VALLEY COUNTY

MINIMUM STANDARDS FOR PUBLIC ROAD DESIGN AND CONSTRUCTION

Adopted April 16, 2008

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Definition of Terms

AASHTO – American Association of State Highway and Transportation Officials.

Alley – Public access of limited use intended only to provide access to the rear or side of lots or building in urban districts.

Applicant – The person or persons making application to Valley County, to obtain a permit for grading, road construction, utility installation or driveway access.

Arterial Highway – Highway controlled and maintained by the Idaho Transportation Department.

Best Management Practices (BMP) - A measure or combination of measures determined to be the most effective and practical means of preventing or reducing contamination to ground water and/or surface water from nonpoint and point sources to achieve water quality goals and protect the beneficial uses of the water.

Cul-de-sac – Local road having one end permanently terminated in a vehicle turnaround.

Dedication – The setting apart of land or interest in land for use by the public. Land becomes dedicated when accepted by Valley County as a public dedication, either by ordinance, resolution, entry in the official minutes, or by the recording of a plat showing such dedication.

Easement – Grant of the right to use a strip of land for a specified purpose.

Engineer – Professional Engineer registered in the State of Idaho.

Frontage Road – Minor road parallel and adjacent to a major route that intercepts local traffic and controls access to the major route.

Highway – Roadway designated as a State or Federal Highway by the responsible state or federal agency.

Irrigation Facilities – Canals, laterals, ditches, conduits, gates, wells pumps, and equipment necessary for the supply, delivery and drainage of irrigation water.

ISPWC – Idaho Standards for Public Works Construction.

ITD – Idaho Transportation Department.

Local Road – Road that provides direct access to residential, commercial, and/or industrial sites for local traffic movements and connects to minor and major roads or arterial highways.

Loop Road – Minor road with both terminal points on the same road of origin.

Major Collector Road – General term for a road including primary county roads that provide travel corridors between cities, recreational sites and industrial areas.

Minor Collector Road – Roadway that provides for traffic movement within neighborhoods and between major roads and local roads with occasional access to abutting property.

MUTCD – Manual on Uniform Traffic Control Devices.

Plat – A plan of certain described land prepared in accordance with subdivision or other regulations as an instrument for recording real estate interests with the County Recorder:

- **Preliminary Plat –** Preliminary plan, subdivision or dedication containing the elements and requirements set forth in the Subdivision Regulations for Valley County, Idaho.
- **Final Plat –** Final plan, subdivision or dedication, or any portion thereof, prepared for recording by the Valley
  County Recorder and containing the elements and requirements set forth in the Subdivision Regulations for Valley County, Idaho.

Private Driveway – A prescribed vehicular access serving a single private property or residence from either a private or public road.

Private Road – Road within a subdivision plat that is not dedicated to the public and not a part of the public road system.

Private Road Right-of-Way – Privately owned land for a private road system.

Public Highway Agency – This term includes the Valley County Road Department, the Idaho Transportation Department and the functioning Public Works departments of the Cities of Cascade, Donnelly and McCall.

Public Right-of-Way – Any land dedicated and open to the public and under the jurisdiction of a public highway agency.

Public Road – Road, thoroughfare, alley, highway or bridge under the jurisdiction of a public highway agency.

Reserve Strip – Strip of land between a dedicated road or partial road and adjacent property, in either case, reserved or held in public ownership for future road extension or widening.

Roadway – That portion of a highway improved, designed or ordinarily used for vehicular travel, exclusive of sidewalks, berms, and other portions of the public right-of-way.

Specification – The construction specifications contained in the current edition of the Idaho Standards for Public Works Construction (ISPWC) as modified by Valley County.

Traveled Way – The portion of the roadway for the movement of vehicles exclusive of shoulders, ditches, and roadside areas.

Utility Facilities – Installations or equipment, underground or overhead, furnished for use by the public, including but not limited to: electricity, gas, steam, television, communications, water, drainage, irrigation, sewage disposal, or flood control, owned and operated by any person, firm, corporation, municipal department, or board duly authorized by state or municipal regulations.

INTRODUCTORY PROVISIONS

This manual provides the minimum standards to be used for design and construction of public roadways outside the incorporated areas of Valley County, Idaho, exclusive of state highways. These standards are to be used in conjunction with the Subdivision Regulations for Valley County, Idaho, the Valley County Land Use and Development Ordinance, and the Valley County Minimum Standards for Private Road Design and Construction.

If the standards set forth herein conflict with other referenced documents, the standards contained in this manual will govern.

Variances

Variations from these standards must be approved by the Valley County Planning and Zoning Commission and the Valley County Board of County Commissioners. Variations will be reviewed on an individual basis. Information on filing variances can be found in the Valley County Land Use and Development Ordinance.

I. ROADWAY DESIGN STANDARDS AND CRITERIA

A. GENERAL ROADWAY DESIGN STANDARDS AND CRITERIA

1. The most current editions of the following design guidelines have been adopted by reference:

   a. Roadway Design – AASHTO, A Policy on Geometric Design of Highways and Streets.

   b. Signs and Markings – MUTCD, Manual on Uniform Traffic Control Devices.

   c. Roadside Safety – AASHTO, Roadside Design Guide.

   d. Bridges – AASHTO, Standard Specifications for Highway Bridges.

   e. Road Structure – Asphalt Institute, Design Guide and Traffic Index.

   f. Drainage – ITD Design Manual.

   g. Traffic – TRB, Highway Capacity Manual and ITE, Trip Generation Manual.

   h. Water Quality, Sediment and Erosion Control – Idaho Department of Environmental Quality (DEQ) Catalog of Stormwater BMPs for Idaho Cities and Counties in conjunction with the Addendum to State Manual: Valley County BMPs.

   i. Bicycle Facilities – AASHTO Guide for Development of Bicycle Facilities.

   All designs shall be based on these guidelines and the applicable design criteria, except as modified herein. Variation from these design guidelines shall be based on site specific conditions, sound engineering judgment, and consideration of the safety of the traveling public and are subject to approval by the Valley County Engineer.

2. The minimum design speeds shall conform to the design criteria listed in Table 1. Based on design traffic volumes, higher design speeds may be required.

Table 1. Minimum Design Speeds

Roadway Classification	Level/Rolling[1]	Mountainous[1]
Local Road	25	20
Minor Collector	45	30
Major Collector	50	40

[1]As defined by AASHTO

B. ROADWAY CLASSIFICATION

1. All roadways are classified in accordance with the Federal Highway Administration guidelines. All roads are classified as major collectors, minor collectors or local roads. Roadway classifications are based on existing and future traffic volumes and adjacent land use patterns. The Valley County Board of County Commissioners shall decide upon and define the classification and level of maintenance for roads on the County road system. All road classification questions shall be directed to the Valley County Road Department prior to beginning the design process.

C. ROAD RIGHT-OF-WAY

1. The minimum public right-of-way width for each roadway classification is shown in Table 2. Additional right-of-way and/or permanent easements may be required to accommodate snow storage, pathways, cut or fill slopes and other features as determined by the Valley County Road Department.

Table 2. Minimum Right-of-Way Widths

Type of Roadway	Minimum Right-of-Way Width
Major Collectors	100 feet
Minor Collectors	70 feet
Local Road	70 feet

2. Cul-de-sacs shall have a minimum 60 foot radius right-of-way. Additional right-of-way and/or permanent easements may be required to accommodate snow storage, pathways, cut or fill slopes and other features as determined by the Valley County Road Department. The maximum length for a cul-de-sac road shall be 900 feet. A standard cul-de-sac layout is shown in Figure 150. Alternate turnarounds with a different shape and configuration may be allowed, providing that adequate public right-of-way is provided,

the proposed geometry accommodates a standard design vehicle, and the design is approved by the Valley County Road Department. An approved alternate turnaround layout is shown in Figure 160.

3. All right-of-way lines at road and highway intersections and at cul-de-sac bulbs shall be connected by a curve having a minimum radius of 20 feet or a chamfer of 20 feet.

4. The roadway centerline shall be centered on the right-of-way unless otherwise approved by the Valley County Road Department.

D. PRIVATE ROADS

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

E. ALIGNMENT

1. Table 3 is intended to show the minimum and maximum values for specific roadway design criteria. Design criteria for items not listed shall conform to AASHTO policy. Modification of the design criteria may be allowed on an individual project basis, subject to approval by the Valley County Road Department.

Table 3. Geometric Design Criteria

Design Parameter	Major Collector	Minor Collector	Local Road
Vertical Grades[1]	Minimum 0.5% Maximum 8%	Minimum 0.5% Maximum 8%	Minimum 0.5% Maximum 10%
Super Elevations	Max 0.06 ft. per foot	Max 0.06 ft. per foot	Max. 0.04 ft. per foot
Angles of Intersection	80° - 90°	80° - 90°	70° - 90°

[1]Roadways constructed using curb and gutter sections may use a minimum grade of 0.4%

2. A minimum tangent length of 100 feet, or as required for superelevation transitions, shall be developed between reverse curves on collector streets.

F. ROADWAY CROSS-SECTION

1. The typical roadway sections are shown in the attached figures. These guidelines show the cross-section characteristics required for public roads in Valley County.

Figure 110 Standard Local Road
Figure 120 Minor Collector Road
Figure 130 Major Collector Road

2. Roadways with curb, gutter, and sidewalk will be reviewed on an individual basis.

3. Driveway approaches shall be constructed in conformance with Figure 200.

4. All turn lanes shall be a minimum of 12 feet wide.

5. Cut and fill slopes shall be a maximum 2:1 slope without a geotechnical engineering report approved by the Valley County Engineer.

6. All borrow ditch flowlines shall be a minimum of 0.5 feet below the road subgrade.

7. Private roads and driveways accessing paved public roads shall be constructed with paved approaches for the first 30 feet.

G. STRUCTURAL ROAD SECTION

1. An adequate base and surface thickness is required for all roads. The standard road sections shown on Figures 110, 120 and 130 for each road classification are minimums and shall be used unless a geotechnical soil analysis is performed for the project site by a geotechnical engineer licensed in the State of Idaho. The geotechnical report including all structural calculations and recommendations for a revised road section must be submitted to the Valley County Engineer for review and approval.

H. UTILITIES

1. Utilities may not be located within Valley County road right-of-way without prior approval by the Valley County Road Department.

2. All utility designs shall meet the requirements of the jurisdictional district or company and must be approved prior to Valley County grading plan approval. All approvals from utility districts or companies shall be provided to Valley County as an attachment to the grading plan submittal.

3. New and relocated irrigation facilities shall be constructed and maintained outside the public right-of-way.

I. STRUCTURES

1. Bridge structures shall be designed by a Professional Engineer licensed in the State of Idaho, in accordance with AASHTO Standard Specifications for Highway Bridges, current edition.

2. The minimum design loading for bridge construction on local and minor collector roads shall be HS-20. Major Collector roads shall be designed for HS-25 loading.

3. The minimum width of the bridge structure measured face-to-face of curb or the face of the bridge rails shall be the full width of the traveled way, plus two feet eight inches (2'-8").

4. All structural retaining walls over 4 feet in height shall be designed by a Professional Engineer licensed in the State of Idaho and shall be approved by the Valley County Engineer prior to construction.

J. SIGNING AND PAVEMENT MARKINGS

1. All traffic control devices (signs, pavement markings, and markers) shall be shown on the roadway design plans.

2. The traffic control devices and their application shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), current edition.

3. Traffic control signs, roadway signs and private signs shall comply with Valley County sign standards detailed in the Valley County Land Use and Development Ordinance.

4. All signs shall be installed prior to the acceptance of roads, unless approved otherwise by Valley County.

5. Valley County may determine additional project specific pavement-marking requirements subject to the MUTCD. The color, pattern and dimensions of marking shall be in conformance with the MUTCD, current edition. Paint specifications shall be the same as that used by the Idaho Transportation Department for pavement markings.

6. All temporary and construction traffic control shall conform to the MUTCD, current edition.

K. TRAFFIC

1. Traffic volumes for new developments shall be determined using the ITE – Trip Generation Manual. The following rates shown in

Table 4 are recommended for general traffic estimation. Trip generation rates are subject to approval by the Valley County Engineer.

Table 4. Common Trip Generation Rates

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

DU = Dwelling Unit
KSF = 1000 Square Feet

2. Roadway capacities and Levels of Service (LOS) shall be evaluated according to the recommendation of the Transportation Research Board (TRB) – Highway Capacity Manual, current edition. A level of service rating of C or better is required for all county roads.

3. Auxiliary lanes shall be provided according to AASHTO guidelines.

4. Planning level roadway capacities based on LOS C are shown in Table 5.

Table 5. Planning Level Roadway Capacities

Roadway Classification	Planning Level Capacity
Local	2,000 vpd (vehicles per day)
Minor Collector	5,000 vpd[1] 6,500 vpd[2]
Major Collector	8,500 vpd

[1]Assumes Mountainous Terrain
[2]Assumes Level Terrain

L. DESIGN VEHICLE

1. All public roads shall be designed to accommodate an intermediate semitrailer (WB-50) with an outside wheel path radius of 45 feet.

M. ROAD DEVELOPMENT AGREEMENT PROCESS

1. A Road Development Agreement (RDA) will be prepared at the Developers' request after preliminary plat approval. The RDA must be finalized prior to final plat approval for all residential/commercial developments.

2. The RDA will be based on the current Valley County Capital Improvement Program (CIP) in place as of the date when the Valley County Board of County Commissioners accept the RDA and the Developer fulfills their obligations as a part of the RDA.

3. Credit for dedicated right-of-way shall be based on the right-of-way value in the CIP used to develop the RDA. Right-of-way credit will only be issued for additional right-of-way required by Valley County and shall not include existing or prescriptive right-of-way.

4. Payment of contribution to the Valley County Road Department is required in order to finalize the RDA.

5. Road impact mitigation may be proposed by the developer through capital offsets such as providing materials and/or in-kind construction in lieu of a portion of the contribution. Approval of the use of capital offsets is at the sole discretion of the Valley County Board of County Commissioners.

6. All accepted capital offsets shall require a letter of credit, bonding or an acceptable surety as determined by Valley County (at a rate of 110% of the value of the capital offset) prior to finalizing the RDA.

N. PLAN SUBMITTAL REQUIREMENTS

Note: Review and approval by Valley County is for the purpose of ensuring general conformances to County policies and requirements. The submitting design engineer is solely responsible for the design and accuracy of the design documents. All submissions to Valley County shall be stamped and signed by a Professional Engineer registered in the State of Idaho.

1. All plans, calculations, reports and materials shall be in English Standard units.

2. All submittal documents shall be submitted to both the Valley County Road Department and the Valley County Engineer.

II. DRAINAGE DESIGN STANDARDS AND CRITERIA

A. GENERAL DRAINAGE DESIGN STANDARDS AND CRITERIA

1. The most current editions of the following design guidelines have been adopted by reference:

   a. Drainage – ITD Design Manual Section 600.

   b. Water Quality, Sediment and Erosion Control – DEQ Catalog of Stormwater BMPs for Idaho Cities and Counties in conjunction with the Addendum to State Manual: Valley County BMPs.

   All designs shall be based on these guidelines and the applicable design criteria, except as modified herein. Variation from these design guidelines shall be based on site specific conditions, sound engineering judgment, and consideration of the safety of the traveling public and are subject to approval by the Valley County Engineer.

2. Downstream drainage systems shall not be adversely affected by upstream development. It shall be the developer's responsibility to ensure that runoff, storm and domestic, from a development does not contain pollutants and that the flow rates and velocities do not exceed pre-development conditions.

3. All necessary drainage easements for accommodating drainage structures shall be shown on the plans and dedicated as a part of the approved plat. Drainage easements necessary for conveying storm water across private property shall be shown on the plat and recorded with the Valley County Recorder's Office.

4. All existing irrigation and drainage conveyances through a site prior to development shall be accommodated, maintained, and continued through the development.

B. EROSION AND SEDIMENTATION CONTROL

Valley County has adopted the Idaho DEQ Catalog of Stormwater BMPs for Idaho Cities and Counties in conjunction with the Addendum to State Manual: Valley County BMPs to assist local agencies and developers with the selection, design, installation and maintenance of BMPs to reduce storm water pollution. The handbook presents general guidelines to mitigate water quality impacts of new construction.

1. The management of erosion and sedimentation from construction sites and new developments involves the design and

implementation of a control system. The source of sediment must be controlled through the use of diversions, ground cover lined channels, sediment basins, and/or sediment control measures.

2. Erosion and sediment discharge from the development site must be minimized or eliminated both during construction and after the development is complete. Developers shall utilize ground covers, lined ditches, riprap, and other methods to eliminate erosion and control sediment.

3. Road construction and development must meet all local, state, and federal requirements for water quality and sediment and erosion control.

C. PEAK RATE OF DISCHARGE

1. The size of the drainage area shall include both on-site and off-site lands tributary at the design point.

2. The peak rate of discharge shall be determined for the 100 year storm event for all major collector roads, bridges, retention/detention ponds, and culverts used to convey off-site drainage facilities. The peak rate of discharge shall be determined for the 50 year storm event for all other drainage facilities. The peak rate shall be used in designing individual components of the drainage system within the development and to examine predevelopment and post-development peak flows.

3. The peak rate for areas up to one hundred acres shall be calculated using the Rational Method or approved derivatives. The Soil Conservation Service (SCS) method shall be used for larger areas.

4. Other methods of determining peak rate of charge based on sound engineering principles and with proven results may be acceptable.

5. Computer software adaptation of any method is acceptable provided that their data and graphical printout are submitted for review.

D. RUNOFF VOLUME

1. Runoff volumes shall be calculated for use in determining storage requirements. The following standards shall be used when calculating runoff volumes.

a. The storm duration shall be a 1-hour event when using the rational method, or a 24-hour event when using the SCS method.

E. CONVEYANCE SYSTEM DESIGN CRITERIA

1. Hydraulic capacity may be calculated by various acceptable methods for open channels and closed conduits such as Hazen-Williams Formula, Deroy-Weisbach Equation and Manning Equation.

2. Design flows shall not exceed 80% of pipe capacity.

3. Culverts used for drainage purposes shall be corrugated steel, aluminum, or high density polyethylene (HDPE) with the wall thickness and minimum depth of cover shown in Table 6 (other culvert materials may be used if approved by the Valley County Road Department):

Table 6. Culvert Materials

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

*Cover may be reduced to six inches (6") on residential driveways with12 gage steel pipe.

4. Culverts across local roads and driveways shall be a minimum of fifteen inches (15") in diameter. Culverts across collector roads shall be a minimum of eighteen inches (18") in diameter. Siphons shall be a minimum of eighteen inches (18") in diameter.

5. Culverts under approach roads or driveways shall have a minimum 16 ga. wall thickness, and shall be installed as shown on Figure 200.

6. Energy dissipaters shall be provided at all outlets and when channel flow velocity exceeds fifteen feet per second.

F. RETENTION FACILITIES

1. Retention facilities are designed to accept all the runoff from the site and retain the runoff until it infiltrates into the surrounding ground or evaporates.

2. Retention facilities shall be designed to accommodate the runoff volume from the design storm with allowance for sediment and freeboard.

3. Facilities shall be designed to accommodate the runoff from a design storm with a 100 year return frequency. Facilities shall be designed with minimum 12-inch freeboard above the high water mark.

4. Unless otherwise approved by the Valley County Road Department, all stormwater retention facilities shall be located outside of the public right-of-way in a common area maintained by the developer or a homeowners association into perpetuity.

G. DETENTION FACILITIES

1. The design of any detention facility requires consideration of several factors, such as size of the basin; minimum freeboard depth; maximum allowable depth of temporary ponding; storm duration; timing of the inflow and allowable outflow rate. The design goal is to leave downstream areas with the same hydrology that existed before development.

2. Facilities shall be designed to accommodate the runoff from a design storm with a 100 year return frequency. Facilities shall be designed with minimum 12-inch freeboard above the high water mark.

3. Maximum outflow rate shall not be more than the pre-development rate of runoff. The receiving system must be shown to be capable of accommodating the design flow.

4. Computer software adaptations of these calculations may be acceptable provided that their data and graphic printout allow review and evaluation.

5. Unless otherwise approved by the Valley County Road Department, all stormwater detention facilities shall be located outside of the public right-of-way in a common area maintained by the developer or a homeowners association into perpetuity.

H. MAINTENANCE AND OPERATION

1. All facilities shall be designed to allow access for maintenance and operation. This includes heavy equipment access, if required.

I. PLAN SUBMITTAL REQUIREMENTS

Note: Review and approval by Valley County is for the purpose of ensuring general conformances to County policies and requirements. The submitting design engineer is solely responsible for the design and accuracy of the design documents. All submissions to Valley County shall be stamped and signed by a Professional Engineer registered in the State of Idaho.

1. The following items are required to be included with all storm drainage submittals.

    a. Topographic survey of the development showing all drainage and irrigation water conveyance systems within a minimum area encompassed by a line 200 feet outside the property line.

    b. Construction documents shall clearly indicate all temporary and permanent water quality and sediment and erosion control devices.

    c. Peak flows and drainage basins shall be delineated on the drawings.

    d. Peak flow calculations shall be included in the drainage report.

    e. Plan view of new or modified drainage and irrigation water conveyance systems.

    f. Plan, profile and/or cross sections for storm water retention or detention facilities.

    g. Flood routing computations for the 100 year flood through any existing drainage conveyance systems.

    h. Seasonal high ground water table where applicable.

    i. Soil classifications where applicable.

    j. Copies of associated permits and discharge agreements.

    k. All plans, calculations, reports and materials shall be in English Standard units.

    l. All submittal documents shall be submitted to both the Valley County Road Department and the Valley County Engineer.

III. CONSTRUCTION SPECIFICATIONS

A. DIVISION 100 – GENERAL CONDITIONS

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

2. Road, drainage and utility improvements are required by Valley County as a condition of approved land use. All improvements (public and private) shall be completed prior to the recording of the final plat or financially guaranteed as provided in the Valley County Subdivision Regulations.

3. The Contractor is required to contact the Valley County Road Department a minimum of five (5) business days prior to beginning any construction activities. Construction activities will not be permitted prior to approval of the construction documents by the Valley County Engineer. The County will review the project to determine whether a preconstruction meeting is required. If required, the Contractor and the Valley County Road Department will determine the time and location for the preconstruction meeting.

4. All testing required in these standards or required by Valley County shall be done by an accredited or approved testing laboratory at the expense of the applicant or contractor. Copies of all tests shall be submitted to the Valley County Engineer for review.

5. Changes to any materials, quality control or workmanship on public improvement projects shall be approved by the Valley County Road Department in writing.

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

7. The contractor shall notify the Valley County Road Department a minimum of two (2) business days before beginning the following operations:

    a. Construction signing and traffic control items
    b. Rough grading
    c. Finish grading
    d. Pipe installation
    e. Subgrade modifications
    f. Asphalt paving
    g. Concrete pouring

    The Contractor shall not proceed beyond any of these stages without written approval from the Valley County Road Department.

B. DIVISION 200 – EARTHWORK

1. Clearing and grubbing shall consist of the removal and proper disposal of all organic and other unsuitable material from the road construction area.

2. In solid rock excavation, the solid rock shall be excavated to six inches (6") below the finished sub-grade elevation and back-filled with approved granular materials.

3. Unstable sub-grade conditions shall be remedied by over-excavation and back-filling with approved granular material. Geotextile material may be required.

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

5. Class A compaction shall be specified for construction on the construction documents.

C. DIVISION 700 – CONCRETE

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

D. DIVISION 800 – UNCRUSHED AGGREGATE

1. Pit run material shall be durable, have a sand equivalent not less than 30, and shall meet the gradation shown in Table 7.

Table 7. Subbase Gradation (% Passing)

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

E. DIVISION 800 – CRUSHED AGGREGATE

1. The crushed aggregate for base shall conform to Table 8.

Table 8. Base Material Gradation (% Passing)

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

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

F. DIVISION 800 – ASPHALT PAVING

1. Prior to paving the Contractor shall proof-roll the subgrade while being observed by the Valley County inspector. Proof-rolling shall be performed with a fully loaded tandem axle dump truck. All soft or spongy areas shall be dug out, recompacted and proof-rolled again until the Valley County inspector has provided written approval of the subgrade preparation.

2. Asphalt paving shall be hot plant mix asphalt unless cold mix is approved for site specific locations by the Valley County Road Department.

3. Hot Plant Mix Asphalt:

    a. The minimum requirement for hot plant mix asphalt concrete shall be Class III. The asphalt cement performance grade shall be selected for the site temperature requirements.

IV. QUALITY ASSURANCE (QA)

A. MINIMUM TESTING REQUIREMENTS

Notify the Valley County Road Department a minimum of two standard business days prior to site inspection.

1. Road Section - Refer to Table 9 and Table 10.

2. Trench Backfill

    a. A minimum of one compaction test per backfill layer is required for any trench backfill including “Bell Holes”.

    b. All other trench backfill compaction testing must be performed at the following frequency:

        - Two tests at different locations for every trench less than 500 feet in length but not less than once per day.
        - One test per every 500 feet of additional trench and at locations where materials or construction procedures change, but not less than once per day.
        - At every location for 1 and 2 above, obtain a test at ½ of the total trench depth and one test at the top of the trench backfill (test set).

3. Street Cuts and Surface Repairs

    a. A minimum of one compaction test of the base course and one compaction test of the pavement for surface repairs less than 50 feet in length including “bell holes”.

    b. Compaction testing shall be performed on the base course at the following minimum frequencies:

        - Two tests at different locations for every surface repair less than 500 feet in length but not less than once per day.
        - One test per every 500 feet of additional surface repair and at locations where materials or construction methods change, but not less than once per day.

4. Compaction testing shall be performed on the pavement surface at the following minimum frequencies:

    a. Two tests at different locations for every surface repair less than 300 feet in length but not less than once per day.

    b. One test per every 300 feet of additional surface repair and at locations where materials or construction methods change, but not less than once per day.

Table 9. Road Section Specifications

Section	Material	Density			Location of Tests Based on Length of Travel Lane	Depths at Each Location	Tolerance (Recompact if:)		
		% of Max	Max Density Method	Field Test			One Test	Avg of 3 Tests in a Row	Average of All Tests
Subgrade	Native or Import Uncrushed (ISPWC 801) or Crushed (ISPWC 802)	95%	See Table ISPWC 202.3.8.C	Nuclear Densometer AASHTO T-310	<500' - 2 Locations/Travel Lane >500' - 1 Location/500'/Travel Lane	Each Lift	< 93%	< 94%	< 95%
Subbase	6" (ISPWC 801)	95%	AASHTO T-99 or ASTM D698				< 93%	< 94%	< 95%
Base	Type II (ISPWC 802)	95%				Full Depth	< 93%	< 94%	< 95%
Pavement- Local Street	Plant Mix Asphalt (ISPWC 810)	95%	Per Mix Design	Nuclear Densometer WAQTC TM-8	<100' - 2 Locations/Travel Lane >100' - 1 Location/100'/Travel Lane	Full Depth	< 92%	< 94%	< 95%
Pavement- Collector/Arterial Street		97%				Full Depth	< 93%	< 96%	< 97%

Notes: Minimum of one (1) compaction test per lift is required
Minimum of two (2) compaction tests per street

Table 10. Gradation/Extraction Gradation/Core Test

Section	Test	Location of Tests
Subbase	Gradation	<2000' - 2 Locations/Travel Lane >2000' - 1 Location/2000'/Travel Lane
Base		
Pavement	Extraction Gradation	
Pavement	Core	<1000' - 2 Locations/Travel Lane >1000' - 1 Location/100'/Travel Lane

Note: Minimum of one (1) of each of the tests listed above per sheet

V. MISCELLANEOUS CONSTRUCTION REQUIREMENTS

Prior to beginning construction within any public right-of-way, the Contractor shall provide Valley County with the following:

A. BOND

1. Performance Bond, or other acceptable surety as determined by the Valley County Road Department, in the amount of 110% of the estimated cost to complete the proposed work, including the costs of applicable permits and easements. The Valley County Road Department shall have final approval of costs to be used for bond/surety requirements.

B. INSURANCE

1. Worker's Compensation: Certificates of Insurance showing statutory Worker's Compensation coverage and showing Employer's Liability coverage. Contractor shall provide Valley County 30 days prior written notice of cancellation of either coverage.

2. Automobile: Certificates of Insurance showing the Contractor maintains Comprehensive Automobile Liability Insurance for all owned, non-owned and hired vehicles. Such coverage must name Valley County as co-insured and Contractor must provide a Certificate showing such coverage and showing that such coverage will not be canceled by the insuring company without 30 days prior written notice to Valley County.

3. General Liability: Contractor shall procure and maintain until the work has been completed and accepted by the Valley County Road Department, Commercial General Liability coverage. Contractor shall provide Certificates of Insurance which show broad form property damage coverage. The Policy must include Contractor's Protective Liability Insurance and completed operations coverage. Coverage should be extended to include Contractor, Subcontractor(s) and any independent contractors directly or indirectly employed by either of them. The General Liability policy shall be endorsed to include personal injury, libel, slander, and false arrest. All policies shall be written on an occurrence basis rather than claims made. Such coverage may be provided by a separate policy for Contractor and for Valley County, or by naming Valley County as an Additional Named Insured. If coverage is obtained by naming Valley County as an Additional Named Insured, the policy must contain a Separation of Insured Clause and the

Certificate must so indicate. If the required coverage is obtained through a Commercial General Liability policy backed with Umbrella Coverage, the certificate for Umbrella Coverage must show that Valley County will be given 30 days prior written notice of cancellation.

C. CONSTRUCTION TRAFFIC CONTROL PLAN

1. The Contractor shall observe and comply with all applicable local, city, county, state and federal laws, rules, ordinances and regulations in effect with respect to the obstruction of and work upon roads, keeping open passageways, and protecting same where they are exposed or would be dangerous to public travel during the entire period of work.

2. Traffic control devices shall be in accordance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) and shall meet the requirements of American Traffic Safety Services Association (ATSSA), Quality Standard for Work Zone Traffic Control Devices (latest edition).

3. The Contractor shall have sole responsibility to provide, erect, and/or maintain any and all traffic control devices (such as signing, striping, barricades, barriers, lights, flares, danger signals, or flagging) necessary to effectively guard and protect the public. The failure of Valley County to notify the Contractor to maintain traffic control devices shall not relieve the Contractor from this liability.

4. No road shall be closed by the Contractor to the public except by written permission of the Valley County Road Department. The Contractor shall provide a minimum of 48 hours notice to property owners and business managers that will be impacted by any impending driveway or road closure.

D. SCHEDULE

1. Prior to beginning construction, the Contractor shall submit a project schedule for approval by the Valley County Road Department. The project schedule shall identify all significant milestones including, but not limited to, start of construction, start and end of any road closures or detours, and substantial completion. Failure to complete the project or road closures that extend beyond the scheduled duration shall entitle Valley County to liquidated damages. The cost basis for liquidated damages will be identified by the Valley County Road Department prior to the start of construction.

VI. ACCEPTANCE OF WORK

A. ACCEPTANCE

1. Acceptance of new roadways as public roads is at the sole discretion of the Valley County Board of County Commissioners.

2. The level of County provided maintenance, if any, for roadways is at the sole discretion of the Valley County Board of County Commissioners.

3. The developer shall provide to the Valley County Road Department certification of inspection and conformance to the approved design documents prior to acceptance of work. Acceptance of work performed by the Contractor does not guarantee or imply acceptance of new roadways as public roads.

B. WARRANTY

1. The Contractor shall warrant that work conforms to the design documents and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any Subcontractor or supplier at any tier.

2. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, Valley County shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

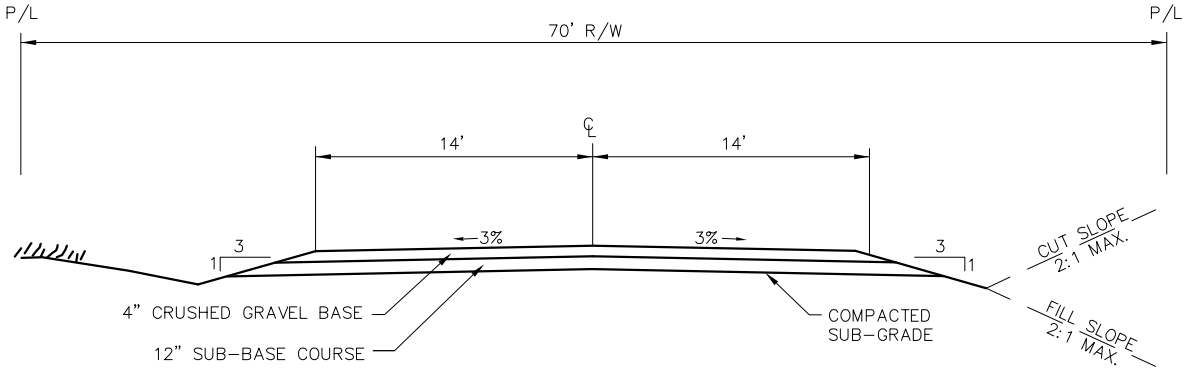
3. The Contractor shall provide a two-year warranty period, commencing on the date of Valley County's written notification of acceptance of work. It is the Developer's responsibility to set up a final warranty inspection prior to the warranty expiration date to confirm all warranty obligations have been satisfied. Final warranty acceptance will be documented in writing by Valley County.

4. The Contractor's warranty with respect to work repaired or replaced will be two-years commencing from the date of Valley County's written notification of acceptance of the repair or replacement.

5. The Contractor shall provide Valley County with a warranty bond, or other acceptable surety as determined by the Valley County Road Department, in the amount of 10% of the construction performance bond (see Section V, Item A). The warranty bond will not be released until final warranty acceptance by Valley County.

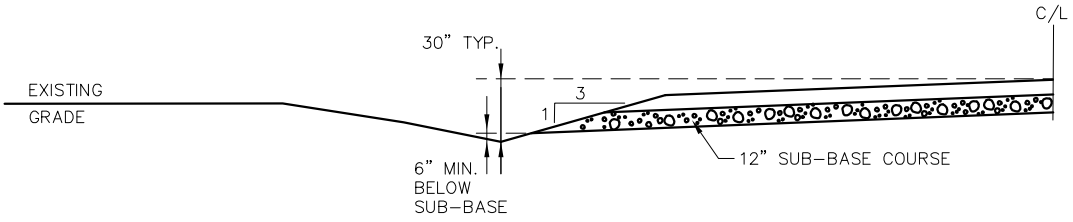
FIGURES

NOTE:
SECTION THICKNESS BASED ON VALLEY COUNTY MINIMUM REQUIREMENTS AND
TRAFFIC INDEX=4
SUBGRADE R=5



GRAVEL ROAD SECTION

NTS



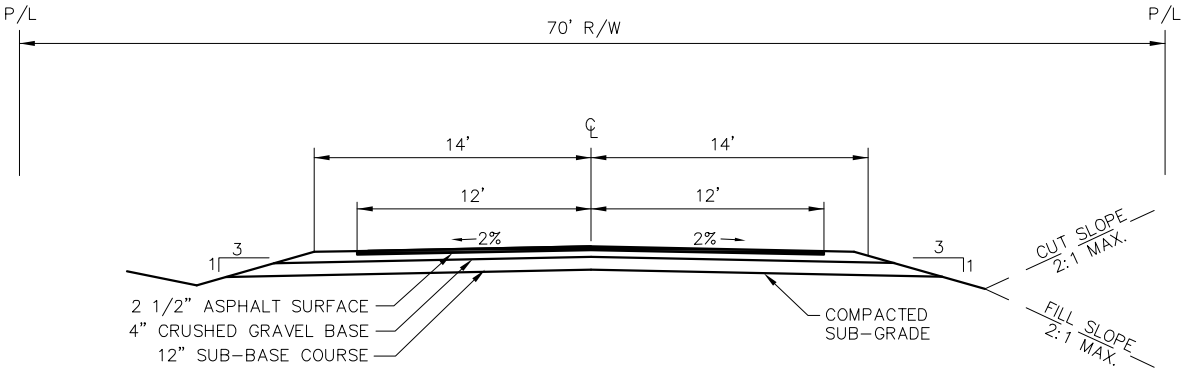
ROADSIDE DITCH DETAIL

(TYPICAL FOR ALL ROAD CLASSIFICATIONS)

NTS

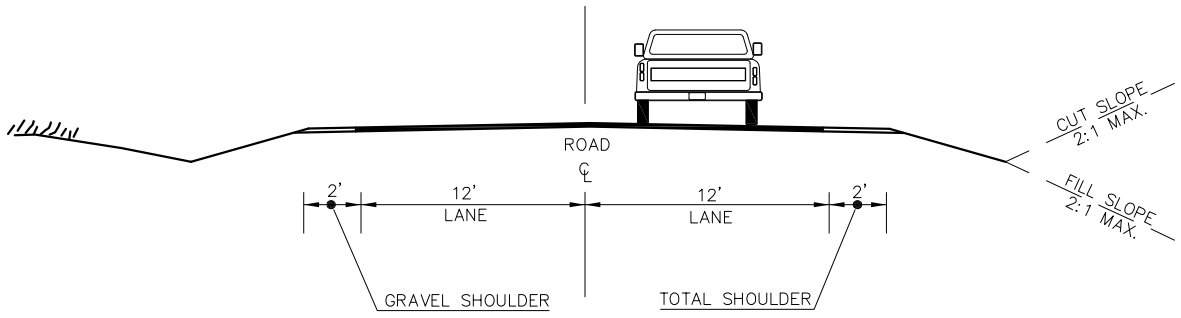
VALLEY COUNTY ROAD DEPARTMENT	PRIVATE ROAD	FIGURE 100

NOTE:
SECTION THICKNESS BASED ON VALLEY COUNTY MINIMUM REQUIREMENTS AND
TRAFFIC INDEX=4
SUBGRADE R=5



MINIMUM STRUCTURAL SECTION

NTS

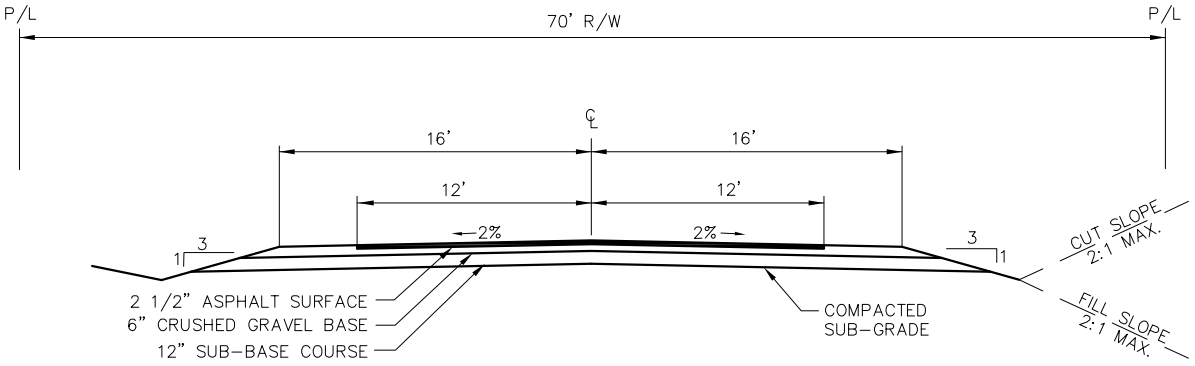


LOCAL ROAD DIMENSIONS

NTS

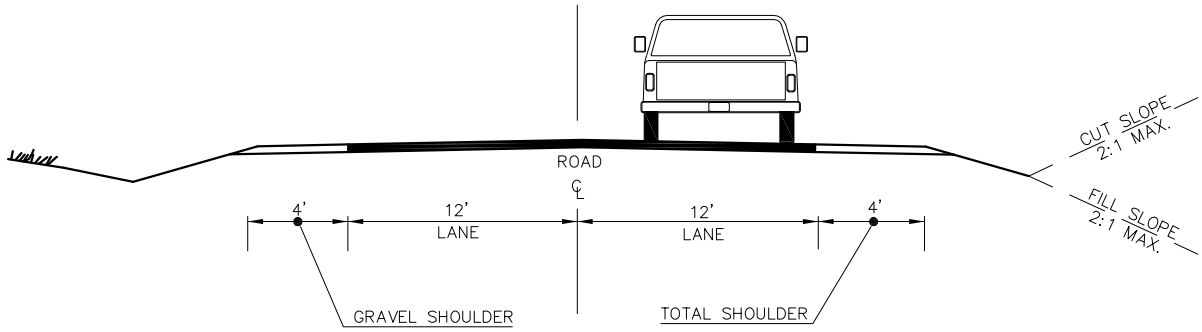
VALLEY COUNTY ROAD DEPARTMENT	STANDARD LOCAL ROAD	FIGURE 110

NOTE:
SECTION THICKNESS BASED ON VALLEY COUNTY MINIMUM REQUIREMENTS AND
TRAFFIC INDEX=6
SUBGRADE R=5



MINIMUM STRUCTURAL SECTION

NTS

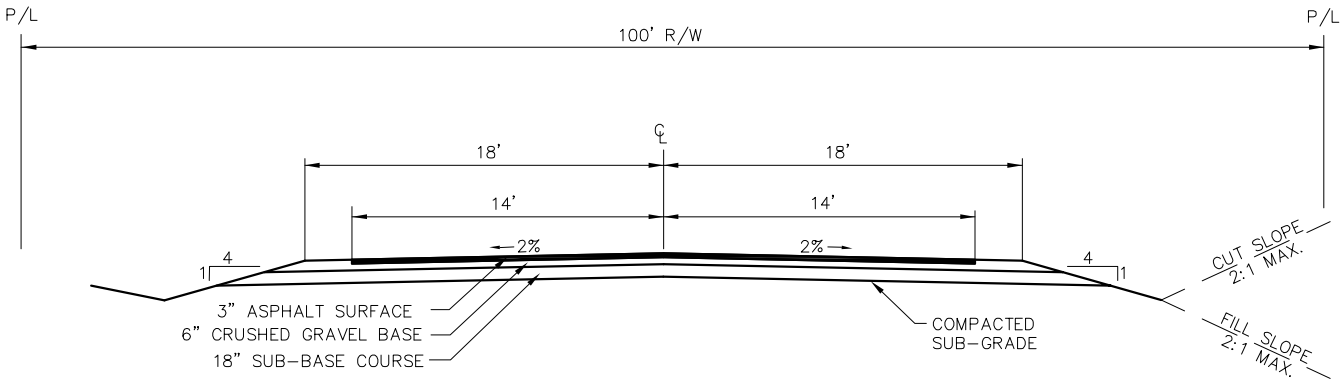


MINOR COLLECTOR DIMENSIONS

NTS

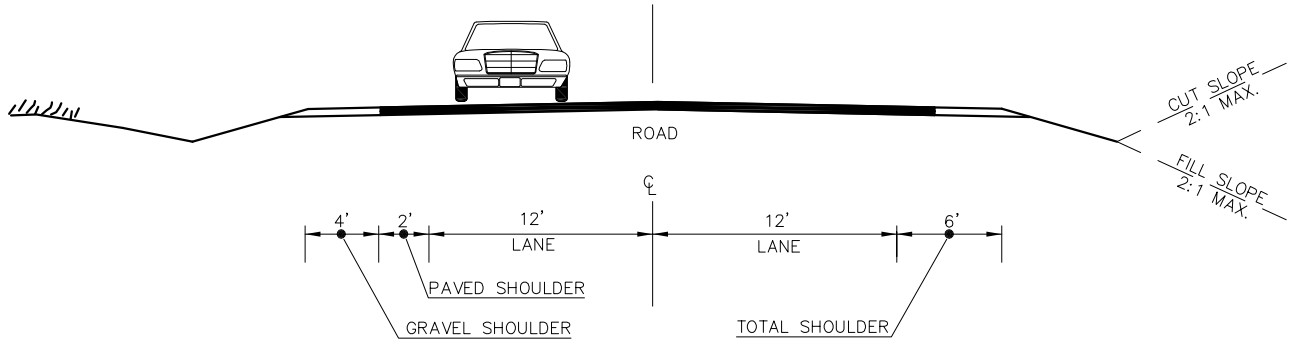
VALLEY COUNTY ROAD DEPARTMENT	MINOR COLLECTOR ROAD	FIGURE 120

NOTE:
SECTION THICKNESS BASED ON VALLEY COUNTY MINIMUM REQUIREMENTS AND
TRAFFIC INDEX=8
SUBGRADE R=5



MINIMUM STRUCTURAL SECTION

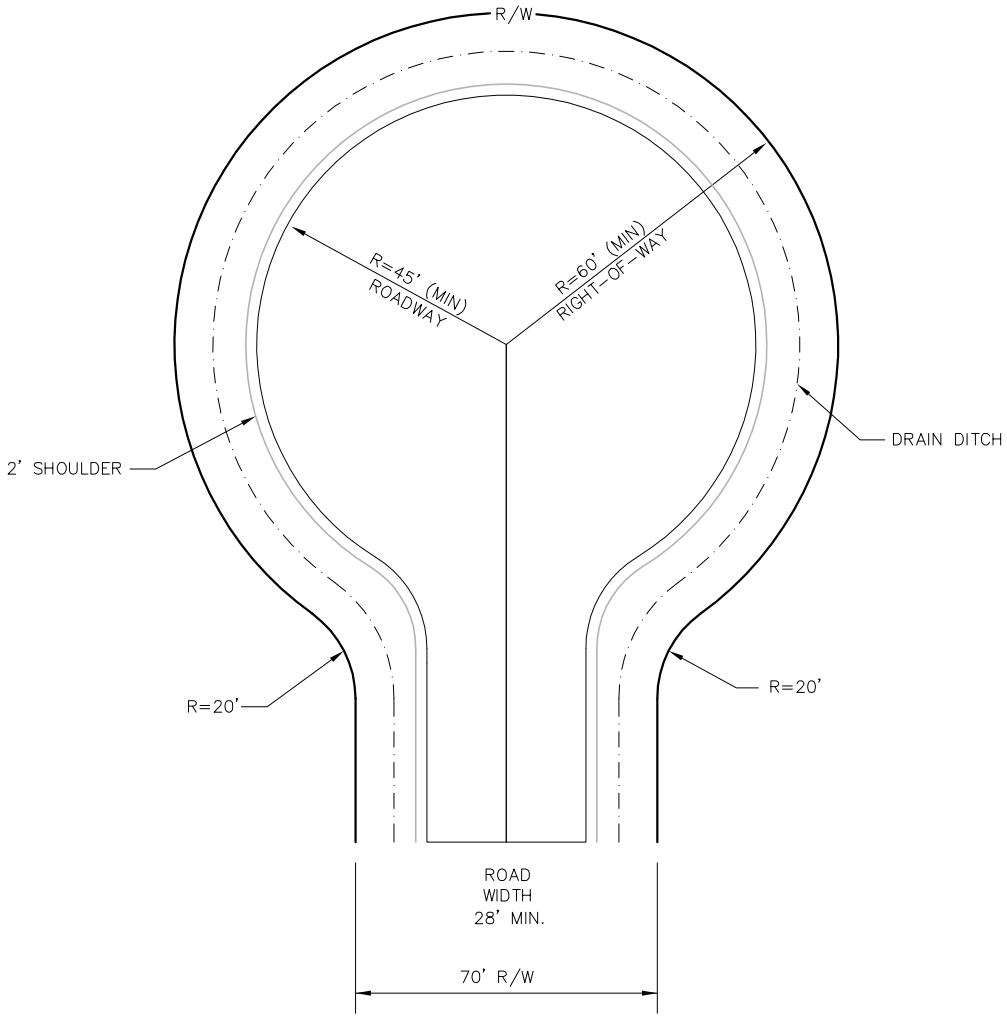
NTS



MAJOR COLLECTOR ROAD DIMENSIONS

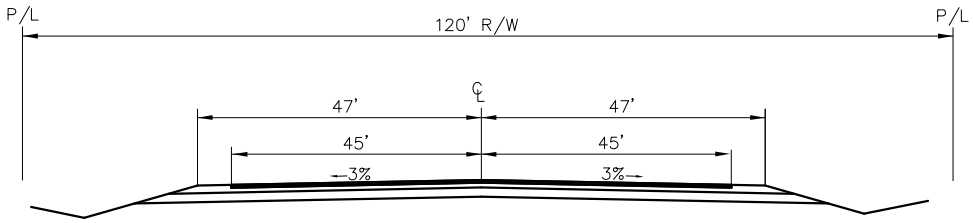
NTS

VALLEY COUNTY ROAD DEPARTMENT	MAJOR COLLECTOR ROAD	FIGURE 130



STANDARD DIMENSIONS

NTS

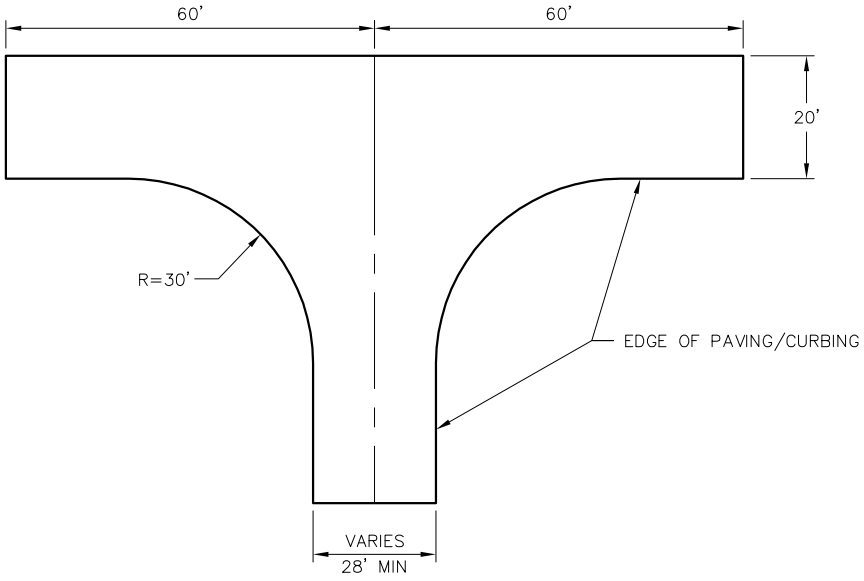


CUL-DE-SAC SECTION

NTS

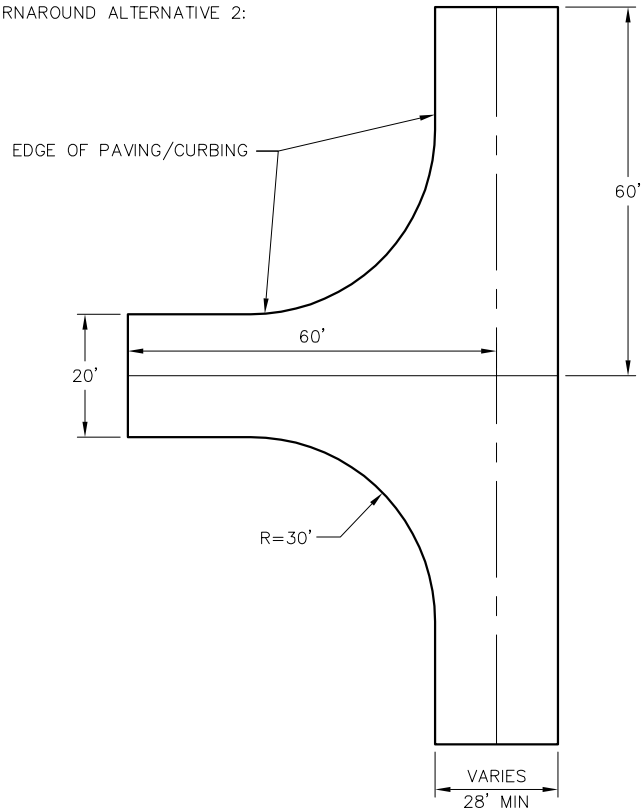
VALLEY COUNTY ROAD DEPARTMENT	STANDARD CUL-DE-SAC	FIGURE 150

TURNAROUND ALTERNATIVE 1:



NTS

TURNAROUND ALTERNATIVE 2:

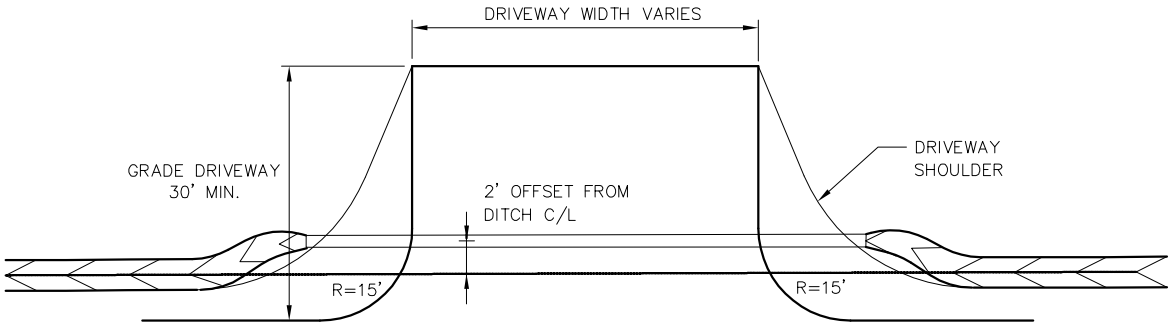


NTS

NOTE:

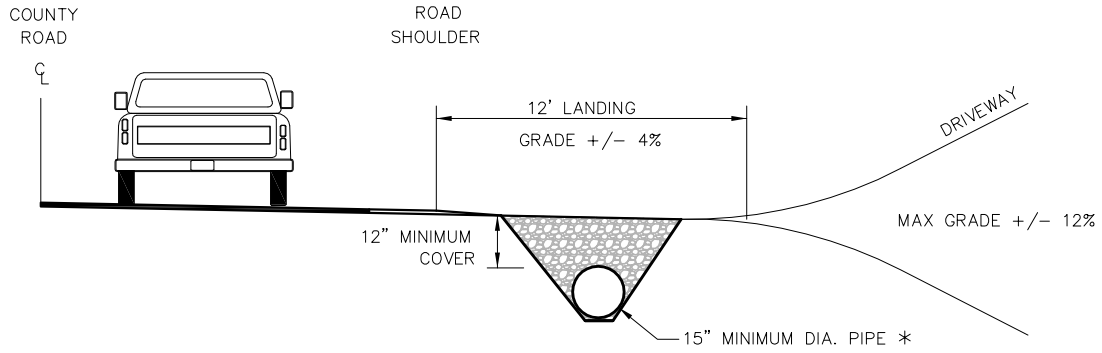
THESE ALTERNATIVE TURNAROUNDS ARE TO BE UTILIZED ONLY WHEN THE CONSTRAINTS OF THE SITE MAKE THE STANDARD CUL-DE-SAC PLACEMENT INFEASIBLE. USE OF THIS ALTERNATIVE MUST BE APPROVED BY THE VALLEY COUNTY ENGINEER DURING THE GRADING PLAN REVIEW.

VALLEY COUNTY ROAD DEPARTMENT	ALTERNATE TURNAROUND	FIGURE 160



PLAN VIEW

NTS

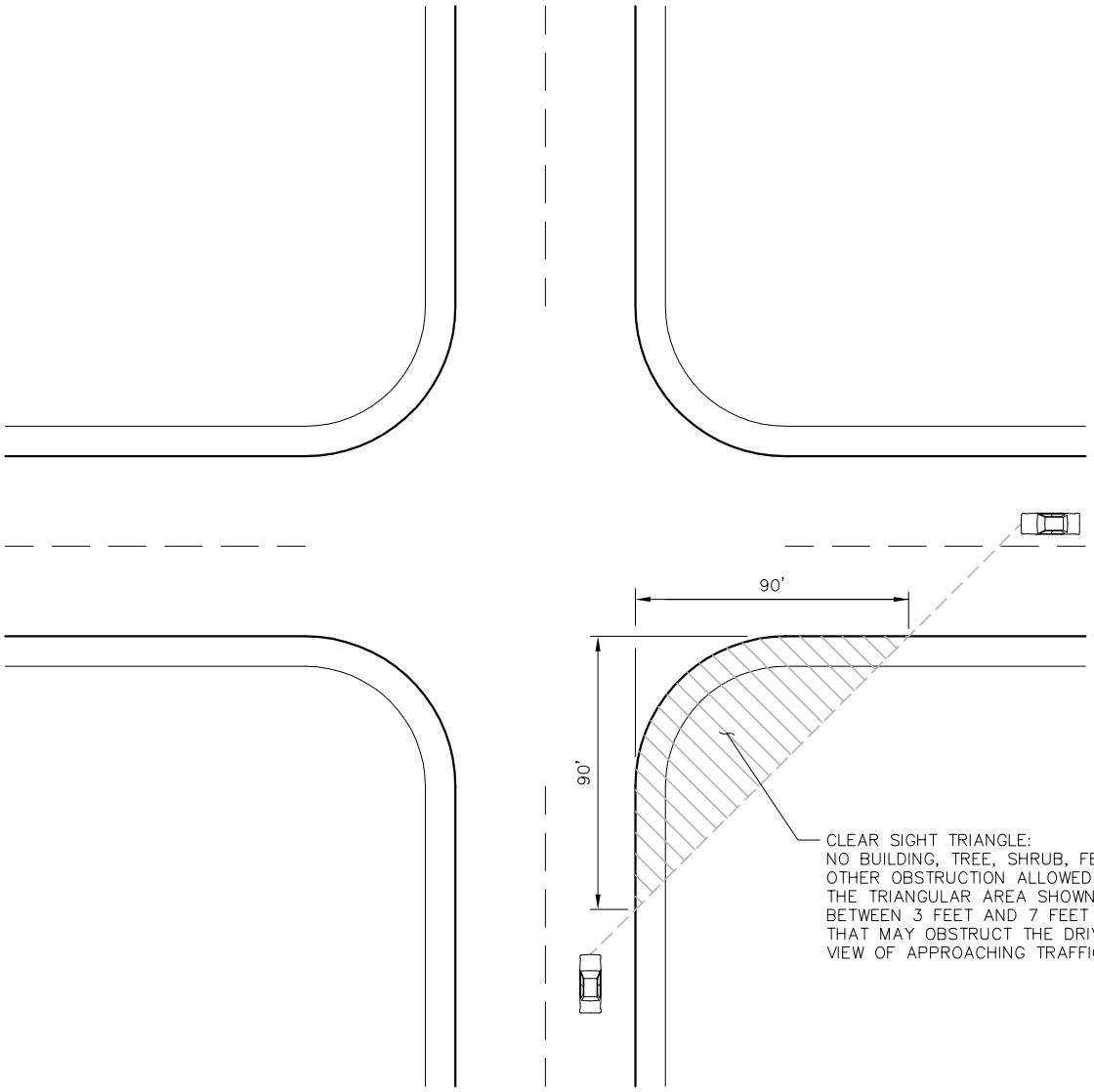


DRIVEWAY PROFILE

NTS

* APPROVED MATERIAL
STEEL CMP 16 GAGE
RIBBED POLYETHYLENE
ALUMINUM 14 GAGE

VALLEY COUNTY ROAD DEPARTMENT	DRIVEWAY PLAN	FIGURE 200



PLAN
NTS

NOTE:
EXAMPLE SHOWN IS FOR A 20 MPH DESIGN SPEED AND REPRESENTS THE MINIMUM ALLOWED IN VALLEY COUNTY AT UNCONTROLLED INTERSECTIONS. FOR HIGHER DESIGN SPEEDS, RECOMMENDATIONS FROM THE CURRENT VERSION OF THE AASHTO DESIGN CRITERIA SHALL BE MET.

VALLEY COUNTY ROAD DEPARTMENT	CLEAR SIGHT TRIANGLE AT UNCONTROLLED INT.	FIGURE 300