

**VALLEY COUNTY
MINIMUM STANDARDS FOR
PRIVATE ROAD
DESIGN AND CONSTRUCTION**

Adopted November 28, 2005



VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

TABLE OF CONTENTS

DEFINITION OF TERMS	II
I. DESIGN CRITERIA	1
A. GENERAL DESIGN CRITERIA.....	1
B. ROADWAY CLASSIFICATION	2
C. ROAD RIGHT-OF-WAY.....	2
D. PUBLIC ROADS.....	2
E. ALIGNMENT.....	2
F. ROADWAY CROSS-SECTION.....	3
G. STRUCTURAL ROAD SECTION	3
H. DRAINAGE.....	3
I. WATER QUALITY.....	4
J. STRUCTURES.....	5
K. SIGNING	5
L. TRAFFIC	6
M. DESIGN VEHICLE.....	6
II. CONSTRUCTION SPECIFICATIONS.....	7
A. DIVISION 100 – GENERAL CONDITIONS.....	7
B. DIVISION 200 - EARTHWORK.....	7
C. DIVISION 300 – TRENCHING.....	8
D. DIVISION 700 – CONCRETE.....	8
E. DIVISION 800 - UNCRUSHED AGGREGATE.....	8
F. DIVISION 800 - CRUSHED AGGREGATE	8
G. DIVISION 800 - ASPHALT PAVING	9

Figures

- Figure 100. Private Road
- Figure 150. Standard Cul-de-Sac
- Figure 200. Driveway Plan

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

Definition Of Terms

- **AASHTO** - American Association of State Highway and Transportation Officials.
- **Alley** – Public access of limited use intended only to provide access to the rear or side of lots or buildings in urban districts.
- **Applicant** - The person or persons making application to Valley County, to obtain a permit for grading, road construction, utility installation or driveway access.
- **Arterial Highway** – Highway controlled and maintained by the Idaho Transportation Department.
- **Best Management Practices (BMP)** - A measure or combination of measures determined to be the most effective and practical means of preventing or reducing contamination to ground water and/or surface water from nonpoint and point sources to achieve water quality goals and protect the beneficial uses of the water.
- **Cul-de-sac Road** – Local road having one end permanently terminated in a vehicle turnaround.
- **Dedication** – The setting apart of land or interest in land for use by the public. Land becomes dedicated when accepted by Valley County as a public dedication, either by ordinance, resolution, entry in the official minutes, or by the recording of a plat showing such dedication.
- **DU** – Dwelling Unit
- **Easement** – Grant of the right to use a strip of land for a specified purpose.
- **Engineer** – Professional Engineer registered in the State of Idaho.
- **Frontage Road** – Minor road parallel and adjacent to a major route that intercepts local traffic and controls access to the major route.
- **Highway** – Roadway designated as a State or Federal Highway by the responsible state or federal agency.
- **Irrigation Facilities** – Canals, laterals, ditches, conduits, gates, wells pumps, and equipment necessary for the supply, delivery and drainage of irrigation water.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

- **ISPWC** – Idaho Standards for Public Works Construction.
- **ITD** – Idaho Transportation Department.
- **KSF** – 1000 square feet.
- **Local Road** – Road that provides direct access to residential, commercial, and/or industrial sites for local traffic movements and connects to minor and major roads or arterial highways.
- **Loop Road** – Minor road with both terminal points on the same road of origin.
- **Major Collector Road** – General term for a road including primary county roads that provide travel corridors between cities, recreational sites and industrial areas.
- **Minor Collector Road** – Roadway that provides for traffic movement within neighborhoods and between major roads and local roads with occasional access to abutting property.
- **MUTCD** – Manual on Uniform Traffic Control Devices.
- **Plat** – Map of a subdivision:
 - **Preliminary Plat** – Preliminary plan, subdivision or dedication containing the elements and requirements set forth in Article II, Section 210 and 215 of the Valley County Land Use and Regulations Plan
 - **Final Plat** – Plan of the plat, subdivision or dedication, or any portion thereof, prepared for recording by the Valley County Recorder.
- **Private Road** – Road within a subdivision plat that is not dedicated to the public and not a part of the public road system.
- **Private Road Right-of-Way** – Privately owned land for a private road system.
- **Public Highway Agency** – This term includes the Valley County Road Department, the Idaho Transportation Department and the functioning Public Works departments of the Cities of Cascade, Donnelly and McCall.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

- **Public Right-of-Way** – Any land dedicated and open to the public and under the jurisdiction of a public highway agency.
- **Public Road** – Road, thoroughfare, alley, highway or bridge under the jurisdiction of a public highway agency.
- **Reserve Strip** – Strip of land between a dedicated road or partial road and adjacent property, in either case, reserved or held in public ownership for future road extension or widening.
- **Roadway** – That portion of a highway improved, designed or ordinarily used for vehicular travel, exclusive of sidewalks, shoulders, berms, and other portions of the public right-of-way.
- **Specification** – The construction specifications contained in the latest edition of the Idaho Standards for Public Works Construction (ISPWC) as modified by Valley County.
- **Traveled Way** – The portion of the roadway for the movement of vehicles exclusive of ditches and roadside areas.
- **Utility Facilities** – Installations or equipment, underground or overhead, furnished for use by the public, including but not limited to: electricity, gas, steam, television, communications, water, drainage, irrigation, sewage disposal, or flood control, owned and operated by any person, firm, corporation, municipal department, or board duly authorized by state or municipal regulations.

Variances

Variations from these standards must be approved by the Valley County Planning and Zoning Commission and the Valley County Board of County Commissioners. Variations will be reviewed on an individual basis.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

I. DESIGN CRITERIA

A. GENERAL DESIGN CRITERIA

1. The following design guidelines have been adopted by reference:
 - a. Roadway Design – AASHTO, A Policy on Geometric Design of Highways and Streets.
 - b. Signs and Markings – MUTCD, Manual on Uniform Traffic Control Devices.
 - c. Roadside Safety – AASHTO, Roadside Design Guide
 - d. Bridges – AASHTO, Standard Specifications for Highway Bridges.
 - e. Road Structure – Asphalt Institute, Design Guide and Traffic Index.
 - f. Drainage – ITD Design Manual
 - g. Traffic – TRB, Highway Capacity Manual and ITE, Trip Generation Manual\
 - h. Environmental - Handbook for Valley County Storm Water Best Management Practices.

Where possible, all designs shall be based on these guidelines and the applicable design criteria set forth therein. Variation from these design guidelines shall be based on site specific conditions, sound engineering judgment, and consideration of the safety of the traveling public.

2. The minimum design speed for a private local road shall be 35 mph in level terrain and 20 mph in mountainous terrain. Based on design traffic volumes, higher design speeds may be required.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

B. ROADWAY CLASSIFICATION

1. Requirements for private roads that exceed the volume and type of use consistent with a 'Local Road' functional classification will be determined based on site specific conditions.

C. ROAD RIGHT-OF-WAY

1. The minimum private right-of-way width for a private local road is 70 feet. Additional right-of-way and/or permanent easements may be required to accommodate snow storage and cut or fill slopes.
2. Private Cul-de-sacs shall have private right-of-way for a 60-foot radius circle for flat terrain locations. Additional right-of-way may be needed to accommodate snow storage and cut or fill slopes. Cul-de-sacs with a different shape and configuration may be allowed, providing that adequate private right-of-way is provided, the proposed geometry accommodates a standard design vehicle, and the design is approved by Valley County. A standard cul-de-sac layout is shown in Figure 150.
3. All private right-of-way lines at road intersections and at cul-de-sac bulbs shall be connected by a curve having a minimum radius of twenty feet (20') or a chamfer of forty feet (40').

D. PUBLIC ROADS

1. Public roads shall be designed in accordance with the Valley County Minimum Standards for Public Road Design and Construction.

E. ALIGNMENT

1. Table 1 is intended to show the minimum and maximum values for specific roadway design criteria. Design criteria for items not listed shall conform to AASHTO policy. Modification of the design criteria may be allowed on an individual project basis.

Table 1. Geometric Design Criteria

Design Parameter	Local Road
Vertical Grades ¹	Minimum 0.5% Maximum 10% ²
Super Elevations	Max. 0.04 ft. per foot
Angles of Intersection	70 - 90°

¹Roadways constructed using curb and gutter sections require a minimum grade of 0.3%

²May be increased to 12% with special attention to safety and maintenance consequences

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

F. ROADWAY CROSS-SECTION

1. The typical section for a private local road is shown on Figure 100.
2. Roadways with curb, gutter, and sidewalk will be reviewed on an individual basis.
3. Approaches shall be constructed in conformance with the driveway plan shown on Figure 200.
4. Private roads - accessing paved public roads shall be constructed with paved approaches for the first 30 feet.

G. STRUCTURAL ROAD SECTION

1. An adequate base and surface thickness is required for all roads. Structural road section calculations shall follow the Asphalt Institute design guidelines (equation listed below) and be submitted to Valley County for review.

$$T = 0.0032*(TI)*(100-R), \text{ where}$$

T = total gravel equivalent (ft.)

TI = traffic index

R = "R-value" of subgrade material

H. DRAINAGE

1. Drainage designs, including ditches and culverts, shall be based on a precipitation event with a return period of twenty-five (25) years for private local roads. Bridges, and primary storm conveyance runs shall be designed to accommodate a 100 year event. Downstream drainage systems shall not be adversely affected by upstream development. It is the developer's responsibility to ensure the runoff from a development does not contain pollutants and that the volumes and flow rates do not exceed pre-development conditions. All drainage systems shall be designed by a Professional Engineer licensed in the State of Idaho,
2. The Idaho Transportation Department (ITD) drainage design manual is recommended for estimating the volume of runoff.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

3. Culverts used for drainage purposes shall be corrugated steel, aluminum, or high density polyethylene (HDPE) with the wall thickness and minimum depth of cover shown in Table 2 (other culvert materials may be used if approved by Valley County):

Table 2. Culvert Materials

Diameter Inches	Steel Thickness Inches	Aluminum Thickness Inches	HDPE Thickness Inches	Cover Required *
12" through 36"	0.051 (16 ga)	0.075 (14 ga)	0.05 @ 12" 0.175 @ 36"	12" minimum

*Cover may be reduced to six inches (6") on residential driveways with 12 gage steel pipe.

4. Design flows shall not exceed 80% of pipe capacity.
5. Culverts across roadways and driveways shall be a minimum of twelve inches (12") diameter. Culverts under approach roads or driveways shall have a minimum 16 ga. wall thickness, and shall be installed as shown on the Figure 200.
6. All necessary drainage easements for accommodating drainage structures shall be shown on the plans and dedicated as a part of the approved plat. Drainage easements necessary for conveying storm water across private property shall be shown on the plat and recorded with Valley County.
7. Dry wells may be used in special circumstances where other methods of storm water management have been explored and there is no feasible alternate to dry well installation.

I. WATER QUALITY

1. Valley County has adopted the Handbook of Valley County Storm Water Best Management Practices (VC-BMP) to assist local agencies and developers with the selection, design, installation and maintenance of BMPs to reduce storm water pollution. The handbook presents general guidelines to mitigate water quality impacts of new construction.
2. Road construction and developments must meet all state and federal requirements.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

J. STRUCTURES

1. Bridge structures shall be designed by a Professional Engineer licensed in the State of Idaho, in accordance with AASHTO Standard Specifications for Highway Bridges, latest edition.
2. The minimum design vehicle for bridge construction on private local roads shall be an HS-20 truck.
3. The minimum width of the bridge structure measured face-to-face of curb or the face of the bridge rails shall be the full width of the traveled way, plus two feet eight inches (2'-8").
4. All structural retaining walls shall be designed by a Professional Engineer licensed in the State of Idaho and shall be approved by Valley County prior to construction.

K. SIGNING

1. All traffic control devices (signs, pavement markings, and markers) shall be shown on the roadway design plans.
2. The traffic control devices and their application shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.
3. Traffic control signs and private signs shall comply with Valley County sign standards detailed in the Valley County Land Use and Development Ordinance.
4. All signs shall be installed prior to the acceptance of roads, unless approved otherwise by Valley County.
5. Valley County may determine pavement-marking standards subject to MUTCD requirements. The color, pattern and dimensions of marking shall be in conformance with the MUTCD, latest edition. Paint quality shall be the same as that used by the Idaho Transportation Department for their pavement markings.
6. All temporary and construction traffic control shall conform to the MUTCD, latest edition.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

L. TRAFFIC

1. Traffic volumes from new developments shall be determined using the ITE – Trip Generation Manual. The following rates shown in Table 3 are recommended for general traffic estimation.

Table 3. Common Trip Generation Rates

Land Use	Unit	Average Daily Traffic Vehicle Per Day
Residential	DU	8.0 vpd
Retail	KSF	40.0 vpd
Industrial	KSF	10.0 vpd

DU = Dwelling Unit
KSF = 1000 Square Feet

2. Roadway capacities shall be evaluated according to the recommendation of the Transportation Research Board (TRB) – Highway Capacity Manual. A level of service rating of C or better is required for all private roads.
3. Auxiliary lanes shall be provided according to AASHTO guidelines.

M. DESIGN VEHICLE

1. All private roads shall be designed to accommodate a single unit (SU) fire truck with an outside wheel path radius of 42 ft.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

II. CONSTRUCTION SPECIFICATIONS

A. DIVISION 100 – GENERAL CONDITIONS

The Idaho Standards for Public Works Construction (ISPWC) (as amended or modified herein) shall control road construction work in Valley County.

1. Road, drainage and utility improvements are required by Valley County as a condition of approved land use. All improvements (public and private) shall be completed prior to the recording of the final plat or financially guaranteed as provided in the Valley County Subdivision Regulations.
2. All testing required in these standards or required by Valley County shall be done by an accredited or approved testing laboratory at the expense of the applicant or contractor. Copies of all tests shall be submitted to Valley County for review.
3. All plans, submittals, calculations, reports and materials shall be in English units.
4. Changes to any materials, quality control or workmanship on public improvement projects shall be approved by Valley County in writing.
5. Valley County shall be notified at least five business days prior to start of construction

B. DIVISION 200 - EARTHWORK

1. Clearing and grubbing shall consist of the removal and disposal of all organic and other unsuitable material from the road construction area.
2. In solid rock excavation, the solid rock shall be excavated to six inches (6”) below the finished sub grade elevation and back-filled with approved granular materials.
3. Unstable sub-grade conditions shall be remedied by over-excavation and back-filling with approved granular material. Geotextile material may be required.

VALLEY COUNTY
MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

4. Sub-grade shall be compacted to a density no less than ninety-five percent, (95%) of the AASHTO T-99 Proctor Density.
5. Class A compaction shall be specified for construction

C. DIVISION 300 – TRENCHING

1. A right-of-way use permit shall be obtained from Valley County prior to commencing work in any public right-of-way.

D. DIVISION 700 – CONCRETE

1. The basic mix design for curb, gutter and sidewalk work on roads shall have at least a 28-day strength of 3000 lbs. (Class 30).

E. DIVISION 800 - UNCRUSHED AGGREGATE

1. Pit run material shall be durable, have a sand equivalent not less than 30, and shall meet the gradation shown in Table 4.

Table 4. Subbase Gradation (% Passing)

Sieve Size	Subbase
12"	95-100
8"	
6"	
2"	
#4	15-65
#200	0-12

F. DIVISION 800 - CRUSHED AGGREGATE

1. The crushed aggregate for base shall conform to Table 5.

Table 5. Base Material Gradation (% Passing)

Sieve Size	% Passing
1"	100
3/4"	90-100
#4	40-75
#8	30-50
#200	3-20

2. Material shall be mechanically compacted by rolling to at least ninety-five percent (95%) of the AASHTO T-99 Proctor Density.

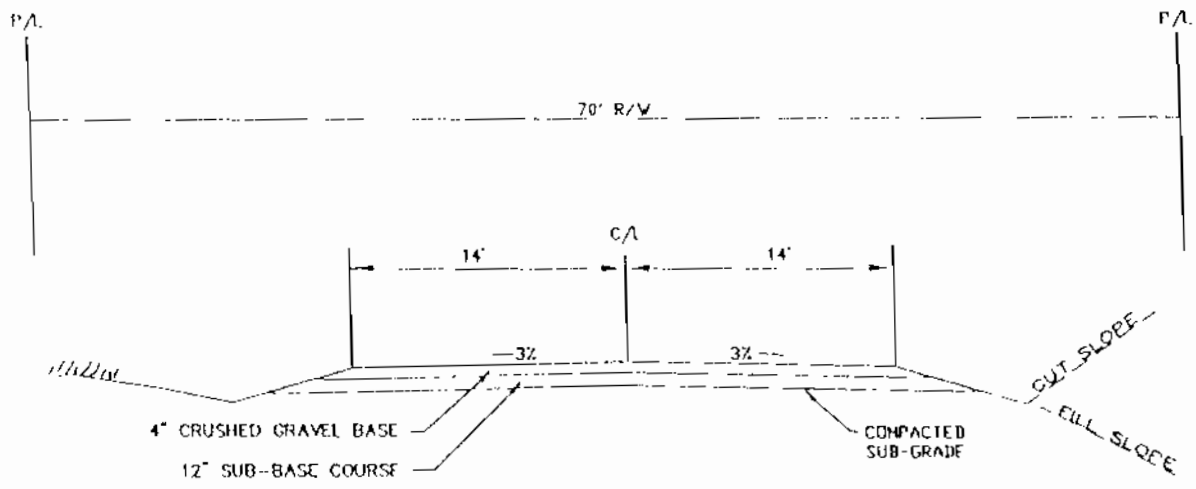
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MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

G. DIVISION 800 - ASPHALT PAVING

1. Asphalt paving shall be one of two types: hot plant mix asphalt or asphalt cold mix.
2. Hot Plant Mix Asphalt:
 - a. The hot plant mix asphalt concrete shall be Class III. The asphalt cement performance grade shall be selected for the site temperature requirements.

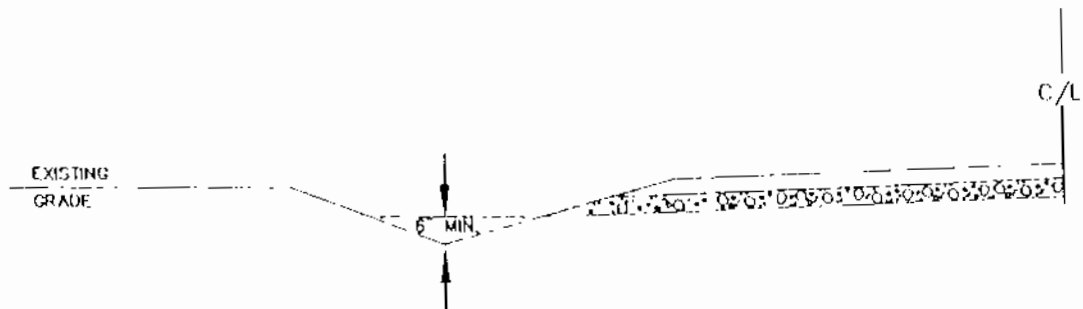
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MINIMUM STANDARDS FOR PRIVATE ROAD DESIGN AND CONSTRUCTION

FIGURES



GRAVELL ROAD SECTION

Note: Section thickness Based On
 H-4, Subgrade R-5, and
 Valley County Minimum
 Requirements

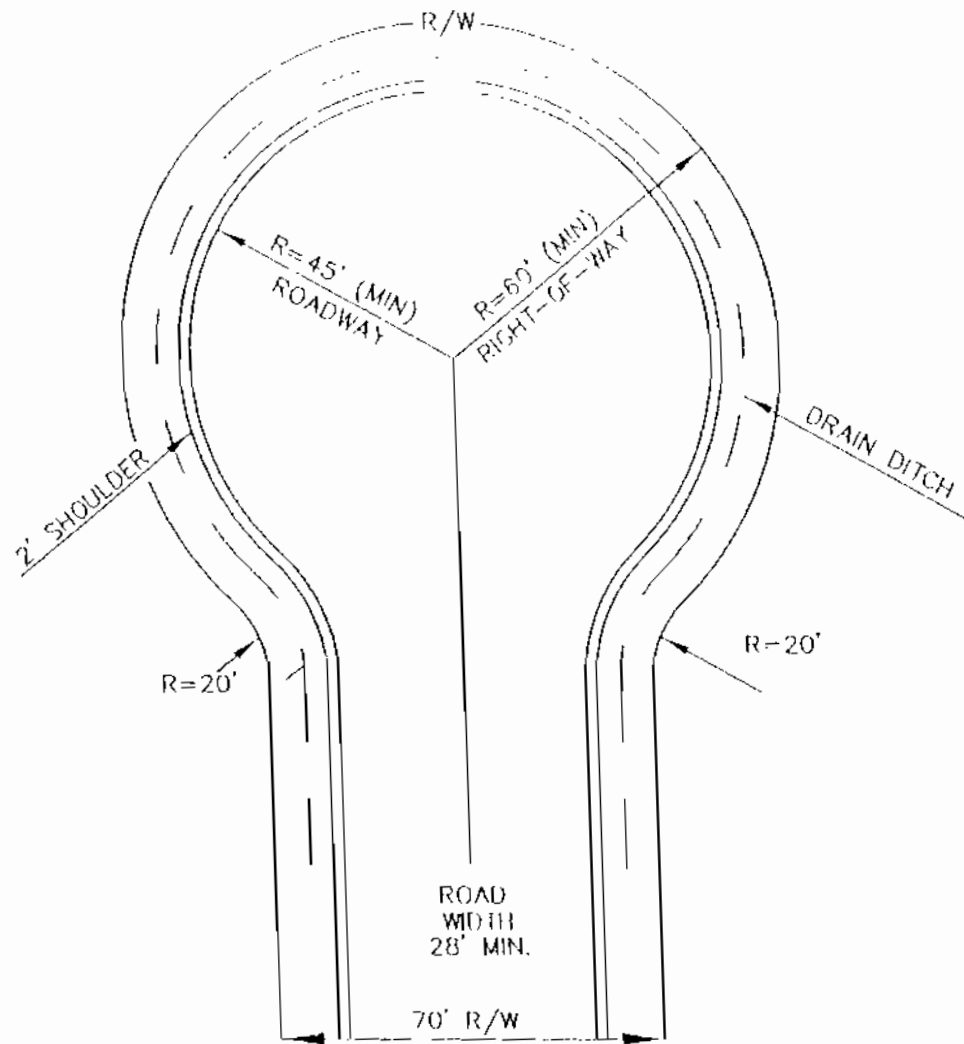


ROADSIDE DITCH DETAIL
 (TYPICAL FOR ALL ROAD CLASSIFICATIONS)

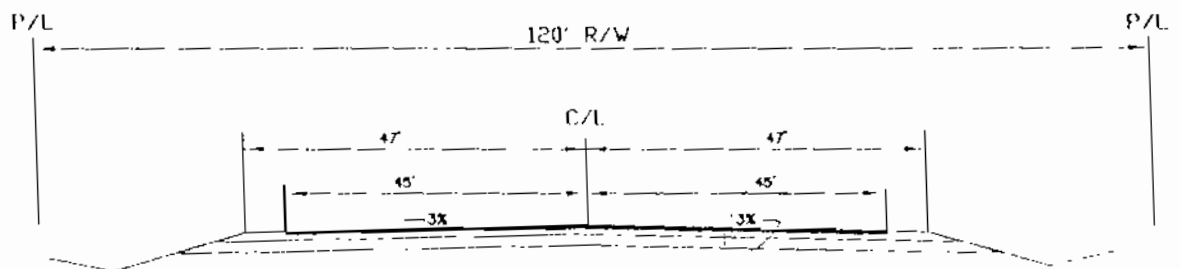
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PRIVATE ROAD

FIGURE
 100



STANDARD DIMENSIONS



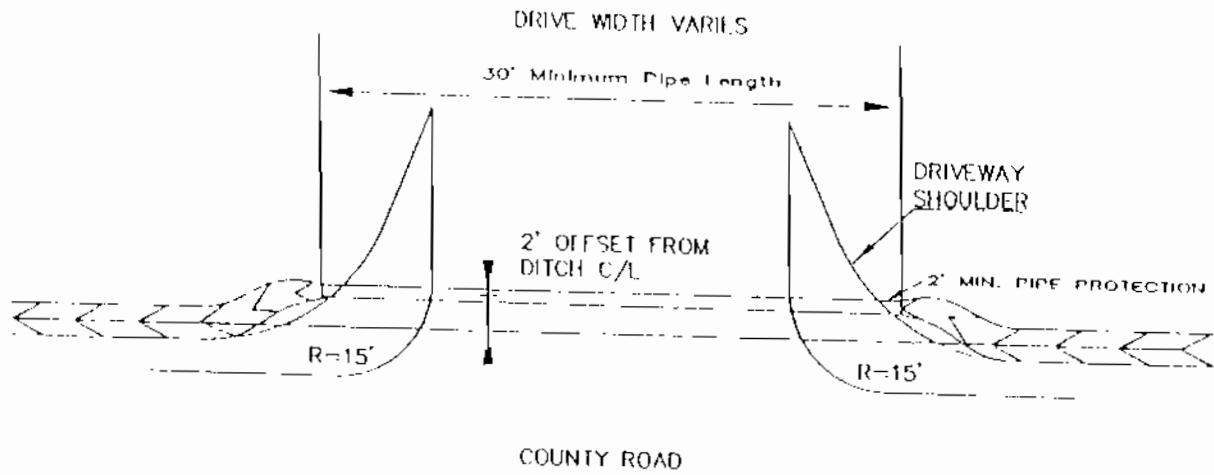
NOTE: ROADWAY AND SHOULDER WIDTHS ALSO APPLY TO PRIVATE ROADS

CUL-DE-SAC SECTION

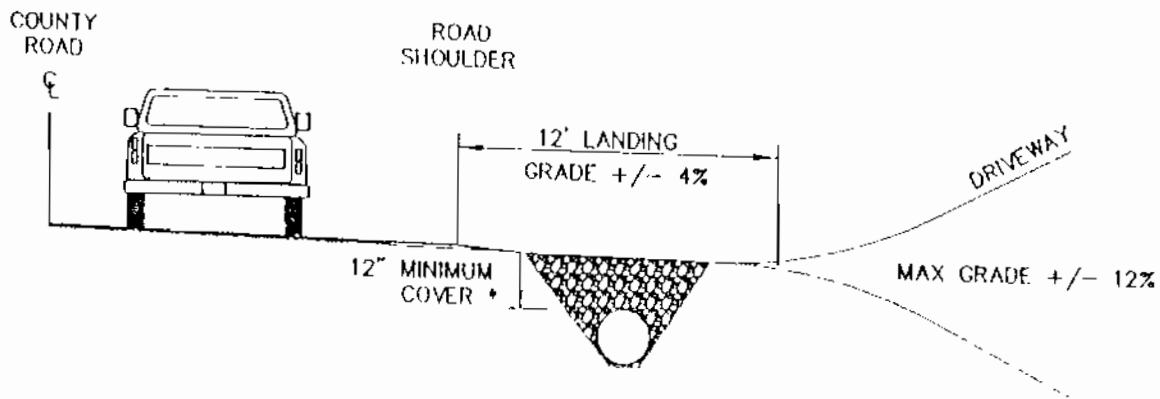
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STANDARD CUL-DE-SAC

FIGURE
150



PLAN VIEW



RECOMMENDED DRIVEWAY PROFILE

APPROVED MATERIAL
 STEEL CMP 16 GAUGE
 RIBBED POLYETHYLENE
 ALUMINUM 14 GAUGE

* NOTE: 6" FOR 12 GAUGE STEEL PIPE

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DRIVEWAY PLAN

FIGURE
 200