

ORDINANCE NO. 94-47

REVISED ASOTIN COUNTY ROAD STANDARDS ORDINANCE

WHEREAS, the former Asotin County Road Standards were adopted in 1973 under Ordinance Number 1293; and

WHEREAS, Asotin County is experiencing significant growth and a corresponding increase in development activity; and

WHEREAS, Washington State regulations addressing road standards have been revised since 1973; and

WHEREAS, the Asotin County Board of Commissioners desires to update the road standards to meet current regulations and community needs; and

WHEREAS, Washington State RCW 36.32.120 (7) requires public hearings for the adoption or amendment of County ordinances; and

WHEREAS, public hearings were held on September 12 and September 19, 1994 and a subsequent two-week period of public written comment was afforded for the public to address concerns regarding the revised road standards; and

WHEREAS, all public comment was evaluated and incorporated into the revised Asotin County Road Standards where deemed appropriate by the Board of County Commissioners.

NOW THEREFORE, BE IT ORDAINED, the attached revised Asotin County Road Standards Ordinance be adopted as Ordinance No. ____; and

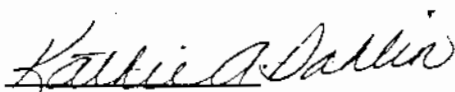
BE IT FURTHER ORDAINED, that Ordinance No. 1293 is hereby repealed, and the Asotin County code shall be modified to reflect the changes made herein; and

BE IT FURTHER ORDAINED, that the attached revised Asotin County Road Standards shall be in full effect from and after the 17th day of October, 1994. Any substantially completed (in the opinion of the Asotin County Board of Commissioners) plats, plans, specifications or other related documents pertaining to roadway and drainage design submitted to Asotin County for review and acceptance following the effective date of the revised Asotin County Road Standards, Ordinance No. ____, shall conform to said standards. Any substantially complete plats, plans, specifications or other related documents pertaining to roadway and drainage design submitted to Asotin County for review prior to the effective date of the revised Asotin County Road Standards, Ordinance No. ____, shall be subject to design requirements contained in the former Asotin County Road Standards, Ordinance No. 1293.

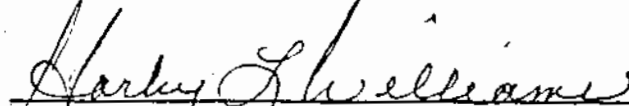
^{17th}
DATED this 10th day of October, 1994.

ATTEST:

ASOTIN COUNTY BOARD OF COMMISSIONERS



Kathie A. Dahlin
Clerk of the Board

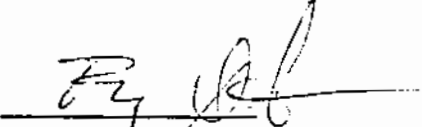


Harley L. Williams, Chairman

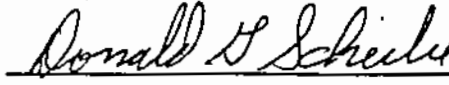
APPROVED AS TO FORM:



James C. Fuller, Member



Ray D. Lutes
Prosecuting Attorney



Donald G. Scheibe, Member

**ASOTIN COUNTY
DESIGN STANDARDS**

For the construction of urban and rural arterials and collectors and private roads.

- 1) Adopted _____, 1994. Per RCW 35.78.030, RCW 36.86.020 and RCW 43.32.020.
- 2) Ordinance No. _____
- 3) Contents:
 - Introduction
 - Chapter I General Conditions
 - Chapter II Design Elements
 - Chapter III Asotin County Standards

INTRODUCTION

Ordinance 1293, adopted December 5, 1973, originally established policies to regulate the acceptance of newly constructed roads into the County Road System. The Asotin County Public Works Department has reviewed and updated the 1973 ordinance and prepared current "Roadway Design Standards" which provide a necessary update of Ordinance 1293 and the former roadway standards. These new standards provide modern design elements and rectify shortcomings in the former road standards. The new standards provide technical guidance for design of newly constructed roads and requirements for construction quality control procedures for all roadways which are intended for use and will be brought into the Asotin County road system or roadways intended for private use. In addition, these standards greatly improve traffic and public safety by updating the standards to conform with generally accepted roadway geometric design elements in areas such as sight distance and horizontal curve design.

CHAPTER 1 GENERAL CONDITIONS

- 1.01 Shortened Designation: These Asotin County Road Standards will be used throughout the text as the "Standards" and on the drawings as "ACRS." Asotin County will herein after be referred to as "the County."
- 1.02 Applicability: These Standards shall apply to all newly constructed road and right-of-way facilities and reconstructed roads, both public and private, within the County. These Standards are intended to supersede roadway standards promulgated by Ordinance 1293.
- 1.03 Responsibility To Provide Roadway Improvements: Any land development which will impact the service level, safety, or operational efficiency of abutting or serving roadways or is required by other county code or ordinance to improve such roadways shall improve those roadways in accordance with these Standards.
- 1.04 General References: In addition to the Standards, the following references may be used to supplement these Standards for county roadway design approval provided that these references are consistent with the Standards and represent the most current versions as amended.

Washington State Department of Transportation (WSDOT)

- Standard Specifications for Road, Bridge, and Municipal Construction
- Supplement to Manual of Uniform Traffic Control Devices (MUTCD) (WAC 468-95)
- Bridge Design Manual
- Highway Hydraulics Manual
- Standard Plans for Road, Bridge, and Municipal Construction
- Design Manual
- Pavement Design Manual
- Local Agency Guidelines (LAG) Manual

American Association of State Highway Transportation Officials (AASHTO)

- A Policy on Geometric Design of Highways and Streets
- Guide for Design of Pavement Structures
- Highway Drainage Guidelines
- Guide for Roadway Lighting
- Roadside Design Guide

Transportation Research Board (TRB)

- Highway Capacity Manual
- Special Report 214, Designing Safer Roads, "Practices for Resurfacing, Restoration, and Rehabilitation"

Institute of Transportation Engineers (ITE)

- Traffic Engineering Handbook

Federal Highway Administration (FHWA)

- Manual on Uniform Traffic Control Devices (MUTCD)

Miscellaneous References

- "Highway Safety Requirements for Low Volume Roads", John C. Glennon, Transportation Research Record 702, 1979.
- "Economics of Design Standards for Low Volume Roads", C.H. Oglesby, NCHRP Report 63, 1969.
- "Designing Safer Roads, Practices for Resurfacing, Restoration, and Rehabilitation", Special Report 214, Transportation Research Board, 1987.
- "Highway Safety Requirements for Low Volume Rural Roads", John C. Glennon, Transportation Research Records #702, 1979.
- "Design and Traffic Control Guidelines for Low Volume Rural Roads", John C. Glennon, NCHRP Report 214, 1979.
- "Guidelines for Guardrail on Low Volume Roads", Virginia Transportation Research Council, 1990.

1.05 Variations: Variations from these Standards may be granted by the Board of County Commissioners at the recommendation of the County Engineer upon evidence that such variations are in the public interest, and that requirements for safety, function, fire protection, appearance, and maintainability based upon sound engineering judgement are fully met. Procedures for requesting variations are available from the County Engineer. Variations must be approved prior to construction. Whenever the need for a variation can be identified in advance, the variation should be proposed at preliminary plat stage and included for consideration during plan review and public hearing. Any variations from these Standards

which do not meet the Uniform Fire Code will require concurrence by the Asotin County Fire Marshall.

1.06 Penalties: Failure to comply with these Standards may result in denial of plan or development permit approval, revocation of prior approvals, legal action for forfeiture of bond, code enforcement, and/or other penalties as provided by law.

1.07 Meaning of Terms:

"Cul-de-sac": Short street having one end open to traffic and the other temporarily or permanently terminated by a vehicle turnaround.

"Developer": Any person, firm, partnership, association, joint venture or corporation or any other entity who undertakes to subdivide for the purpose of resale and profit.

"County Engineer": Asotin County Road Engineer, having authorities specified in RCW 36.75.050 and 36.80, or his authorized representative.

"Loop": Road of limited length forming a loop, having no other intersecting road, and functioning mainly as direct access to abutting properties. A loop may be designated for one-way or two-way traffic.

"Private Street": Private vehicular access provided for by an access tract, easement, or other legal means, serving two or more potential dwelling units; privately owned and maintained. Private street does not include private driveways or other like facilities.

"Public Street": Publicly owned and maintained street.

"Right-of-Way": Land, property, or property interest (e.g., an easement), usually in a strip, acquired for or devoted to transportation purposes.

"Road" and "Street" will be considered interchangeable terms for the purpose of these Standards.

"Rural Areas": Areas so designated in the Asotin County Comprehensive Plan, and as implemented through community plans; characterized by long-term low density of development.

"Transitional Areas": Areas so designated in the Asotin County Comprehensive Plan; characterized by low density but earmarked for redesignation through community planning as either a rural or an urban area.

"Traveled Way": The part of the road made for vehicle travel excluding shoulders and auxiliary lanes.

"Urban Areas": Areas so designated in Asotin County Comprehensive Plan, and as implemented through community plans; characterized by denser commercial/industrial and residential development.

"Utility": A company providing public service such as gas, electric power, telephone, telegraph, water, sewer, or cable television, whether or not such company is privately owned or owned by a governmental entity.

1.08 Severability: If any part of these Asotin County Road Standards as established by ordinance shall be found invalid, all other parts shall remain in effect.

CHAPTER 2 PURPOSE AND DESIGN ELEMENTS

- 2.01 Preface: Asotin County is generally considered a small county. Roadway design therefore should reflect the requirements of a small county. The following text generally describes major roadway design elements as they relate to small county low volume road design. It should be noted that all of the single design elements identified herein are directly or indirectly related. The experienced designer should refer to this document, and the referenced publications, in the process of taking a project through the preliminary design to the construction stage. Major road design elements are discussed below.
- 2.02 Purpose: Asotin County has developed and adopted Standards referenced herein for the following two-fold purpose:
- (a) To set forth specific consistent design criteria for developers and other private parties constructing or modifying county roads or right-of-way facilities which require county licenses or permits or will be accepted into the county roadway system;
 - (b) To establish uniform criteria to guide Asotin County's internal construction processes for new roads or reconstruction of existing county roads.

In adopting these Standards, the County has sought to encourage standardization of road design elements where necessary for consistency and to assure, so far as practical, that public motoring, bicycling, equestrian, and pedestrian needs are met. Consideration of these needs include but are not necessarily limited to safety, convenience, esthetics, drainage, and economical maintenance. The Standards also provide requirements for the location and installation of utilities within the public right-of-way.

The County's new Standards, in addition to fulfilling tasks listed above, satisfy the County's requirements for permitting and licensing through the adoption of specific, identifiable standards to guide private individuals and entities in the administrative process of procuring the necessary County approval. Yet, the Standards allow the County the needed flexibility to carry out its general duty to provide streets, roads, and highways for the diverse and changing needs of the traveling public. Accordingly, the Standards do not represent the legal standard by which the County's duty to the traveling public is to be measured.

The Standards cannot provide for all situations and are not intended as a substitute for sound engineering judgement. They are intended to provide guidance but do not constitute a substitute for competent work by design professionals. It is expected that registered professional land surveyors, engineers, and architects will be utilized during the appropriate phases of each project. The Standards are not intended to unreasonably limit innovative or creative efforts of the design professionals whose efforts may result in better quality, cost

savings, or both. Any proposed departure from the Standards however, will be evaluated based on the likelihood that such variance will produce a compensating or comparable result, in every way adequate for the road user and the County.

- 2.03 Economic Analysis: While economic analysis is not strictly a design element, the concept is important during design of low volume roads. While it might be desirable from a design and maintenance viewpoint to construct or reconstruct all roadway improvements to current design standards, the reality is that funds to accomplish these goals may not be available at the local level. Federal fuel tax funds are available for construction only on designated arterials and must include a match by local funds. State fuel tax funds are similarly earmarked for construction only on designated arterials with local matching funds required. In addition, funds are not available for routine maintenance activities.

Therefore, the design engineer must apply an economic analysis to each project and determine how to strike the best balance between the desired design, the safety and mobility of the traveling public, and the available funds. The manner in which such an economic analysis is completed is up to the professional judgement and experience of the design engineer and should be appropriately documented.

- 2.04 Design Traffic Volume: Roads and streets should be designed for a specific traffic volume range, using either the current average daily traffic (ADT) or projected ADT for some future design year, preferably 20 years hence. Current and future land use trends should also be considered in making these decisions. On low volume facilities, traffic volumes generally do not normally change significantly for the foreseeable future. However, growth significantly exceeding the projected estimate, will require reevaluation of the anticipated traffic volume. In an urban environment low volume facilities typically consist of relatively short streets that are not likely to be extended. In rural areas they most likely would be remote agriculture or natural resource access roads where there is little or no likelihood of land use change.

- 2.05 Design Speed: Geometric design features of a low volume facility should be consistent with the design speed appropriate for the facility. For example, this may vary from a low of 20 mph (miles per hour) in mountainous terrain to a high of 60 mph in flat terrain. It should be noted, however, that the design speed rarely represents the anticipated operating or posted speed limit.

- 2.06 Sight Distance: The Standards and WSDOT and AASHTO design manuals contain an exhaustive discussion of the factors and assumptions associated with the calculation of stopping, passing, and intersection sight distance. Stopping sight distance is a vital consideration for both urban and rural situations. Passing sight distance will likely be pertinent only in rural situations where operating speeds are in excess of 30 mph. Intersection sight distance must be considered in light of the terrain in which the facility is

located and, in urban situations to what extent parking is permitted. Where the improvement contemplates pavement of the roadway, the simplest approach is to base the design on stopping sight distance, and to control passing and intersection situations with appropriate striping.

- 2.07 Horizontal Alignment: On most low volume roads and streets, especially those classified as local access where design speeds are generally in the 20-25 mph range, short radius curves may be tolerated and superelevation may not be necessary. On roads with design speeds as high as 60 mph, horizontal alignment becomes a critical design consideration. Each individual road alignment, however, is unique and must be carefully evaluated to ensure appropriate design. Computations to determine appropriate curve radius and superelevation are important elements in the design process and are well detailed in the Standards and WSDOT and AASHTO design manuals.
- 2.08 Vertical Alignment: In an urban curbed low volume street situation the minimum acceptable grade to assure proper drainage is an important consideration. Tolerable maximum grades will vary with road use. Steeper grades acceptable on an urban residential street may not be acceptable on a rural road serving heavy trucks. Intersections on steep grades should be avoided whenever possible, especially in areas with recurring snow and ice problems. In urban areas ease of access for emergency vehicles is also a consideration when establishing grades. For rural projects the Standards and WSDOT and AASHTO design manuals include tables of maximum grades related to design speed and terrain. The design of crest and sag vertical curves is related to design speed and is especially important in rural projects with high design speeds.
- 2.09 Cross Section Elements: The Standards and WSDOT and AASHTO design manual contain tables of recommended minimum roadway, pavement and shoulder widths for various design speed, and various levels of ADT, with the low end addressing all volumes below 400 ADT. It is recognized, however, that there are thousands of miles of both rural and urban roads and streets on which traffic volumes fall even below 150 ADT. In this category there may be unique situations for which the County Engineer can justify and use somewhat lesser widths than those suggested by the Asotin County Road Standards.
- 2.10 Drainage: All roadways must have adequate crown or adequate cross-slope to get water off the roadway. Careful cross-slope design is especially important at the ends of horizontal curves with superelevation and at intersections. The size and shape of drainage ditches will depend on the amount of runoff and the type of soils in which the road and ditches are being built. It must also be recognized that the drainage ditch and headwalls are usually in the clear zone, or recovery area, which is an important roadway safety feature. In curb and gutter situations, especially where grades are at or near recommended minimums, the location and design of inlets becomes most important.

2.11 Clear Zone: The designer must be aware of the extensive tables of recommended clear zone distances in the design manuals. It must also be recognized, however, that serious accidents on low volume roads, especially on those below 150 ADT, are rare occurrences. At this low end of the scale, the cost of providing the recommended clear zone may be prohibitive. Research undertaken to re-evaluate the safety needs on low volume rural roads states that the suggested values for side slopes and clear zones should be recognized as idealistic objectives and that a more realistic approach to roadside safety on low volume roads should depend on achieving a balance between the cost and the safety effectiveness of the design treatment.

It is further stated that, while the application of such an analysis to low volume roads indicates that individual roadside safety treatments yield very small safety contributions, some low cost improvements do appear to be cost effective especially on the outside of curves. The removal of certain trees and relocation of utility poles are recommended. Also cited as being cost effective are the placement of guardrail on steep slopes, removal of unnecessary guardrail on flat slopes, and the flattening of steep but low embankments. In this regard it is most important that the designer must apply his or her own professional judgement in making the final design decisions, and be prepared to defend and justify them if necessary.

2.12 Guardrail: If it has been established that guardrail is justified on a particular improvement the designer must determine the best location, type of construction, and post-spacing that would be most appropriate for the function and anticipated traffic volume of the facility. The designer should be aware that warrants and designs developed for high volume, high speed facilities are not necessarily appropriate for low volume and/or low speed location.

2.13 Utilities: All utility structures and appurtenances that extend above the surface of the road right-of-way are a potential hazard to users of the facility and should be located near the edge of the right-of-way, especially in rural situations and with higher speeds of travel. In an urban environment on curbed streets, and with lower speeds, the face of utility poles may be located to within 18" of the curb face. When a project involves reconstruction of an existing facility in a restricted corridor where additional right-of-way is prohibitive or impossible to acquire and existing utility structures must be accommodated, a joint effort by the roadway and utility designers will be needed to assure that a safety-sensitive design has been achieved.

2.14 Miscellaneous Considerations:

- Roadway approaches, public or private, should be designed so as to provide adequate sight distance in both directions on the facility being accessed, and also as not to interfere with drainage.
- Americans with Disabilities Act (ADA) facilities are not normally associated with low volume roads and streets, except that in an urban development with sidewalks

and curb, the appropriate wheelchair ramps should be provided at intersections. The designer should be aware of the requirements of the ADA.

- Bicycle facilities would not normally be expected in a low volume environment except in situations where the facility is part of an adopted bicycle trail plan. It may then be desirable to provide a widened shoulder and appropriate drainage grates.
- Pedestrian facilities should be provided where significant numbers of children are walking to or from school, or where other pedestrian traffic warrants.
- Truck turning radii as detailed in the AASHTO Manual should be provided where significant volumes of heavy trucks are expected.
- Bus pullouts would not normally be part of a low volume project design, but certainly may be provided in case of special need.

CHAPTER 3 ASOTIN COUNTY ROAD STANDARDS

3.01 Definitions:

Average Daily Traffic (ADT): The general unit of measure for traffic defined as the total volume during a given time period (in whole days), greater than one day and less than one year, divided by the number of days in that time period.

Clear Zone: The clear zone is that roadside border area starting at the edge of the traveled lane that is available for safe use by errant vehicles. The available clear zone is the distance, measured in feet, normal to the highway beginning at the edge of the traveled lane to the closest part of any fixed object or nontraversable obstacles. Establishment of a minimum width clear zone is recommended. Rigid objects and certain other obstacles within that zone should be removed, relocated to an inaccessible position outside the minimum clear zone, remodeled to make traversable, breakaway, or shielded. Traffic control signs and luminaries with breakaway supports are not considered as obstacles. All new construction and reconstruction projects should consider a minimum clear zone distance.

Design Hourly Volume (DHV): The DHV is generally the 30th highest hourly volume (30 DHV) of the future year chosen for design. On the average rural road or arterial, DHV is about 15 percent of ADT. For urban areas, DHV is usually between 8 to 12 percent of the ADT.

Functional Classification: The roadway classifications referred to herein are the Federal Functional Classifications shown on the official functional class maps prepared by the Transit, Research, and Intermodal Planning (TRIP) Division of the Washington State Department of Transportation.

Low Volume Roads and Streets: For this document, a collector arterial or lower classified road and street with an ADT of less than 400.

New Construction: New construction is the building of a new roadway or structure on substantially new alignment, or the upgrading of an existing roadway or structure by the addition of one or more continuous traffic lanes.

Private Road: Roadway which serves or is utilized for ingress and egress to rural areas divided at a rate no greater than one lot per five acres, provided the roadway is not utilized by more than 15 lots.

Reconstruction: A reconstruction project involves major construction activity in excess of 3-R activity. Reconstruction includes significant changes in cross section and/or shifts in

vertical or horizontal alignment. If 50 percent or more of the project length involves significant vertical or horizontal alignment changes, the project will be considered reconstruction. Reconstruction may require acquisition of additional right-of-way, and may include all items or work usually associated with new construction

Road: An improved or maintained right-of-way dedicated as specified herein, which provides vehicular circulation or principal means of access to or within a subdivision or short subdivision or other area of the county, which may also include provisions for open space and recreation areas, cut and fill slopes and drainage.

Rural Road and Street: Roadway which serves or is utilized for ingress and egress to rural areas divided at a rate no greater than two lots per acre, with minimum lot sizes being defined as an area with a gross square footage of 11,300 or greater or otherwise consistent with prevailing Asotin County septic standards.

Subdivision: The division or redivision of land into five or more lots, tracts, parcels, sites or divisions for the purpose of sale, lease or transfer of ownership and shall include all resubdivision of land

Short Subdivision: The division or redivision of land into four or fewer lots, tracts, parcels, sites or divisions for the purpose of sale, lease, or transfer of ownership.

Traveled Lane: That portion of the roadway used for the movement of vehicles exclusive of the portion of the roadway width which is used, or available for parking of vehicles.

Urban Road and Street: Roadway which serves or is utilized for ingress and egress to subdivisions or other primarily industrial, commercial or residential areas divided at a rate of three lots per acre or greater with lots being defined as an area with a gross square footage of 11,300 or less or otherwise consistent with prevailing Asotin County septic standards.

- 3.02 Ingress - Egress: All subdivisions and short subdivisions shall be served by one or more public roads, constructed to the prevailing Standards which provide access to and from the subdivision at not less than two points. All subdivisions, short subdivisions and other areas of the county may, as an alternative, be served by a private road provided that the subdivision, short subdivision, or other area is not further subdivided, further development does not result in extension of the private road from it's termini established by submission of the final subdivision or short subdivision plat or final engineering plans and, it is not practicable in the opinion of the County Engineer to construct the private road with access to public roads at two points. In addition, for subdivisions, a statement must be placed on the final plat indicating to all concerned that cost for improvement of the private road to County Standards for public acceptance at a later date are borne by individuals owning lots which are served by the private road. The County may accept a single point of ingress-egress

where such condition is temporary (where there are established acceptable provisions for future extensions completing the road system to required Standards), where two points of ingress-egress are impracticable (based on the opinion of the County Engineer), or where there exists satisfactory provisions for access by emergency vehicles. The following criteria are also applicable:

- a. The construction standard applicable to an access road leading to a subdivision or short subdivision from an existing county road or state highway may be of a higher degree than minimum requirements set forth herein.
- b. Each lot within a subdivision or short subdivision shall have frontage on an existing county road or an approved subdivision road meeting Standards and which provides practical and feasible direct access onto said road.
- c. Lots adjacent to a roadway classified as an arterial, as defined in the County road log, maintained by the County Road Administration Board (CRAB), shall be provided with access to a subdivision road other than the arterial.
- d. Lots adjacent to a roadway classified as a Collector shall utilize common access among two or more lots.

3.03 Rights of Way (Subdivisions): All new roads leading to and within subdivisions or short subdivision shall have a minimum right of way width of thirty (30) feet on each side of the centerline except for roads to be utilized exclusively for local access in which case said roads shall have a minimum right of way width of twenty-five (25) feet on each side of the centerline, exclusive of such additional width as may be required for cut and fill sections. Should any proposed subdivision or short subdivision border on or be accessed by an existing county road having less than sixty (60) feet of right-of-way, the developer shall consult with the County Engineer prior to submission of a preliminary application. The following criteria are also applicable:

- a. Additional right-of-way along roads classified as arterials, collectors and local access in the areas of anticipated heavy pedestrian and bicycle traffic may be required to accommodate bicycle paths, sidewalks and/or on-street parking on either or both sides of the roadway, if deemed necessary by the Board of County Commissioners (BOCC).
- b. Sufficient additional right-of-way shall be provided at principal intersections of new subdivision or short subdivision access roads, State or County Arterials, or other major traffic carriers to accommodate left-turn lanes or other appropriate exchange systems determined necessary by the County Engineer.
- c. Any subdivision or short subdivision bordering on a designated State or County

Arterial shall set aside additional right-of-way necessary to meet a minimum forty (40) feet from centerline requirement on the County arterial except where such roadway passes through or approaches a community or major development area, in which case the minimum right-of-way shall be fifty (50) feet from centerline.

- d. Any subdivision or short subdivision bordering on an existing County Road designated other than an arterial and having less than a sixty (60) foot right-of-way, shall set aside additional right-of-way necessary to meet a minimum thirty (30) feet from centerline requirement.
- e. All alleys within a subdivision shall have a minimum right-of-way width of thirty (30) feet.

3.04 Roadway Classifications: Roadway classifications are to be determined by the County per the county road log as maintained by the CRAB. Following are general classification criteria:

- a. The **principal arterial system** shall consist of a connected network of rural arterial routes with appropriate extensions into and through urban areas, including all routes designated as part of the interstate system, which serve corridor movements having travel characteristics indicative of substantial statewide and interstate travel;
- b. The **minor arterial system** shall, in conjunction with the principal arterial system, form a rural network of arterial routes linking cities and other activity centers which generate long distance travel, and, with appropriate extensions into and through urban areas, form an integrated network providing interstate and interregional service; and
- c. The **collector system** shall consist of routes which primarily serve the more important intercounty, and intraurban travel corridors, collect traffic from the system of local access roads and convey it to the arterial system, and on which, regardless of traffic volume, the predominant travel distances are shorter than on arterial routes.
- d. **Local access roads** shall consist of routes which primarily serve to collect traffic from all areas not connected to the principal arterial, minor arterial or collector system.

3.05 Design Standards: Geometric Design Standards for new roadways will be in accordance with the Standards referenced herein and/or in accordance with design criteria referenced in the General Conditions, Section 1.04.

3.06 Plans: A developer must provide the County Engineer with a plan and profile sheet

containing, at a minimum, the following design information prepared under the responsible charge of a professional registered engineer in the State of Washington for County approval, before commencement of any roadway construction:

- a. Roadway Grades and Geometric Design Details
- b. Typical Roadway Design Section(s)
- c. Stormwater Design Details (i.e. Drywells, Retention Ponds, Swales, etc...)
- d. Catch Basin Details
- e. Curb Detail (if used)
- f. Typical Approach Sections

3.07 Roadway Base and Surfacing: Roadway base and surfacing course shall be in accordance with these Standards. Crushed base and surfacing course shall meet requirements specified in WSDOT Standard Specifications, Section 9-03.9(3).

3.08 Roadway Drainage and Facilities: All new roadway and subdivision or short subdivision plans will require an approved stormwater management/drainage plan. Drainage created as a result of creation of roadway surfaces, driveways, and buildings will be contained and disposed within the subdivision or short subdivision in drywells and/or collection ponds or other equivalent storm drainage systems or directed to an approved stormwater disposal facility location. If stormwater is disposed of on-site, field percolation testing shall be completed in accordance with the Asotin County percolation test standard and the resultant data utilized in design of the stormwater disposal facility. Collection ponds will be seeded and mulched. Drainage improvements must be constructed as follows:

- a. Roadway ditches will be a minimum of 1 1/2 foot depth from the finished surface.
- b. Overflow retention/detention ponds/basins will be designed and provided as needed in size to handle excess water flows based on a 100-year storm event.
- c. Drywells and other on-site stormwater disposal facilities will be designed based on a 10-year storm event. Drywells shall be constructed in accordance with Standard Plan No. ACRS-110A or ACRS-110B based on percolation testing results.
- d. Culvert pipes across new roads shall be a minimum of 18 inches in diameter by 44 feet in length for a 28 feet roadway. Approach culverts shall be a minimum of 12 inches diameter by 40 feet in length. Culvert design and size however, should be based on anticipated peak water flows during a 10-year storm event.
- e. All culverts will require beveled end sections.
- f. Drainage roadway ditches in erosion sensitive soils on grades in excess of 6% will

require erosion protection. Erosion protection shall be designated to conform approximately to WSDOT specification 9-13.1(2) for light loose rip rap and WSDOT specification 8-15.3(7) for filter blanket or equivalent.

- 3.09 Curbs/Gutters: Curb and gutter typical sections will be according to Standard Plan No. ACRS-106. The County Engineer has the authority to require curb and gutter on any new construction and subdivisions in areas where the roadway grade is steeper than 6% and drainage control is needed.
- 3.10 Noncommercial Roadway Approaches: Noncommercial roadway approaches to any Asotin County road, will be constructed according to Standard Plan No. ACRS-104. Commercial roadway approaches may utilize the noncommercial roadway approach provided the design is deemed adequate by the County Engineer. New construction by developers which have roadways that do not have curb/gutter or equivalent, will be required to have drainage ditches as shown on the typical section, ACRS-102. Each roadway approach will require a culvert design as discussed in 3.08. All roadway approaches will be constructed by the developer or property owner at their expense according to the Asotin County Standards and will require final approval by Asotin County. A permit will be required from Asotin County prior to construction. The road approach and culvert will be subject to removal and reconstruction at the owners expense if not constructed according to the Standards contained herein.
- 3.11 Monuments: Cased monuments will be placed at all street intersections and at all P.C.'s and P.T.'s (Point of Curvature and Point of Tangent), and all cul-de-sac radius points. As an alternative, if a P.I. (Point of Intersection) of a horizontal curve falls on any paved surface the P.I. may be monumented instead of said curves corresponding P.I. and P.T. The monument cover will be stamped ("Asotin County"). In all new subdivisions it will be the responsibility of the developer to place all monuments.
- 3.12 Signing: It will be the responsibility of the Developer to pay for all project street signing. Signing will be engineered, manufactured and installed by Asotin County in accordance with the MUTCD. Asotin County will bill the developer for all signing related expenses.
- 3.13 Construction Management/Quality Control: It will be the responsibility of the developer to provide construction management/quality control on new roadway construction if the developer will request that the roads be brought into the County road/maintenance system. Copies of the construction management/quality control test procedures and results will be required by the Asotin County Public Works Department. The following quality control testing will be required:
- a. Earthwork compaction evaluation to determine in-place density of native and fill soils. In-place density testing results shall be accomplished using a nuclear

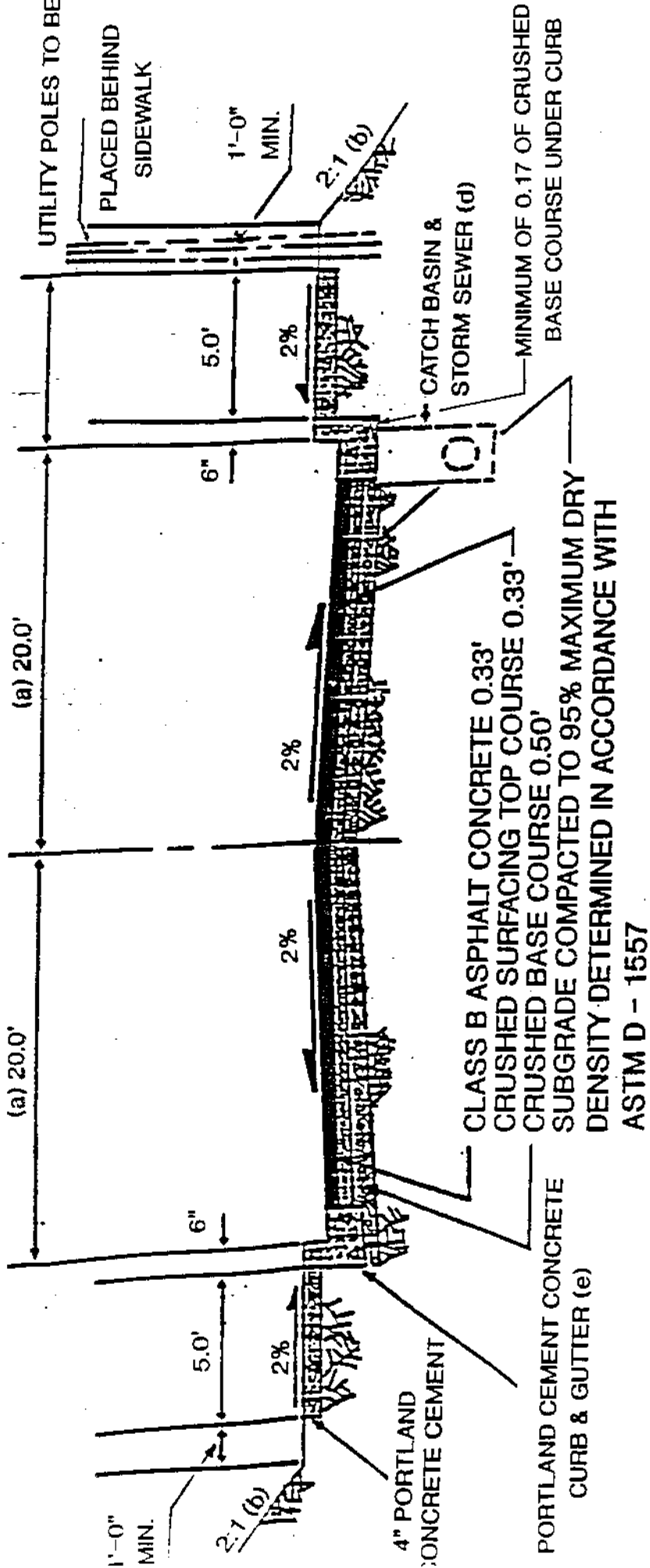
densometer and shall be evaluated relative to the MDD (Maximum Dry Density determined in accordance with ASTM test procedure D-1557). Soils beneath all roadways within 2 feet of finished subgrade shall be compacted to 95% of MDD. Soils present at depths greater than 2 feet below finished subgrade shall be compacted to 90% of MDD. As an alternative, if it is not practicable (in the opinion of the County Engineer) to accomplish in-place density tests, other testing methods including proofrolling, probing, etc., may be permitted. However, all alternative testing methods must be approved by the Asotin County Engineer prior to construction. Records of in-place nuclear density or alternative testing, or a summary and certification of in-place density testing results, prepared under the responsible charge of a civil engineer licensed in the State of Washington, shall be provided to the County Engineer. The County will accomplish periodic spot inspections of all new roadway construction to monitor compliance with the compaction and other quality control criteria referenced herein.

- b. Aggregate Gradations
- c. Bituminous Surface Treatment (Yield and Coverstone)
- d. ACP Paving - Materials and Compaction
- e. Concrete Test Cylinders

All quality control shall be accomplished under the responsible charge of a civil engineer licensed in the State of Washington and will be according to WSDOT and APWA 1994 Standard Specifications for Road, Bridge and Municipal Construction if not presented specifically in these Standards.

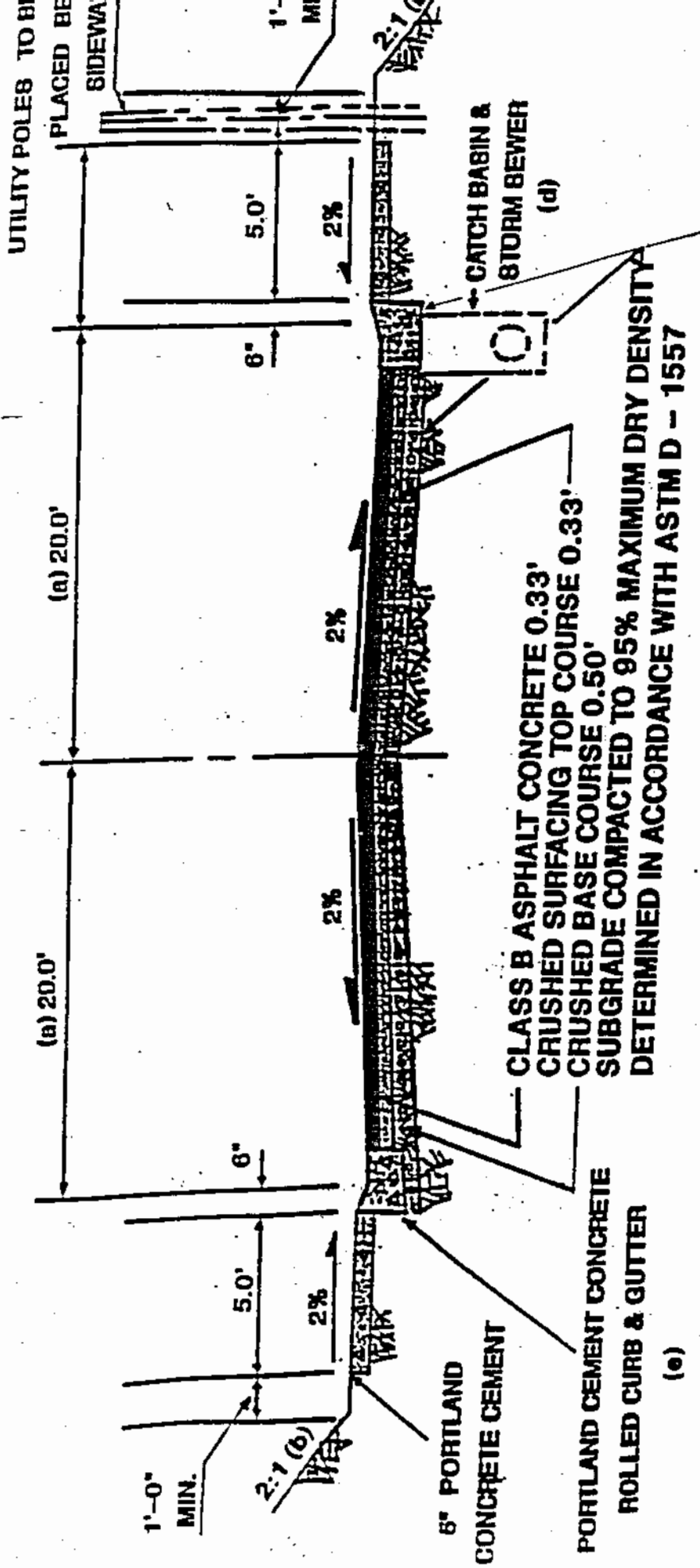
- 3.14 Project Costs: The project costs for constructing all new roadways to the County Standards will be the responsibility of the developer. The final subdivision or short subdivision plat will not be accepted until the roadway is complete and accepted by the County as described in 3.15 or as described in this section. The developer can request that the County accept the plat prior to the roadway being constructed however, in this case the developer must provide a bond payable to the County in the amount of the roadway construction cost estimate. The developer will be required to provide an engineers cost estimate for roadway construction costs. The County will review the cost estimate and adjust if needed. Bond will be in the amount of the approved cost estimate.
- 3.15 Acceptance: Developers or private citizens wishing to establish a private road as a county road must follow the established procedure contained in RCW Chapter 36.81 or that contained in the Asotin County subdivision or short subdivision approval process. New

roads will not be accepted into the County system by the BOCC until all construction is complete. If acceptance of the road is not sought through the subdivision or short subdivision approval process the interested party or petitioners must petition Asotin County to establish the road as a county road. Following submittal of the petition, the BOCC directs the County Engineer to prepare a report. Following completion of the County Engineer's report, the report is presented at a public hearing at which time the BOCC may by resolution adopt the road into the county road/maintenance system. From the date of acceptance the developer will provide a 1-year warranty on the entire roadway. Any damage due to maintenance defect, poor construction or other related defect to the new roadway within the 1-year period will be repaired at the cost of the developer. The method and type of repair will be approved by the County Engineer. A bond in the amount of 10 percent of the total roadway construction costs must be submitted by the developer to secure the warranty. The bond may consist of one of the following, including a bond from the developer that is provided to the developer from the developer's project contractor, an assignment of savings account, a bond from a bonding firm, or any other equivalent bond form. In all cases, if the developer chooses to supply Asotin County with a bond supplied by the developer's project contractor, direct financial responsibility to Asotin County must be maintained by the developer. Following completion of the 1-year period, a final inspection by the County Engineer, including representatives for the developer and roadway contractor, shall be completed prior to release of the bond.



URBAN ROADWAY
 TYPICAL SECTION
 STANDARD PLAN NO.
 ACRS - 101A

- NOTES:
- (a) MINIMUM WIDTH MAY BE REDUCED TO 32 FEET FOR LOCAL ACCESS ROADWAY PROVIDED PARKING IS PROHIBITED ALONG ROADWAY.
 - (b) CUT AND FILL SLOPES STEEPER THAN 2:1 MAY BE USED WHERE FAVORABLE SOIL CONDITIONS EXIST OR STEPPED CONSTRUCTION IS USED. REFER TO WSDOT DESIGN MANUAL PAGE 640-641 FOR SPECIFIC DETAILS.
 - (c) ALL THICKNESS SPECIFIED REPRESENT COMPACTED THICKNESS. PAVEMENT AND CRUSHED ROCK THICKNESSES MAY BE REDUCED FOR LOCAL ACCESS ROADWAYS PROVIDED A SOILS ANALYSIS AND ALTERNATIVE PAVEMENT DESIGN ARE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL. MINIMUM ASPHALT CONCRETE, CRUSHED SURFACING TOP COURSE AND CRUSHED BASE COURSE THICKNESSES ARE 0.25 FEET, 0.17 FEET AND 0.25 FEET RESPECTIVELY.
 - (d) FOR DETAILS, REFER TO STANDARD PLAN NO. ACRS - 108.



UTILITY POLES TO BE PLACED BE SIDEWALK

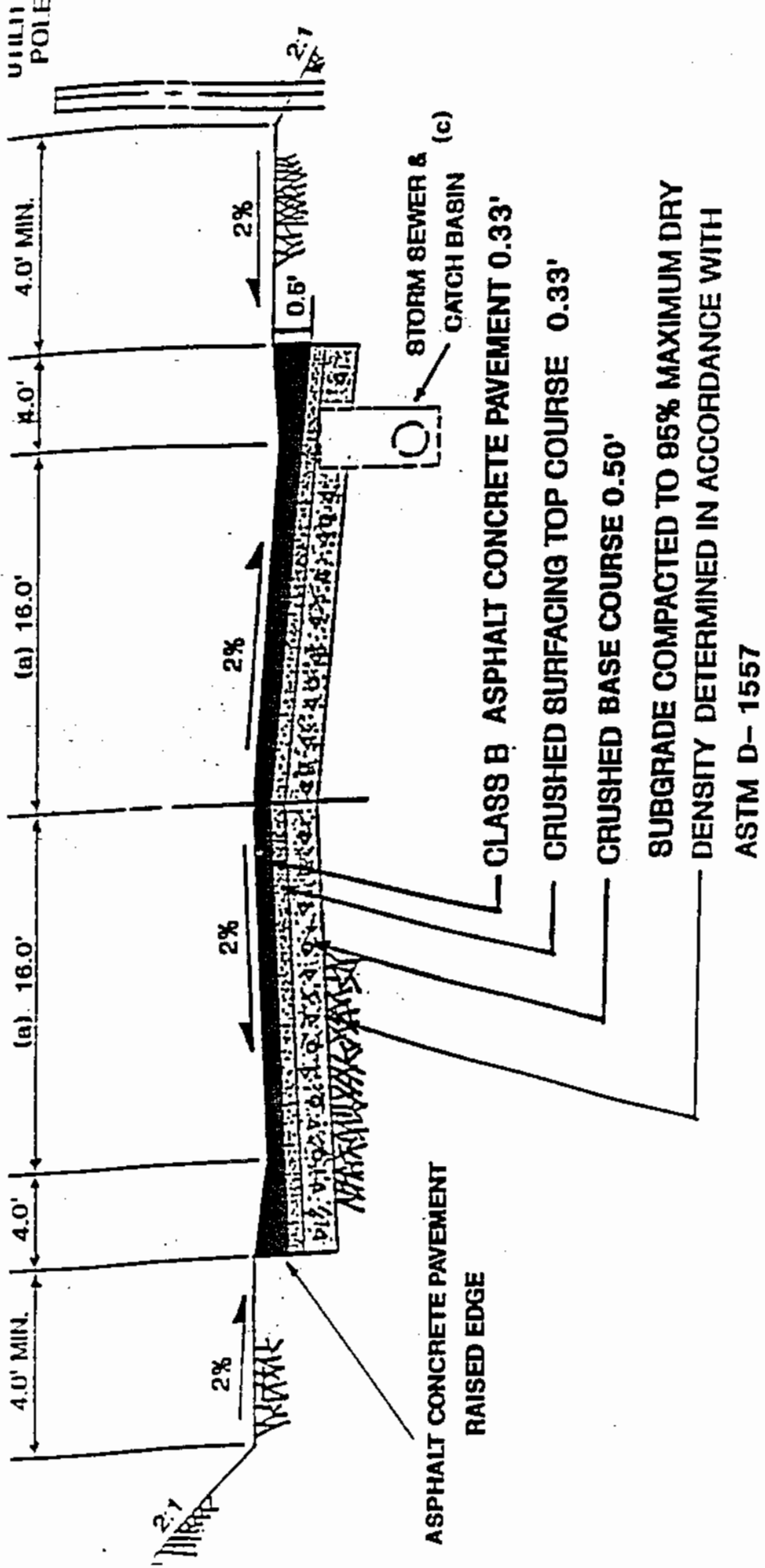
(a) MINIMUM WIDTH MAY BE REDUCED TO 32 FEET FOR LOCAL ACCESS ROADWAY PROVIDED PARKING IS PROHIBITED ALONG ROADWAY

(b) CUT AND FILL SLOPES STEEPER THAN 2:1 MAY BE USED WHERE FAVORABLE SOIL CONDITIONS EXIST OR STEPPED CONSTRUCTION IS USED. REFER TO WSDOT DESIGN MANUAL, PAGE 640-841 FOR SPECIFIC DETAILS.

(c) ALL THICKNESSES SPECIFIED REPRESENT COMPACTED THICKNESS. PAVEMENT AND CRUSHED ROCK THICKNESSES MAY BE REDUCED FOR LOCAL ACCESS ROADWAYS PROVIDED A SOILS ANALYSIS AND ALTERNATIVE PAVEMENT DESIGN ARE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL. MINIMUM ASPHALT CONCRETE, CRUSHED SURFACING TOP COURSE AND CRUSHED BASE COURSE THICKNESSES ARE 0.25 FEET, 0.17 FEET AND 0.25 FEET RESPECTIVELY.

(d) FOR DETAILS REFER TO STANDARD PLAN NO. 1-101

URBAN ROADWAY
TYPICAL SECTION
STANDARD PLAN NO.



NOTE: (a) MINIMUM WIDTH MAY VARY DEPENDING ON TRAFFIC VOLUMES & TYPE OF TRAFFIC (TRUCKS). MINIMUM WIDTH MAY BE REDUCED TO 32.0 FEET FOR LOCAL ACCESS ROADWAYS IF PARKING IS PROHIBITED ALONG THE ROADWAYS.

(b) ALL THICKNESSES SPECIFIED REPRESENT COMPACTED THICKNESS. PAVEMENT AND CRUSHED ROCK THICKNESSES MAY BE REDUCED FOR LOCAL ACCESS ROADWAYS PROVIDED A SOILS ANALYSIS AND ALTERNATIVE PAVEMENT DESIGN ARE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL. MINIMUM ASPHALT CONCRETE, CRUSHED SURFACING TOP COURSE AND CRUSHED BASE COURSE THICKNESSES ARE 0.25 FEET, 0.17 FEET AND 0.25 FEET RESPECTIVELY.

(c) FOR DETAILS, REFER TO STANDARD PLAN NO. ACRS - 108.

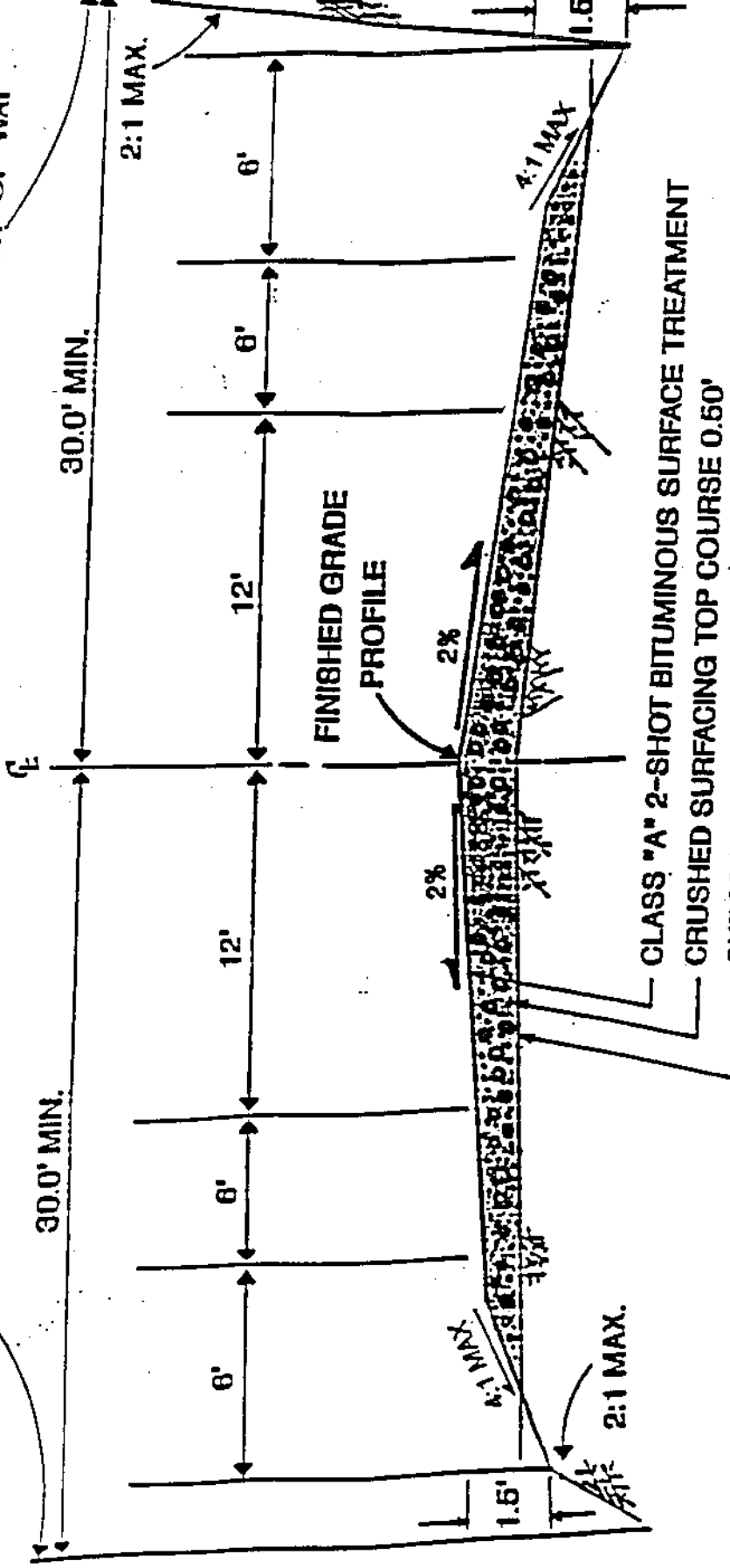
(d) CUT AND FILL SLOPES STEEPER THAN 2:1 MAY BE USED WHERE

URBAN ROADWAY
TYPICAL SECTION

STANDARD PLAN NO.

RIGHT-OF-WAY

RIGHT-OF-WAY

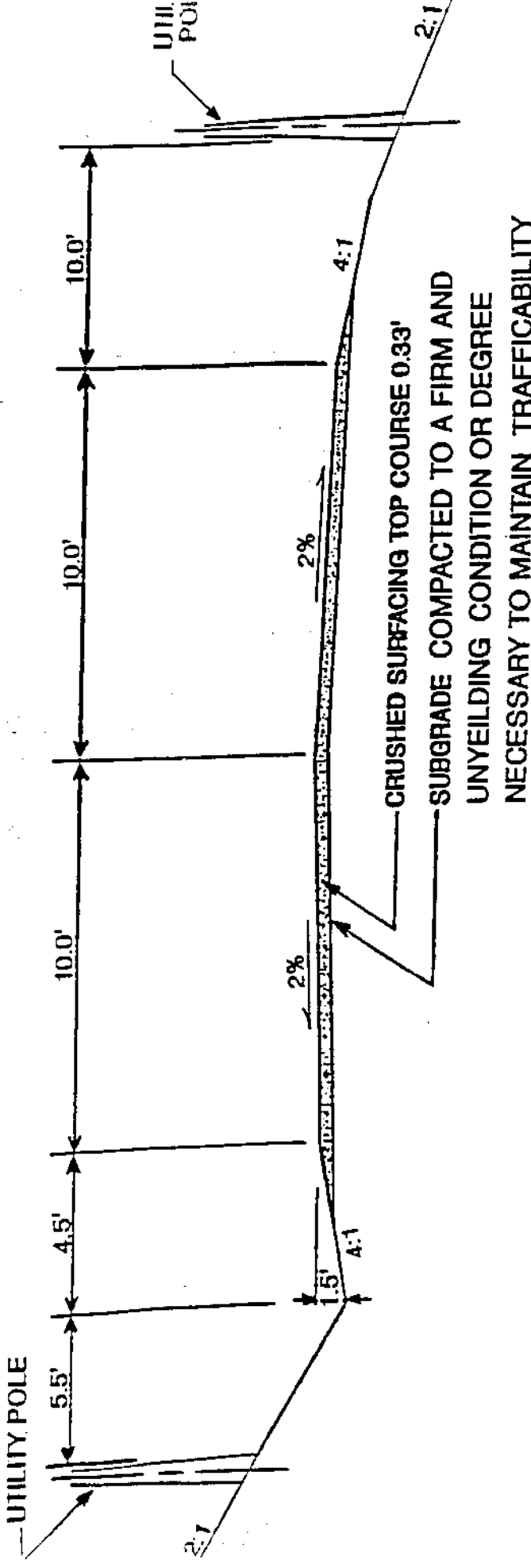


CLASS "A" 2-SHOT BITUMINOUS SURFACE TREATMENT
 CRUSHED SURFACING TOP COURSE 0.50'
 SUBGRADE COMPACTED TO 95% MAXIMUM DRY DENSITY

DETERMINED IN ACCORDANCE WITH ASTM D - 1557

- NOTES: (a) IF PARKING IS NOT ALLOWED, ROADWAY WIDTH MAY BE REDUCED TO 28 FEET FOR LOCAL ACCESS ROADWAYS.
 (b) IF GUARDRAIL IS REQUIRED, ROADWAY WIDTH SHALL BE INCREASED 2 FEET ON EACH GUARDRAIL SIDE.
 (c) CUT AND FILL SLOPES STEEPER THAN 2:1 MAY BE USED WHERE FAVORABLE SOIL CONDITIONS EXIST OR STEPPED CONSTRUCTION IS USED. REFER TO WSDOT DESIGN MANUAL PAGE 640-641 FOR SPECIFIC DETAILS.
 (d) ASPHALT APPLIED FOR USE ON BST ROADWAYS SHALL BE APPLIED AT MINIMUM RATE OR 0.5 GALLONS PER SQUARE YARD PER SHOT. COVERSTONE RATE SHALL BE BETWEEN 28 TO 40 POUNDS PER SQUARE YARD PER SHOT. COVERSTONE SHALL BE CHOKED WITH 1/4"-0" AT A RATE OF 3 TO 10 POUNDS PER SQUARE YARD PER SHOT FOLLOWING COVERSTONE APPLICATIONS.

RURAL ROADWAY
 TYPICAL SECTION
 STANDARD PLAN NO.
 ACRS - 102

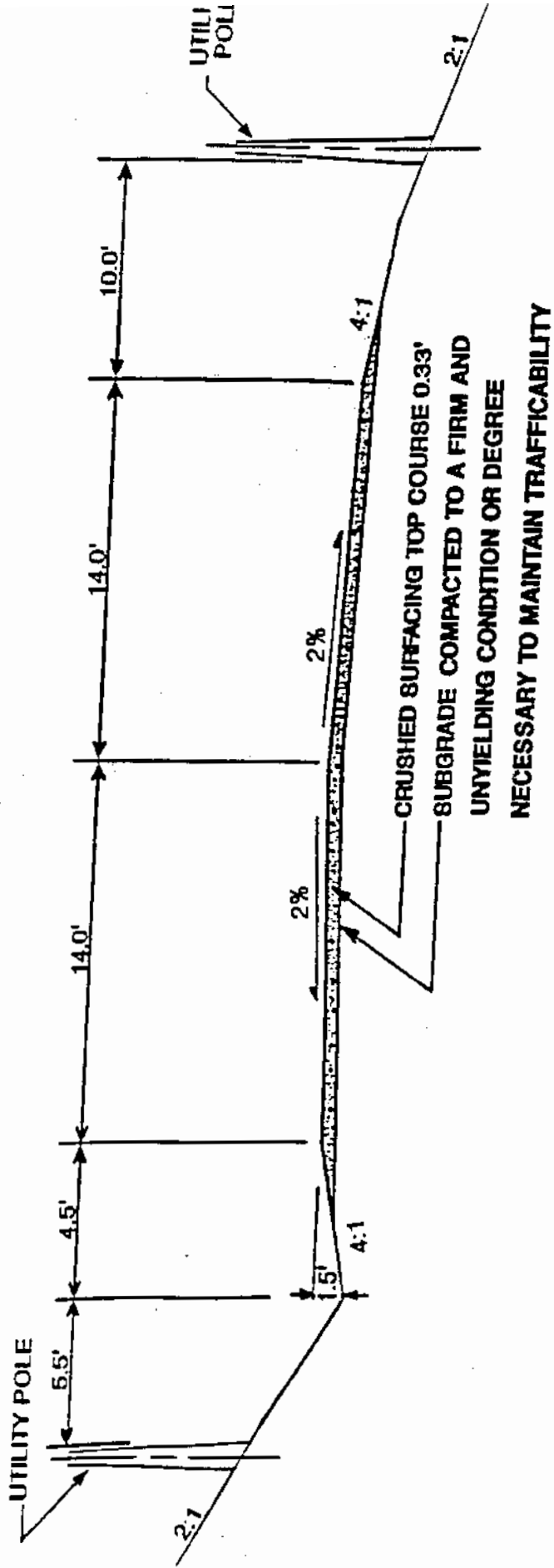


CRUSHED SURFACING TOP COURSE 0.33'
 SUBGRADE COMPACTED TO A FIRM AND
 UNYIELDING CONDITION OR DEGREE
 NECESSARY TO MAINTAIN TRAFFICABILITY

(a) TYPICAL SECTION SHOWN IS FOR USE AS A PRIVATE ROADWAY UTILIZED BY NINE OR LESS LOTS.

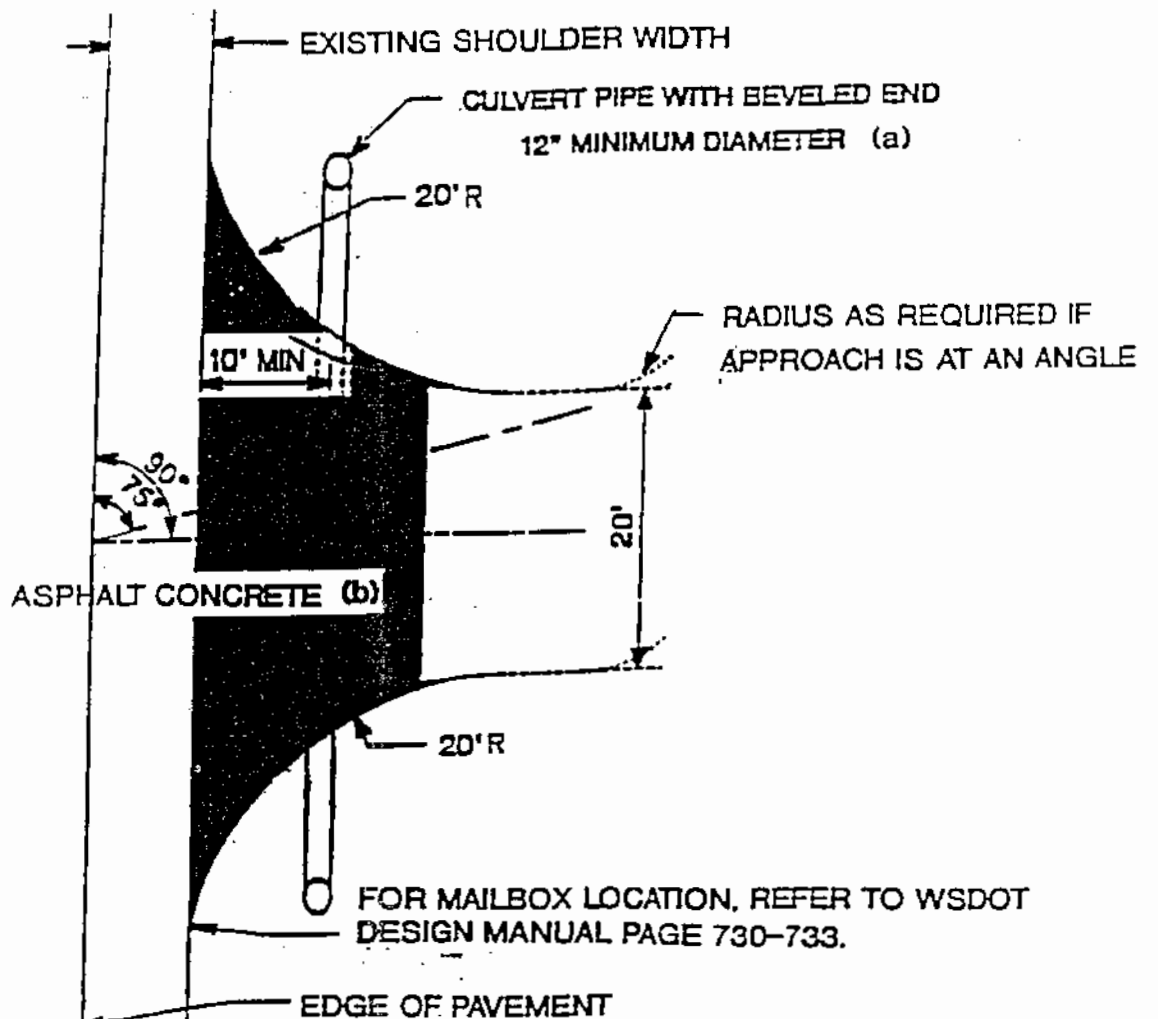
(b) CUT AND FILL SLOPES STEEPER THAN 2:1 MAY BE USED WHERE FAVORABLE SOIL CONDITIONS EXIST OR STEPPED CONSTRUCTION IS USED. REFER TO WSDOT DESIGN MANUAL PAGE 640-641 FOR SPECIFIC DETAILS.

PRIVATE ROADWAY
 TYPICAL SECTION
 STANDARD PLAN NO.
 ACRS - 103A



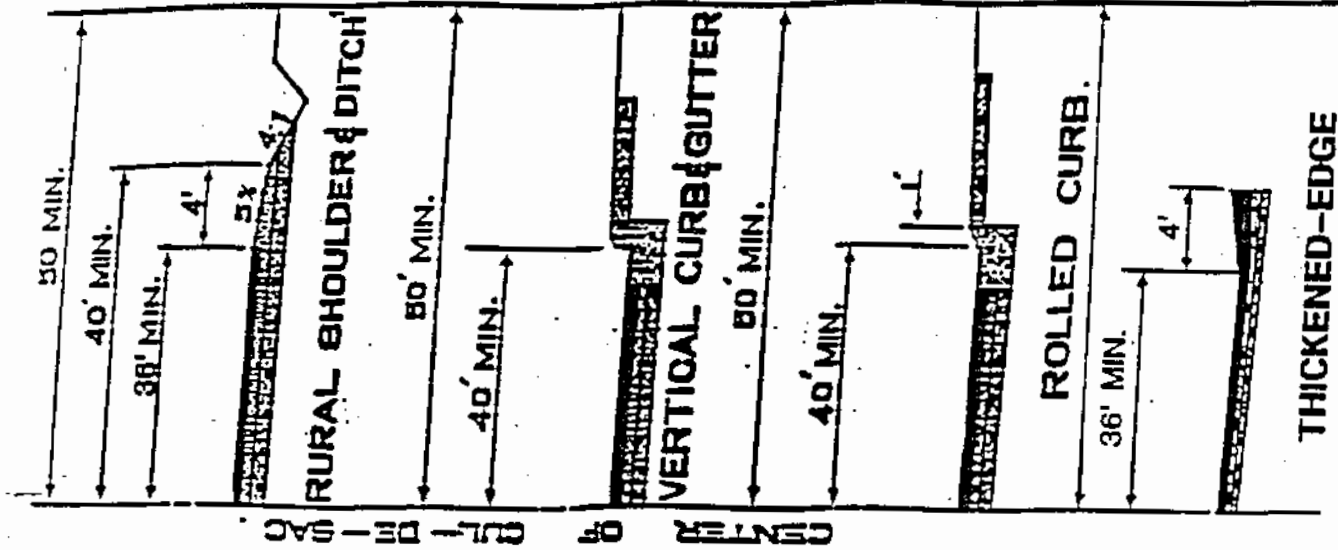
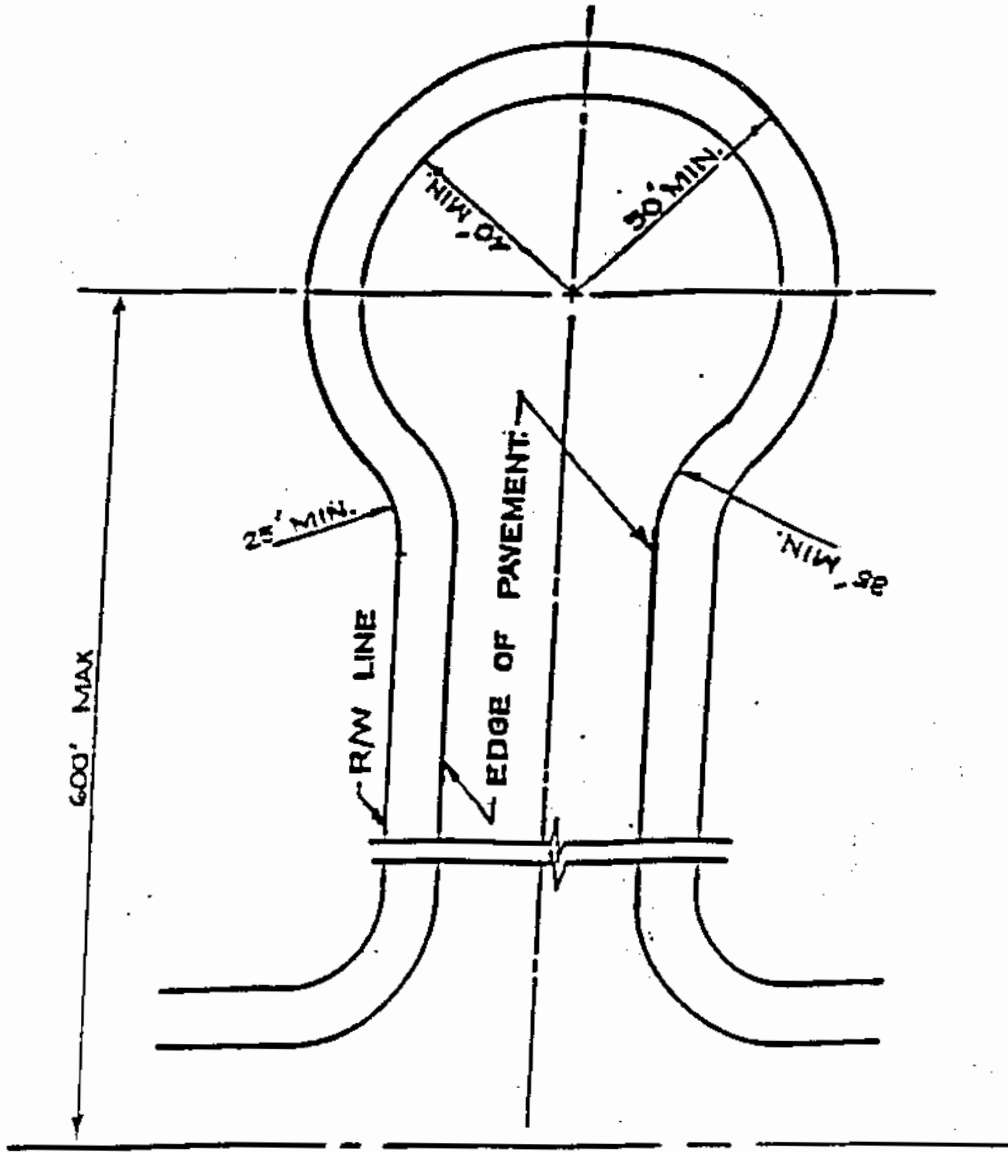
- (a) TYPICAL SECTION SHOWN IS FOR USE AS A PRIVATE ROADWAY UTILIZED BY TEN OR MORE LOTS.
- (b) CUT AND FILL SLOPES STEEPER THAN 2:1 MAY BE USED WHERE FAVORABLE SOIL CONDITIONS EXIST OR STEPPED CONSTRUCTION IS USED. REFER TO WSDOT DESIGN MANUAL PAGE 640-641 FOR SPECIFIC DETAILS.

PRIVATE ROADWAY
TYPICAL SECTION
STANDARD PLAN NO.
ACRS - 103B

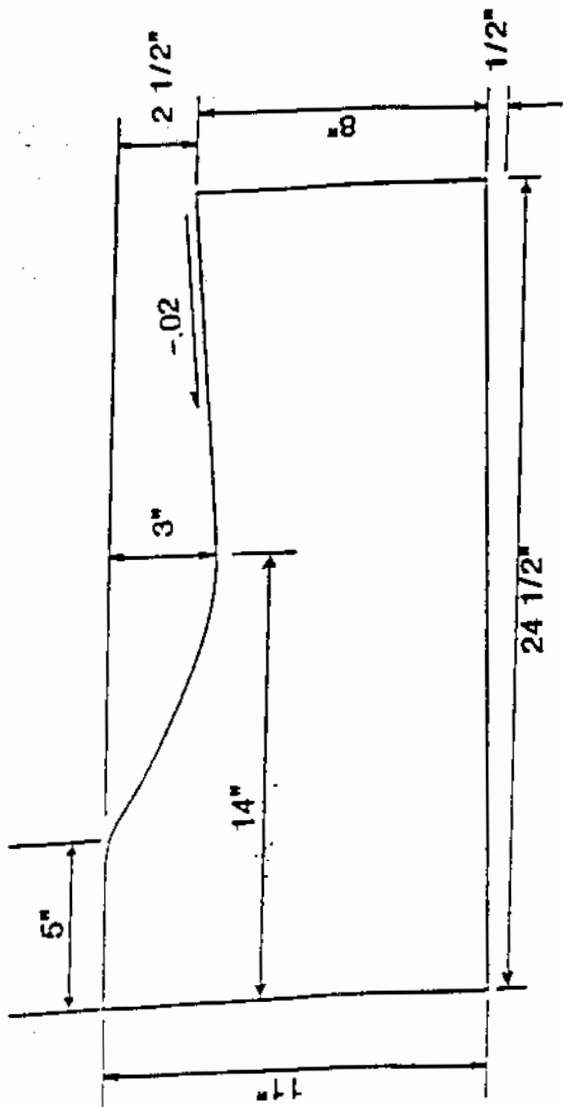


- (a) ACTUAL CULVERT PIPE TO BE DETERMINED BY ENGINEERING ANALYSIS BASED ON A 10-YEAR STORM EVENT. OTHERWISE, A MINIMUM 18-INCH DIAMETER CULVERT PIPE IS SPECIFIED.
- (b) WHEN THE TRAVEL LANES ARE BITUMINOUS, A SIMILAR TYPE MAY BE USED ON THE APPROACHES.
- (c) DIFFERENCE FROM SHOULDER SLOPE.

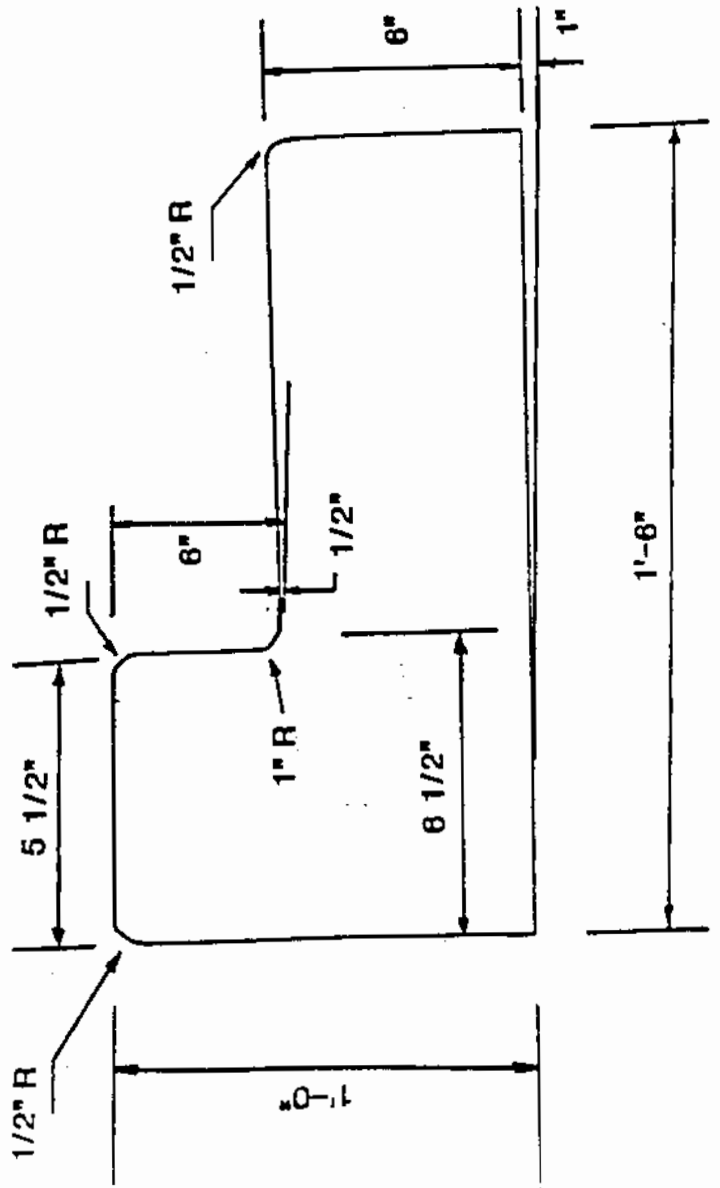
NONCOMMERCIAL
APPROACHES
STANDARD PLAN
NO. ACRS - 104



CUL-DE-SAC
STANDARD PLAN



ROLLED CURB

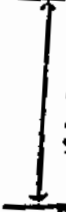


STANDARD CURB & GUTTER

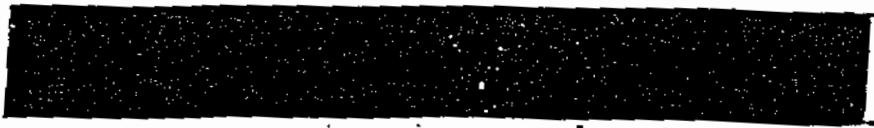
**CURB AND GUTTER
STANDARD PLAN
NO. ACRS - 106**



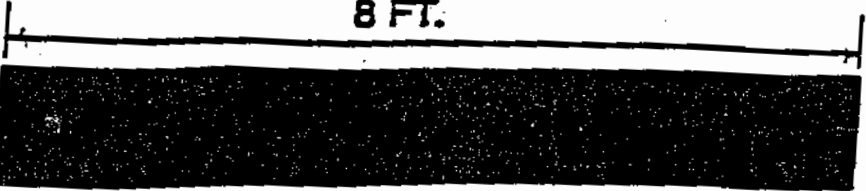
ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS



2 FT.



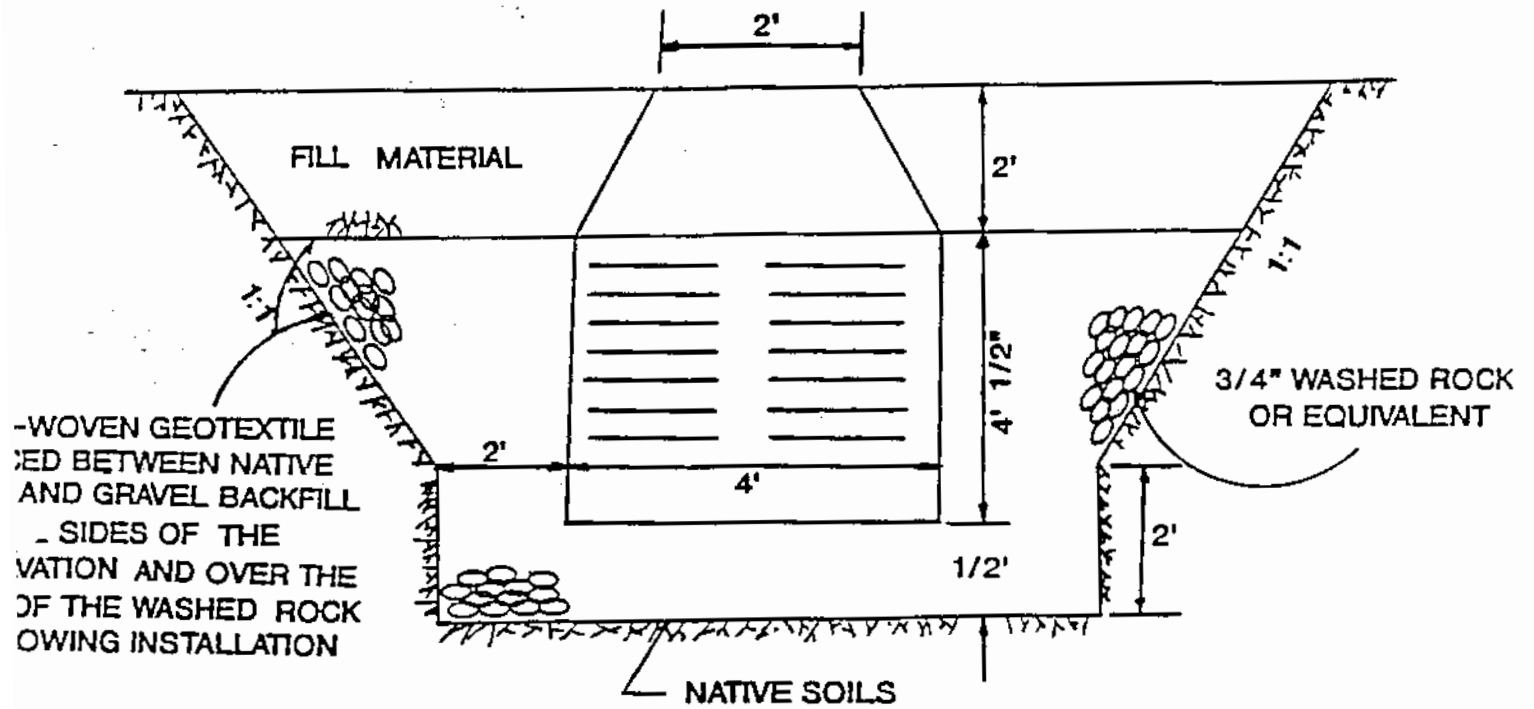
1 FT.



8 FT.

CROSSWALK TEMPLATE
STANDARD PLAN NO.
ACBS - 107

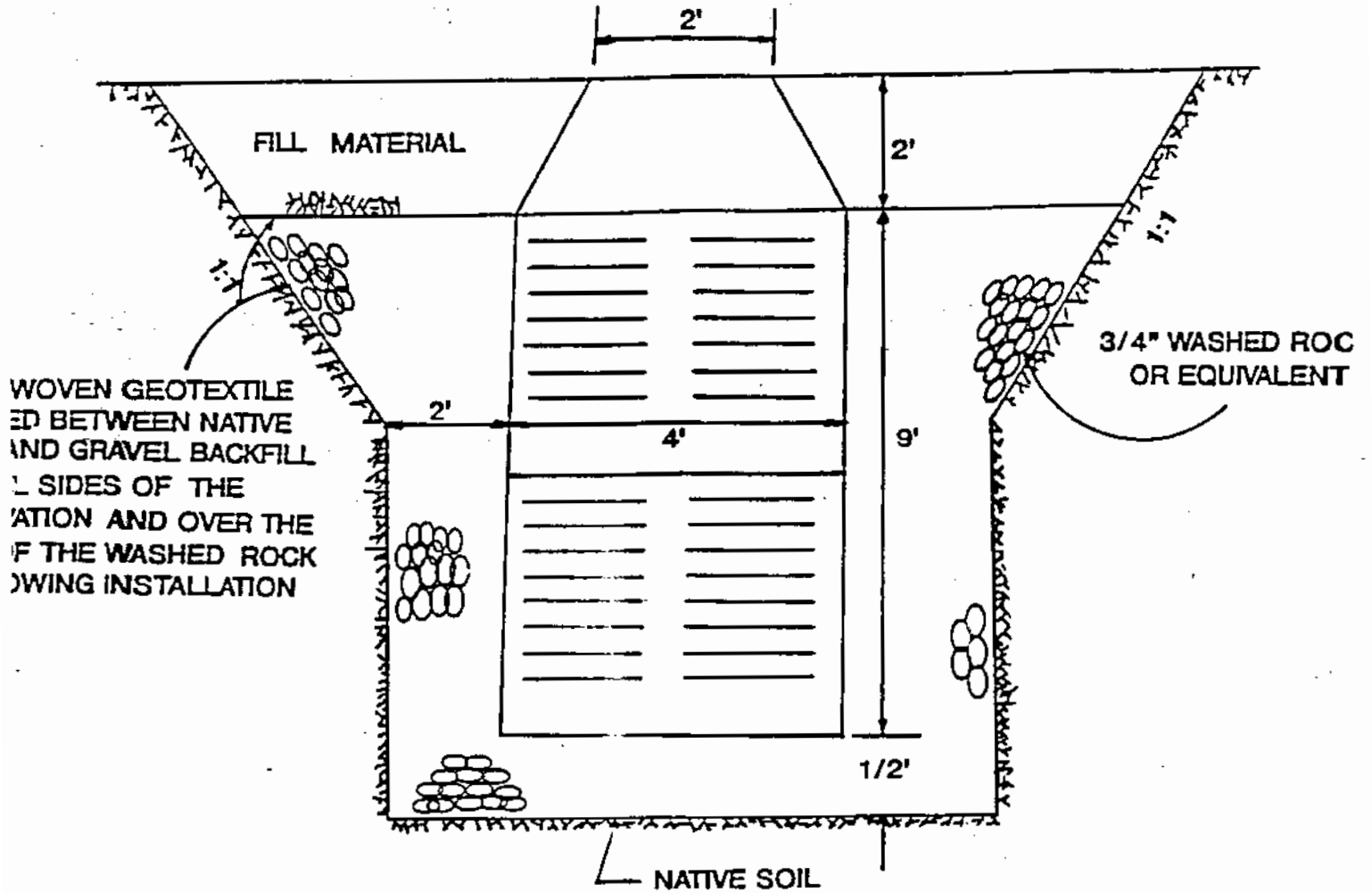
STANDARD MANHOLE FRAME
AND SLOTTED LID



(a) SUITABILITY OF DRYWELLS DETERMINED BASED ON RESULTS OF PERCOLATION TESTING AS SPECIFIED IN THE ASOTIN COUNTY PERCOLATION TEST STANDARD

TYPE 1 DRYWELL
STANDARD PLAN NO.
ACRS - 110A

STANDARD MANHOLE FRAME
AND SLOTTED LID



SUITABILITY OF DRYWELLS DETERMINED BASED
ON RESULTS OF PERCOLATION TESTING AS SPECIFIED IN THE
MICHIGAN COUNTY PERCOLATION TEST STANDARD

TYPE 2 DRYWELL
STANDARD PLAN NO.
ACRS - 110 B