An aerial photograph of a road construction site. The image shows a network of concrete slabs and rebar structures. The rebar is laid out in a grid pattern, and some sections are covered with formwork. The overall scene is a complex of concrete and steel structures under construction.

FRANKLIN COUNTY DESIGN STANDARDS

For the Construction of
Roads and Bridges

FRANKLIN COUNTY
PUBLIC WORKS DEPARTMENT
3416 STEARMAN AVE. • PASCO, WA 99301-7104

IN THE MATTER OF)
ESTABLISHING DESIGN)
STANDARDS FOR THE)
CONSTRUCTION OF ROADS)
AND BRIDGES)

RESOLUTION NO. 2002 270

WHEREAS, design standards for the construction of roads and bridges are necessary to ensure public safety and compliance with sound engineering principals, and

WHEREAS, in accordance with the current Uniform Fire Code, fire apparatus access roads shall be provided and maintained in accordance with locally adopted standards, and

WHEREAS, on April 15, 2002 the Board of County Commissioners adopted, through Resolution 2002-152, Design Standards for The Construction of Roads and Bridges, and

WHEREAS, it is the duty of the County Engineer to prepare, update, and maintain said design standards, and

WHEREAS, the Board of County Commissioners has examined and approved the revised design standards prepared by the County Engineer, and

WHEREAS, this resolution shall supersede all previous resolutions and/or ordinances which conflict with any of the standards contained herein, and

NOW, THEREFORE, BE IT RESOLVED, the Board of County Commissioners does adopt the following amendment of Division 6 of the Franklin County Design Standards for the Construction of Roads and Bridges for all county road construction projects, major road maintenance projects, subdivisions, and establishments.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that this resolution supersedes and replaces Division 6 of the Franklin County Design Standards for the Construction of Roads and Bridges as adopted in Resolution 2002-152.

Dated this 26 day of June, 2002.

BOARD OF COUNTY COMMISSIONERS
Franklin County, Washington

Frank H Brock
Frank H. Brock, Chair

Neva J. Corkrum
Neva J. Corkrum, Vice-Chair

Sue Miller
Sue Miller, Member

ATTEST:

Mary Withers
Clerk of the Board

IN THE MATTER OF)
ESTABLISHING DESIGN)
STANDARDS FOR THE)
CONSTRUCTION OF ROADS)
AND BRIDGES)

RESOLUTION NO. 2002 152

WHEREAS, design standards for the construction of roads and bridges are necessary to ensure public safety and compliance with sound engineering principals, and

WHEREAS, it is the duty of the County Engineer to prepare, update, and maintain standards of construction for county roads and bridges, and

WHEREAS, in accordance with the current Uniform Fire Code, fire apparatus access roads shall be provided and maintained in accordance with locally adopted standards, and

WHEREAS, the Board of County Commissioners has examined and approved the standards of construction prepared by the County Engineer, and

WHEREAS, this resolution shall supersede all previous resolutions and/or ordinances which conflict with any of the standards contained herein, and

NOW, THEREFORE, BE IT RESOLVED, the Board of County Commissioners does adopt the following Franklin County Design Standards for the Construction of Roads and Bridges for all county road construction projects, major road maintenance projects, subdivisions, and establishments.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that this resolution supersedes and replaces Resolution 97-154.

Dated this 15 day of April, 2002.

BOARD OF COUNTY COMMISSIONERS
Franklin County, Washington

Frank H. Brock
Frank H. Brock, Chair

Neva J. Corkum
Neva J. Corkum, Vice-Chair

Sue Miller
Sue Miller, Member

ATTEST:

Mary Withers
Clerk of the Board

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DIVISION 1 GENERAL REQUIREMENTS

1-01 GENERAL

The following definitions and requirements shall be used in conjunction with the Washington State Department of Transportation *Local Agency Guidelines* and shall remain in effect for the design, construction and/or reconstruction of all roads and bridges within Franklin County, unless explicitly amended in subsequent divisions or as approved through the deviation process.

Request for deviations from these standards for urban and rural access roads shall be submitted to the Franklin County Engineer for review and transmittal to the Board of County Commissioners for approval or denial. Documentation of deviation request shall be done in accordance with Chapter 41 of the Washington State Department of Transportation *Local Agency Guidelines*.

Request for deviations from these standards for urban and rural arterial roads, and collectors shall be done in accordance with Chapter 41 of the Washington State Department of Transportation *Local Agency Guidelines*.

1-02 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 luminaires 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 Planning and Programming Service Center of the Washington State Department of Transportation.

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

Private Access Lane - Access roads provided to adjacent property for every facility, building, or portion of a building more than 150 feet from a maintained county road and/or private access road, which serves only one (1) lot.

Private Access Road - Access roads provided to adjacent property for every facility, building, or portion of a building more than 150 feet from a maintained county road, which serves two (2) or more lots.

Reconstruction – A reconstruction project involves major construction activity in excess of 2-R and 3-R activities. Reconstruction includes significant changes in cross section and/or shifts in vertical and horizontal alignment. If 50 percent or more of the project length involves significant vertical and horizontal alignment changes, the project will be considered reconstruction. Reconstruction may require acquisition of additional right of way, and may include all items of work usually associated with new construction. Reconstruction adds additional capacity for the through traffic lanes.

Rural: - That land area outside the boundaries of designated urban growth areas as shown on the official urban growth area boundary map on file at the Franklin County Planning and Building Department. For these purposes only, agriculturally designated lands outside urban growth area boundaries shall be considered as rural.

Shoulder – A shoulder is the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of subbase, base, and surface courses.

Sidewalk - A sidewalk is a continuous way designated for pedestrians and separated from the traveled way by space, curbing, pavement marking or barrier.

Traveled Way – 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: - That land area within the boundaries of designated urban growth areas as shown on the official urban growth area boundary map on file at the Franklin County Planning and Building Department.

3-R – Resurfacing, restoration, and rehabilitation of existing roadways with minimal changes to alignment or grade with no increase to capacity for the through traffic lanes.

Resurfacing – The addition of a layer or layers of paving material to provide additional structural integrity or improved serviceability and rideability.

Restoration – Work performed on pavement or bridge decks to render them suitable for an additional stage of construction. This may include supplementing the existing roadway by increasing surfacing and paving courses to provide structural capability, widening up to 10 feet, including lane and shoulder width, and should include the installation of localized safety improvements. Restoration will generally be performed within existing right of way.

Rehabilitation – Similar to “Restoration” except that work may include, but is not limited to, the following:

- Reworking, strengthening, or removing and replacing the base and/or subgrade.
- Recycling or reworking existing materials to improve their structural integrity.
- Adding underdrains.
- Replacing or restoring malfunctioning joints.
- Substantial pavement under-sealing when essential for stabilization.
- Pavement grinding to restore smoothness, providing adequate structural thickness remains.
- Removing and replacing deteriorated materials.
- Crack and joint sealing but only when routing or sawing establishes the required shape factor.
- Improving or widening shoulders.

Rehabilitation may require acquisitions of additional right of way.

2-R – Resurfacing and restoration of existing roadways by supplementing the existing road prism.

Resurfacing – The addition or replacement of a layer of paving material to provide additional structural integrity or improved serviceability and rideability.

Restoration – Work performed on either pavement sections or bridge decks to render them suitable for an additional stage of construction. This may include supplementing the existing roadway by increasing surfacing and paving courses to provide structural capability and minor shoulder widening to provide roadway section continuity. Restoration will generally be performed within existing right of way.

1-03 DESIGN ELEMENTS**1-03.1 General**

The design phase of all projects shall be done in accordance with Chapter 41 of the Washington State Department of Transportation *Local Agency Guidelines*.

Plans and specifications shall be developed in accordance with Chapter 44 of the Washington State Department of Transportation *Local Agency Guidelines*. All plans and specifications shall be submitted to the Franklin County Engineer for review and approval prior to the commencement of any construction activities.

1-03.2 Roadway Geometrics

The following table provides some basic references to the designer. The designer should read the text associated with the referenced tables and should consider other related tables and text in the AASHTO policy. Additional design references are in the References for New Construction and Reconstruction Standards section.

Design Elements	References
Stopping Sight Distance	AASHTO, "A Policy on Geometric Design of Highways and Streets," 1990 Edition for English Units; 1994 Edition for Metric Units Stopping Sight Distance (wet pavement) Table III-1, page 120, and text on pages 469-470 (rural) and page 480 (urban).
Passing Sight Distance	Single vehicle passing a single vehicle (Table III-5, page 133). Minimum passing sight distance single vehicle (Table VI-2B, page 471).
Entering Sight Distance (for All Movements)	Figures IX-32 through IX-40, pages 739-762, "Intersection sight distance at at-grade intersection."
Horizontal Curvature (Radius)	For speeds up to 40 mph (60 km/h) in urban areas, use Figure III-18, page 190, "Maximum Safe and Comfortable Speed for Horizontal Curves on Low-Speed Urban Streets." In urban areas, for speeds over 40 mph (60 km/h) and rural areas, use Table III-6, page 154 "Maximum Degree of Curve" and "Minimum Radius Determined for Limiting Values of e and f," "rural highways and high-speed urban street." The maximum superelevation rate for any road shall be 6% (0.06 ft/ft).

Design Elements	References
	AASHTO, "A Policy on Geometric Design of Highways and Streets," 1990 Edition for English Units; 1994 Edition for Metric Units
Vertical Sag Curves	Table III-42, page 293, "Design controls for sag vertical curves based on stopping sight distance." A sag vertical curve for nonilluminated roadways should be long enough so that the light beam distance is nearly the same as the stopping sight distance. Sag vertical curves shorter than shown may be justified for economical reasons in cases where an existing element, such as a structure that is not ready for replacement, controls the vertical profile.
Vertical Crest Curves	Table III-40, page 284, "Design controls for crest vertical curves based on stopping sight distance."
Vertical Grade	Table VI-3, page 472, Collector Rural and Urban up to 12 percent, or greater for short sections.

1-03.3 Bridge and Guardrail Criteria

The following table provides some basic criteria and references to the designer. The designer should read the text associated with the referenced tables and should consider other related tables. Additional design references are in the References for New Construction and Reconstruction Standards section.

Design Elements	References
Bridge Width	The minimum bridge width for two-way structures is the greater of: (1) the design roadway width, or (2) the existing roadway width.
Loading	HS 25-44 (for federally funded projects), others may use HS 20-44.
Vehicular Railing	AASHTO Crash Tested Rail, or approved Crash Tested Rail.
Pedestrian Railing	AASHTO
Approach Railing	AASHTO Crash Tested Rail, or approved Crash Tested Rail.
Vertical Clearance	16.5 feet minimum.

1-03.4 Other Criteria

The following table provides some basic criteria and references to the designer. The designer should read the text associated with the referenced tables and should consider other related tables. Additional design references are in the References for New Construction and Reconstruction Standards section.

Design Elements	References
Right of Way	A minimum 60 foot right of way shall be required on all county roads unless as approved by the Board of County Commissioners, per RCW 36.86.010.
Parking	The Board of County Commissioners shall determine the need for on street parking. In general, commercial access and residential areas comprised of lot sizes 1/3 acre or less shall require parking lanes. Required parking on rural roads shall be built in accordance with the specified urban standards.
Bicycle	Chapter 1020 of the WSDOT Design Manual (RCW 35.75.060 and 36.82.145).
Sidewalks	Sidewalk Details, A Guide for Washington Local Agencies, Tribes and Nations, March 2001.
Soils and Paving	Division 5 of the WSDOT Design Manual. All new roads shall be hard-surfaced.
Drainage and Hydraulic Design	WSDOT Hydraulics Manual, WSDOT Highway Runoff Manual, and AASHTO Highway Drainage Guidelines
Cul-de-sacs	Cul-de-sacs shall be designed with a 47 foot minimum radius and shall be required on all dead-end roads
Signing	MUTCD, as modified by the Washington State Transportation Commission per RCW 47.36.030.
Americans with Disabilities Act-1990 ADA	Code of Federal Regulations 28 CFR Part 36, Interim Final Rules U.S. Department of Justice. The Architectural and Transportation Barriers Compliance Board WSDOT/APWA Standard Plan F-3. 1994 Uniform Building Code, Washington State Amendments.
Utilities	Utility installation shall comply with the Franklin County policy "Accommodation of Utilities on County Road Right-of-Way for Franklin County".
Railroad-Highway Grade Crossing	Railroad – Highway crossings shall comply with the U.S. Department of Transportation – Federal Highway Administration’s Railroad-Highway Grade Crossing Handbook and requirements as set forth by the Washington State Utilities and Transportation Commission.

1-03.5 References for New Construction and Reconstruction Standards

The designer may use the standards and rationales incorporated into the following manuals.

AASHTO

- A policy on Geometric Design of Highways and Streets (1990 Edition for English Units and 1994 Edition for Metric Units)
- Guide for Design of Pavement Structures
- Highway Drainage Guidelines
- Guide for Roadway Lighting
- Roadside Design Guide
- Standard Specifications for Highway Bridges

Transportation Research Board (TRB)

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

Washington State Department of Transportation

- Standard Specifications for Road, Bridge, and Municipal Construction
- Supplement to MUTCD (WAC 468-95)
- Bridge Design Manual
- Highway Runoff Manual
- Hydraulics Manual
- Standard Plans
- Design Manual
- Pavement Design Manual
- Sidewalk Details, “A Guide for Local Agencies, Tribes and Nations”
- Construction Manual
- Materials Manual
- Laboratory Manual

Institute of Transportation Engineers (ITE)

- Traffic Engineering Handbook

FHWA

- Manual of Uniform Traffic Control Devices (MUTCD)

ADA

- Federal/Register, June 20, 1994, Interim Final Rules, 36 CFR-Part 1191 Architectural and Transportation Barriers Compliance Board
- 1994 Uniform Building Code, Washington State Amendments.

1-04 CONSTRUCTION ELEMENTS

1-04.1 General

The construction phase of all projects shall be done in accordance with Chapters 51-53 of the Washington State Department of Transportation *Local Agency Guidelines*, and the current version of the WSDOT *Standard Specifications for Road, Bridge and Municipal Construction*.

Traffic Control for all construction activities shall be in accordance with the *Manual of Uniform Traffic Control Devices* (MUTCD) and WSDOT *Supplement to MUTCD* (WAC 468-95).

1-04.2 Construction Specifications

All construction shall be done in accordance with the current version of the WSDOT *Standard Specifications for Road, Bridge and Municipal Construction*, Amendments to the Standard Specifications, and Special Provisions. The aforementioned Amendments to the Standard Specifications, and Special Provisions are as published by the Washington State Department of Transportation and/or Franklin County.

1-04.3 Construction Materials

All construction materials shall comply with the current version of the WSDOT *Standard Specifications for Road, Bridge and Municipal Construction*, Amendments to the Standard Specifications, Special Provisions, the WSDOT *Construction Manual*, and the WSDOT *Materials Manual*.

1-04.4 Construction Inspection and Documentation

Construction shall be administered and materials shall be inspected and tested in accordance with the WSDOT *Standard Specifications for Road, Bridge and Municipal Construction*, Amendments to the Standard Specifications, Special Provisions, the WSDOT *Construction Manual*, the WSDOT *Materials Manual*, and the WSDOT *Laboratory Manual*.

All documentation of construction activities shall be submitted to the County Engineer for review and approval. All elements of construction found to be deficient shall be brought into compliance prior to final approval.

Final approval and acceptance of any construction project shall be contingent upon a final inspection and review by the County Engineer.

DIVISION 2 RURAL AND URBAN ARTERIALS

2-01 GENERAL

The principal and minor arterial road systems provide the high speed, high volume network for travel between major points in both rural and urban areas. Arterials are designed on the basis of traffic volume needs and should be constructed to the highest standards possible.

2-02 DEFINITIONS

Principal Arterial (Urban & Rural) – Principal arterials permit traffic flow through and between our cities and towns and between major elements of the urban areas. They are of great importance in the regional transportation system as they interconnect major traffic generators, such as central business districts and regional shopping centers, to other major activity centers and carry a high proportion of the total area travel on a minimum of roadway mileage. Principal arterials frequently carry important intra-urban as well as inter-city bus routes.

Many principal arterials are fully or partially access controlled facilities emphasizing the through movement of traffic. Within the category are (1) interstates (2) other freeways and expressways and (3) other principal arterials. Spacing of principal arterials may vary from less than one mile in highly developed central business areas to five miles or more in sparsely developed urban fringes and rural areas. Principal arterials generally comprise 5-10 percent of the urban system and 2-4 percent of the rural road miles.

Minor Arterial (Urban & Rural) – Minor arterials collect and distribute traffic from principal arterials to lesser-classified streets, or allow for traffic to directly access their destination. In urban areas they serve secondary traffic generators such as community business centers, neighborhood shopping centers, multiple residence areas, and traffic from neighborhood to neighborhood within a community. Urban bus routes generally follow these facilities. Access to land use activities is generally permitted. Such facilities are usually spaced under two miles apart in urban fringes and in core areas can be spaced 1/8 to 1/2 mile apart. In sparsely populated areas of our rural counties, minor arterials may be widely disbursed or non-existent. Rural minor arterials, in conjunction with rural principal arterials, are spaced at such intervals that all developed areas of the state are within a reasonable distance of an arterial highway. Rural minor arterials are expected to provide for relatively high overall travel speeds with minimal interference to through movement. Rural minor arterials generally comprise 4-8 percent of the system; whereas, in urban areas they generally comprise 10-15 percent.

2-03 DESIGN ELEMENTS

The following criteria shall be used in conjunction with Division 1 of these standards and the Washington State Department of Transportation *Local Agency Guidelines*.

Design Speed: The desirable design speed shall be as shown in the following table:

Posted Speed	Desirable Design Speed
35 mph or less	Not less than the posted speed
40 mph to 50 mph	5 mph over the posted speed
55 mph or higher	10 mph over the posted speed

Roadway Width: The total roadway width (including shoulders) shall be in accordance with Chapter 42 of the Washington State Department of Transportation *Local Agency Guidelines*.

Pavement Depth: The minimum pavement depth (including surfacing) shall be one (1) foot total depth (rural) and nine (9) inches total depth (urban).

Bridge Width: The minimum bridge width for two-way structures is the greater of: (1) the design roadway width, or (2) 36 feet.

Bridge Loading: The minimum design bridge loading shall be HS 25-44 plus a future 2" wearing course.

DIVISION 3 RURAL AND URBAN COLLECTORS

3-01 GENERAL

A major part of the rural highway system consists of two-lane collector highways. These roadways should be designed to accommodate the highest practical standards compatible with traffic and topography. Basic information necessary for design of collectors includes safety, traffic volumes, terrain controls, and alignment.

The urban collector street also serves pedestrian traffic and often accommodates public utility facilities within the right-of-way. The design values should be those for the ultimate planned development. In general, design values for collector streets should be greater than the minimums cited.

3-02 DEFINITIONS

Collectors (Urban) – Urban collectors provide for land access and traffic circulation within residential neighborhoods and commercial and industrial areas. They distribute traffic movements from such areas to the arterial system. Half-mile spacing is common in more developed areas. Collectors do not handle long through trips and are not continuous for any great length. They generally account for 5-10 percent of the total street system.

Collectors (Rural) – Rural collector roads are classified as major collectors and minor collectors. These routes generally serve travel of primarily intra-county rather than statewide importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes. Consequently, more moderate speeds may be typical. Rural collectors, both major and minor, generally constitute 20-25 percent of the rural road miles.

Rural major collectors provide service to any county seat not on an arterial route; to larger towns not directly served by an arterial; and to other traffic generators of equivalent intra-county importance, such as consolidated schools, shipping points, parks, important agricultural areas, etc. Major collectors link these places with nearby larger towns or cities or with routes of higher classification and serve the more important intra-county travel corridors.

Rural minor collectors should be spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road. Furthermore, minor collectors provide service to the remaining smaller communities and also link the locally important traffic generators with their rural hinterland.

3-03 DESIGN ELEMENTS

The following criteria shall be used in conjunction with Division 1 of these standards and the Washington State Department of Transportation *Local Agency Guidelines*.

Design Speed: The desirable design speed shall be as shown in the following table:

Posted Speed	Desirable Design Speed
35 mph or less	Not less than the posted speed
40 mph to 50 mph	5 mph over the posted speed
55 mph or higher	10 mph over the posted speed

Roadway Width: The total roadway width (including shoulders) shall be in accordance with Chapter 42 of the Washington State Department of Transportation *Local Agency Guidelines*.

Pavement Depth: The minimum pavement depth (including surfacing) shall be one (1) foot total depth (rural) and nine (9) inches total depth (urban).

Bridge Width: The minimum bridge width for two-way structures is the greater of: (1) the design roadway width, or (2) 28 feet.

Bridge Loading: The minimum design bridge loading shall be HS 25-44 plus a future 2" wearing course.

DIVISION 4
LOCAL ROADS AND STREETS
Access Roads (Rural and Urban)

4-01 GENERAL

Local roads and streets (access roads) constitute a high proportion of the roadway mileage in Franklin County. These roadways should be designed to accommodate the highest practical standards compatible with traffic, land use, and topography. Basic information necessary for design of local roads and streets includes safety, traffic volumes, terrain controls, and alignment.

4-02 DEFINITIONS

Local Roads and Streets (Rural & Urban) – All public roads and streets, not otherwise classified as an arterial or collector, comprise the local access system. These roadways primarily serve local needs for access to adjacent lands, travel over relatively short distances, and connections to collectors or other higher systems. Local urban streets offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement is deliberately discouraged. Local streets usually account for 65-80 percent of the urban system. In rural areas, the local roads generally comprise 65-75 percent of the road miles.

4-03 DESIGN ELEMENTS

The following criteria shall be used in conjunction with Division 1 of these standards and the Washington State Department of Transportation *Local Agency Guidelines*.

Design Speed: The desirable design speed shall be as shown in the following table:

Posted Speed	Desirable Design Speed
35 mph or less	Not less than the posted speed
40 mph to 50 mph	5 mph over the posted speed
55 mph or higher	10 mph over the posted speed

Roadway Width: Refer to Appendixes I-1 to I-3.

Pavement Depth: The minimum pavement depth (including surfacing) shall be nine (9) inches total depth (rural) and six (6) inches total depth (urban).

Bridge Width: The minimum bridge width for two-way structures is the greater of: (1) the design roadway width, or (2) 28 feet.

Bridge Loading: The minimum design bridge loading shall be HS 20-44 plus a future 2" wearing course.

**DIVISION 5
PRIVATE ACCESS ROADS AND LANES**

5-01 GENERAL

Private access roads and lanes shall be designed and located as to provide direct access for emergency vehicles.

Request for deviations from the standards of this division shall be submitted to the Franklin County Fire Marshal and/or appropriate fire district for review and transmittal to the Board of County Commissioners for approval or denial.

5-02 DEFINITIONS

Private Access Lane - Access roads provided to adjacent property for every facility, building, or portion of a building more than 150 feet from a maintained county road and/or private access road, which serves only one (1) lot.

Private Access Road - Access roads provided to adjacent property for every facility, building, or portion of a building more than 150 feet from a maintained county road, which serves two (2) or more lots.

5-03 DESIGN ELEMENTS

The following criteria shall be used in conjunction with Division 1 of these standards.

Design Speed: Design speed is the principal factor that must be correlated with the physical features of design to achieve a roadway that will accommodate the traffic safely for the planned use.

Grades: The maximum allowable grades shall be as shown in the following table:

Type of Terrain	Maximum Grades (%)
Level	7
Rolling	10
Mountainous	14

Horizontal Alignment: Horizontal curves shall be designed with as large a radius as possible, but no less than fifty (50) feet.

Roadway Width: The roadway width shall not be less than twenty (20) feet for private access roads and twelve (12) feet for private access lanes. Refer to Appendix I-4.

Clear Zone: The clear zone shall be a minimum of twenty (20) feet, measured ten (10) feet to each side of the centerline of the road/lane, and shall be completely free of all obstructions. Refer to Appendix I-4.

Pavement Depth: The road/lane shall be designed to support the loads of emergency vehicles and shall be surfaced as to provide all-weather driving capabilities.

As a minimum the road/lane surface shall consist of four (4) inches of crushed surfacing.

Bridge Width: The minimum bridge width for two-way structures is the greater of: (1) the design roadway width, or (2) 20 feet.

Bridge Loading: The minimum design bridge loading shall be HS 20-44.

DIVISION 6 ROAD APPROACHES

6-01 GENERAL

Every owner of property that abuts the Franklin County road system where limited access rights have not been acquired has a right to reasonable access to the county road system. The right of access to the county road system may be restricted if reasonable access can be provided by way of private access roads and lanes that abut the property.

Property owners shall be required to construct a new approach and/or bring existing nonconforming authorized road approaches into conformance for any new construction of homes and/or additional structures. Property owners requesting a new road approach or upgrades to an existing road approach shall complete an *Application to Construct A Road Approach to A County Road* with the Franklin County Public Works Department. Applicants for a *Permit to Construct A Road Approach* shall comply with all instructions and conditions of the permit, and shall design and construct road approaches in accordance with Divisions 1 and 6 of these standards.

Existing road approaches impacted by road projects shall be handled in accordance with Section 6-03.1, and shall be designed and constructed in accordance with Divisions 1 and 6 of these standards.

The following criteria shall be used in conjunction with Division 1 of these standards and the Washington State Department of Transportation *Design Manual*.

6-02 DEFINITIONS

Authorized Road Approach – A road approach or the replacement of a road approach that has been permitted or was open prior to January 1, 1973.

Average Weekday Vehicle Trip Ends (AWDVTE) – The estimated total of all trips entering plus all trips leaving a road approach on a weekday for the final stage of development of the property served by the road approach.

Conforming Road Approach – A road approach that meets all current requirements for location, quantity, spacing, sight distance, and geometric elements.

Corner Clearance – The distance from an intersection at grade to the nearest road approach. The distance is measured from the closest edge of the traveled way of the crossroad to the closest edge of the traveled way of the road approach measured along the edge of the traveled way of the road.

Intersection at Grade – The general area where a county road is met or crossed at a common grade or elevation by another county road, a state highway, or a city street.

Joint Use Approach – A single approach that serves more than one property.

Nonconforming Road Approach – A road approach that does not meet current requirements for location, quantity, spacing, sight distance, or geometric elements.

Permit – The written approval issued the Franklin County Public Works Department authorizing construction, reconstruction, maintenance, or change of category of a road approach.

Road Approach – A connection providing private access to or from the county road system.

Road Approach Connection Category – A category of road approach based on the estimated traffic generated.

Road Approach Design Template – The design geometric standards for a road approach based on the approach usage, types of vehicles that use the approach, posted speed of the county road, and the traffic volume.

Road Approach Type – The designation of road approaches on limited access facilities based on the use of the property served.

Temporary Road Approach – A road approach for a specific property use, conditioned to be open for a specific purpose and traffic volume for a specific period of time with the right-of-way to be restored to the original condition upon road approach closure.

6-03 DESIGN ELEMENTS

6-03.1 General

When a road project impacts existing road approaches, all conforming authorized road approaches shall be replaced. Existing nonconforming authorized road approaches shall be evaluated for ways to bring them into conformance. Solutions may include relocation, combining with the road approach of the adjacent property thus creating a joint use approach, closure to the road system, or addition of access to another public road or private access road/lane.

When the evaluation determines that a nonconforming road approach cannot be made conforming and that closure of the road approach would leave the property without a reasonable means of access, a nonconforming access connection permit may be issued. Documentation of the evaluation justifying the use of a nonconforming road approach shall be submitted to the County Engineer for approval or denial.

New road approaches or upgrades to existing road approaches, requested by the property owner, may be included in road projects at the expense of the property owner.

6-03.2 Road Approach Connection Category

Category I – Minimum Connection provides access to family residences, permanent agricultural road approaches, utility operation and maintenance roads, and road approaches serving low volume traffic generators with truck volumes less than 10%, and an AWDVTE of 100 or less

Category II – Minor Connection provides access to the county road system for medium traffic generators with an AWDVTE of 1500 or less, that are not included in Category I.

Category III – Major Connection provides access to the county road system for high traffic generators with an AWDVTE exceeding 1500.

Category IV – Temporary Connection provides access to the county road system for a limited time.

6-03.3 Road Approach Design Template

The road approach design template is dependent upon the approach usage, types of vehicles that use the approach, posted speed of the county road, and the traffic volume.

Figure 6-03(a) lists the road approach design templates, the approach usage, usage criteria, and the largest vehicle that Figure 6-03(c) provides for. When a larger design vehicle is required, use the turning path templates in Chapter 910 of the Washington State Department of Transportation *Design Manual* to determine the necessary adjustments.

Design Template	Property Usage (Noncommercial)	Usage Criteria	Design Vehicle
A	Urban Residential	Approaches to family residence from county roads with posted speeds of 35 mph or less with no trucks.	P
B	Rural Residential	Approaches to family residence from county roads with posted speeds greater than 35 mph with no trucks.	P
C	Farm	Farm field approaches used for the normal daily farming operations.	SU & BUS
D	Utility and Special Use	Approaches to shops, storage facilities, and utility operation and maintenance roads.	SU & BUS

Road Approach Design Templates

Figure 6-03(a)

Noncommercial Road Approaches are normally Category I connections. When they are Category II or III they shall be designed as commercial approaches in accordance with Chapter 920 of the Washington State Department of Transportation *Design Manual*.

Commercial Road Approaches are normally Category II or III connections. Commercial Road Approaches shall be designed in accordance with Chapter 920 of the Washington State Department of Transportation *Design Manual*. Where traffic volumes are heavy, the commercial road approach shall be designed as an intersection in accordance with Chapter 910 of the Washington State Department of Transportation *Design Manual*.

6-03.4 Sight Distance

The driver of a vehicle entering a roadway from a road approach needs obstruction-free sight triangles in order to see enough of the roadway to safely enter before an approaching vehicle can reach the road approach.

Road approaches should be located where the distances as shown in Figure 6-03(d) can be achieved. Road approaches with sight distances less than indicated are considered nonconforming road approaches.

6-03.5 Road Approach Spacing and Corner Clearance

Road Approach Spacing - The minimum distance, measured along the edge of the traveled way, from the closest edge of the traveled way of one road approach to the closest edge of the traveled way of an adjacent are as shown in Figure 6-03(e).

Road approach spacing less than these minimums may be required to provide access to properties where road frontage, topography, or location would otherwise preclude access. Where a joint use approach or access to a private access road/lane meeting or exceeding these minimums cannot be obtained or is determined not to be feasible, less than the minimum spacing may be necessary. Road approaches spaced to close are nonconforming road approaches.

Corner Clearance – Corner clearances shall meet or exceed the minimums shown in Figure 6-03(e). If, due to property size, corner clearance requirements cannot be met, and where a joint use approach or access to a private access road/lane meeting or exceeding the minimum corner clearance cannot be obtained or is determined not to be feasible, then the following minimum S values may be used:

Position	Access Allowed	S Minimum
With Restrictive Medians		
Approaching Intersection	Right In/Right Out	115 ft
Approaching Intersection	Right In Only	75 ft
Departing Intersection	Right In/Right Out	230 ft*
Departing Intersection	Right Out Only	100 ft
Without Restrictive Medians		
Approaching Intersection	Full Access	230 ft*
Approaching Intersection	Right In Only	100 ft
Departing Intersection	Full Access	230 ft*
Departing Intersection	Right Out Only	100 ft
*For urban roads with speeds less than 35 mph, 50 ft may be used.		

Minimum Corner Clearance*Figure 6-03(b)*

6-03.6 Drainage Requirements

In a roadway section with a drainage ditch, a culvert pipe may be required under the approach.

Design foreslopes not steeper than 6H:1V. Bevel the culvert ends in accordance with Chapter 700 of the Washington State Department of Transportation *Design Manual*. Culverts are to be located as far from the traveled way as possible. Minimum distances are as shown Figure 6-03(c).

Approaches and related areas must be constructed so they do not impair drainage within the right-of-way or alter the stability of the roadway subgrade.

6-03.7 Procedures

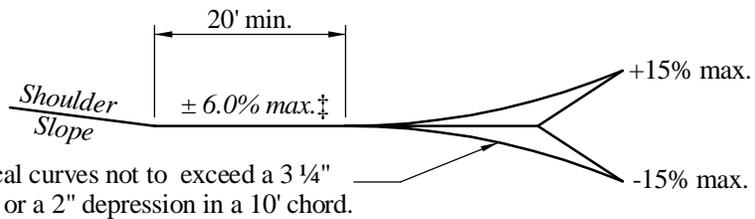
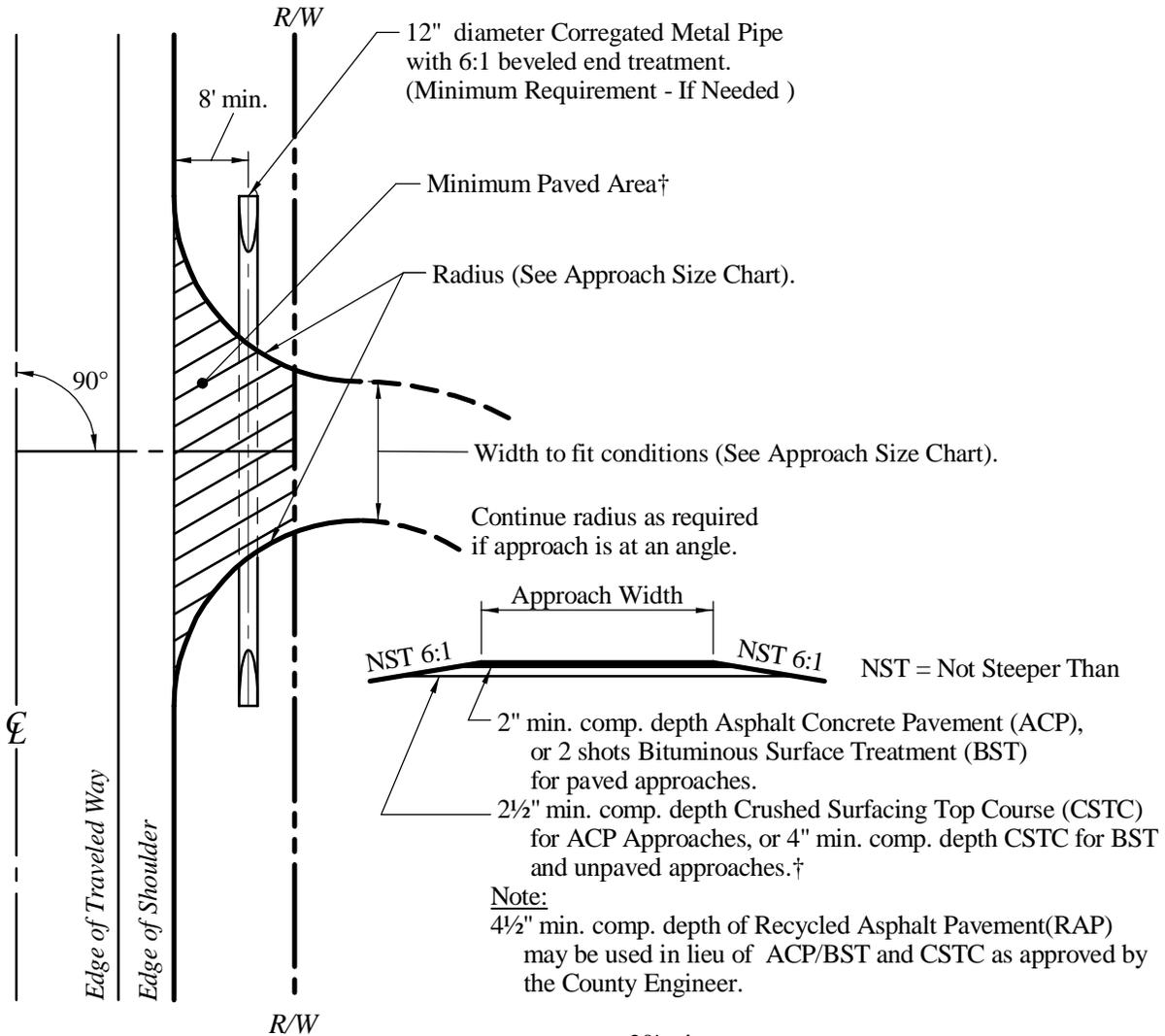
Verify the validity of all road approaches. Show on a plan or a list the location, template, validity, and justification for all road approaches. Where road approaches are to be included in a project, consider location and function as early as possible, preferably in the preliminary planning stage.

6-03.8 Documentation

The following documents are to be preserved in the project file.

Plan or list of the road approaches

Evaluation of nonconforming authorized road approaches



† Use material similar to traveled way.

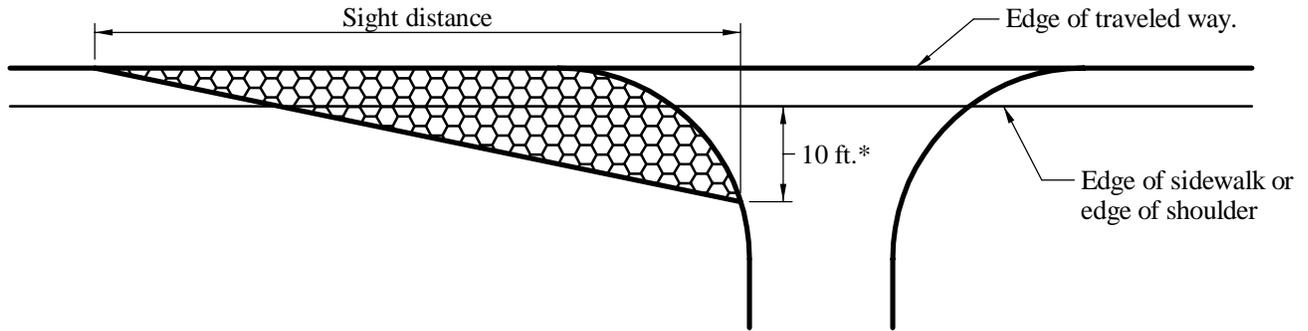
‡ Difference from shoulder slope.

Approach Size Chart			
Type	Width	Radius	Culvert Length*
A - Urban Residential	12' - 30'	5'	36' - 54'
B - Rural Residential	15' - 30'	20'	55' - 70'
C - Farm	20' - 30'	35'	90' - 100'
D - Utility and Special Use	20' - 50'	50'	120' - 150'

* If required.

Non-commercial Road Approaches

Figure 6-03(c)



*Not to exceed 18 ft. from the edge of traveled way.

Posted Speed Limit (mph)	25	30	35	40	50	60	70
Category I Road Approach	350	420	490	560	700	840	980

Road Approach Sight Distance (ft)

These distances require an approaching vehicle to reduce speed or stop to prevent a collision.

Design Category II and III road approach sight distance as an intersection (see Washington State Department of Transportation. *Design Manual* , Chapter 910).

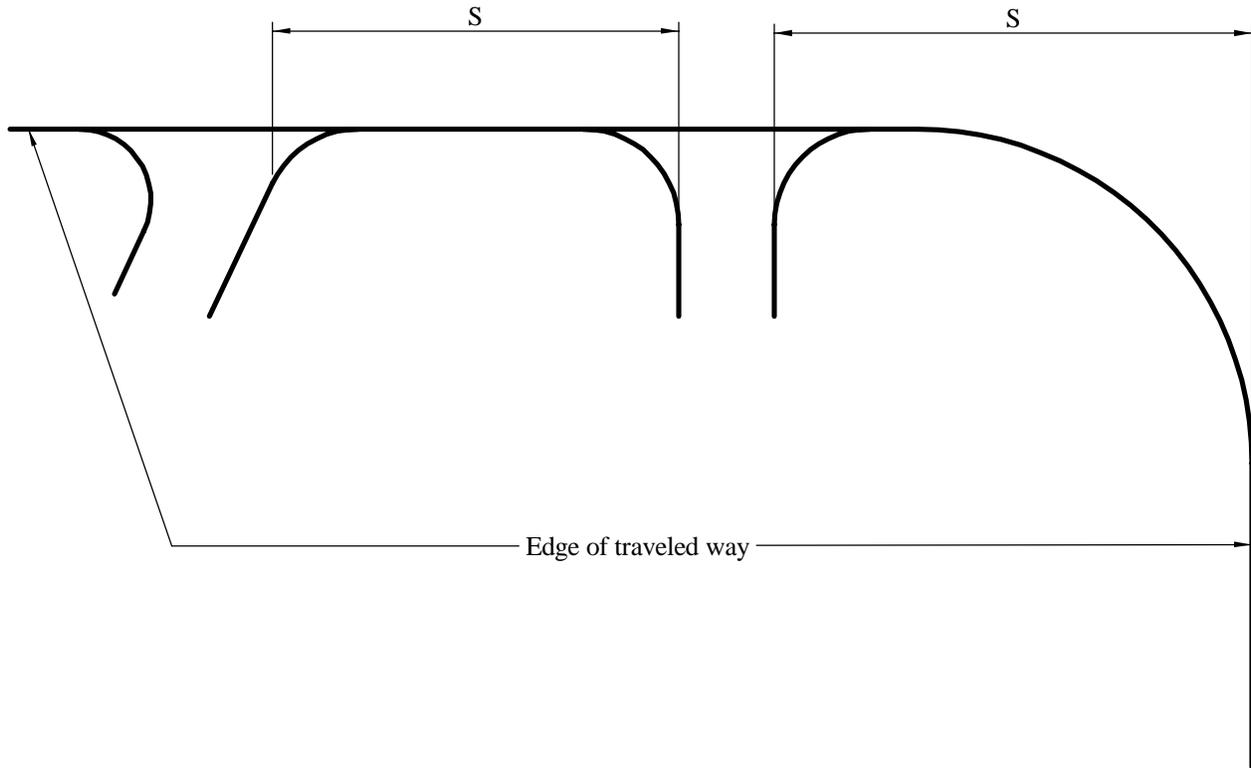
For road approaches where left turns are not allowed, a sight triangle need only be provided to the left, as shown

For road approaches where left turns are allowed, provide a sight triangle to the right in addition to the one to the left. The sight distance to the right is measured along the center line of the roadway.

For addition information on calculating the sight triangle, (see Washington State Department of Transportation. *Design Manual* , Chapter 910).

Road Approach Sight Distance

Figure 6-03(d)



Arterials		Collectors		Access	
Rural	Urban	Rural	Urban	Rural	Urban
350 ft.	250 ft.	300 ft.	125 ft.	200 ft.	100 ft.

Road Approach Spacing and Corner Clearance

Note:

For Road Approach Spacing, S is the distance between closest edge of traveled way of the two road approaches, measured along the edge of the traveled way of the road.

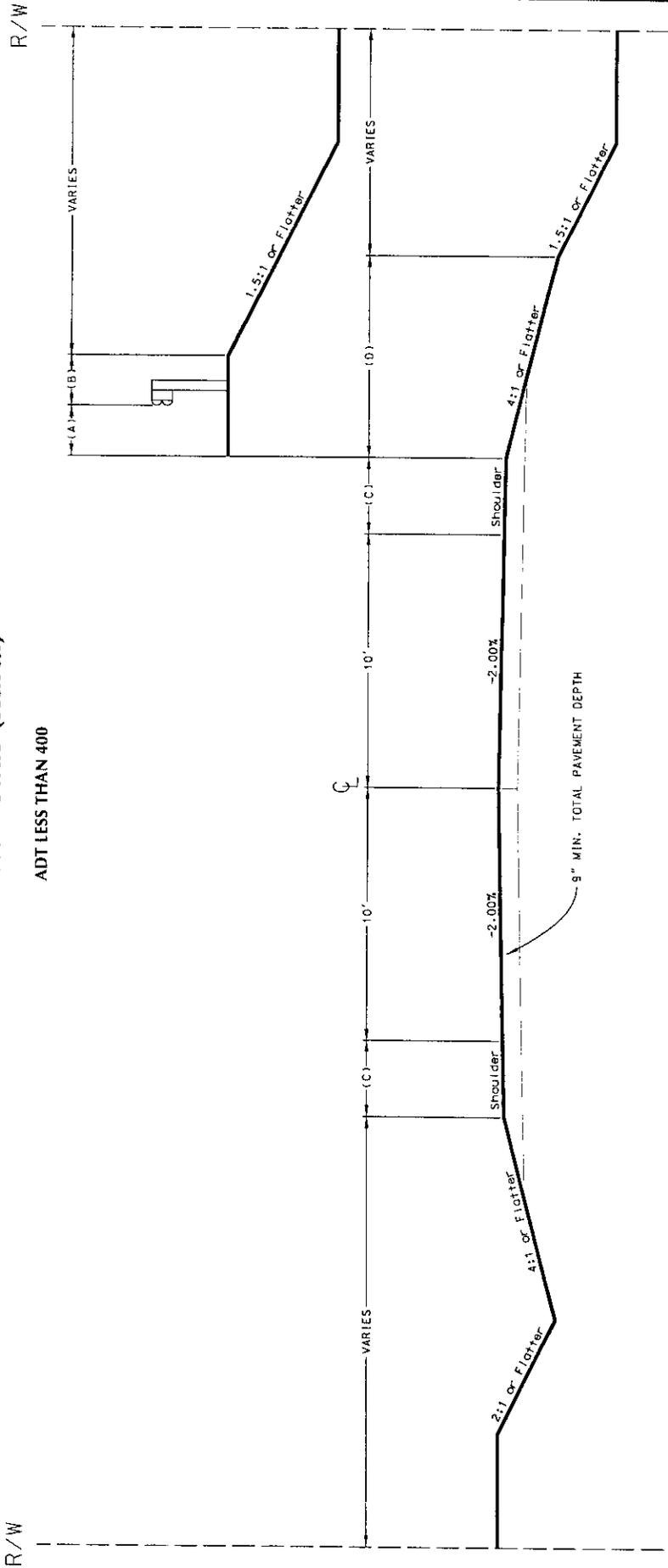
For corner clearance, S is measured from the closest edge of the traveled way of the crossroad to the closest edge of the traveled way of the road approach, measured along the edge of the traveled way of the road.

Road Approach Spacing and Corner Clearance

Figure 6-03(e)

APPENDIX I - 1

MINIMUM ROADWAY SECTION LOCAL ROADS AND STREETS Access Roads (Rural)



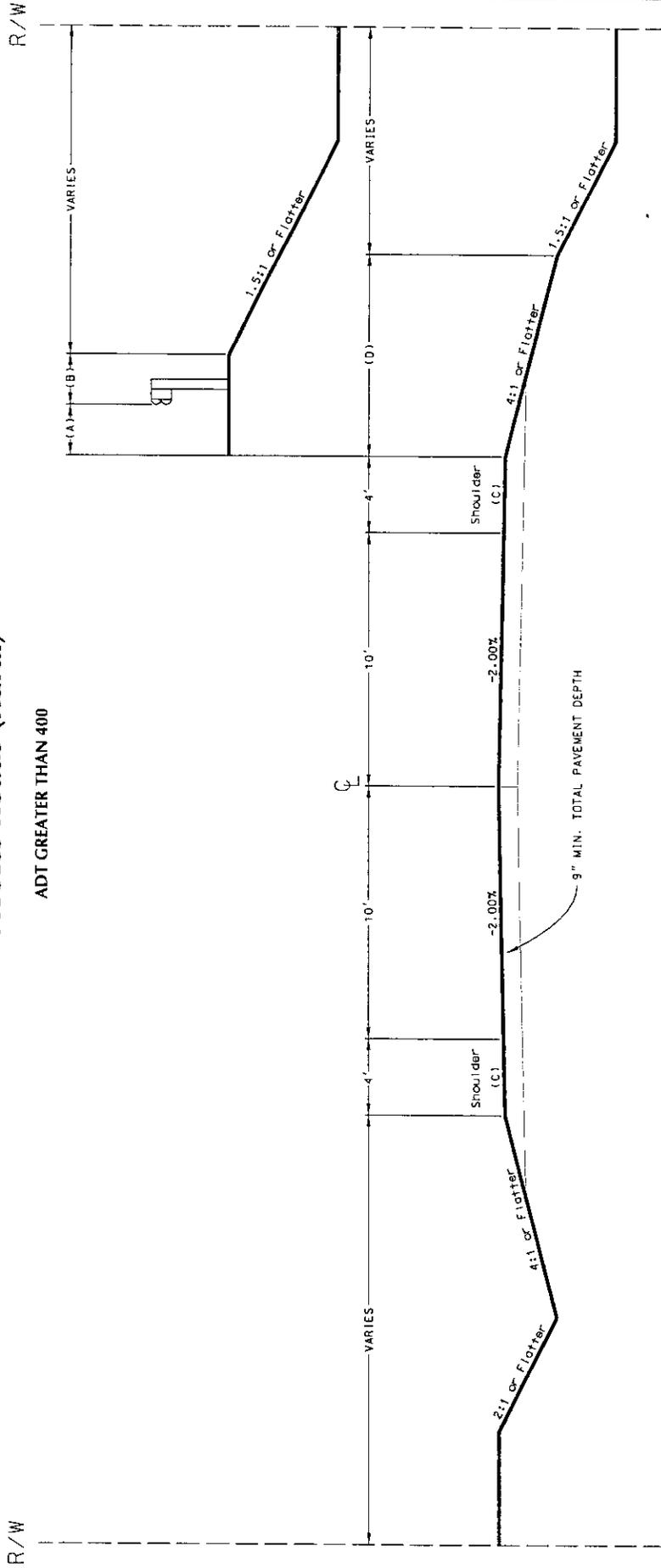
NOTES:

- (A) PROVIDE 2 FOOT CLEARANCE FROM EDGE OF USABLE SHOULDER TO FACE OF GUARDRAIL
- (B) WIDENING AS REQUIRED TO PROVIDE LATERAL SUPPORT
- (C) SHOULDER PAVING REQUIRED: 2' < 100 ADT
3' > 100 ADT
- (D) MINIMUM DISTANCE FOR CLEAR ZONE REQUIREMENTS

* ADT = AVERAGE DAILY TRAFFIC

APPENDIX I - 2

MINIMUM ROADWAY SECTION LOCAL ROADS AND STREETS Access Roads (Rural)



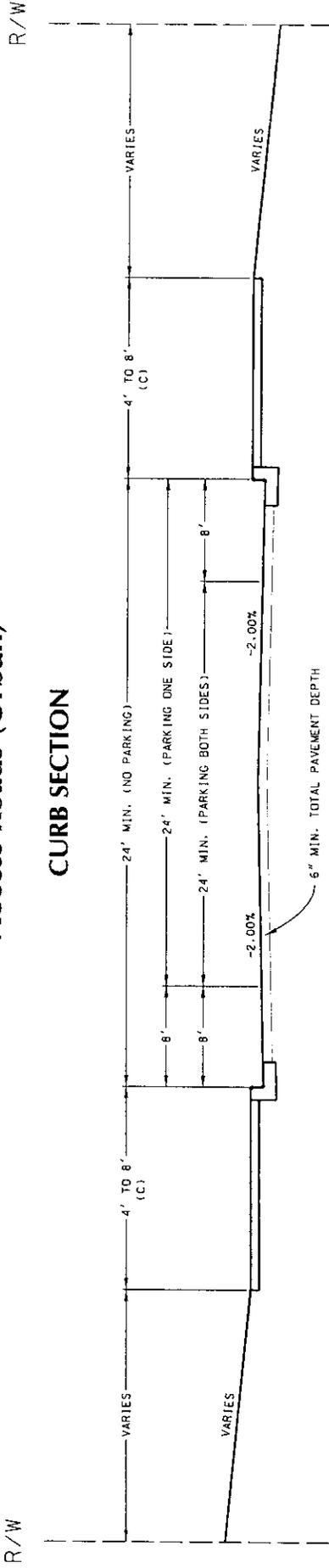
NOTES:

- (A) PROVIDE 2 FOOT CLEARANCE FROM EDGE OF USABLE SHOULDER TO FACE OF GUARDRAIL
- (B) WIDENING AS REQUIRED TO PROVIDE LATERAL SUPPORT
- (C) SHOULDER PAVING REQUIRED
- (D) MINIMUM DISTANCE FOR CLEAR ZONE REQUIREMENTS

* ADT = AVERAGE DAILY TRAFFIC

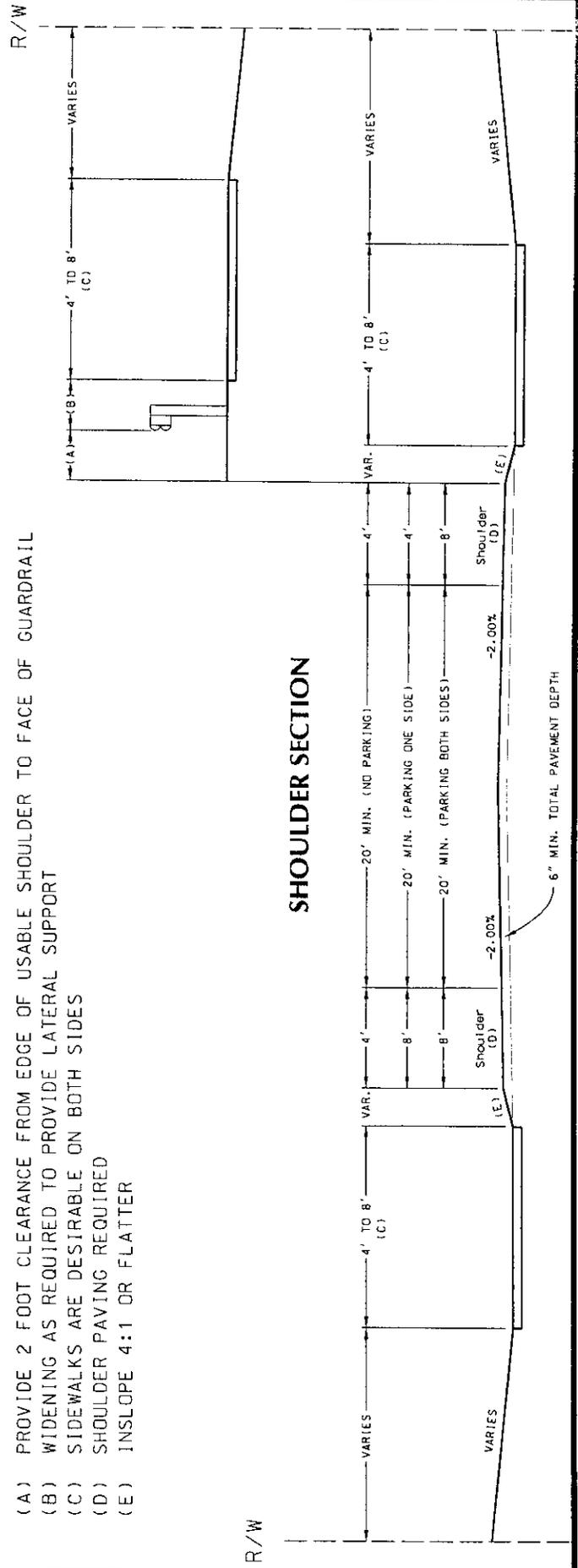
APPENDIX I - 3

MINIMUM ROADWAY SECTION LOCAL ROADS AND STREETS Access Roads (Urban)



NOTES:

- (A) PROVIDE 2 FOOT CLEARANCE FROM EDGE OF USABLE SHOULDER TO FACE OF GUARDRAIL
- (B) WIDENING AS REQUIRED TO PROVIDE LATERAL SUPPORT
- (C) SIDEWALKS ARE DESIRABLE ON BOTH SIDES
- (D) SHOULDER PAVING REQUIRED
- (E) INSLOPE 4:1 OR FLATTER



APPENDIX I - 4

MINIMUM ROADWAY SECTION PRIVATE ACCESS ROADS AND LANES

