT CONCRETE
PL	- PROPERTY LINE
PVC	- POLY-VINYL-CHLORIDE
RCP	- REINFORCED CONCRETE PIPE
R/W	- RIGHT OF WAY
SB	- SUBBASE
SG	- SUBGRADE
TBC	- TOP BACK OF CURB

# GENERAL NOTES

- ALL A.C. TO BE 1/2" MAXIMUM, MEDIUM TYPE B WITH AR 4000 FOR A.C. SECTIONS OF 2 1/2". FOR GRADES EXCEEDING 7% OR ELEVATIONS OVER 3000', 3/4" MIX REQUIRED. FOR A.C. SECTIONS OF 3", 2" WILL BE 3/4" MAXIMUM, MEDIUM TYPE B (LOWER LIFT) AND 1" OF 1/2" ON TOP.
- INTERSECTION SIGHT DISTANCE SHALL MEET AASHTO STANDARDS.
- FIVE SACK CEMENT CONCRETE FOR DRIVEWAYS, SIDEWALKS, AND SIX FOR DRAINAGE STRUCTURES.
- CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS A CIVIL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE, WILL NOT BE SUSCEPTABLE TO EROSION, AND WILL NOT CAUSE ADDITIONAL MAINTENANCE.
- TWENTY FEET MINIMUM ROADWAY WIDTH REQUIRED FOR CDF AND FIRE PROTECTION VEHICLE ACCESS. (STANDARD RIG SIZE = 96" WIDE, PLUS 10" FOR EACH SIDE MIRROR AND 13'-6" HIGH CLEARANCE.)
- A STORM DRAIN MANHOLE OR CLEANOUT WILL BE PLACED EVERY 300' OR AT ANY JUNCTION. THESE STORM DRAIN MANHOLES/C.O.S. WILL BE INSTALLED WITH 24" OPENINGS FOR 3' DEEP, 36" FOR UP TO 5', AND 48" OVER 5' DEEP. NUMBER 4 REBAR REQUIRED 12" O.C. ON ALL D.I.'s OVER 5' IN DEPTH, AND ON STORM DRAIN MANHOLES OVER 8' IN DEPTH.
- GRADES MAY REACH 15% FOR NO MORE THAN 600'. IN ELEVATIONS ABOVE 3000'. GRADES SHALL NOT EXCEED 10% (15% IF SURFACED)

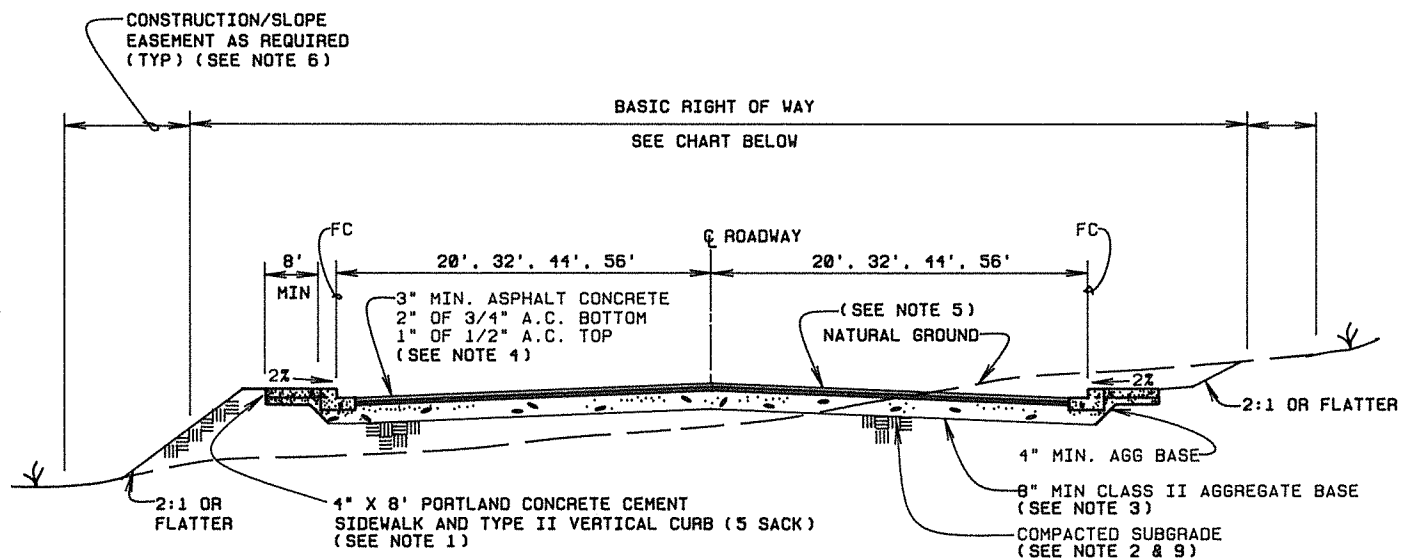
**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



GENERAL  
 LEGEND  
 & NOTES

**NOTES:**

1. TYPE 2 CURB AND GUTTER AS SHOWN ON STANDARD PLAN 104, 8' MINIMUM SIDEWALKS ARE REQUIRED ON INDUSTRIAL AND COMMERCIAL STREETS.
2. TOP 6" OF SOIL BELOW SUBGRADE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION (C.T.M. 231F OR ASTM 1557).
3. CLASS 2 AGGREGATE BASE, COMPACTED TO 95% RELATIVE COMPACTION (C.T.M. 231F OR ASTM 1557) INCLUDING SIDEWALKS AND CURB & GUTTERS, ALL AGGREGATE BASE WILL MEET CALTRANS REQUIREMENTS FOR GRADATIONS AND S.E.
4. OVER ALL AGGREGATE BASE, ASPHALT CONCRETE SHALL BE TYPE B PER CALTRANS STANDARD SPECIFICATION 39, 1" OF 1/2" MAX. MED. OVER 2" OF 3/4" A.C. ASPHALT GRADE AR-4000. FOR GRADES EXCEEDING 7%, OR ELEVATIONS OVER 3000 FT., A.C. SECTION WILL BE ONLY 3/4" MAX. MED. TYPE B. TACK COAT TO BE USED BETWEEN A.C. LIFTS.
5. FOG SEAL SS-1 OVER ALL A.C.. PRIME COAT WILL BE SC70.
6. WHEN THE GRADING FOR CUT AND FILL SLOPES EXTENDS OUTSIDE OF THE BASIC RIGHT OF WAY WIDTH, A SLOPE EASEMENT WILL BE PROVIDED 2' BEYOND ALL TOE OF FILLS, HINGE OF CUTS, OR DRAINAGE STRUCTURES.
7. ADT'S SHALL BE THOSE SHOWN IN THE THE LAND CAPABILITY REPORT UNLESS DETERMINED OTHERWISE BY THE COUNTY ENGINEER.
8. BELOW THE 3000 FT. ELEVATION, ROLLED CURB TYPE 1 ONLY REQUIRED FOR SNOW REMOVAL.
9. IN EXISTING CUT SECTIONS, THE TOP 6" OF SUBGRADE WILL BE SCARIFIED AND RECOMPACTED TO 95% RELATIVE COMPACTION.



R/W	ROADWAY WIDTH	ADT	DESIGN SPEED	MAX. GRADE
60'	40'	LESS THAN 5000	40	12% *
80'	64'	5001 TO 36,000	40	10%
110'	88'	36,001 TO 60,900	40	10%
130'	112'	60,901 TO 85,500	40	10%

\* WITH COUNTY ENGINEER'S APPROVAL

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 04/03/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Shawn K. Lipe</i>
DRAWN: JM/SR/BS		C33427
CHECKED: SKP		P.E. NO.
APPROVED:		SENIOR CIVIL ENGINEER

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

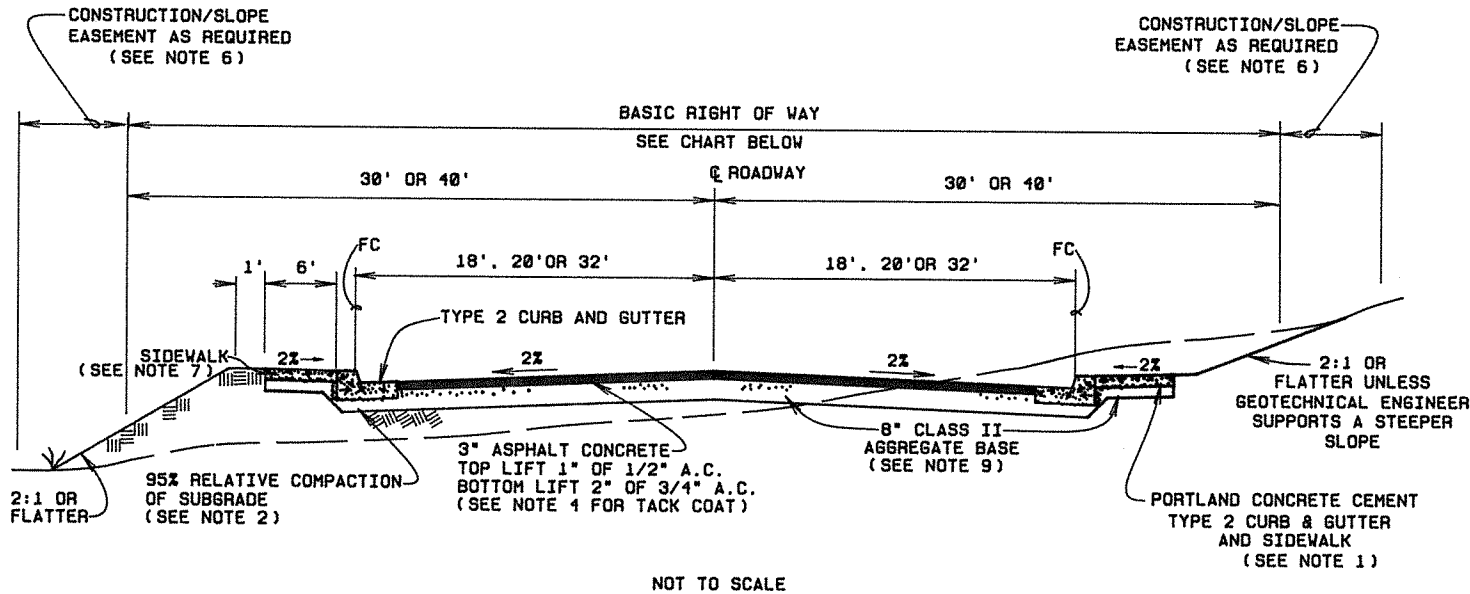


**COMMERCIAL AND INDUSTRIAL ROADWAYS**

**STD. PLAN 101A**

**NOTES:**

1. IN EXISTING CUT SECTIONS, SCARIFY AND RECOMPACT SUBGRADE TO 95% REL. COMPACTION. KEY IN SLOPES OVER 10:1.
2. TOP 6" OF NATIVE SUBGRADE SHALL BE COMPACTED TO 95% (C.T.M. 231F OR A.S.T.M. 1557)
3. CLASS 2 AGGREGATE BASE COMPACTED TO 95%. PER CALTRANS STANDARD SPECIFICATIONS SECTION 26. (C.T.M. 231F OR A.S.T.M. 1557) INCLUDING THE 4" UNDER CURB & GUTTER, AND SIDEWALKS.
4. OVER ALL AGGREGATE BASE, ASPHALT CONCRETE SHALL BE TYPE B PER CALTRANS STANDARD SPECIFICATION 39. AGGREGATE 1/2" MAX. MEDIUM TYPE B. ASPHALT GRADE AR-1000. FOR GRADES EXCEEDING 7%, AND ELEVATIONS OVER 3000 FT., A.C. TO BE ONLY 3/4" MAX. MEDIUM. TACK COAT TO BE USED BETWEEN A.C. LIFTS.
5. FOG SEAL SS-1 OVERALL A.C. PRIME COAT TO BE SC70.
6. WHEN THE GRADING FOR CUT AND FILL SLOPES EXTENDS OUTSIDE OF THE BASIC RIGHT OF WAY WIDTH, SLOPE EASEMENT WILL EXTEND 2' BEYOND HINGES, TOES AND DRAINAGE STRUCTURES.
7. ADJACENT TO SCHOOLS, SIDEWALKS SHALL BE 8 FEET WIDE, AND EXTEND BETWEEN SCHOOL PROPERTY LINES.
8. ADT'S SHALL BE THOSE SHOWN IN THE LAND CAPABILITY REPORT UNLESS DETERMINED TO BE OTHERWISE BY THE COUNTY ENGINEER.
9. PAVEMENT, BASE, AND SUBGRADE COMPACTION THICKNESS MAY BE CHANGED IF DESIGNED BY A REGISTERED CIVIL OR GEOTECHNICAL ENGINEER. R-VALUE TEST RESULTS MUST BE SUBMITTED. \*
10. UPON SPECIAL APPROVAL CURB, GUTTER AND SIDEWALK MAY BE CHANGED TO A.C. DIKE AND OVERSIDE DRAINS WHEN CONNECTING ONTO EXISTING A.C. FACILITIES.



R/W	ROADWAY WIDTH (CURB FACE TO CURB FACE)	ADT	DESIGN SPEED	MAX. GRADE
50'	28' **	0-350 *	25 *	15% *
50'	36' **	351-2000	25	15% *
60'	40'	2001-5000	35	12%
80'	64'	5001-18000	40	10%

\* WITH COUNTY ENGINEER'S APPROVAL  
 \*\* TYPE I ROLLED CURB AND GUTTER

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chudde</i>
DATE: 04/05/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Stan K. Kipe</i>
DRAWN: JM/SR/BS		C33A27
CHECKED: SKP		SENIOR CIVIL ENGINEER
APPROVED:		P.E. NO.

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

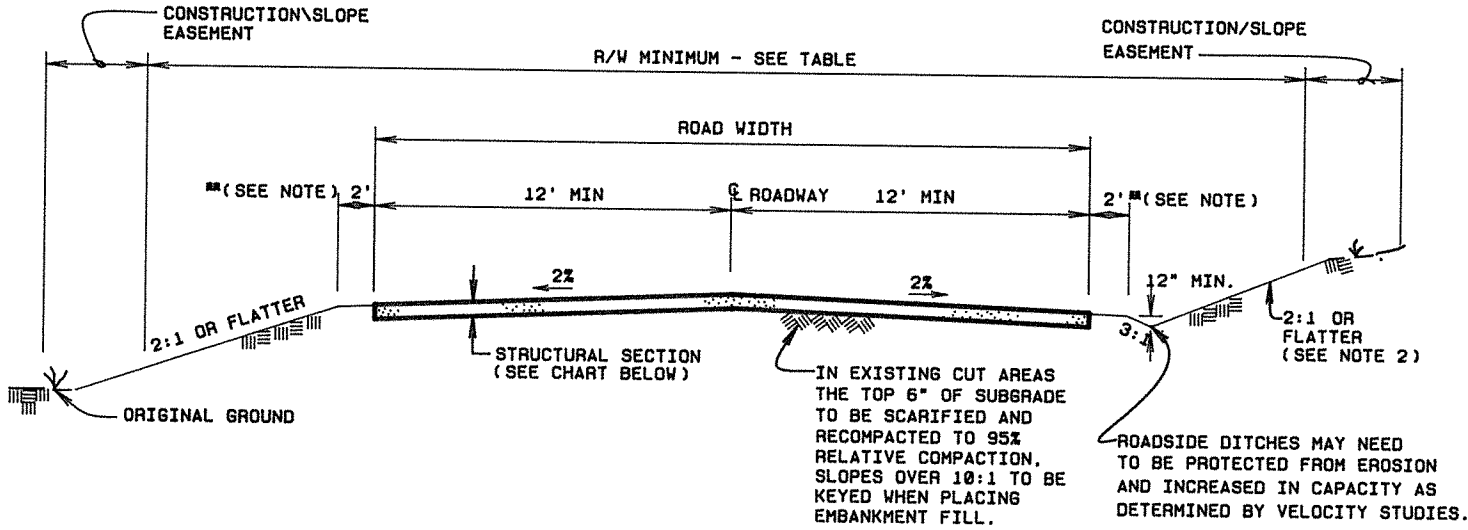


**CLASS I**  
**SUBDIVISION**  
**and PARCEL MAP**  
 (LESS THAN 2 ACRES  
 IN URBAN AREA)  
**ROADWAYS**

**STD.**  
**PLAN**  
**101B**

**NOTES:**

1. EMBANKMENT SHALL BE COMPACTED TO 90% (C.T.M. 231F OR A.S.T.M. 1556). THE TOP 6" OF NATIVE SUBGRADE WILL BE COMPACTED TO 95%. AS WELL AS CLASS II AGGREGATE BASE & SUBBASE.
2. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL UNLESS A CIVIL ENGINEER OR GEOTECHNICAL ENGINEER DETERMINES THAT A STEEPER SLOPE WILL BE SAFE FOR THE INTENDED USE, WILL NOT BE SUSCEPTABLE TO EROSION, AND WILL NOT CAUSE ADDITIONAL MAINTENANCE.
3. GRAVEL SURFACE BELOW 3000' SHALL BE COMPACTED AGGREGATE SUBBASE. WHERE GRADES EXCEED 15%, AND ON GRADES GRADES OVER 3,000 FT. ELEVATION A CHIP SEAL WILL BE APPLIED OVER 6" OF AB. SEE NOTE 5 FOR CHIP SEALS AND NOTE 8 FOR A.C. INFORMATION.
4. CHIP SEAL SURFACE IS MC800 SEAL PLACED ON COMPACTED AGGREGATE BASE WITH A DOUBLE APPLICATION OF 3/8" BY #6 CHIPS. WITH A TOP COURSE OF 1/4" BY #10 CHIPS.
5. WHERE ROAD WIDTHS ARE 40' OR GREATER, THE OUTSIDE 4' ON EACH SIDE NEED NOT BE A.C. SURFACED. BUT FINISHED GRADE OF 4' A.B. SHOULDERS SHALL CONTINUE AT 2% WITH FINISHED A.C. GRADE. DRAINAGE WILL BE CONTROLLED SO AS TO NOT ERODE SLOPES.
6. ADT'S SHALL BE THOSE SHOWN IN THE LAND CAPABILITY REPORT UNLESS DETERMINED BY THE COUNTY ENGINEER.
7. OVER ALL CLASS II AGGREGATE BASE, ASPHALT CONCRETE SHALL BE TYPE B PER CALTRANS SPECIFICATION 39. FOR GRADES EXCEEDING 7% AND ELEVATIONS OVER 3,000 FT., 3/4" MAX. MED. TYPE B TO BE USED. THE A.C. SECTION WILL BE 2" OVER 6" OF AB. TACK COAT TO BE USED BETWEEN A.C. LIFTS.



R/W	ROAD WIDTH	MAXIMUM ADT	STRUCTURAL SECTION		DESIGN SPEED	MAX. GRADE
			AGGREGATE	SURFACE		
50'	24'	LESS THAN 3,000	6" SB	GRAVEL	20	12% *
50'	24'	3001 TO 5,000	6" AB	CHIP SEAL	25	12% *
60'	40'	5001 TO 7,000	6" AB	2.5" A.C.	30	12%
60'	40'	GREATER THAN 7,000	8" AB	3" A.C.	35	12%

\* OR HIGHER WITH COUNTY ENGINEERS APPROVAL (NOT TO EXCEED 18%)  
 \*\* TWO FT. SHOULDER REQUIRED IN 50' R/W FOUR FT. REQUIRED IN 60' R/W.

NOT TO SCALE

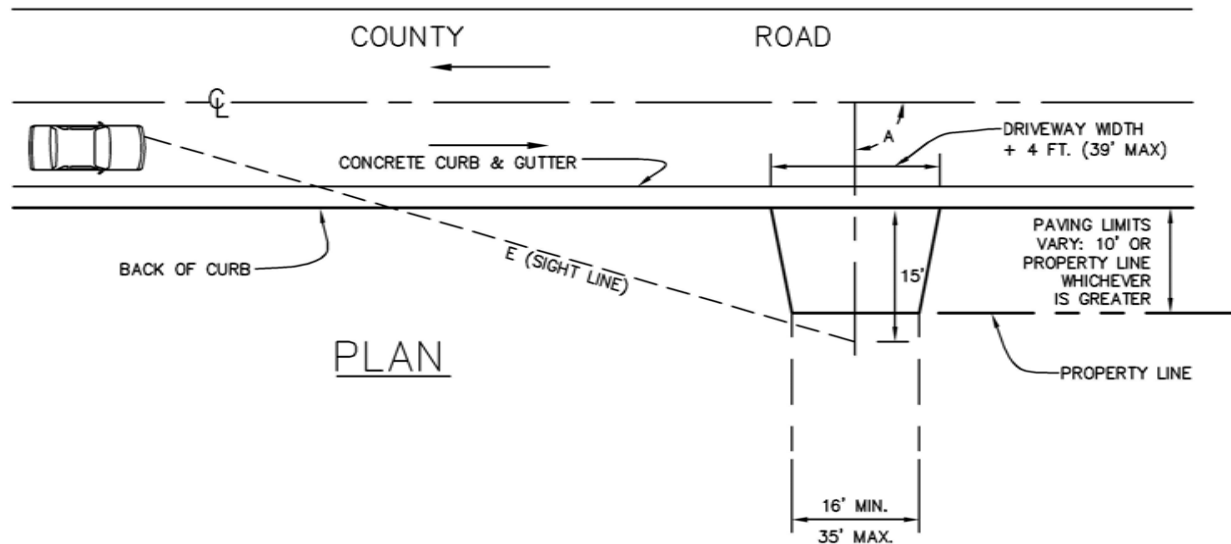
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chubb</i>
DATE: 04/03/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Alan K. Klype</i>
DRAWN: JM/SR/BS		C33427
CHECKED: SKP		P.E. NO.
APPROVED:		

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

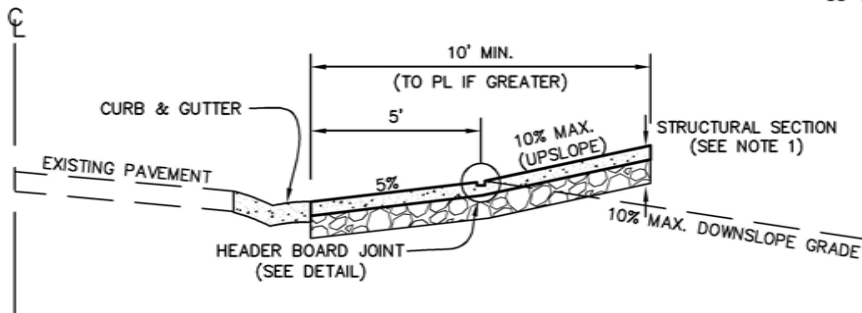


**RURAL**  
**SUBDIVISION**  
**& PARCEL MAP**  
**ROADWAYS**

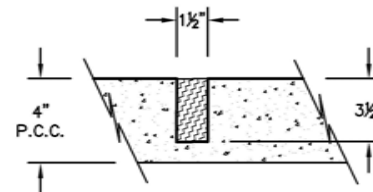
**STD.**  
**PLAN**  
**101C**



PLAN



PROFILE



HEADER BOARD JOINT DETAIL

NOTES:

E = 200' MINIMUM SIGHT DISTANCE FOR LOCAL ST., 100' FOR A CUL-DE-SAC.

A = ANGLE OF DRIVEWAY CENTERLINE IN RELATION TO ROAD CENTERLINE, THE ANGLE WILL BE BETWEEN 70°-90°

1. THE DRIVEWAY STRUCTURAL SECTION IS 4" OF PORTLAND CEMENT CONCRETE OR 2 1/2" ASPHALT CONCRETE OVER 4" OF AGGREGATE BASE.
2. THOSE DRIVEWAYS EXCEEDING 20%, EITHER UP OR DOWN IN GRADE, WILL REQUIRE A GRADING PERMIT.
3. NO PORTION OF A DRIVEWAY WILL BE WITHIN 25' FROM A RADIUS RETURN, NOR 10' FROM A FIRE HYDRANT.

NOT TO SCALE

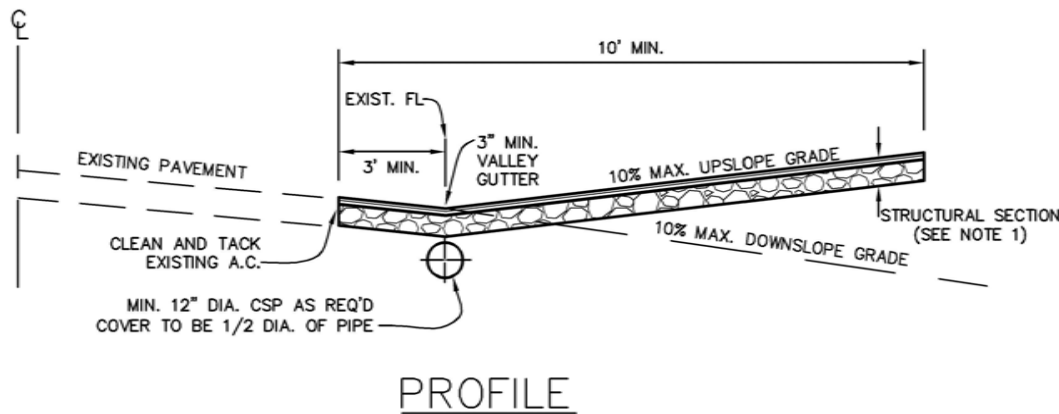
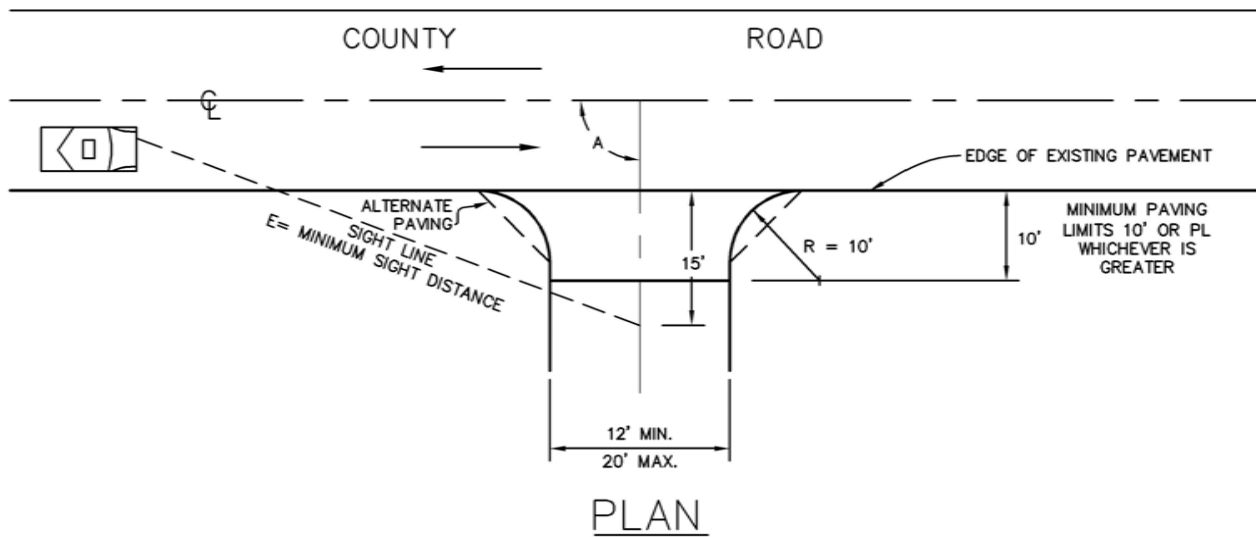
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 03/16/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



**DRIVEWAY CONNECTION**  
SINGLE UNIT RESIDENCE  
CLASS I SUBDIVISION  
WITH ROLLED CONCRETE CURB  
AND GUTTER

**STD. PLAN**  
**103A-1**




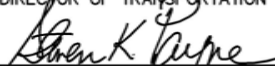
**NOTES:**

E = 200' MINIMUM SIGHT DISTANCE FOR LOCAL ST., 100' FOR A CUL-DE-SAC.

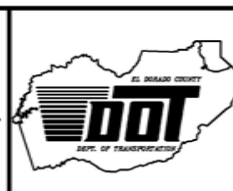
A = ANGLE OF DRIVEWAY CENTERLINE IN RELATION TO ROAD CENTERLINE, THE ANGLE WILL BE BETWEEN 70°-90°

1. THE DRIVEWAY STRUCTURAL SECTION IS 2 1/2" ASPHALT CONCRETE OVER 4" OF AGGREGATE BASE.
2. THOSE DRIVEWAYS EXCEEDING 20%, EITHER UP OR DOWN IN GRADE, WILL REQUIRE A GRADING PERMIT.
3. NO PORTION OF A DRIVEWAY WILL BE WITHIN 25' FROM A RADIUS RETURN, NOR 10' FROM A FIRE HYDRANT.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		 DIRECTOR OF TRANSPORTATION
DATE: 03/16/90		
DESIGNED:		
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		 C33427 SENIOR CIVIL ENGINEER P.E. NO.

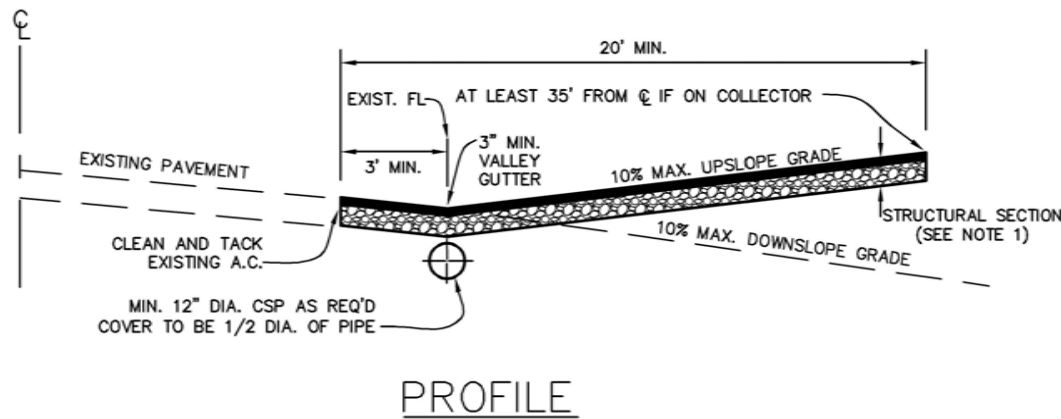
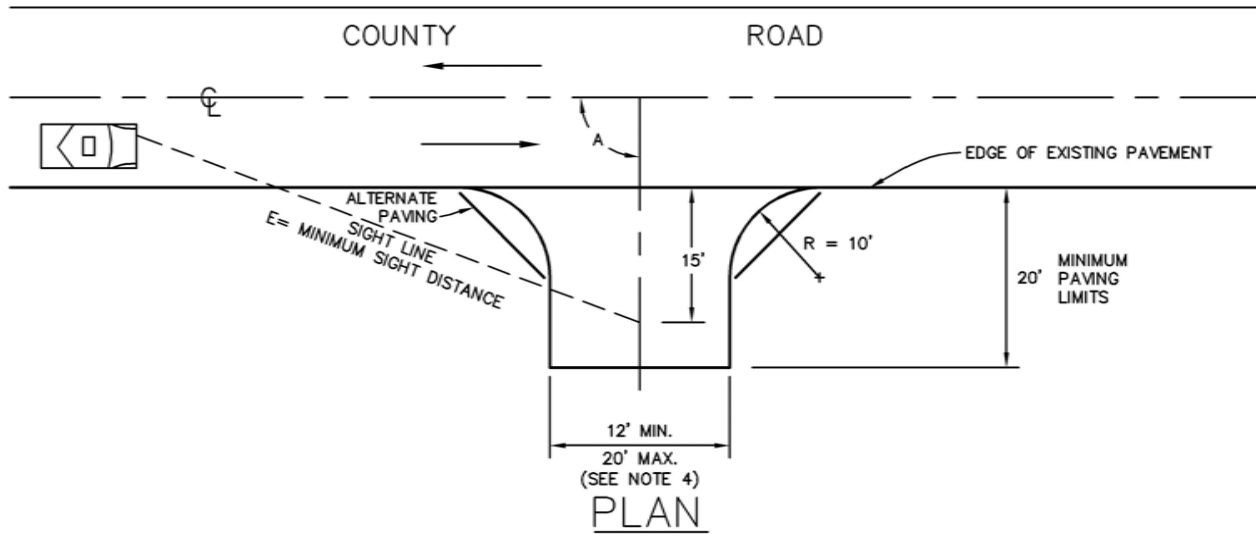
**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



**DRIVEWAY CONNECTION**  
 SINGLE UNIT RESIDENCE  
 CLASS I SUBDIVISION  
 WITHOUT CURB & GUTTER  
 OR A.C. DIKE

**STD. PLAN**  
**103A-2**





**NOTES:**

COUNTY ROAD SPEED

	25	30	35	40	45	50	55
A	70' - 110'						
E	250	300	350	400	450	500	550

E = 200' MINIMUM SIGHT DISTANCE FOR LOCAL ST., 100' FOR A CUL-DE-SAC.

A = ANGLE OF DRIVEWAY CENTERLINE IN RELATION TO ROAD CENTERLINE, THE ANGLE WILL BE BETWEEN 70°-100°

1. DRIVEWAY STRUCTURAL SECTION IS 2 1/2" ASPHALT CONCRETE AND 4" OF AGGREGATE BASE.

2. THOSE DRIVEWAYS EXCEEDING 20%, EITHER UP OR DOWN IN GRADE, WILL REQUIRE A GRADING PERMIT.

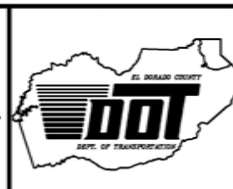
3. NO PORTION OF A DRIVEWAY WILL BE WITHIN 25' FROM A RADIUS RETURN, NOR 10' FROM A FIRE HYDRANT.

4. MINOR COLLECTORS WILL REQUIRE MAXIMUM WIDTH DIMENSION ON DRIVEWAY.

NOT TO SCALE

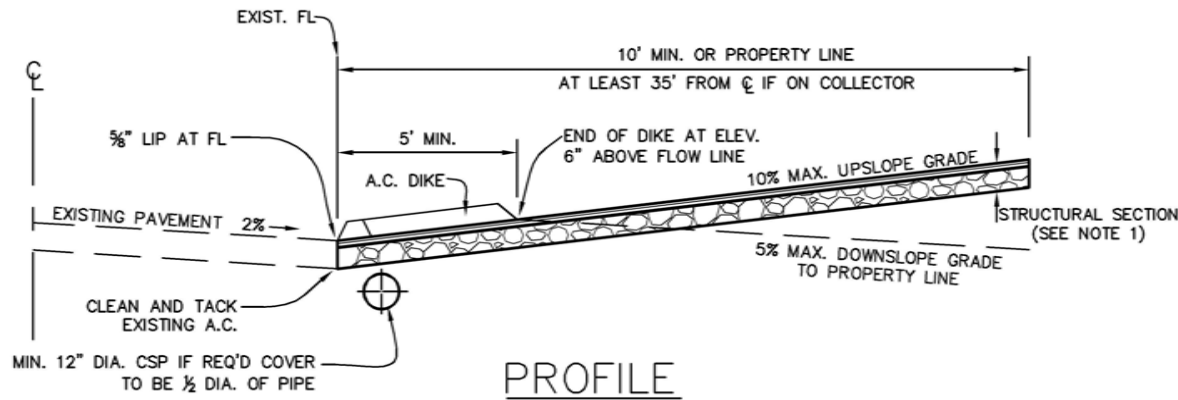
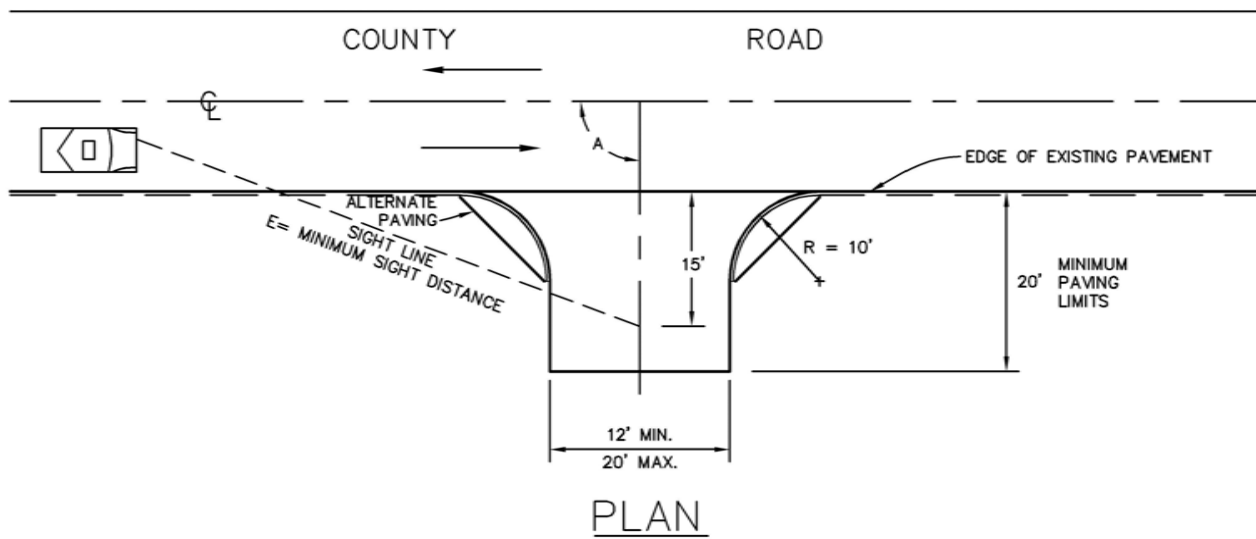
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 03/16/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



DRIVEWAY CONNECTION  
SINGLE UNIT RESIDENCE  
TO LOCAL ROAD OR  
MINOR COLLECTOR

**STD. PLAN**  
**103B-1**



**NOTES:**

COUNTY ROAD SPEED

	25	30	35	40	45	50	55
A	70' - 110'						
E	250	300	350	400	450	500	550

E = 200' MINIMUM SIGHT DISTANCE FOR LOCAL ST., 100' FOR A CUL-DE-SAC.

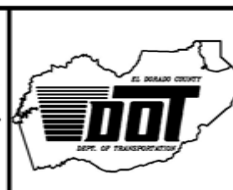
A = ANGLE OF DRIVEWAY CENTERLINE IN RELATION TO ROAD CENTERLINE, THE ANGLE WILL BE BETWEEN 70°-110°

1. DRIVEWAY STRUCTURAL SECTION IS 2 1/2" ASPHALT CONCRETE AND 4" OF AGGREGATE BASE.
2. THOSE DRIVEWAYS EXCEEDING 20%, EITHER UP OR DOWN IN GRADE, WILL REQUIRE A GRADING PERMIT.
3. NO PORTION OF A DRIVEWAY WILL BE WITHIN 25' FROM A RADIUS RETURN, NOR 10' FROM A FIRE HYDRANT.

NOT TO SCALE

<b>GENERATED</b>	<b>REVISIONS</b>	<b>APPROVED:</b>
NO.		<i>Scott Chadd</i>
DATE: 03/16/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Shawn K. Rupp</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



**DRIVEWAY CONNECTION**  
 SINGLE UNIT RESIDENCE  
 CLASS 1 SUBDIVISION  
 ONLY WHERE AC DIKE EXISTS

**STD. PLAN**  
**103B-2**

**DRIVEWAY CLASSIFICATIONS**

**MINOR COMMERCIAL/INDUSTRIAL**

A	90°
E	10 TIMES THE OPERATIONAL SPEED OF TRAFFIC
G1	3" DOWN FROM E.P.
G2	5% MAXIMUM
W	35 FEET
X1	20 FT. (25' COLLECTOR)
X2	35 FT. (50' COLLECTOR)

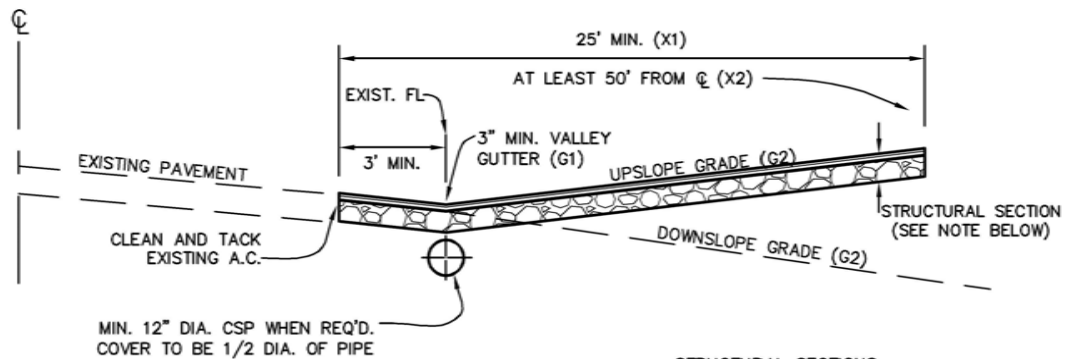
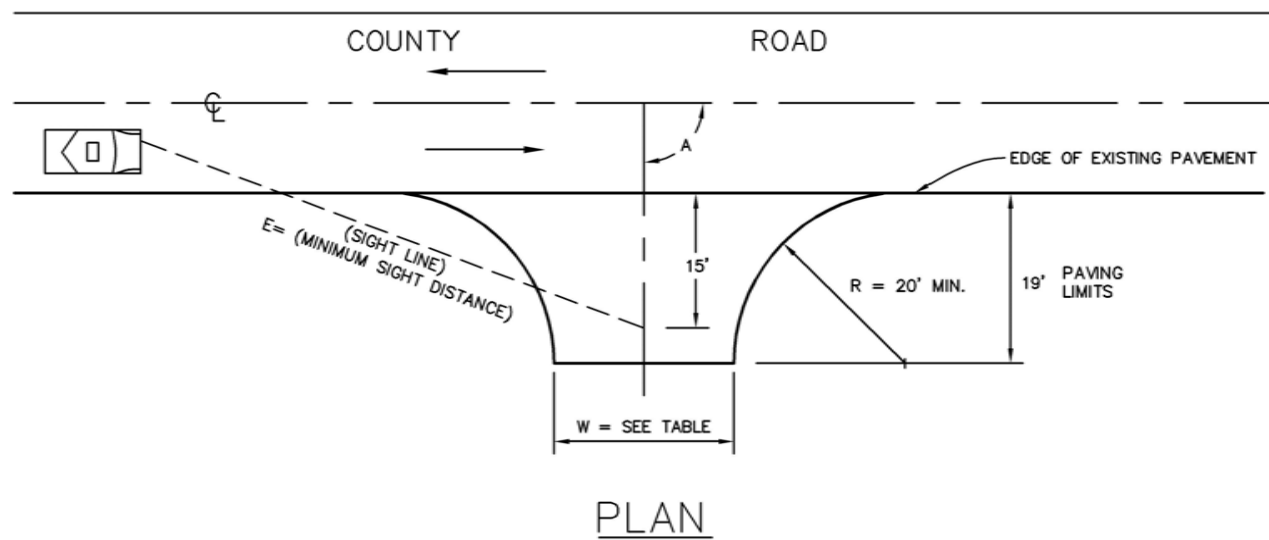
**MULTI-UNIT RESIDENTIAL LOCAL RD.**

A	90°
E	10 TIMES THE OPERATIONAL SPEED ON THE HIGHWAY
G1	3" DOWN FROM E.P.
G2	5% MAXIMUM
W	24 FEET
X1	20 FT. (25' COLLECTOR)
X2	35 FT. (50' COLLECTOR)

**SINGLE UNIT RESIDENTIAL (ARTERIALS AND MAJOR COLLECTORS)**

A	90°
E	300 FT. MINIMUM
G1	3" DOWN FROM E.P.
G2	5% MAXIMUM
W	24 FEET
X1	20 FT. (25' COLLECTOR)
X2	35 FT. (50' COLLECTOR)

NOT TO SCALE


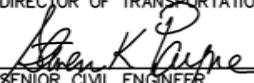


**PROFILE**

**STRUCTURAL SECTIONS**

- 2 1/2" ASPHALT CONCRETE PER CALTRANS SPEC. SEC. 39
- 4" CLASS II AGGREGATE BASE PER CALTRANS SPEC. SEC. 78

GENERATED	REVISIONS	APPROVED:
NO.		
DATE: 04/03/90		
DESIGNED: TMA		
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

  
 DIRECTOR OF TRANSPORTATION  
  
 SENIOR CIVIL ENGINEER  
 C33427  
 P.E. NO.

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



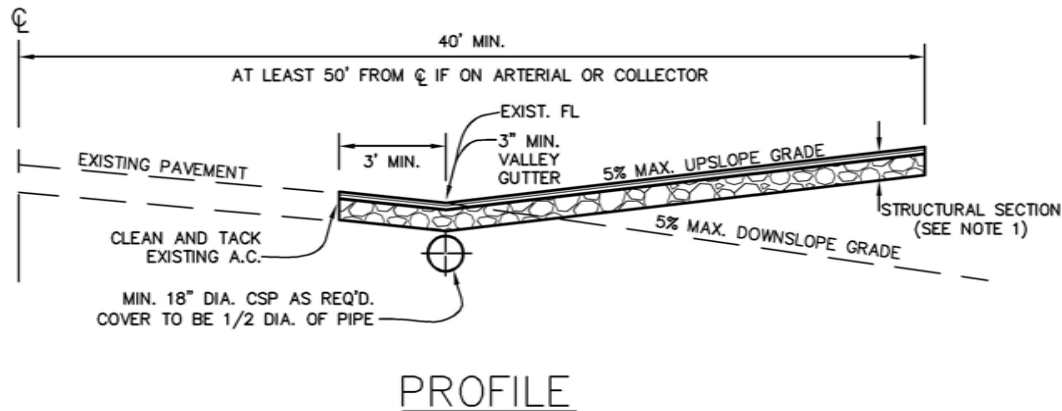
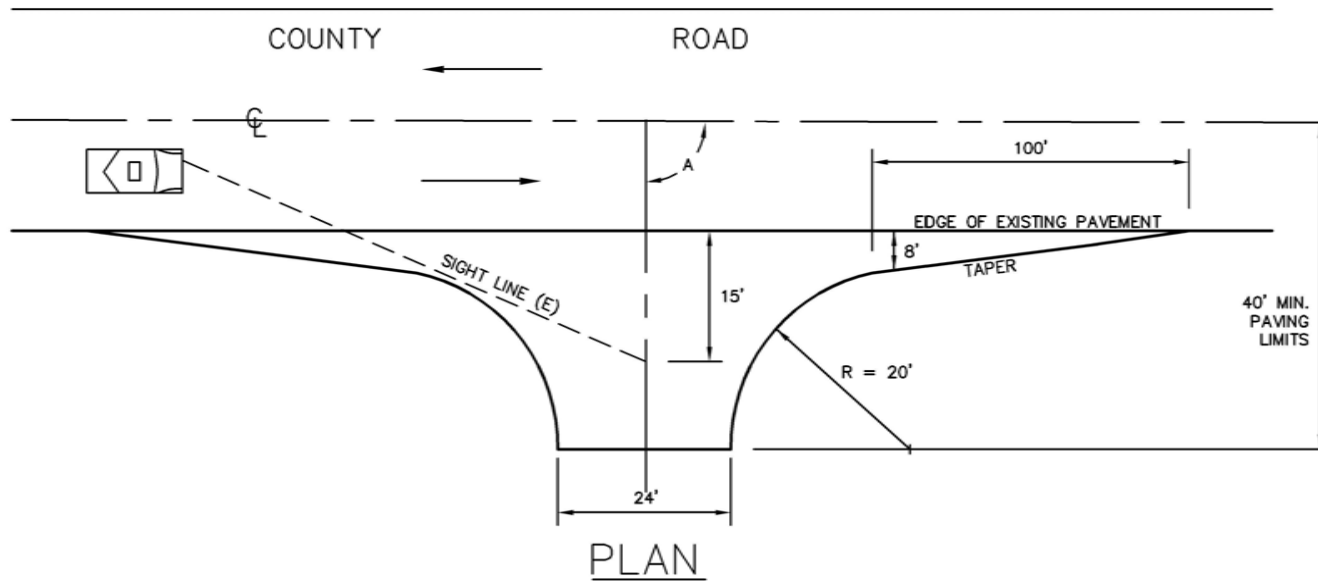
**DRIVEWAY CONNECTIONS**  
 MINOR COMMERCIAL/INDUSTRIAL  
 (WITHOUT CONCRETE CURB AND GUTTER)  
 MULTI-UNIT RESIDENTIAL  
 SINGLE UNIT RESIDENTIAL  
 (ARTERIALS & MAJOR COLLECTOR)

**STD. PLAN**  
**103C**

NOTES:

ENCROACHMENT CLASSIFICATION				
	I.	II.	III.	IV.
A	70' - 110'			
E	10 TIMES THE OPERATIONAL SPEED OF TRAFFIC			
W	24' MAX.			

1. THE STRUCTURAL SECTION IS 2 1/2" OF ASPHALT CONCRETE PER CALTRANS SPEC. SECTION 39, OVER 6" OF CLASS II AGGREGATE BASE PER CALTRANS SPECS.
2. ADDITIONAL DRAINAGE STRUCTURES NEEDED IF HYDRAULIC STUDIES WARRANT.



NOT TO SCALE

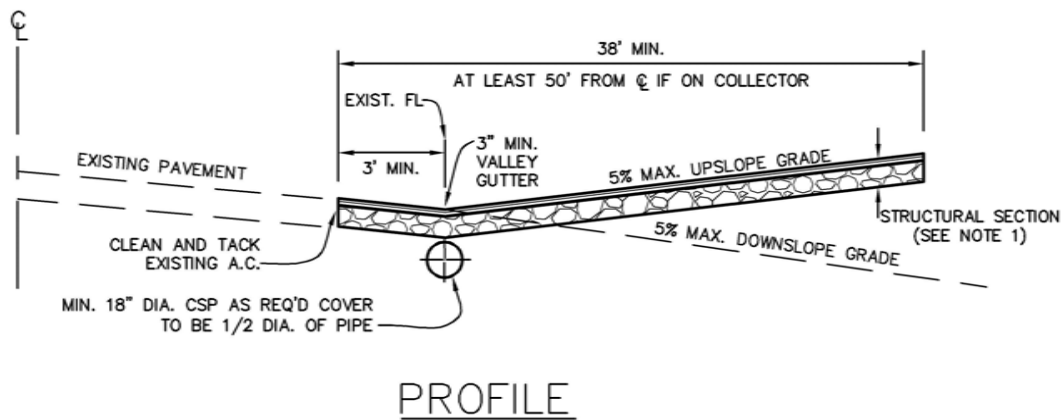
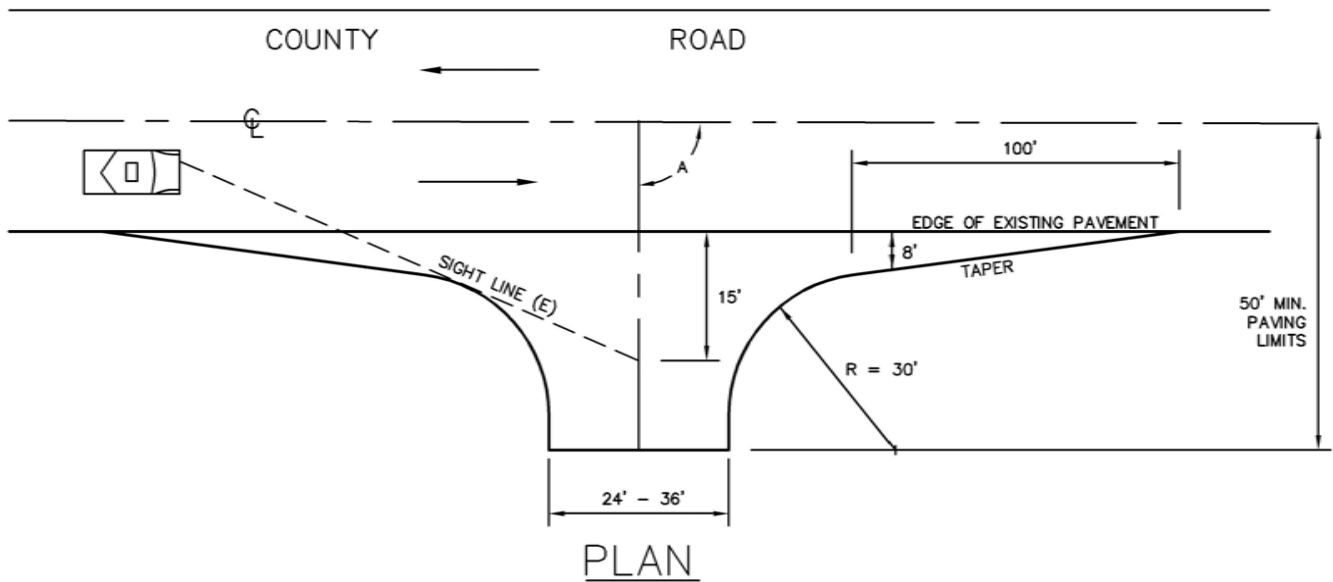
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 04/05/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



- I. LOCAL ACCESS ROAD TO COLLECTOR/ARTERIAL
- II. MAJOR COMMERCIAL CONNECT. (WITHOUT C & G) TO MAJ. COLL.
- III. MINOR COMMERCIAL TO MAJOR COLLECTOR
- IV. MULTI-UNIT RESIDENTIAL TO MAJOR COLLECTOR

**STD. PLAN**  
**103D**



NOTES:

A	70' - 110'
E	10 TIMES THE OPERATIONAL SPEED OF TRAFFIC

1. THE STRUCTURAL SECTION IS 2 1/2" OF ASPHALT CONCRETE PER CALTRANS SPEC. SECTION 39. OVER 6" OF CLASS II AGGREGATE BASE PER CALTRANS SPECS.
2. ADDITIONAL DRAINAGE STRUCTURES NEEDED IF HYDRAULIC STUDIES WARRANT.

NOT TO SCALE

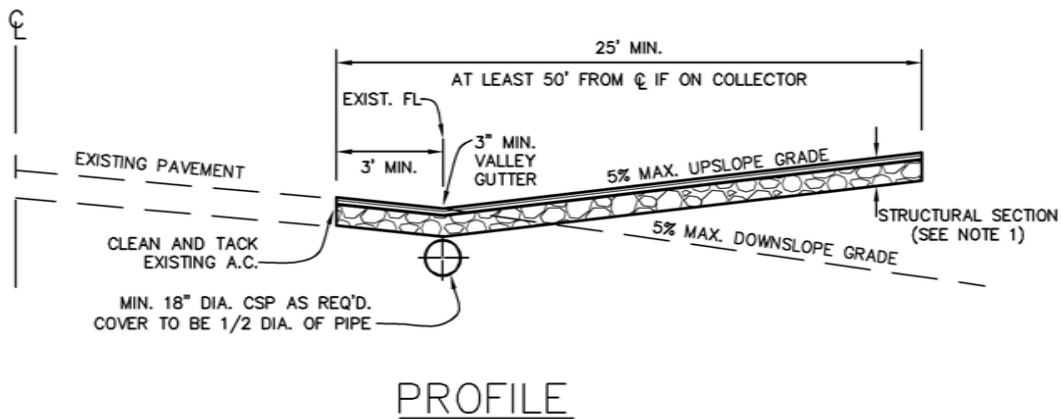
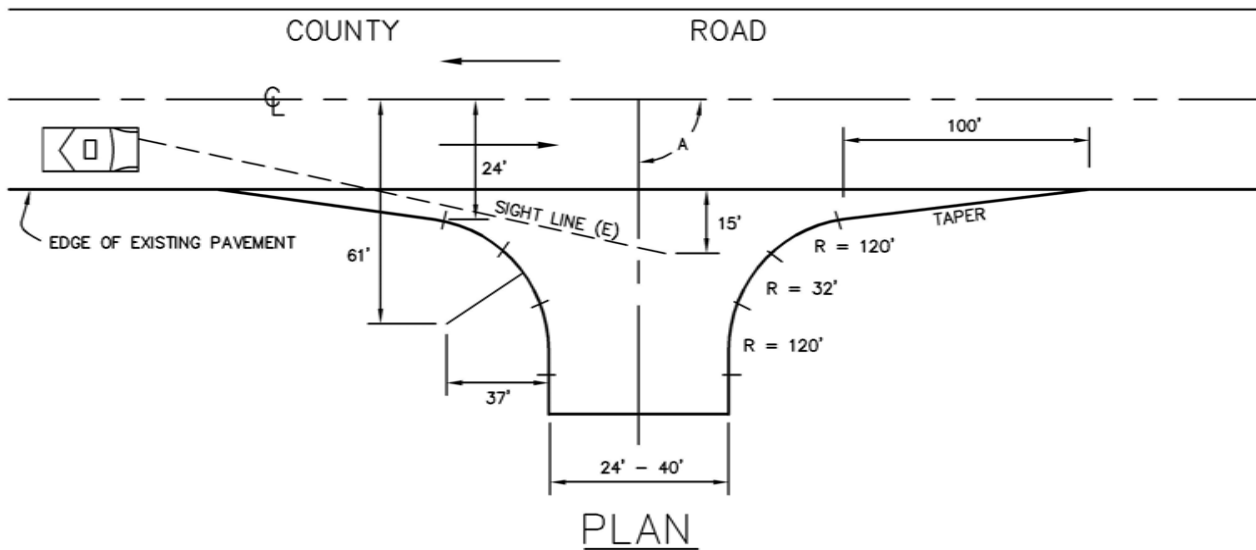
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 03/17/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Shen K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



MINOR COLLECTOR  
 TO  
 COLLECTOR/ARTERIAL

**STD. PLAN**  
**103E**



NOTES:

A	70' - 110'
E	10 TIMES THE OPERATIONAL SPEED OF TRAFFIC

1. THE STRUCTURAL SECTION IS 2 1/2" OF ASPHALT CONCRETE PER CALTRANS SPEC. SECTION 39. OVER 6" OF CLASS II AGGREGATE BASE PER CALTRANS SPECS.
2. ADDITIONAL DRAINAGE STRUCTURES NEEDED IF HYDRAULIC STUDIES WARRANT.

NOT TO SCALE

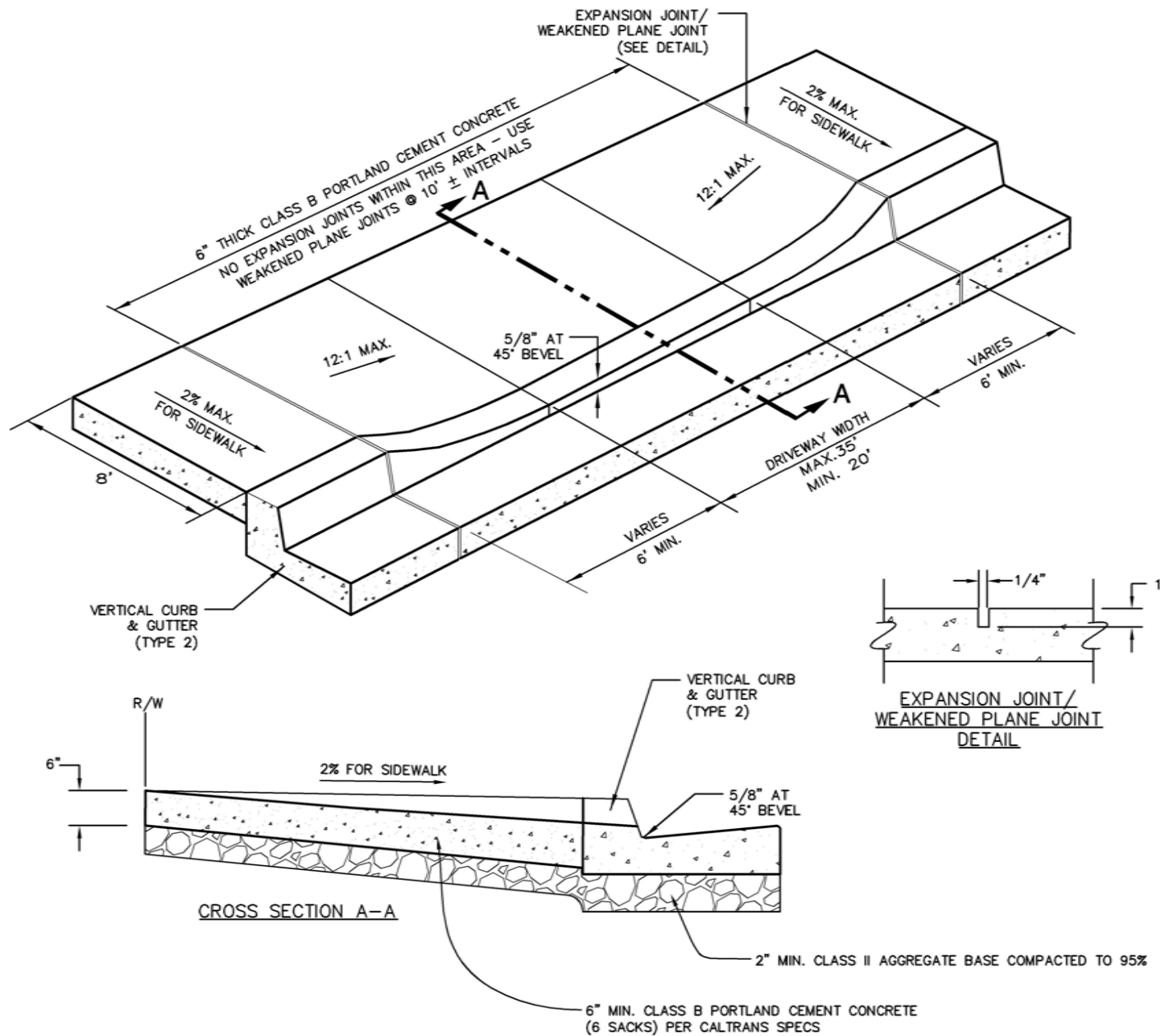
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 03/17/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



MAJOR COLLECTOR  
TO  
COLLECTOR/ARTERIAL

**STD. PLAN**  
**103F**



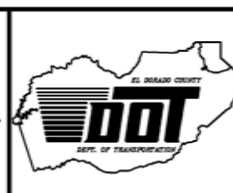
**NOTES:**

1. WHERE A COMMERCIAL DRIVE IS TO BE PLACED IN EXISTING ROLLED CURB, TWO FEET OF STANDARD (TYPE 2) CURB AND GUTTER WITH 6 FOOT TRANSITIONS SHALL BE PLACED ON BOTH SIDES OF THE DRIVEWAY.
2. NO VERTICAL CURB AND GUTTER ABOVE 3000 FT. ELEVATION.
3. 2500 P.S.I. (POUNDS PER SQUARE INCH) STRENGTH REQUIRED ON CONCRETE AT 28 DAYS.
4. MINIMUM SIGHT DISTANCE ALLOWABLE IS 200' OR 10% OF THE COUNTY ROAD SPEED.

NOT TO SCALE

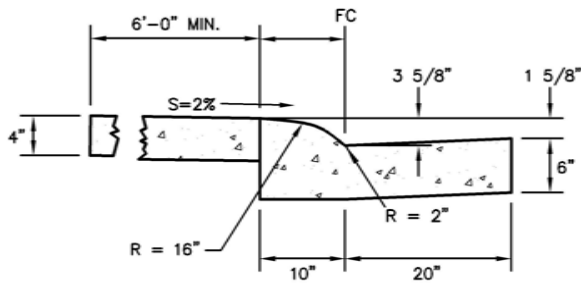
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 03/14/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Shen K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

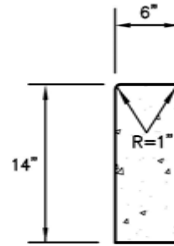


COMMERCIAL DRIVEWAY  
FOR VERTICAL  
CURB LOCATIONS

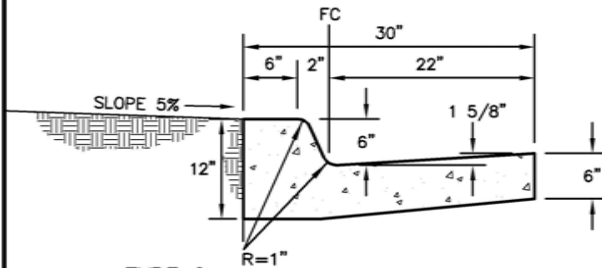
**STD.  
PLAN**  
**103G**



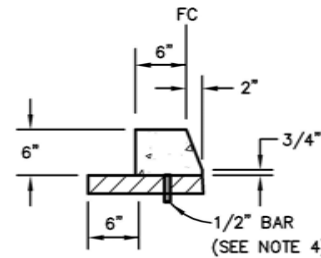
**TYPE 1**  
ROLLED CURB AND GUTTER  
(SEE NOTE 1, 2 & 3)



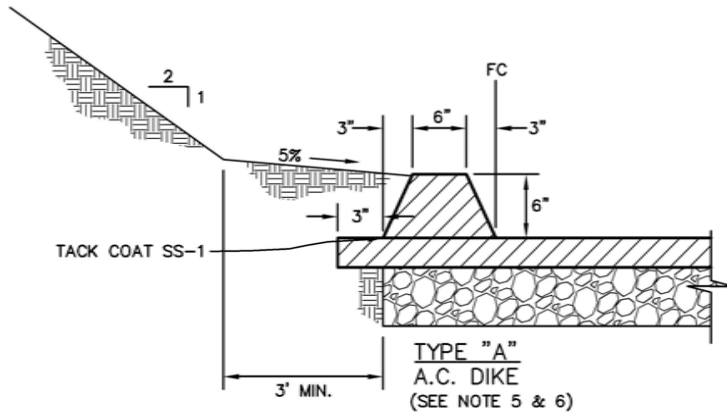
**TYPE 3**  
BARRIER CURB  
(SEE NOTE 4)



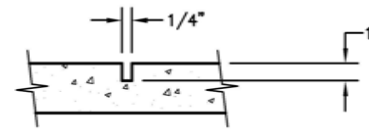
**TYPE 2**  
VERTICAL CURB AND GUTTER  
(SEE NOTE 1, 2 & 3)



**TYPE 4**  
BARRIER CURB  
(SEE NOTE 4)



**TYPE "A"**  
A.C. DIKE  
(SEE NOTE 5 & 6)



**WEAKENED PLANE**  
JOINT DETAIL  
(SEE NOTE 3)

**NOTES:**

1. ALL PORTLAND CEMENT CONCRETE SHALL BE PER CALTRANS SPECIFICATIONS, SECTION 78.
2. 1/2" x 18" LONG DOWEL MINIMUM 4 FT. CENTER TO CENTER SPACING, OR APOXY.
3. PLACE 1/2" TRANSVERSE EXPANSION JOINTS OF ASPHALT IMPREGNATED CELOTEX IN SIDEWALK, CURB & GUTTER AT 20' INTERVALS. ALL CONCRETE TO BE CLASS "B" AND SCORED EVERY 10'.
4. FOR TYPE 4 & 5 BARRIER CURBS LOCATE WEAKENED PLANE JOINTS AT 10' INTERVALS. USE 5' INTERVALS FOR RADII LESS THAN 25'
5. ASPHALT CONCRETE SHALL BE CLASS B PER CALTRANS SPECIFICATIONS SECTION 39,- SEE GENERAL NOTE PAGE.
6. AC DIKE TO BE USED WHERE EXISTING CONDITIONS WARRANT. TO BE USED WITH COUNTY ENGINEER'S APPROVAL.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadler</i>
DATE: 03/14/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Steven K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED: SKP		
APPROVED:		

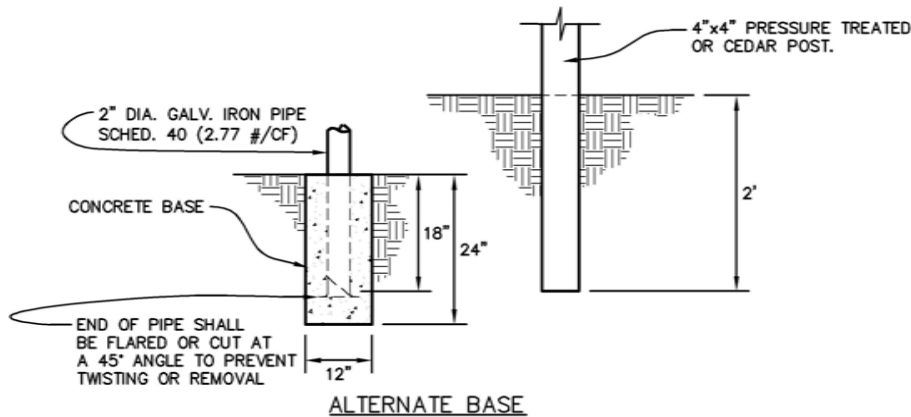
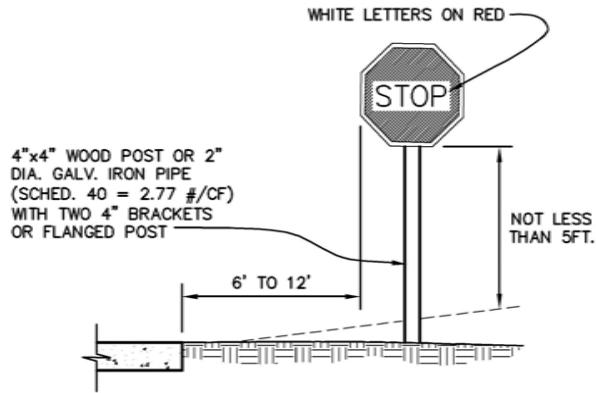
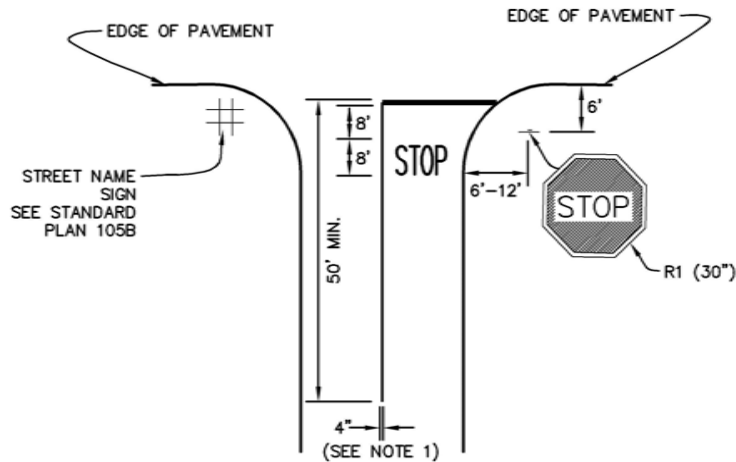
**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



CONCRETE  
CURB & GUTTERS  
A.C. DIKE

**STD.**  
**PLAN**  
**104**





**NOTES:**

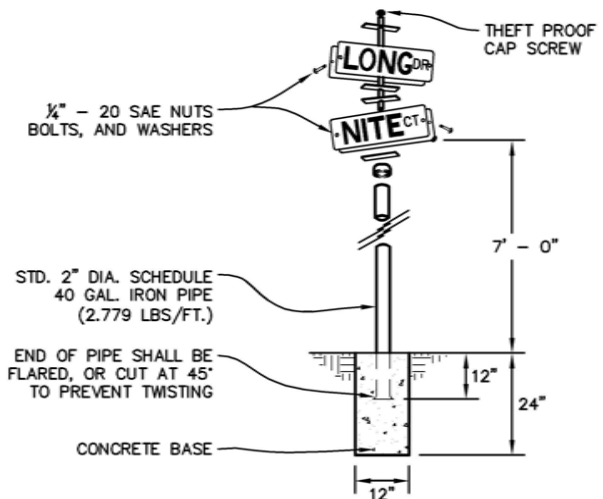
1. 4" STRIPE TO BE YELLOW REFLECTORIZED TRAFFIC PAINT. TWO 4" STRIPES WILL BE USED IF ADT'S WARRANT.
2. 12" STOP BAR TO BE WHITE REFLECTORIZED TRAFFIC PAINT AND LOCATED TO PROVIDE MAXIMUM VISIBILITY ALONG THROUGH STREET.
3. ALL SIGNS SHALL BE FABRICATED OF HIGH INTENSITY REFLECTIVE SHEETING ON AN ALUMINUM BLANK PER EL DORADO COUNTY SPECIFICATIONS.

NOT TO SCALE

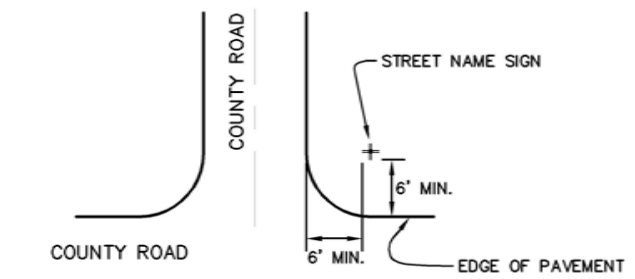
<b>GENERATED</b>	<b>REVISIONS</b>	<b>APPROVED:</b>	<b>EL DORADO COUNTY</b> DEPARTMENT OF TRANSPORTATION <b>DESIGN STANDARDS</b>		<b>STOP SIGN</b>	<b>STD. PLAN</b>  <b>105A</b>
NO.		<i>Scott Chadd</i>				
DATE: 03/14/90		DIRECTOR OF TRANSPORTATION				
DESIGNED:		<i>Shen K. Payne</i> C33427				
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.				
CHECKED: SKP						
APPROVED:						

**NOTES:**

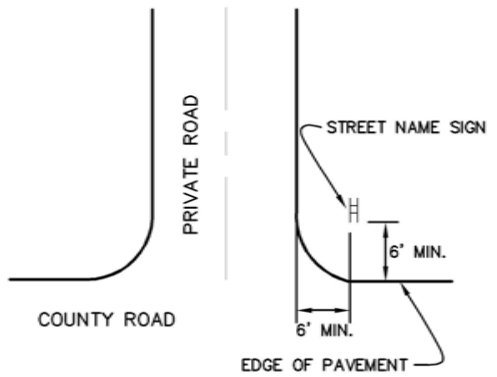
1. STREET NAME PANELS FOR COUNTY ROADS SHALL BE FLAT ALUMINUM PLATES, 0.08" THICK. PANELS SHALL BE 6" x 24" OR 6" x 30", DEPENDING ON STREET NAME LENGTH. LETTERING TO BE 1" AND 4" SERIES "B", SILVER REFLECTIVE SHEETING ON GREEN SCOT-LITE BACKING.
2. STREET NAME PANELS FOR PRIVATE ROADS SHALL BE FLAT ALUMINUM PLATES, 0.08" THICK. PANELS SHALL BE 8" x 30" OR 8" x 24", DEPENDING ON STREET NAME LENGTH. LETTERING TO BE 1" AND 4" SERIES "B", SILVER REFLECTIVE SHEETING ON GREEN SCOT-LITE BACKING.



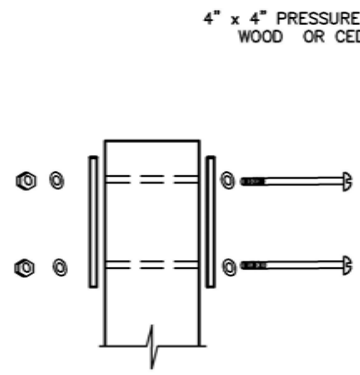
COUNTY ROAD STREET SIGN (SEE NOTE 1)



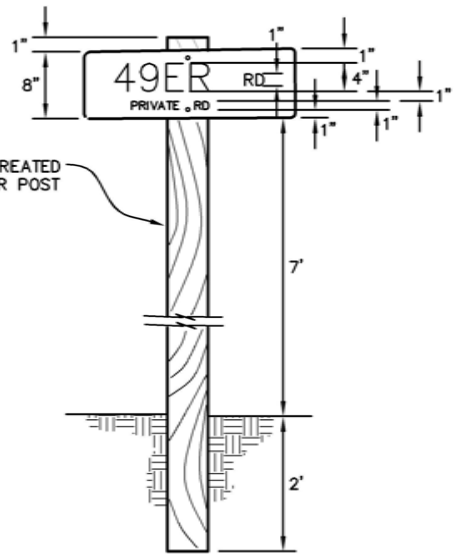
LOCATION OF COUNTY ROAD STREET SIGN



LOCATION OF PRIVATE STREET SIGN



PRIVATE ROAD TYPICAL SIGN ASSEMBLY



PRIVATE ROAD STREET SIGN

(SEE NOTE 2)

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 3/14/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

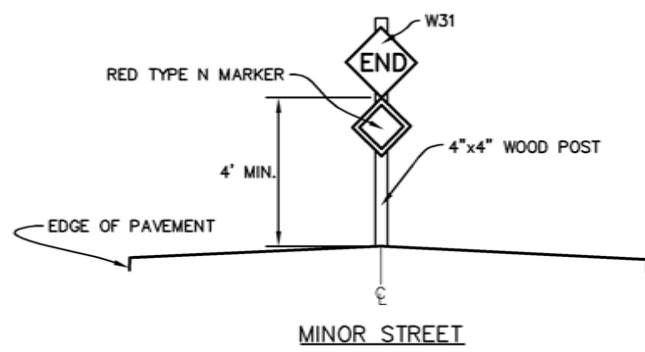
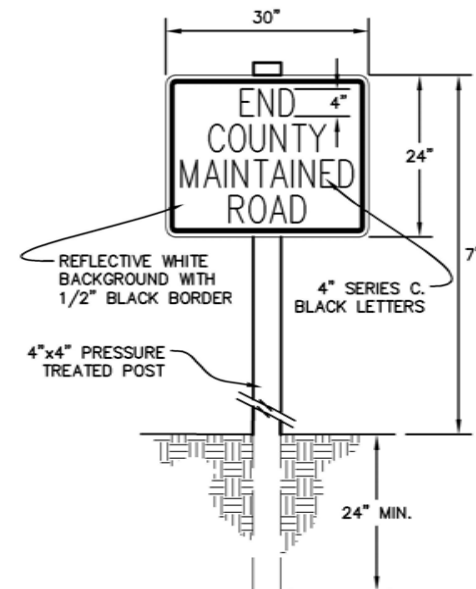
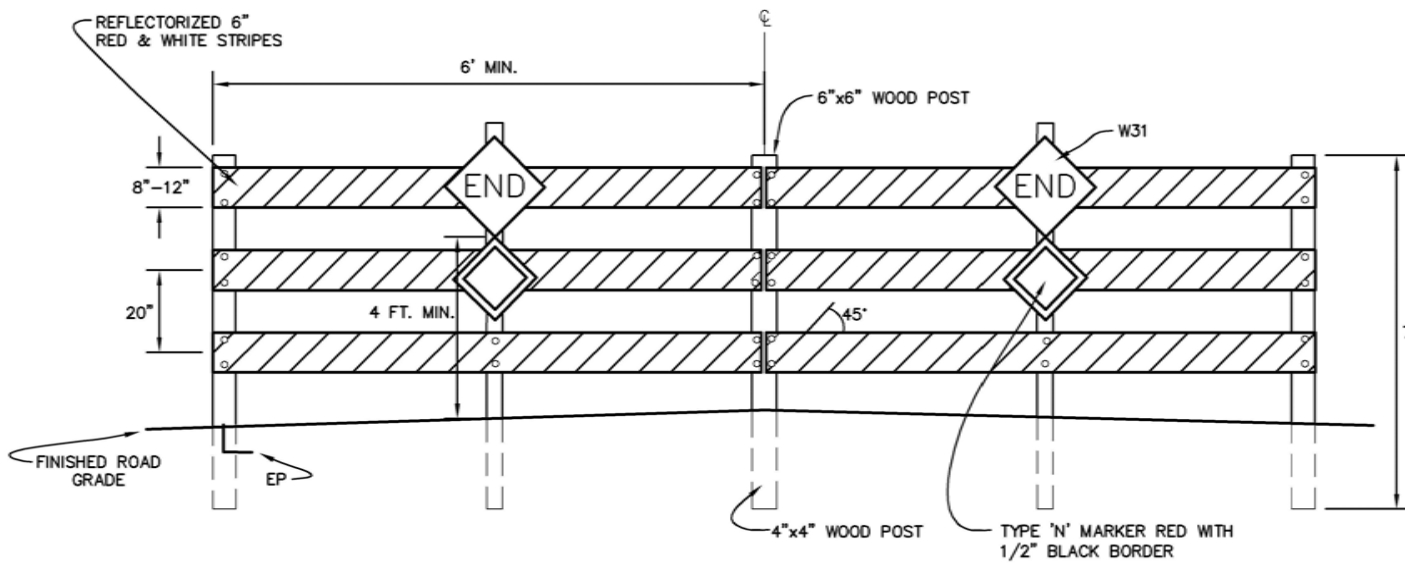


STREET SIGN

**STD. PLAN**  
**105B**

**NOTES:**

1. RED AND WHITE BARRICADES ARE TO WARN AND ALERT DRIVERS OF THE TERMINOUS OF A ROAD, STREET OR HIGHWAY IN OTHER THAN CONSTRUCTION OR MAINTENANCE AREAS. THE BARRICADES ARE TO MEET THE DESIGN CRITERIA OF SECTION 6C-8 FOR A TYPE III BARRICADE, EXCEPT THAT THE COLORS OF THE STRIPES SHALL BE REFLECTORIZED WHITE AND RED.

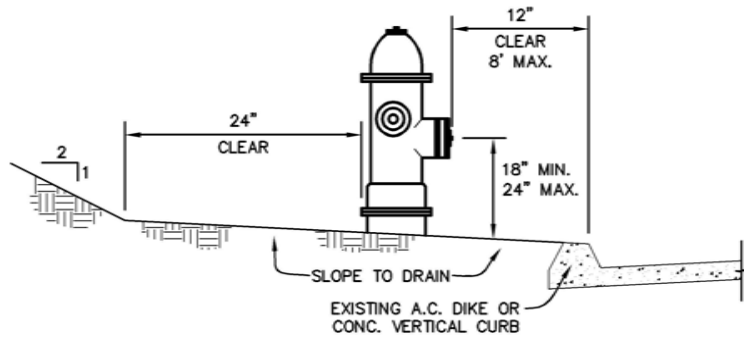


NOT TO SCALE

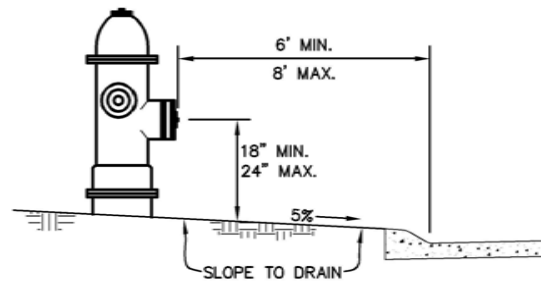
<b>GENERATED</b>		<b>REVISIONS</b>		<b>APPROVED:</b>		<b>EL DORADO COUNTY</b>			<b>BARRICADES ROAD ENDS SIGN DETAIL</b>	<b>STD. PLAN 105C</b>
NO.						<b>DEPARTMENT OF TRANSPORTATION</b>				
DATE: 3/13/90						<b>DESIGN STANDARDS</b>				
DESIGNED:										
DRAWN: JM/SR/BS				<b>C33427</b>						
CHECKED: SKP				<b>SENIOR CIVIL ENGINEER</b>		<b>P.E. NO.</b>				
APPROVED:										

**NOTES:**

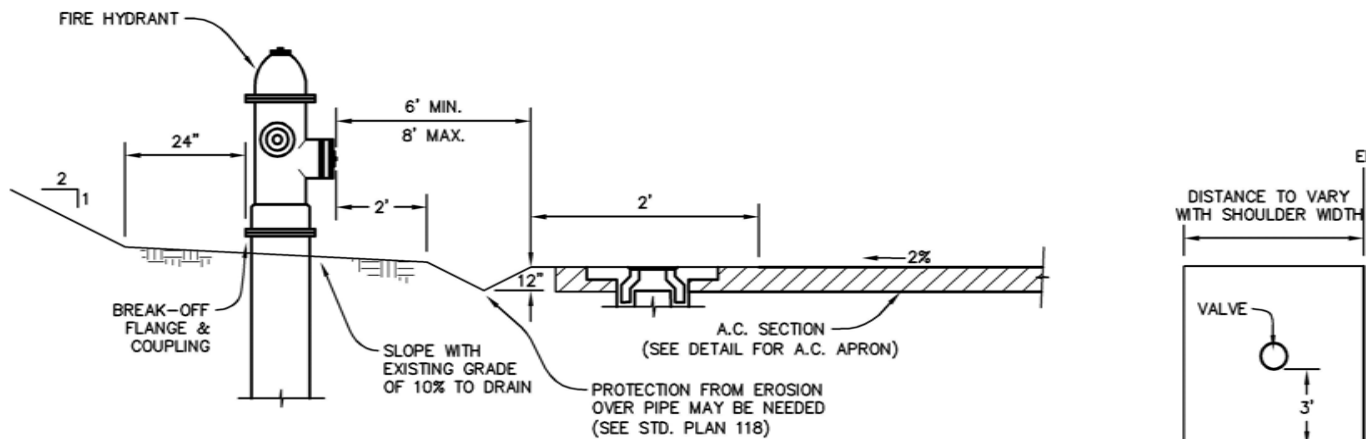
1. THE FIRE HYDRANT IS TO BE PLACED BEHIND THE DRAINAGE DITCH AND NO FURTHER THAN 8 FEET FROM DRIVEABLE SHOULDER SURFACE OR BACK OF CURB.
2. ALL VALVE BOXES SET IN THE A.C. OR CONCRETE TO BE F.G. MINUS 1/4".
3. CONTACT LOCAL WATER AGENCY FOR FIRE HYDRANT AND VALVE ASSEMBLY REQUIREMENTS.



FIRE HYDRANT BEHIND VERTICAL CURB & GUTTER


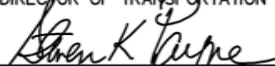


BEHIND ROLLED CURB & GUTTER



FIRE HYDRANT WITHOUT CURB & GUTTER

NOT TO SCALE

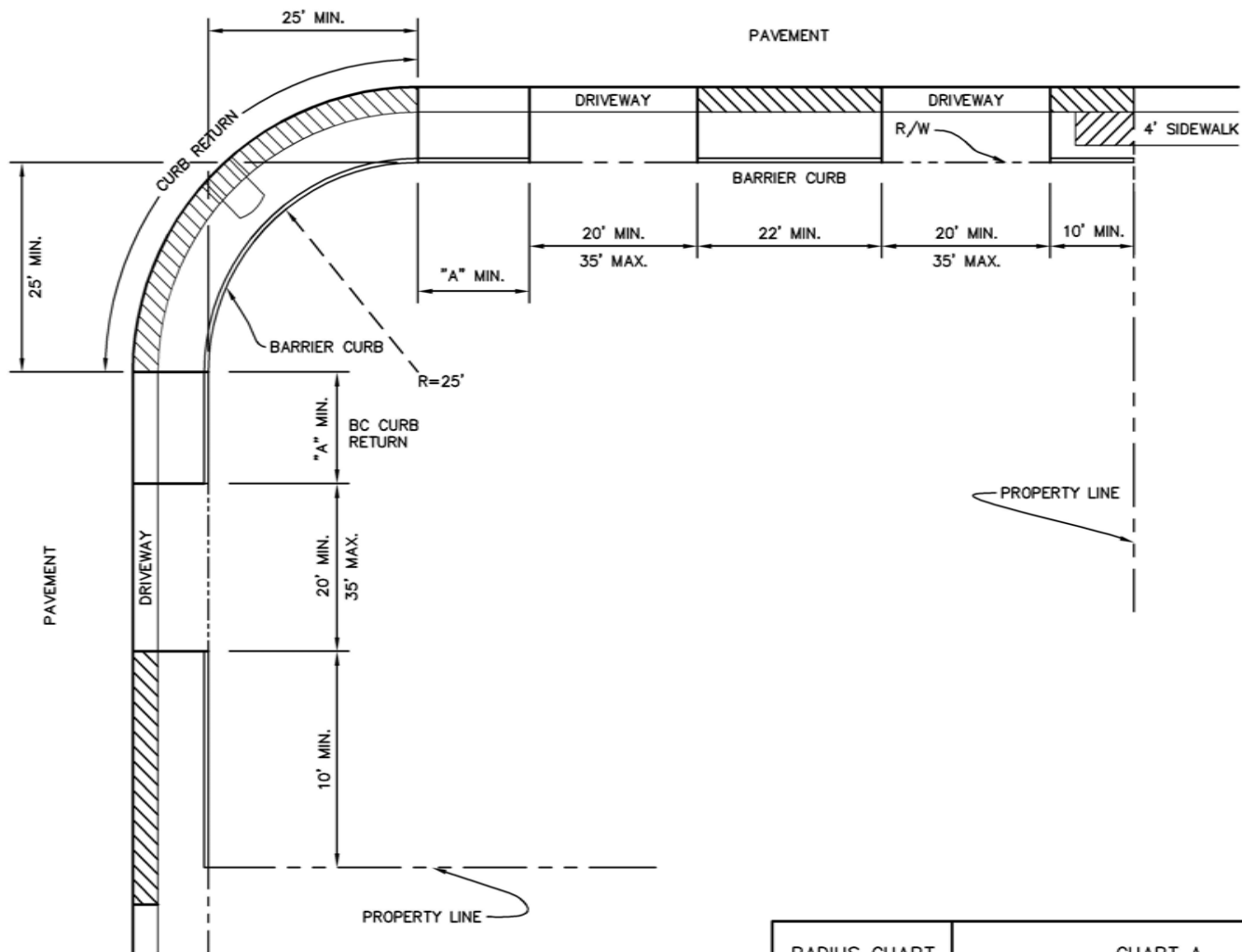
GENERATED	REVISIONS	APPROVED:
NO.		 DIRECTOR OF TRANSPORTATION
DATE: 04/17/90		
DESIGNED:		
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		 C33427 SENIOR CIVIL ENGINEER P.E. NO.

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



**FIRE HYDRANT**  
 LOCATION DETAIL  
 BEHIND CURB AND GUTTER  
 &  
 WITHOUT CURB AND GUTTER

**STD.**  
**PLAN**  
**106**



**NOTES:**

1. FRONTAGE MEASURED ALONG R/W LINE AND FROM THE INTERSECTION OF PROJECTED R/W TANGENTS ON LOT CORNERS.
2. DRIVEWAYS NOT PERMITTED WITHIN 10' OF PROPERTY LINES. SEE CHART A FOR LOCATION OF DRIVEWAYS IN RELATIONSHIP TO INTERSECTING TANGENTS.
3. 22' MINIMUM ALLOWABLE DISTANCE BETWEEN DRIVEWAYS FOR LESS THAN 200' FRONTAGE AND 45' MINIMUM ALLOWABLE DISTANCE FOR FRONTAGE GREATER THAN 200'. 20' MINIMUM AND 35' MAXIMUM DRIVEWAY WIDTH MEASURED AT R/W LINE. SPECIFIC CASES TO BE SUBMITTED FOR APPROVAL.
4. NO PART OF A DRIVEWAY MAY FALL WITHIN A CURB RETURN OR WITHIN THE LIMITS SHOWN IN CHART A.
5. HANDICAPPED RAMPS @ SIDEWALK INTERSECTIONS PER CALTRANS STANDARD PLAN N8-B, CASE E.
6. SEE GENERAL NOTE PAGE REGARDING DRIVEWAY CEMENT.

RADIUS CHART		CHART A	
40'	ARTERIAL	250' *	
35'	MAJOR COLLECTOR	150' *	
25'	MINOR COLLECTOR	100' *	
25'	ACCESS ROAD	25'	

\* LESS WITH COUNTY ENGINEER'S APPROVAL

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 03/14/90		DIRECTOR OF TRANSPORTATION
DESIGNED:		<i>Shen K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER
CHECKED: SKP		P.E. NO.
APPROVED:		

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

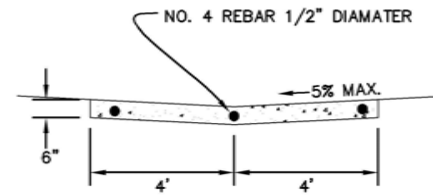


**COMMERCIAL**  
**DRIVEWAY**  
**REGULATIONS**

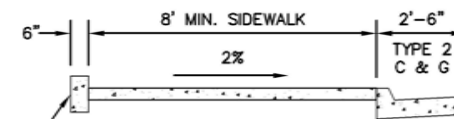
**STD.**  
**PLAN**  
**109**

**NOTES:**

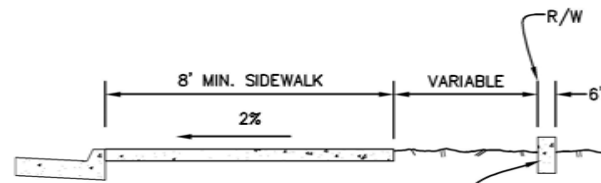
1. WHEEL CHAIR ACCESS PER CALTRANS STANDARD PLAN N8-B, CASE E.
2. PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATIONS 78.
3. CURBS SHALL BE IN ACCORDANCE WITH STANDARD PLAN 104.



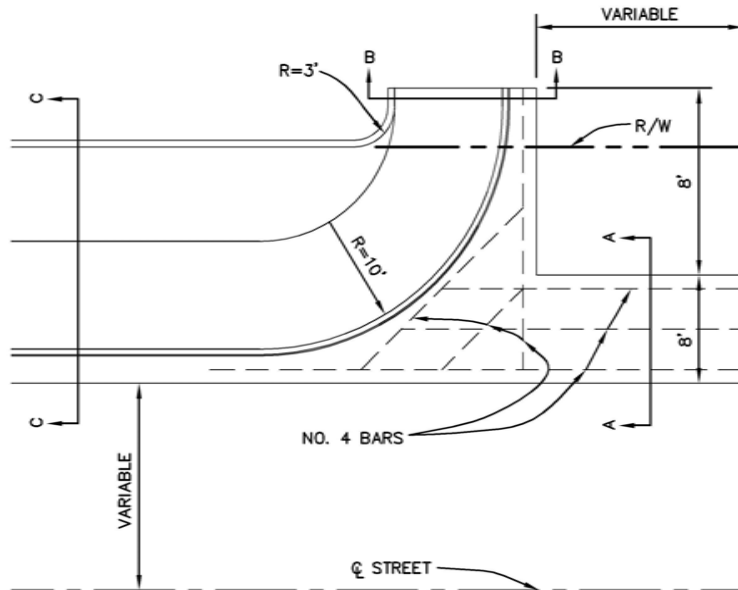
**SECTION A-A**



**SECTION B-B**  
(SEE NOTE 2)



**SECTION C-C**



NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 03/14/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

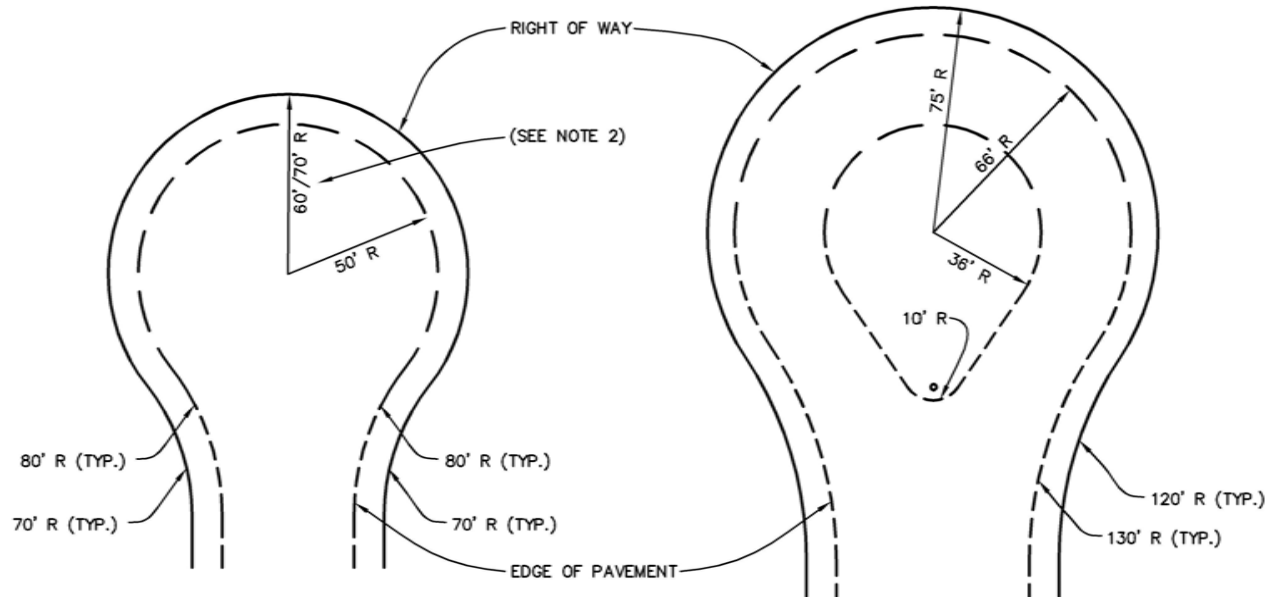


SPECIAL COMMERCIAL  
FRONTAGE  
ENTRANCE

**STD. PLAN**  
**110**

**NOTES:**

1. CUL-DE-SACS MAY BE ASYMMETRICAL TO THE LEFT OR RIGHT OF CENTERLINE.
2. IF FIRE HAZARDS EXIST, 70' MIN. RADIUS REQUIRED.
3. CALTRANS HS-20 CULDESAC DETAIL MAY BE USED WITH COUNTY ENGINEER'S APPROVAL.



TYPE A  
STANDARD

TYPE B  
PEAR-SHAPED

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 3/17/90		
DESIGNED:		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		

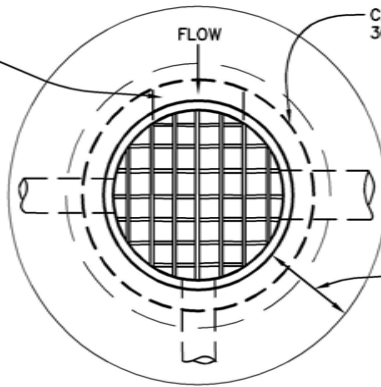
**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



CUL-DE-SACS

**STD. PLAN**  
**114**

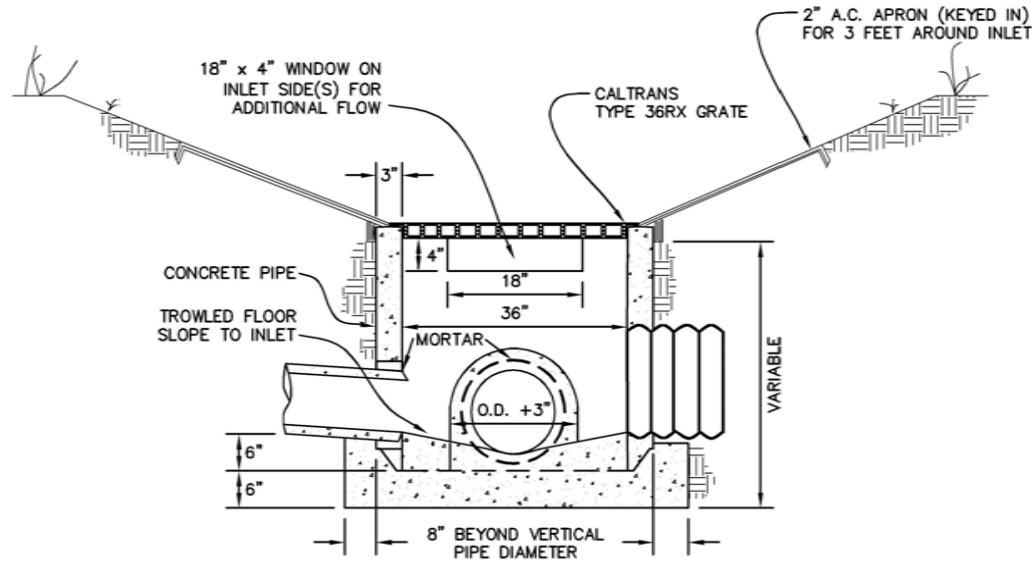
18" x 4" WINDOW ON INLET SIDE(S) FOR ADDITIONAL FLOW



CALTRANS TYPE 36RX GRATE

2" A.C. APRON (KEYED IN) FOR 3 FEET AROUND INLET

PLAN



18" x 4" WINDOW ON INLET SIDE(S) FOR ADDITIONAL FLOW

CALTRANS TYPE 36RX GRATE

2" A.C. APRON (KEYED IN) FOR 3 FEET AROUND INLET

CONCRETE PIPE  
TROWLED FLOOR SLOPE TO INLET

3"

4"

18"

36"

MORTAR

O.D. +3"

6"

6"

8" BEYOND VERTICAL PIPE DIAMETER

VARIABLE

PROFILE

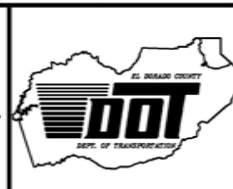
NOTES:

1. IN RURAL CONDITIONS A CALTRANS OMP OR OCP WITH 1/4" STEEL CHECKERED PLATE COVER AND A SINGLE HORIZONTAL GRATE AT 4" O.C. MAY BE USED WITH COUNTY ENGINEER'S APPROVAL.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 1/2/90		
DESIGNED:		DIRECTOR OF TRANSPORTATION
DRAWN: JM/SR/BS		<i>Shen K. Payne</i> C33427
CHECKED: SKP		SENIOR CIVIL ENGINEER P.E. NO.
APPROVED:		

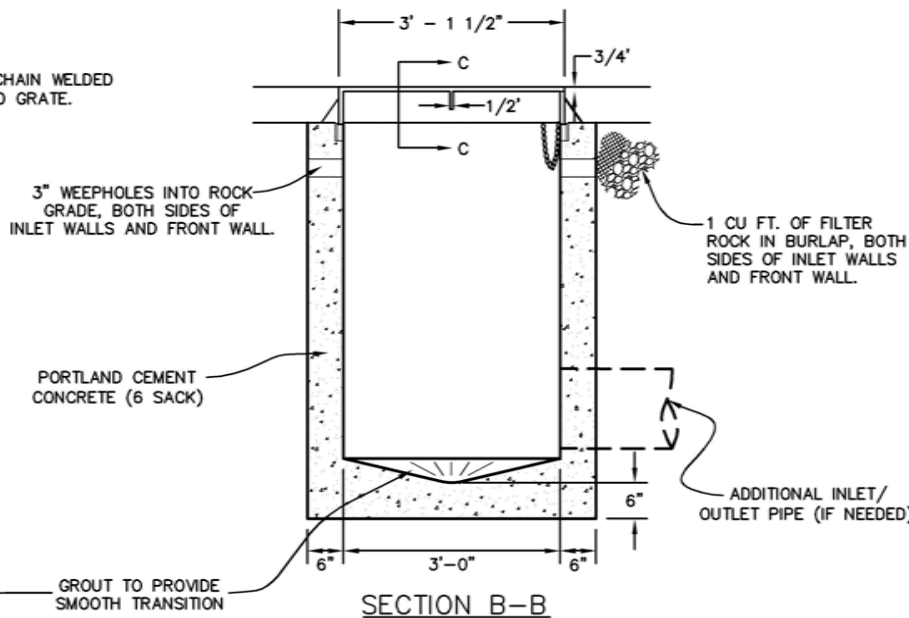
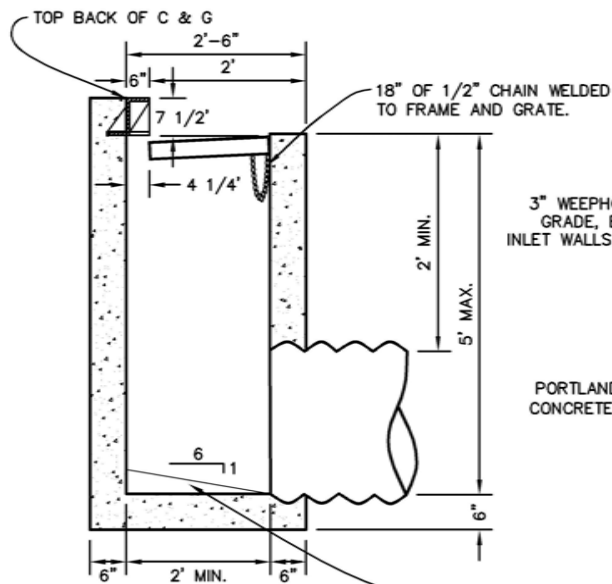
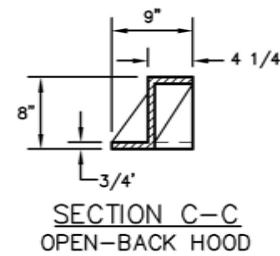
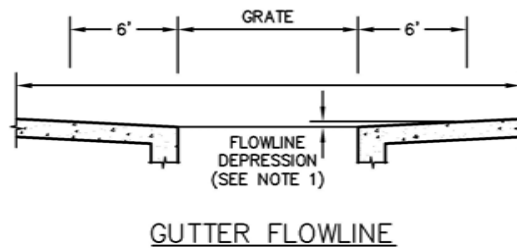
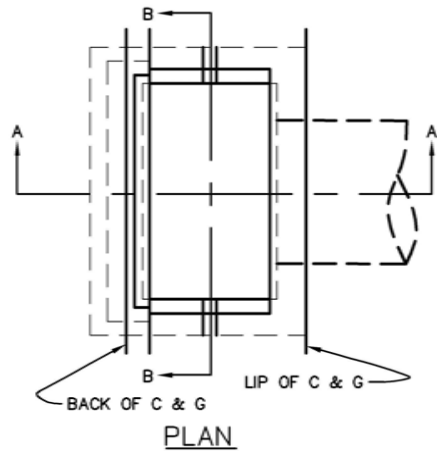
**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



GRATED  
INLET

**STD.  
PLAN  
115A**

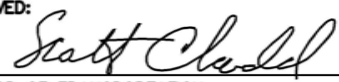






**NOTES:**

1. DEPRESS GRATE 3 7/8" BELOW GUTTER FLOWLINE, ON ROLLED CURB AND GUTTER, AND 1 1/2" ON VERTICAL CURB.
2. FLOOR OF INLET SHALL BE PLACED PRIOR TO OR AT THE SAME TIME AS SIDE WALLS, OR TIED WITH REBAR.
3. FRAME AND GRATE SHALL CONFORM TO STANDARD PLAN 115B PINKERTON FOUNDRY #A-601 OR EQUAL.
4. OPEN-BACK HOOD SHALL BE CAST IRON.
5. THE OUTLET PIPE INVERT SHALL BE AT LEAST ONE INCH BELOW THE LOWEST INLET PIPE INVERT.
6. FOR ROLLED CURB AND GUTTER, 6' TRANSITIONS TO VERTICAL CURB ARE REQUIRED ON BOTH SIDES OF INLET.
7. CONCRETE TO BE SIX SACK MIX FOR ALL DRAINAGE STRUCTURES.
8. 5' MAX. DEPTH FROM FLOWLINE, WITHOUT REINFORCEMENT ADDED.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		 DIRECTOR OF TRANSPORTATION  SENIOR CIVIL ENGINEER
DATE: 3/17/90		
DESIGNED: TMA		
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		 SENIOR CIVIL ENGINEER

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

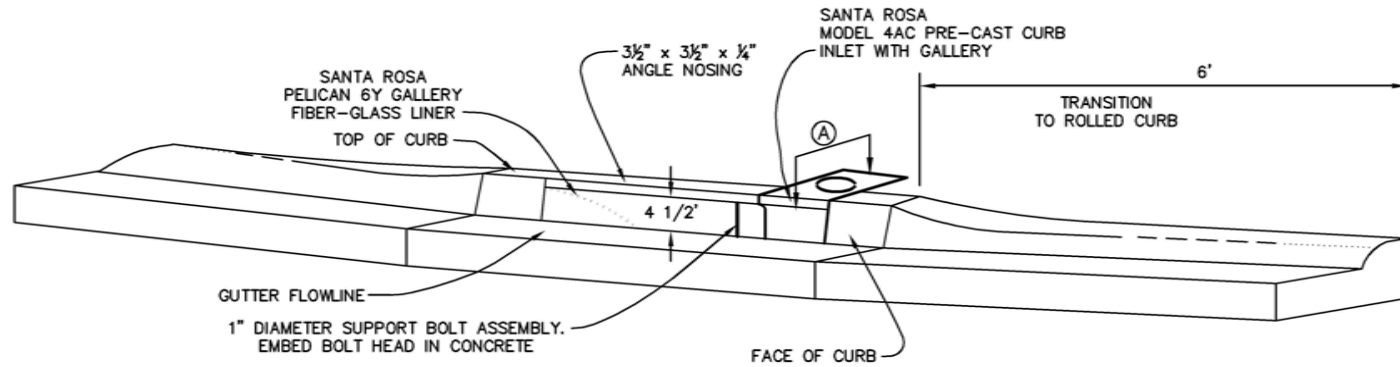


DROP INLET  
 CALTRANS TYPE B

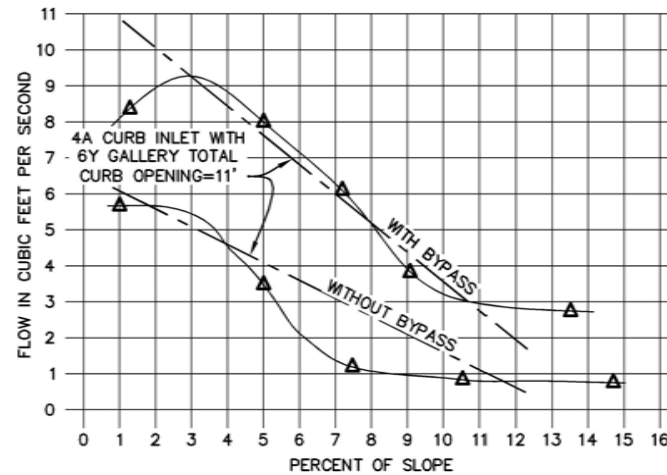
**STD. PLAN**  
**115B**

**NOTES:**

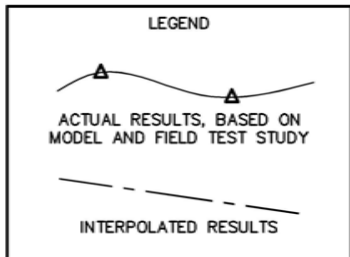
1. PORTLAND CEMENT CONCRETE SHALL BE 3000 P.S.I. AT 28 DAYS.
2. PELICAN GALLERY TO BE SANTA ROSA'S 6Y GALLERY ASSEMBLY WITH THE MODEL 4AC PRE-CAST CURB INLET OR EQUIVALENT.
3. INLET SHOULD BE BROUGHT TO LINE AND GRADE BY ALIGNING NOSING WITH CURB FACE BOARD.
4. FOR ROLLED CURB AND GUTTER, 6' TRANSITIONS TO VERTICAL CURB ARE REQUIRED ON BOTH SIDES OF INLET.
5. STRINGLINE TOP OF ROLLED CURB AND GUTTER 6' BEYOND ALL OPENINGS AND HOLD THAT ELEVATION FOR TOP FRONT OF CURB, DEPRESSING FLOWLINE CORRESPONDINGLY.



PELICAN PICTORIAL VIEW AND CURB TRANSITIONS



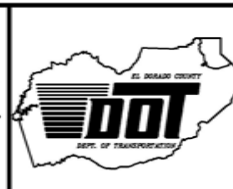
4A CURB INLET DRAINAGE CAPACITY WITH 6Y PELICAN GALLERY



NOT TO SCALE

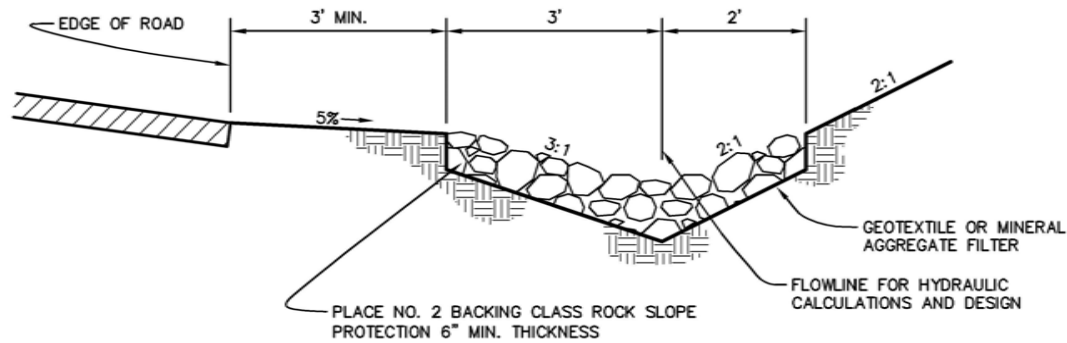
GENERATED	REVISIONS	APPROVED:
NO.		 DIRECTOR OF TRANSPORTATION
DATE: 3/17/90		
DESIGNED: TMA		
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		 SENIOR CIVIL ENGINEER

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

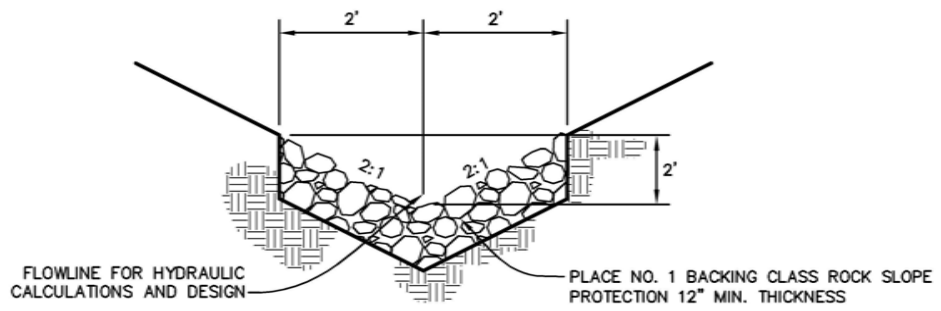


PELICAN GALLERY  
 SANTA ROSA  
 MODEL 6Y  
 MODEL 4AC  
 CURB INLET

**STD. PLAN**  
**115C**



ROADWAY ROCK LINED DITCH DETAIL




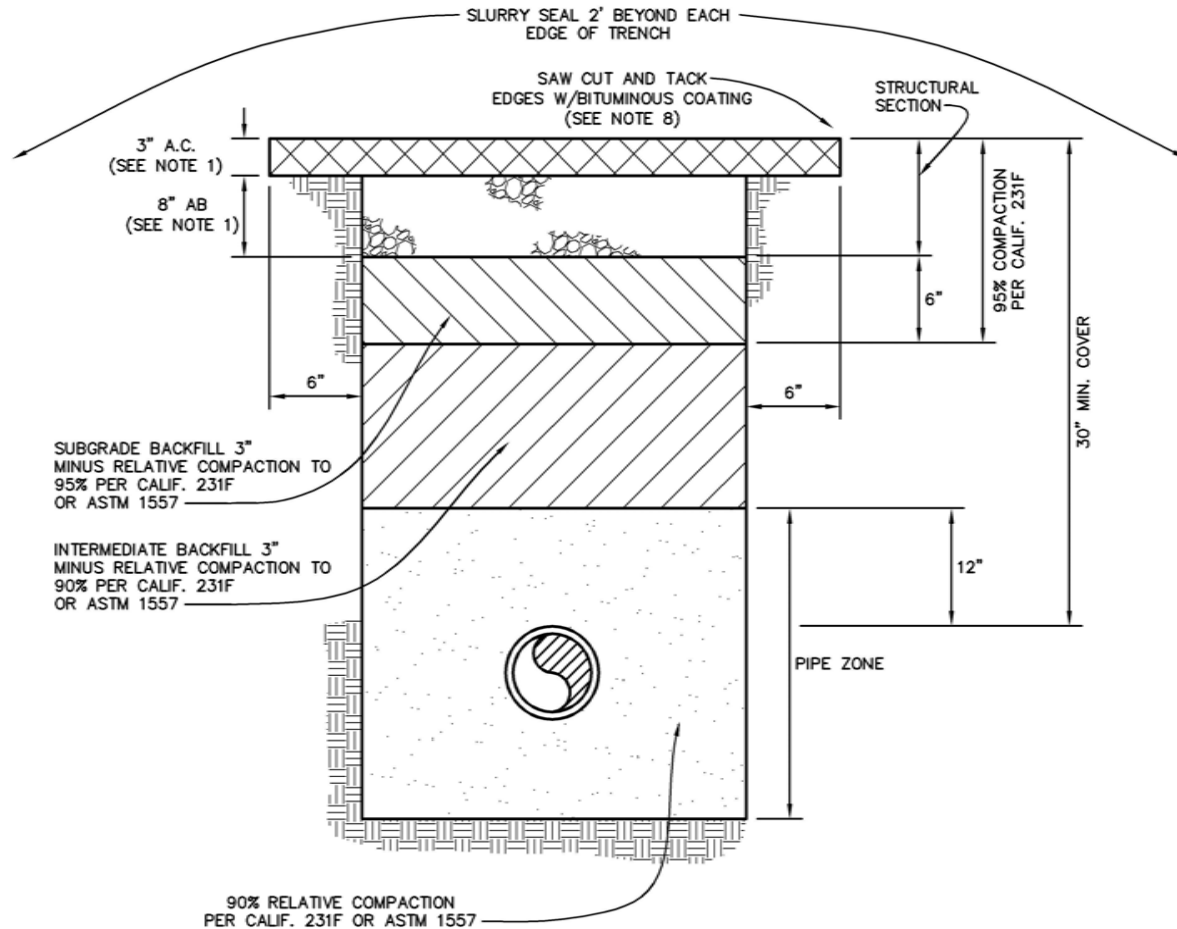
ROCK LINED DITCH DETAIL

NOTES:

1. ROCK LINED DITCHES ARE USED AS SPECIFIED IN EL DORADO COUNTY GRADING ORDINANCES.
2. ROCK LINING SHALL NOT BE HIGHER THAN ROADWAY OR ELEVATION OF SHOULDER.
3. WHERE A 6:1 SLOPE EXISTS, USE A MINIMUM OF 6' OR A MAXIMUM OF 18' SIZED ROCKS.
4. GROUT WILL BE USED WHEN ROCK RIP-RAP IS PLACED ON FILL SLOPES, IF SLOPES ARE EXCEEDING 2:1, WITHIN 10 FEET OF A CULVERT WITHOUT A FLARED END SECTION, OR WHEN VELOCITIES EXCEED 15 FT. PER SECOND.
5. THE ENDS OF BOTH THE ROCK LINED AND GROUTED ROCK LINED DITCHES TO BE KEYED IN A MINIMUM OF ONE FOOT.

NOT TO SCALE



GENERATED	REVISIONS	APPROVED:	<b>EL DORADO COUNTY</b>		ROCK LINED DITCH	<b>STD. PLAN</b>
NO.		<i>Scott Chadd</i>	DEPARTMENT OF TRANSPORTATION			
DATE: 03/17/90		DIRECTOR OF TRANSPORTATION	<b>DESIGN STANDARDS</b>			
DESIGNED:		<i>Shen K. Payne</i> C33427				
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER	P.E. NO.			
CHECKED: SKP						<b>118</b>
APPROVED:						



**NOTES:**

1. STRUCTURAL SECTION SHALL BE 3" A.C. AND 8" AB MINIMUM, OR MATCH EXISTING THICKNESS.
2. PONDING OR JETTING NOT PERMITTED UNDER OR WITHIN 2' OF EXISTING ROADWAY.
3. THE TRENCH WILL BE PAVED WITH ASPHALT WHEN ENTERING ROADSIDE DITCHES AND GUTTERS WITH A GRADE OF 5% OR BETTER. AT TAHOE, PAVE ALL TRENCHES ENTERING DITCHES.
4. IN ROADWAY FILL STEEPER THAN 4:1, THE OUTER EDGE OF TRENCH SHALL BE AT LEAST 18" FROM HINGE POINT. FOR CABLE PLOWING OPERATIONS, IT SHALL BE 36".
5. LONGITUDINAL PAVEMENT REPLACEMENT WILL BE FROM THE INNER CUT LINE TO THE EDGE OF THE EXISTING PAVEMENT, WHEN THE REMAINING PAVEMENT WIDTH WOULD BE LESS THAN 3 FEET. ON COLLECTOR ROADS, PAVEMENT SHALL BE REPLACED FROM CENTERLINE.
6. REPLACE ALL OBLITERATED PAVEMENT MARKINGS.
7. ON COLLECTOR ROADS, INTERMEDIATE BACKFILL WILL BE 3/4" AB COMPACTED TO 95%. A CONCRETE/SAND SLURRY (2 SACK) MAY BE USED IN PLACE OF 3/4" AB.
8. FINAL PAVEMENT REPLACEMENT WILL HAVE A UNIFORM WIDTH AND WILL BE APPROVED BY AN INSPECTOR BEFORE SAW CUTTING.
9. SEE FURTHER CONDITIONS ATTACHED TO PERMIT.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		 DIRECTOR OF TRANSPORTATION
DATE: 03/14/90		
DESIGNED:		
DRAWN: JM/SR/BS		
CHECKED: SKP		
APPROVED:		 C33427 SENIOR CIVIL ENGINEER P.E. NO.

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

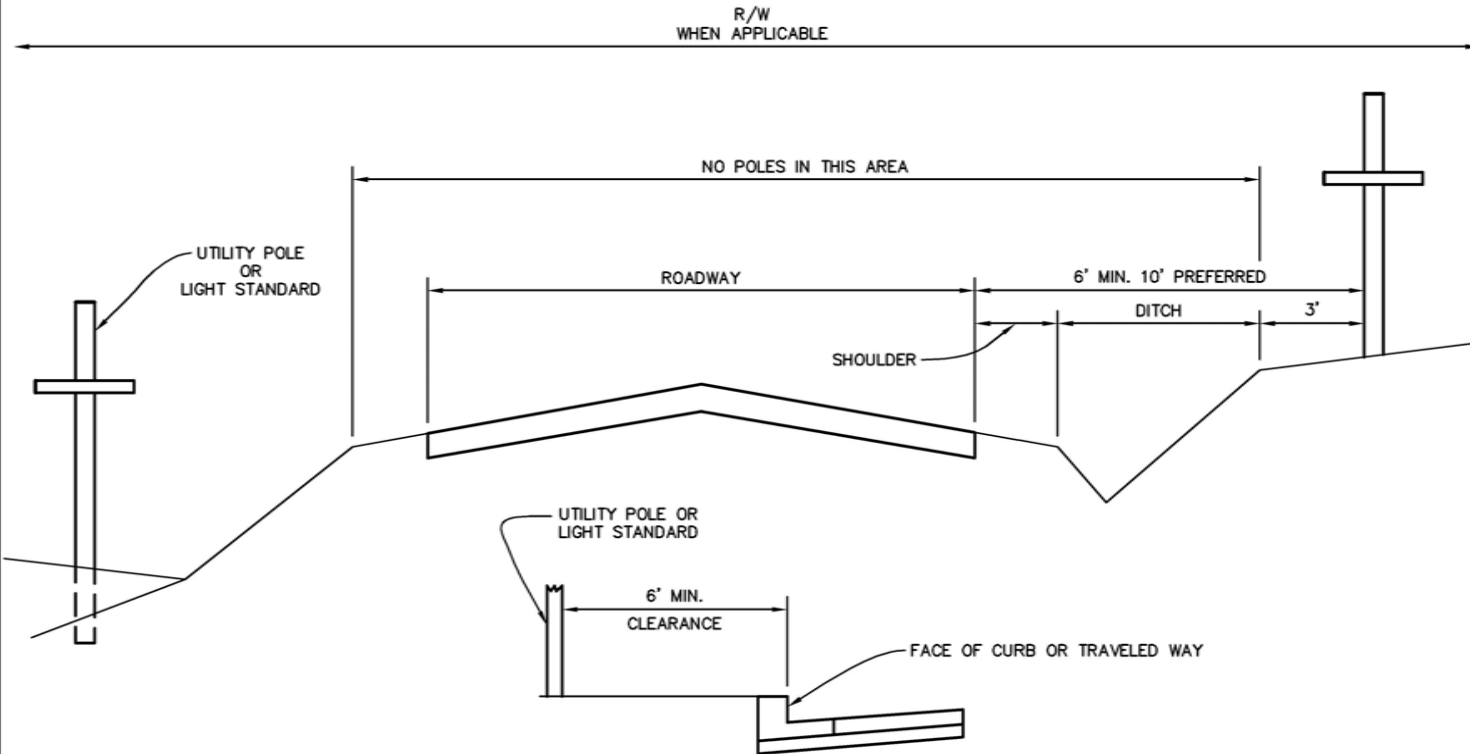


**UNDERGROUND  
 TRENCH  
 DETAIL**  
 IN A.C. SECTIONS ONLY

**STD.  
 PLAN**  
**119**

**NOTES:**

1. POLES MAY BE LOCATED AT THE TOE OF FILLS WHICH ARE MORE THAN 4 FEET IN HEIGHT. POLES SHOULD EXTEND TO NATIVE GROUND WHERE PRACTICAL.
2. POLES MAY BE LOCATED ON CUT OR FILL SLOPES WHEN THE ELEVATION OF THEIR BASE IS 4 FEET ABOVE OR BELOW THE EDGE OF ROADWAY.
3. POLES SHOULD BE LOCATED AS FAR AS PRACTICAL FROM THE ROADWAY AND BEYOND THE SHOULDER & DITCH AREA, BUT MUST BE AT LEAST 6 FEET FROM THE EDGE OF ROADWAY AND 10 FEET PREFERRED.
4. POLES MAY BE LOCATED CLOSER TO THE ROADWAY IF MOTORISTS ARE PROTECTED FROM POLES BY METAL BEAM GUARD RAILING.
5. POLES AND GUYS MAY NOT BE LOCATED ON THE ROADWAY OR IN THE ROADSIDE DITCH OR DRIVEABLE SHOULDER.
6. NO POLES WILL BE LOCATED WITHIN ANY RADIUS PORTION OF A DRIVEWAY CONNECTION OR ROADWAY.



NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 12/30/89		
DESIGNED:		DIRECTOR OF TRANSPORTATION
DRAWN: JM/SR/BS		<i>Shen K. Payne</i> C33427
CHECKED: SKP		
APPROVED:		SENIOR CIVIL ENGINEER P.E. NO.

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

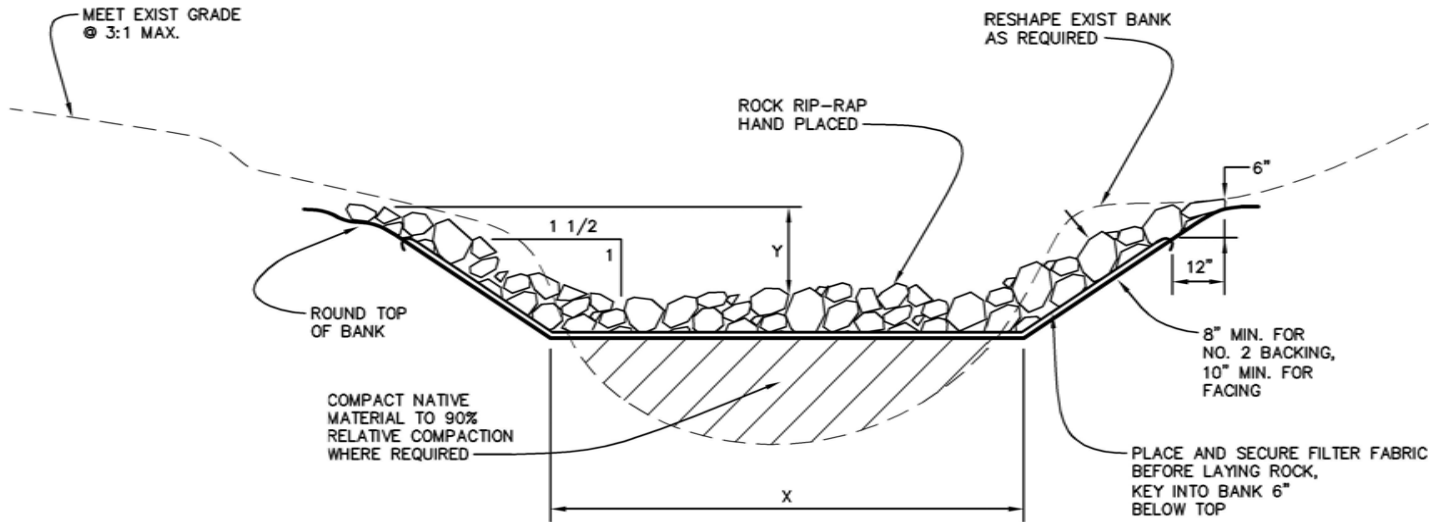


UTILITY  
 POLE  
 LOCATIONS

**STD.  
 PLAN  
 120**

**NOTES:**

1. ROCK LINED CHANNELS SHALL NOT BE USED UNLESS WARRANTED BY HYDRAULIC CALCULATIONS.
2. ALL ROCK SHALL BE ANGULAR WITH A MINIMUM OF 2 FACES.
3. GROUT WILL BE USED WHEN ROCK RIP RAP IS PLACED ON FILL SLOPES, IF SLOPES EXCEED 2:1, IF WITHIN 10 FEET OF A CULVERT WITHOUT A FLARED END SECTION, OR WHEN ROCK IS PLACED ON ANY FILL.
4. A 24" KEY WILL BE PLACED AT THE END OF THE SWALE AREA.



CHANNEL TYPE	WIDTH, X	DEPTH, Y	ROCK CLASS
A	1'	1'	NO. 1 BACKING
B	2'	1 1/2'	NO. 1 BACKING
C	2'	2'	NO. 1 BACKING

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 03/15/90		DIRECTOR OF TRANSPORTATION
DESIGNED: JH		<i>Shen K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED:		
APPROVED:		

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

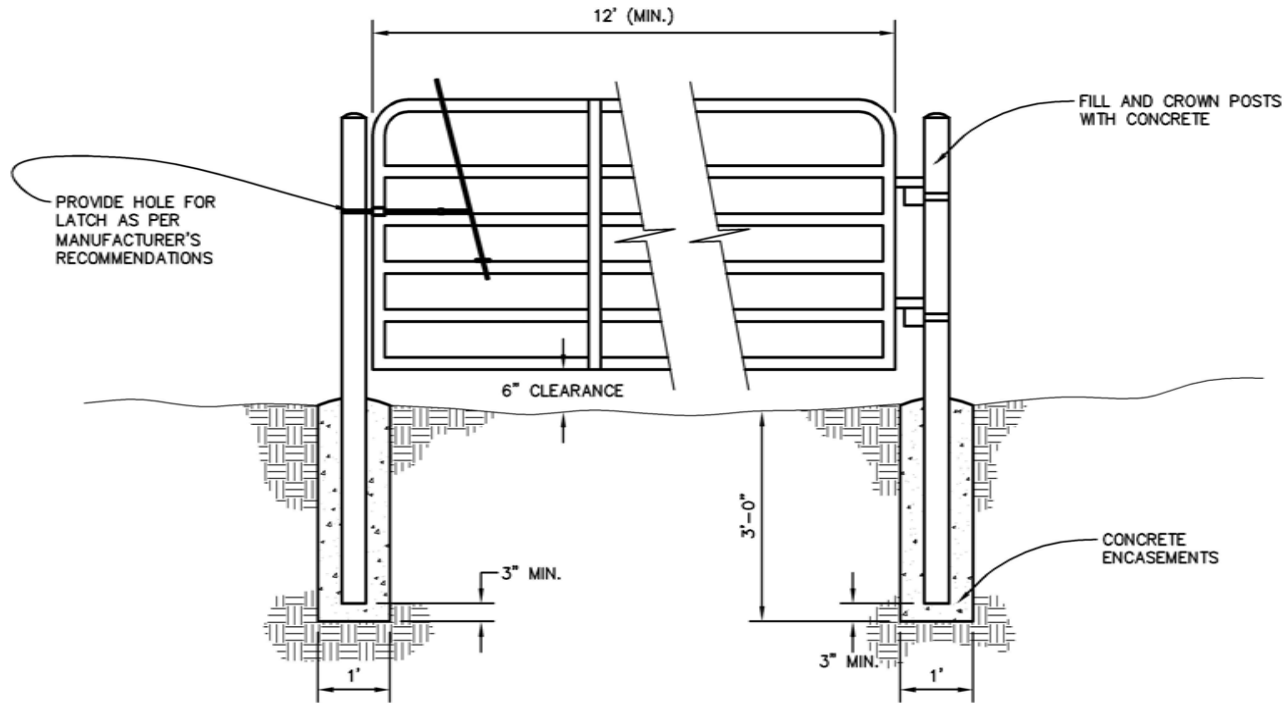


ROCK LINED  
 CHANNELS

**STD.  
 PLAN**  
**T-501**

**NOTES:**

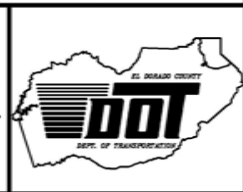
1. CONCRETE ENCASEMENTS SHALL HAVE A 1" CROWN ABOVE GROUND LEVEL.
2. 12' WIDE GATE OF 16 GAGE, 2" DIAMETER TUBE CONSTRUCTION WITH MOUNTING HARDWARE AND SINGLE, LOCKABLE PISTON LEVER LATCH BY WESTGUARD INDUSTRIES OR EQUIVALENT.
3. GATE POSTS 4" DIAMETER SCHEDULE 40 GALVANIZED STEEL.



NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 3/12/90		
DESIGNED: JH		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED:		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

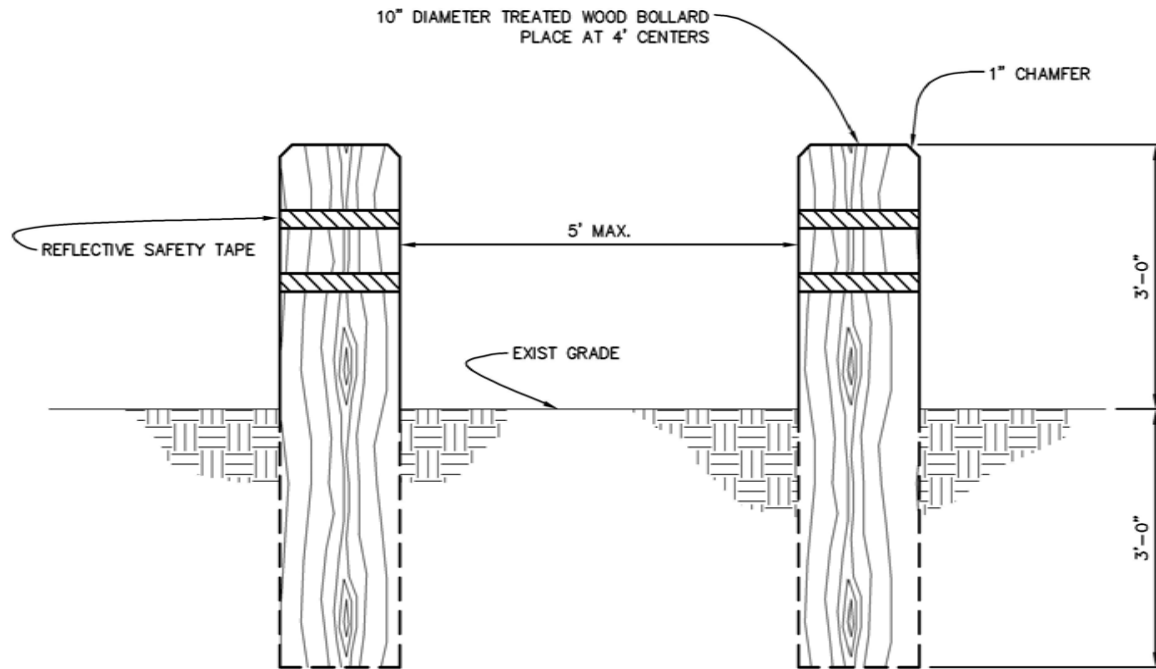


GATE DETAIL

**STD. PLAN**  
**T-502**

**NOTES:**

1. WHERE USED ON DEAD END ROADS, A RED WARNING SIGN SHALL BE INSTALLED PER STANDARD PLAN 105C.



NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 3/12/90		DIRECTOR OF TRANSPORTATION
DESIGNED: JH		<i>Shen K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED:		
APPROVED:		

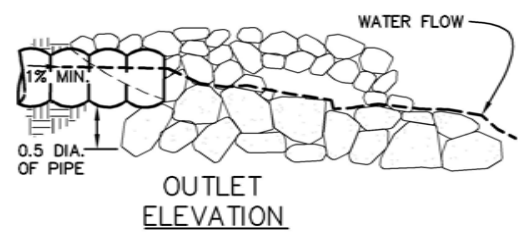
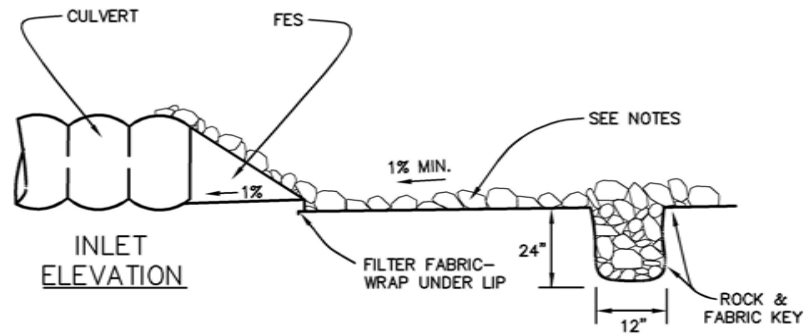
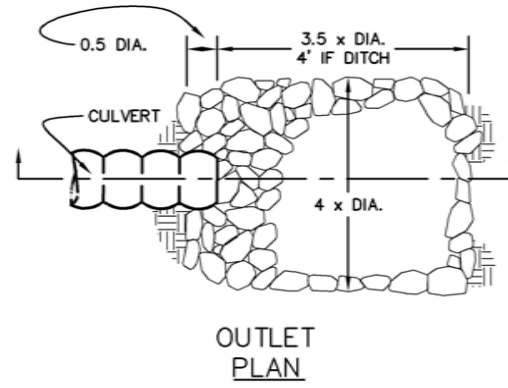
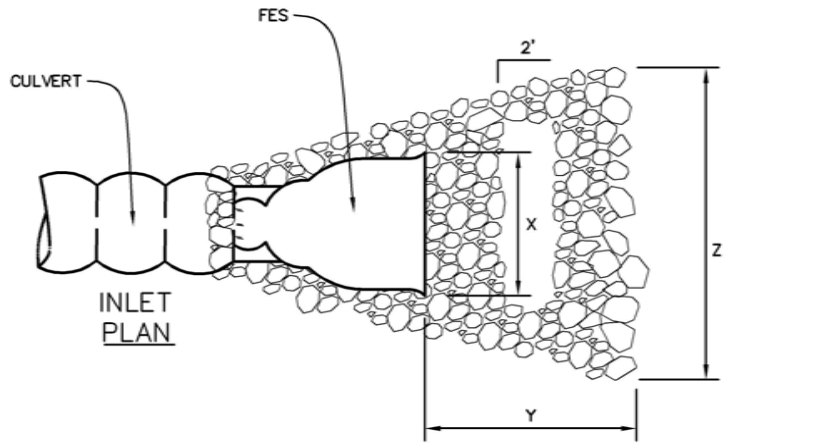
**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



VEHICLE  
BARRIER

**STD.  
PLAN**  
**T-503**





ROCK CLASS	PIPE Ø IN.	(3 x PIPE Ø) X, FT	(4x) Y, FT	(5x) Z, FT
NO. 1 BACKING	12	3	4	5
NO. 1 BACKING	18	4.5	6	7.5
NO. 1 BACKING	24	6	8	10
NO. 1 BACKING	30	7.5	10	12.5
NO. 1 BACKING	36	9	12	15

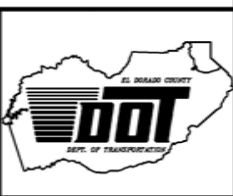
**NOTES:**

- HAND PLACE ROCK.
- ALL ROCK SHALL BE ANGULAR AND HAVE TWO FACES.
- WHERE SLOPES OF OUTLET EXCEEDS 5%, A SEDIMENT BOWL OR ENERGY DISSIPATER SHALL BE REQUIRED.
- FLARED END SECTION AND ROCK SLOPE PROTECTION WILL SLOPE AT A MINIMUM OF 1% INTO OR OUT OF THE CULVERT.
- 12" X 24" KEY TO BE PLACED FOR BOTH INLET AND OUTLET APPLICATIONS.
- ON OUTLET APPLICATIONS, 50% OF THE ROCK SHALL BE LARGER THAN HALF THE DIAMETER OF THE PIPE.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 3/12/90		
DESIGNED: JH		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED:		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

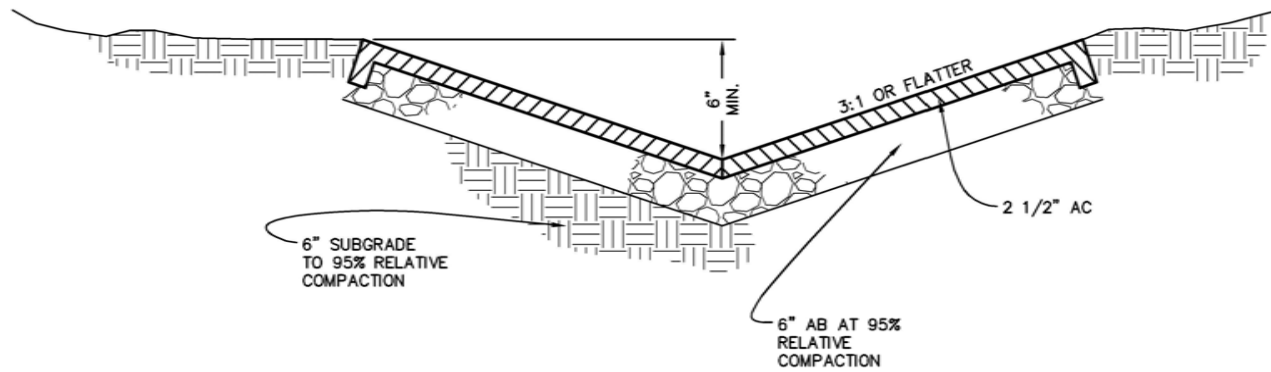


**ROCK**  
**INLET/OUTLET**  
**PROTECTION**

**STD.**  
**PLAN**  
**T-504**

**NOTES:**

1. ABOVE 4000 FT. ELEVATION AC SHALL BE REPLACED WITH CLASS B CONCRETE PER CALTRANS SPECIFICATIONS.
2. KEY IN END 1 FT. MIN. OR EQUAL TO DEPTH OF DITCH.
3. PLACE FULL WIDTH KEY EVERY 50' FOR LONG RUNS WITH STEEPER DITCH SLOPES.

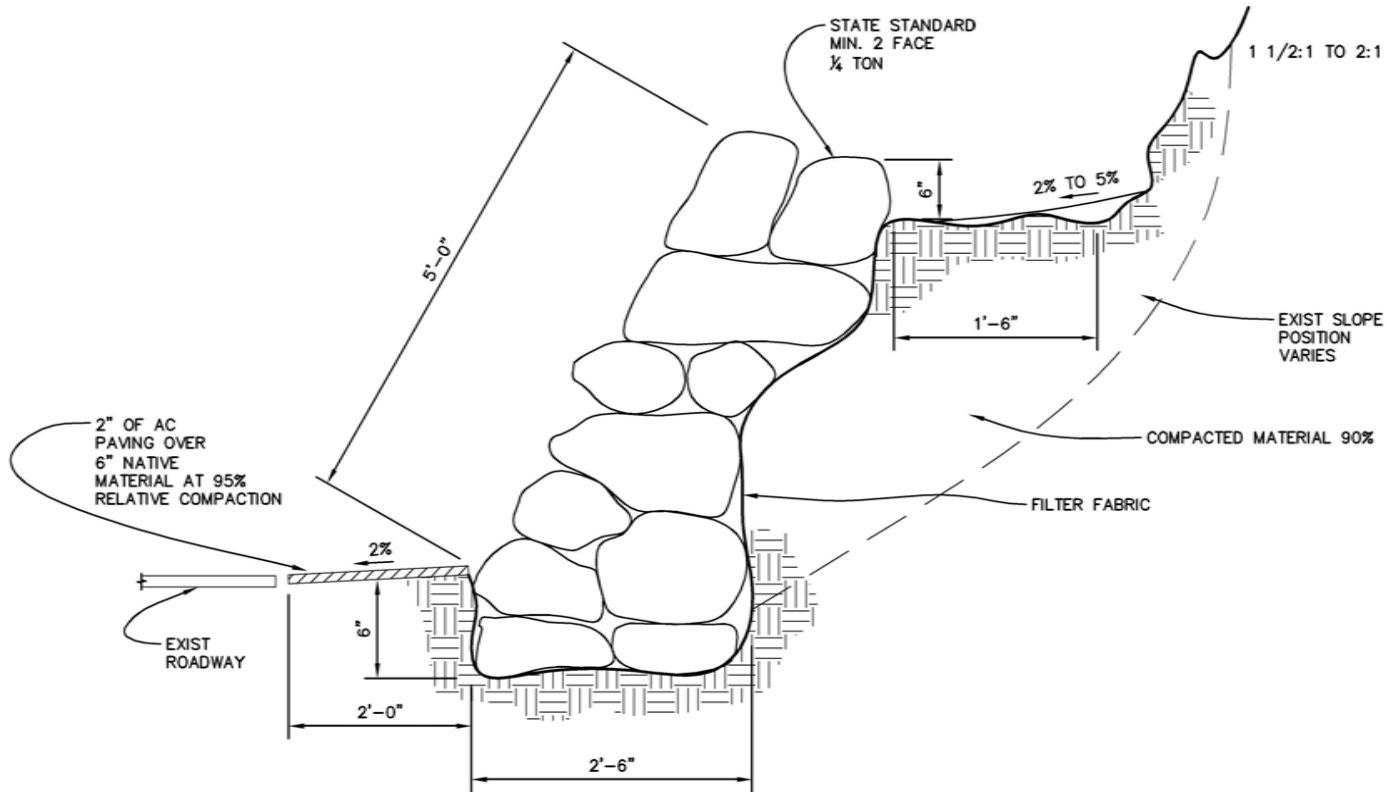


NOT TO SCALE

<b>GENERATED</b>		<b>REVISIONS</b>		<b>APPROVED:</b>		<b>EL DORADO COUNTY</b>			<b>STD. PLAN</b>	
NO.						DEPARTMENT OF TRANSPORTATION				<b>PAVED SWALE</b>
DATE: 03/12/90				DIRECTOR OF TRANSPORTATION 		<b>DESIGN STANDARDS</b>				
DESIGNED: JH				SENIOR CIVIL ENGINEER P.E. NO. C33427						
DRAWN: JM/SR/BS										
CHECKED:										
APPROVED:										

**NOTES:**

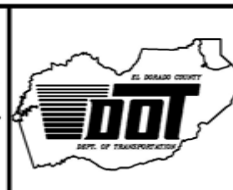
1. TAHOE BASIN ONLY, AND ONLY WHERE REPAIRING EXISTING.



NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i>
DATE: 3/12/90		DIRECTOR OF TRANSPORTATION
DESIGNED: JH		<i>Shen K. Payne</i> C33427
DRAWN: JM/SR/BS		SENIOR CIVIL ENGINEER P.E. NO.
CHECKED:		
APPROVED:		

**EL DORADO COUNTY**  
 DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**

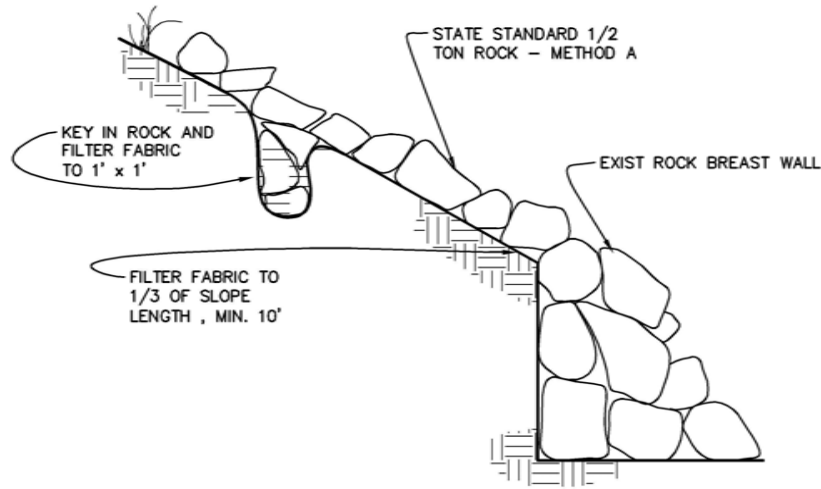


**ROCK BREAST WALL**

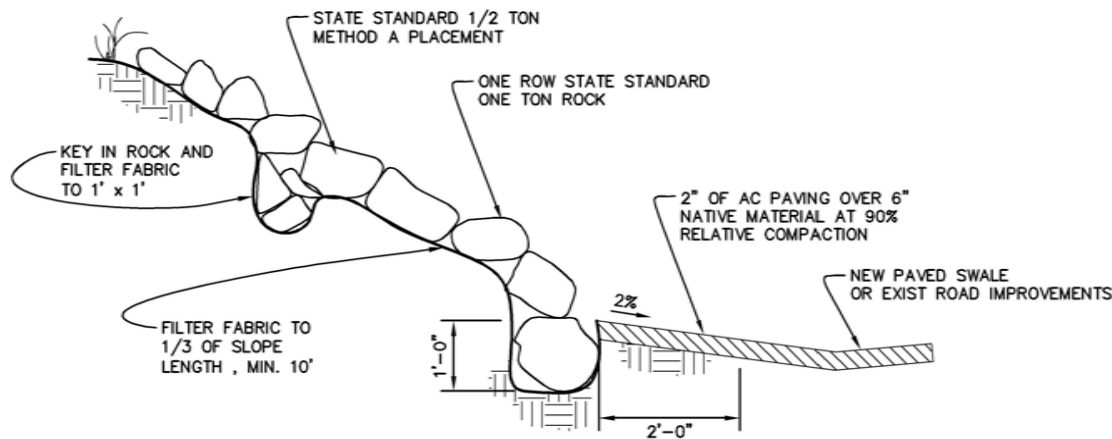
**STD. PLAN**  
**T-506**

**NOTES:**

1. TAHOE BASIN ONLY, WHEN REPAIRING EXISTING CONDITIONS.



IF ROCK SITS ABOVE EXISTING ROCK WALL



NOT TO SCALE

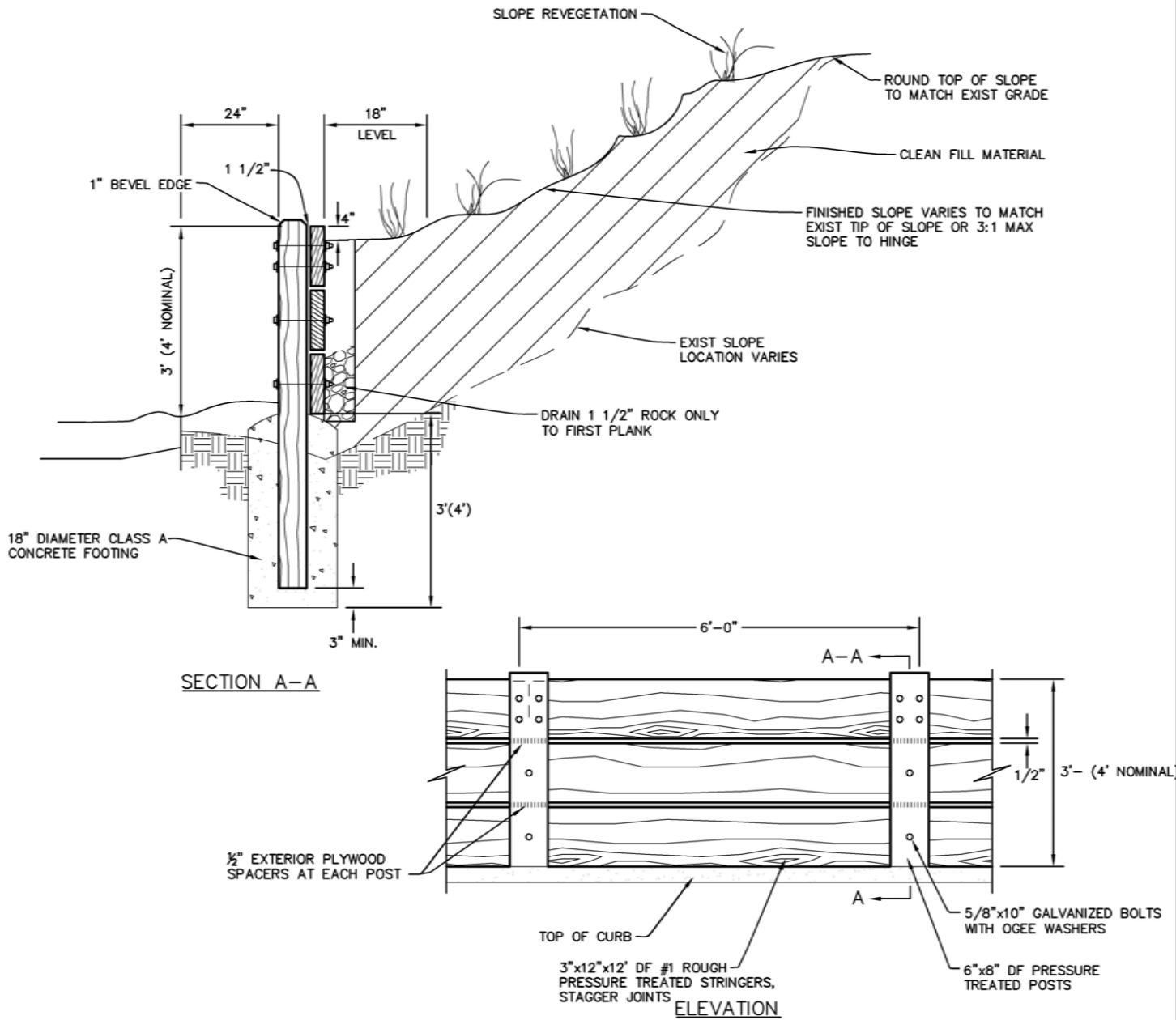
GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 03/12/90		
DESIGNED: JH		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED:		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



ROCK  
SLOPE  
PROTECTION

**STD.  
PLAN**  
**T-507**



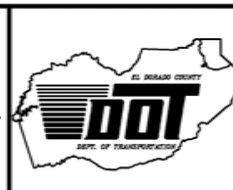
**NOTES:**

1. DEPTH OF FOOTING MAY BE REDUCED TO 2 FEET AS DIRECTED BY ENGINEER.
2. USE 12' LENGTHS FOR STRINGERS. 6' STRINGERS ALLOWABLE FOR RADII AND TRANSITIONS WHERE NECESSARY.
3. PLACE 20 SQ. FT. OF NO. 2 BACKING AS SLOPE PROTECTION AT THE END OF EACH WALL.
4. DIMENSIONS IN PARENTHESIS FOR 4' RETAINING WALL APPLICATIONS.

NOT TO SCALE

GENERATED	REVISIONS	APPROVED:
NO.		<i>Scott Chadd</i> DIRECTOR OF TRANSPORTATION
DATE: 3/17/90		
DESIGNED: JH		<i>Shen K. Payne</i> C33427 SENIOR CIVIL ENGINEER P.E. NO.
DRAWN: JM/SR/BS		
CHECKED:		
APPROVED:		

**EL DORADO COUNTY**  
DEPARTMENT OF TRANSPORTATION  
**DESIGN STANDARDS**



**3' AND 4'**  
**TIMBER**  
**RETAINING WALL**

**STD.**  
**PLAN**  
**T-508**