

**GENERAL PROVISIONS
FOR THE
DESIGN & CONSTRUCTION
OF
PUBLIC ROADWAYS**

NELSON COUNTY

KENTUCKY

DATED: 12/18/2018

**GENERAL PROVISIONS FOR THE DESIGN & CONSTRUCTION
OF PUBLIC ROADWAYS**

NELSON COUNTY, KENTUCKY

As Adopted by Nelson County Fiscal Court,

December 18, 2018

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1. INTRODUCTION:

The purpose of these General Provisions is to establish the minimum standards required for the design and construction of public roadways in Nelson County. These General Provisions are intended to assist a private developer in the design and construction of sub-division roadways which will be dedicated (once properly constructed) to the Nelson County Government for public use, repair, and maintenance. These provisions are to be a supplement to the Joint City-County Planning Commission's "Sub-Division Regulations, Nelson County".

2. DEFINITIONS:

Nelson County Fiscal Court-

The local Government Agency which shall be responsible for all current and future repair and maintenance of existing and newly developed County roadways.

NCRD-

Nelson County Road Department - when used in these provisions shall mean the Nelson County Road Department Supervisor or other designated representative of the Nelson County Fiscal Court. The NCRD shall be responsible construction review and inspection of any proposed public roadway.

The NCRD is located at 820 West Stephen Foster, Bardstown, KY 40004.

Phone Number is (502) 348-1880.

NCE -

Nelson County Engineer - when used in these provisions shall mean the County Engineer employed by the Nelson County Fiscal Court. The NCE shall be responsible for the design review and construction review of any public roadway owned and maintained by the Nelson County Fiscal Court.

The NCE's office is located at the Nelson County Road Department, 820 West Stephen Foster, Bardstown, KY 40004. Phone Number is (502) 348-1880.

KYSS-

The Kentucky Standard Specifications for Road and Bridge Construction- The standard specification book commonly used for all new, repair, and maintenance work associated with State highways and bridges in Kentucky. The Edition of this book to be utilized shall be that edition which is in effect when the design/construction plans for a new proposed County roadway has been submitted to the NCRD for approval. When the term "Engineer" or phrase "as approved by the Engineer" is used in the KYSS - it shall be construed to mean the NCE (authorized representative). The KYSS shall be the minimum standard utilized for construction and inspection of Nelson County Public Roadways. Any developer who intends to utilize a different specification than the KYSS shall specifically identify the difference in the Construction Plans. If a specific item is noted in the General Provisions for the Design and Construction of Public Roadways for Nelson County, Kentucky, that differs from the minimum standards of KYSS, then the specified item shall govern per the Nelson County minimum standards.

3. PROCEDURES

All developers/contractors who wishes to construct a new road or extend an existing road and of which that developer intends to dedicate ownership of that road to the Nelson County Fiscal Court once constructed shall accomplish the following:

- a. Comply with all zoning regulations required by the Nelson County Joint City-Planning Commission.
- b. Comply with "Subdivision Regulations, Nelson County Kentucky" developed by the Planning Commission.
- c. Submit "Construction Plans" (with or after the "Preliminary Plat" submittal) to the NCE for review. No construction of a proposed public roadway shall begin until the NCE has reviewed and approved the Construction Plan.
- d. Review the site with the NCE - Be prepared to discuss locations of borrow material, sample locations and number of proctors (to be used for Soil densities), cross drain culverts, easements, and right of ways.
- e. Revise initial construction plans to comply with the NCE comments and concerns. Re-submit the final for final approval by the NCE.
- g. Once the Construction Plans have been approved by the NCE, Construction may begin (provided the preliminary plat and other requirements of the Planning Commission have been complied with).

NOTE: Any construction activities which begin prior to construction plan review and approval shall be at the owners own risk.

4. ROADWAY DESIGN AND CONSTRUCTION.

A. Design Standards:

Subdivision Standards

County Road (commercial, industrial, rural)

B. Construction Plans-

All newly developed roadways - either in subdivisions or extensions of existing roads, which are intended to be dedicated to the County at a later date shall be required to have construction plans. These construction plans shall be submitted to, reviewed by, and approved by the NCE prior to construction.

To assure proper review and approval of the Constructions Plans prior to Final Plat approval, the Construction Plans shall be submitted to the NCE a minimum of ten (10) working days prior to the Planning and Zoning subdivision plat review committee meeting. This subdivision plat review committee meeting is typically held on the third Wednesday of each month.

These plans shall be in sufficient detail to properly inform the NCE/NCRD of all fills, cuts, ditches, culverts, bridges, preliminary lot layout, and any other information necessary which may be required for a County owned roadway. The plans shall comply with the following:

1. Roads shall be designed and constructed in accordance with this document and the "SUBDIVISION REGULATIONS, For all Nelson County".
2. The minimum requirements for Construction Plans shall be:
 - A. Plan, profile, curve data etc. of the roadway showing roadway cuts, fills, alignment, and road grades.
 - B. Existing contour lines at minimum of two feet. Contour lines shall be of sufficient detail to depict all hills, creeks, sink holes, ponds, and

other features which might impact roadway construction.

- C. Typical roadway cross-section showing pavement structure, width, and side drainage ditches.
- D. Roadway location with respect to subdivision lot layouts, adjacent property owners, connecting roads (names), new phases (proposed), etc.
- E. Cross drain culverts - including size, lengths and location, and material (including head walls). Culverts shall be sized for a 25 year storm event and certified by a Professional Engineer. The 100 year storm event shall not overtop the County Road and designed to be 1'-0" below the roadway elevation. Show all retention structures if required.
- F. Roadway side ditches and proposed driveway culverts
- G. Roadway "right of way" to be dedicated to the County,
- H. Utility easements with proposed utilities,
- I. Construction or maintenance easements if needed.
- J. If septic tanks/lateral fields are to be used for sewage disposal, provide a copy of the preliminary on-site evaluation provided by the Nelson County Health Department.
- K. All plans shall be prepared, sealed, and signed by a Licensed Professional Engineer of Kentucky who routinely prepares such design assuring that all features such as culverts, bridges, and any other structures are properly designed to carry intended loads.
- L. All variances to the above requirements shall be specifically noted or requested.

C. Specifications-

All materials and procedures utilized in the design and construction of a new County roadway shall comply with the appropriate Section in the KYSS such as concrete, asphalt, dense graded aggregate, pipe materials, etc. Typical details such as culvert headwalls shall be as specified in the Standard Drawings Manual developed by

the Kentucky Department of Highways. Reference to this manual shall be made when designing such structures. Any variance to this manual shall be noted.

D. Roadway Construction (to subgrade)-

All roadway fills and cuts shall be shown on the plans. In areas that require embankments to be constructed, the developer shall understand they will be required to comply with SECTION 206 - Embankment of the KYSS. Soil Proctors (target densities) shall be required as determined in the Construction Plan review. The number of proctors shall One proctor per soil type within the roadway shall be obtained at the proposed development site. Proctors will involve soil samples to be collected and sent off to an acceptable laboratory with target densities (with acceptable moisture contents) developed for the soil to be used in the embankment construction. Field Densities-shall be obtained at 100 foot centers checked by using Nuclear Density Meters operated by an approved Construction Inspection company. These field densities will be responsibility of the developer/contractor when required by the NCE.

Density reports shall be routinely provided to the NCE during construction. Material which fail the field density check will be required to be excavated, refilled, and compacted with suitable material in accordance with the KYSS.

The minimum in place dry density of subgrade soils utilized for subgrade construction shall be as described in Section 205 of the KYSS. Specifically, all subgrade construction shall obtain 95 % of the maximum density (based on the proctor) or 98 pounds per cubic foot (which ever is greater).

A proof-roll shall be conducted of the subgrade prior to placement of DGA. The proof-roll shall be conducted by the NCE and the Nelson County Road Department shall

provide a fully loaded single axle dump truck. Any areas that fail the proof-roll shall be excavated and repaired prior to placement of DGA.

E. Roadway Construction (Pavement Structure):

The minimum pavement structure for Public Roadways in Nelson County shall be constructed to comply with the minimum following standards for the specified street classification. Designs are based on soils with a CBR of three (3) or less and a design life of 15 years. Alternate pavement designs may be submitted to the Nelson County Engineer for approval by a Kentucky licensed Engineer with an accompanying geotechnical report. Alternate designs shall be in accordance with the current edition of the KYTC's Pavement Design Guide and Standards Specifications.

<u>Street Classification</u>	<u>Minimum Pavement Section</u>
Residential Cul-de-Sac (<1,000 ft)	9" DGA, 3" Asph. Base, 1.25" Asph. Surface
Residential Collector (>1,000 ft.)	9" DGA, 3.5" Asph. Base, 1.25" Asph. Surface
Commercial	12" DGA, 4.5" Asph. Base, 1.25" Asph. Surface
Light Industrial (LIP)	12" DGA, 5.5" Asph. Base, 1.5" Asph. Surface
Industrial	14" DGA, 6" Asph. Base, 1.5" Asph. Surface

Use of Concrete roads or any other variance from this minimum standard shall be prepared and submitted by a Licensed Professional Engineer for approval to the NCE.

1. Dense Graded Aggregate (DGA): The DGA to be used shall comply with the KYSS in that the DGA shall be run through a pugmill and water added to achieve a moisture content of plus or minus 2% of optimum. The DGA may be placed in one lift no

thicker than 6 inches compacted. The DGA shall be spread with a stone spreader capable of obtaining a uniform depth. A waiver may be requested to use Global Positioning System (GPS) on a grader or dozer for placement of initial DGA lift (no greater than 6.75-inches) if tailgated with one pass at appropriate depths in which the DGA can be graded in no more than 3 passes to not segregate the DGA. At no time shall the DGA be installed greater than 6.75-inch depth. The DGA shall be compacted while still wet to 84% of solid Volume. The contractor shall be responsible for testing compaction which shall comply with the KYSS.

Subsurface drain (rock trenches) bleeders shall be constructed/cut/installed with a #57 stone at about 100 foot centers alternating each side (bleeder every 50 feet) along the roadway's edges to drain any subsurface water from the DGA to ditch-lines when the roadway shoulders are constructed of clay material.

A proof-roll shall be conducted of the DGA prior to placement of the asphalt to ensure proper compaction of the DGA. If there is inclement weather or excessive delay between DGA and asphalt placement, an additional proof-roll shall be required. The proof-roll shall be conducted by the NCE and the Nelson County Road Department shall provide a fully loaded single axle dump truck. Any areas that fail the proof-roll shall be excavated and repaired prior to placement of asphalt.

2. Asphalt Bituminous Base Course: The Asphalt base shall be laid in one lift and compacted. The initial compaction pass shall be with a static roller and at least two more passes of a roller in the vibratory mode or as specified by the KYSS Section 403.03.10 "Compaction". Finish rolling shall be accomplished with a static roller.

3. Asphalt Tack Coat: Asphalt tack coat shall be applied to any Asphalt Base Course prior to Surface Placement. The Tack Coat shall comply with and be applied as specified in Section 406 of the KYSS.

4. Asphalt Bituminous Surface Course: The surface course shall be placed and compacted as required by the KYSS.

Both the Bituminous Base and Bituminous surface shall meet the current KYSS for gradation and asphalt content for work on similar projects by the Kentucky Department of Transportation. The Bituminous base shall be compacted to within 95% of the Job Mix formula for the material being used. (Ref. KYSS Section 403). The contractor shall provide density reports on the compaction.

The pavement width shall be as described in the Subdivision Regulations. No DGA shoulders will be required unless determined necessary by the NCE. At ATTACHMENT # 1 is the "typical" roadway section intended to be used. Any variance to this section shall be shown on the construction plans when practical.

F. Slopes / Ditches / Culverts

1. Slopes - The grades of the proposed roadway shall be specifically shown on the profile sheet. Roadway Side slopes (embankment fill areas, including over culverts) shall be a maximum (steepest) of a three (3) to one (1) vertical - 3:1.

2. Ditches - Parallel roadway ditches shall typically be a "V" type ditch with a 3:1 side slope designed to a depth to properly channel surface drainage away from the

pavement structure. Typical ditches shall be shown on the plan and profile sheets. When the roadway grade is greater than a 5 percent grade, side ditches shall be rip rap lined two feet up each side slope. Ditches at minimum shall be at a 1% slope to provide sufficient drainage. Ditches shall be minimum of six (6) inches below the bottom of the pavement stone base layer so as to allow the subgrade drainage system to function properly.

All other ditches shall be seeded and strawed with a seed Mixture I, of Section 212 of the KYSS. Any variance of this mixture shall be identified in the Construction plans. The rates of application shall be as detailed in Section 212.

All disturbed right of way areas shall be seeded at a rate of eighty (80) pounds per acre. Within 48 hours of seeding, the area shall be mulched with straw mulch at rates required by the KYSS Section 212.

3. Culverts - Culverts shall be sized to carry the flow rates expected for a 25 year storm event. In the design, the HW/D ratio shall be as close to 1.0 as is practical however shall not exceed 1.5, or overtop the road, or cause unnecessary ponding. A 100-year storm event should not reach an elevation of one (1) foot below the roadway surface so as to prevent overtopping during extreme storm events.

Culvert material shall be as a minimum aluminized corrugated metal pipe (ACMP), 16 gage thickness complying with ASTM A819 and AASHTO M 274 and the KYSS. Alternatives pipe material may be utilized provided the Owner/Developer specifically identifies and request a variance on the construction plans. All materials to used shall comply with the KYSS.

Cross drain round culverts twenty -four (24") inches or larger shall require concrete headwalls. All concrete box culverts require headwalls. The culvert length shall be what is necessary for the 3:1 embankment slope to toe out at the culvert flow-line. Rip Rap (shot limestone rock) shall be required at culvert inlets/outlets. The minimum size for a roadway cross drain culvert shall be eighteen (18") inches.

All culverts (box or pipe), and utility structures (pipelines) with the pavement structure area shall be constructed and properly backfilled in accordance with Section 701 of KYSS.

3.1 Culverts for Entrances to Public Roadways :

Any person/persons requesting to **create a new entrance or modify an existing entrance** off an existing County Road or an existing platted County Road shall obtain an "Encroachment Permit" from the Nelson County Road Department (NCRD) in accordance with the Nelson County Drainage Ordinance, Section 2.5 (Encroachment Permit- County Right of Way). Sight distance availability, culvert pipe size/length, etc. shall be determined by the NCRD during the Encroachment Permit review/application process.

New Entrance:

A Property owner requesting a New Entrance shall provide a culvert pipe and pay for the required gravel at the ~~then~~ current price per ton as bid by the County for the entrance meeting the specifications of the NCRD. The NCRD shall install the culvert pipe and install a load of gravel (up to 15 tons) for the new entrance within County right of way.

Existing Entrance :

All existing entrance culverts within County Right of Way that are in need of replacement because of deterioration/culvert failure and/or impede proper roadway drainage shall be replaced /repaired at the County's expense.

When the existing driveway is paved (concrete or asphalt) and the culvert is in need of replacement, the County shall saw cut the existing drive and replace the culvert pipe. The County will only replace the paved portion of the drive which was removed during culvert replacement with like kind materials. Stamping, dye or other specialized finishes shall NOT be completed by the County.

A Property owner requesting an existing driveway entrance be modified (widened, raised, etc.) shall pay to the NCRD the cost of all materials required to properly complete the work. The cost of the materials shall be the current prices being paid by the NCRD for culvert pipes and rock material. Payment for materials shall be made during the "Encroachment Permit" application process. The NCRD shall install the culvert pipe and provide gravel for the modified entrance within County right of way (only). The NCRD shall not provide/install concrete or asphalt pavement for the modified driveway extension.

Maintenance of Private Driveways.

Maintenance of all private drive ways (adding gravel, repairing or replacing deteriorated concrete/ asphalt drives, etc.) shall be the responsibility of the private property owner.

G. Right of Ways

Right of Ways to be dedicated to the County shall be a minimum the width identified in the "Subdivision Regulations". Permanent right of way markers shall be installed at all roadway change of direction. These right of way marker locations shall be shown on the construction plans.

H. Easements

All utility, construction, and/or maintenance easements shall be shown on the Construction plans. Typically, no utility easements shall be located in the right of way unless specifically requested and identified on the plans. All underground utilities which cross the roadway (i.e. - electric lines) shall be specifically shown on the construction plans. All utilities which are to be installed in the County right of way shall have "Utility Identification Tape" installed during backfill of the utility trench. This identification tape shall be placed at about 18 inches above the utility.

All utilities which are installed within the pavement structure area shall be properly backfilled with flowable fill concrete and compacted in accordance with Section 601.03.09 Section (C) of the KYSS.

I. Curb & gutters/sidewalks

Curb, gutters, and sidewalks shall be installed when required by the Nelson County Planning Commission's Sub-division Regulations. The minimum sizes/configuration for the curb/gutters and sidewalks are shown at the attachments. Any variance from this detail shall be identified in the Construction Plans.

Adequate surface drain structures (i.e. curb box inlets with clean out manholes) shall be installed along the curb and gutters (at all low points in roadways or at sufficient intervals along relatively flat roadways as designed by the Engineer) to allow surface water drain off from the pavement structure. Catch basin clean out manhole spacing shall not exceed 150 feet.

The design engineer shall take into account any subsurface drainage problems which could result from curb/gutter installation due to the site's soil/clay material and/or terrain. The requirement for subsurface drainage is a designer decision.

J. Street Lighting

One street light shall be installed at each new subdivision roadway which intersects an existing public roadway. Waiver of this requirement shall be at the County's discretion. Installation of the street light shall be coordinated by the County with the appropriate Electric Utility Company.

After approved light installation, the Nelson County Fiscal Court will assume the cost of providing electricity and maintenance of any street light.

Additional lights may be installed within the new subdivision at the discretion of the developer or subdivision association. Future maintenance and payment thereof will be agreed to on a case by case basis.

The style selected and location of each street light are to be made only after consultation with the appropriate utility provider and Nelson Fiscal Court for all lights to be maintained by the County.

K. Street signs

K.1 - General-

The Geographic Information System (GIS) Coordinator working with/for the Emergency Management E-911 Board shall be responsible to coordinate naming of all Public Roads and Private Roads in Nelson County. The GIS Coordinator shall assure all names of streets have not been duplicated and proposed names comply with general guidelines of the National Emergency Number Association (NENA) Standard Formats for 9-1-1 GIS Mapping.

The Director of Planning and Zoning shall coordinate/confer with the GIS Coordinator when any subdivision of land has created new Public Roads and/or new Private Roads in regards to proper Street Names.

The GIS Coordinator shall also be responsible to assign all new addresses for new residences, new commercial facilities, new industrial facilities, and/or any entity requiring a street address.

Existing un-named Private Roads shall be named/re-named in accordance with KRS 179.330. "Names of county roads – How changes and established – Erection of signs".

Existing or improperly named public or county roads that require a new name for any reason shall be changed by the County Judge Executive only after a public hearing, advertised in accordance with KRS 424.130, is held by the Nelson Fiscal Court. The purpose of this public hearing is to receive Fiscal Court and public input. This is an

advisory meeting only and does not create a right to appeal any decision regarding the name of a road.

If 50% of the property owners residing on a public or County road agree to a name of a County road and present a petition to the Fiscal Court, the County Judge Executive shall rename the existing public or County road to the name presented in the petition provided that the name meets all other requirements in this section.

Once the naming of a proposed road/street has been accomplished per above, then the GIS Coordinator shall provide to the appropriate agency having jurisdiction (ie: NCRD, City of Bardstown, City of New haven, City of Bloomfield, City of Fairfield) the following:

- A. Copy of Road Naming/Renaming Document (Executive Order or Fiscal Court Order)
- B. Public Road # / Private Road #,
- C. Public Road new Name / Private Road new Name,
- D. Public Road (existing) which the newly named road is located off of
- E. Number (mile mark) location along existing Public Road where intersection of new public/private road occurs,
- F. Length of new Road,
- G. Material (paved/gravel).
- H. Aerial photo map location of newly named road in "pdf" format,
- I. GIS shape files/database files for inclusion into a GIS information mapping software (ie ARC-GIS Explorer).

K.2 - Public Road Street Signs -

The Nelson County Road Department (NCRD) shall be responsible to purchase, install, and **maintain** all Public Road Street Signs within the jurisdiction of the NCRD.

All Cities within Nelson County shall be responsible for their own street sign purchase/installation policy

NCRD Public Street/Road Signs shall be GREEN background with WHITE letters.

All signs shall be either 6" high or 9" high with lengths required for proper name.

Signs may be installed on steel post or wood post at the discretion of the NCRD.

All sign colors shall be made of high intensity, high reflective material which shall comply with the Federal Highway Administrations's Manual of Uniform Traffic Control Devices (2009 edition or later) minimum sign "Retroreflectivity Requirements"

K.3 - Private Road Street Signs

The Nelson County Road Department (NCRD) shall be responsible to purchase and install all Private Road Street Signs within the jurisdiction of the NCRD;

All Cities within Nelson County shall be responsible for their own street sign purchase/installation policy for Private Road Signs

Nelson County PRIVATE Street/Road Signs shall be RED background with WHITE letters.

All signs shall be 6" or 9" high with lengths required for proper name. Signs may be installed on steel post or wood post at the discretion of the NCRD.

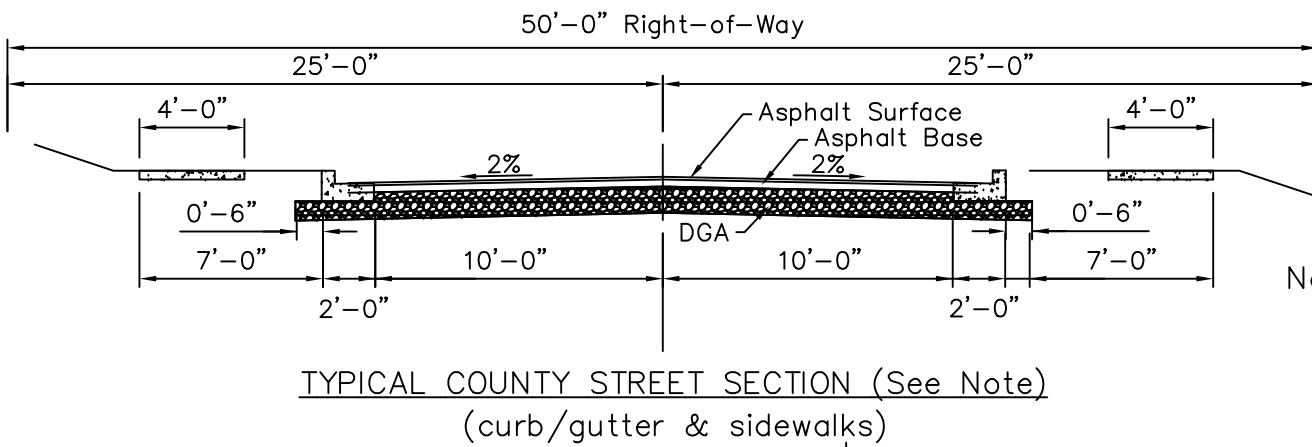
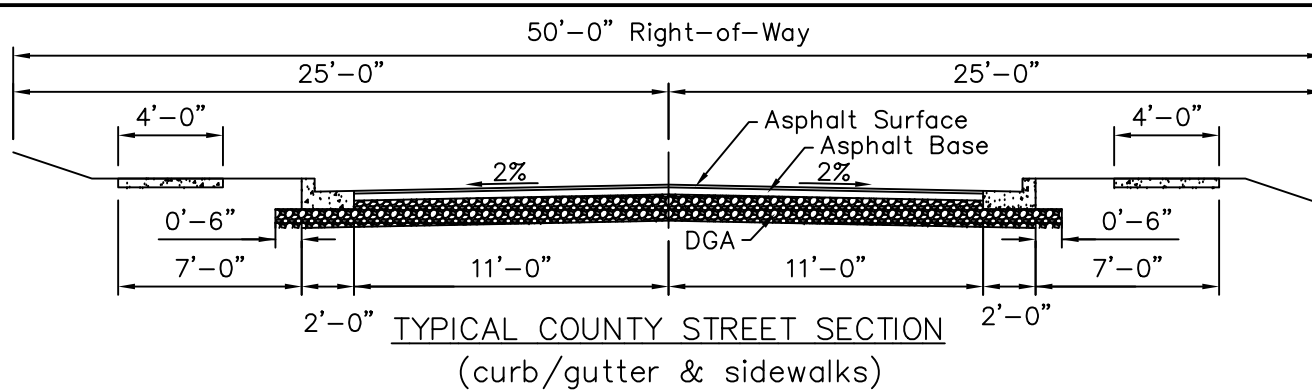
All sign colors shall be made of high intensity, high reflective material which shall comply with the Federal Highway Administrations's Manual of Uniform Traffic Control Devices (2009 edition or later supplements) minimum sign "Retroreflectivity Requirements.

L. Stormwater Management & Drainage Plan and Encroachments on County Roads:

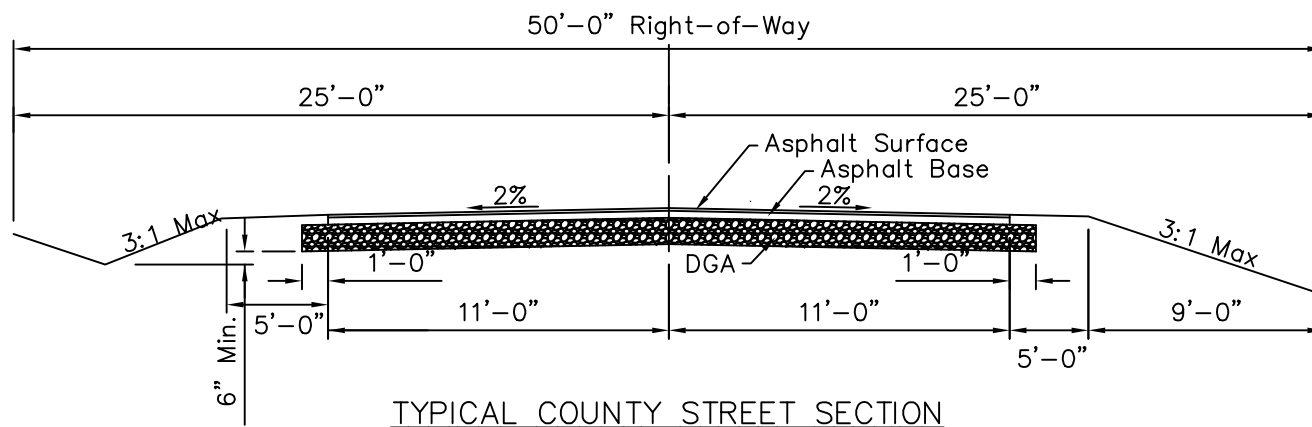
Storm water management and drainage plans shall be submitted as required by County Ordinance.

Encroachment permits for drive entrances onto County roads shall be submitted as required by County Ordinance.

ATTACHMENTS

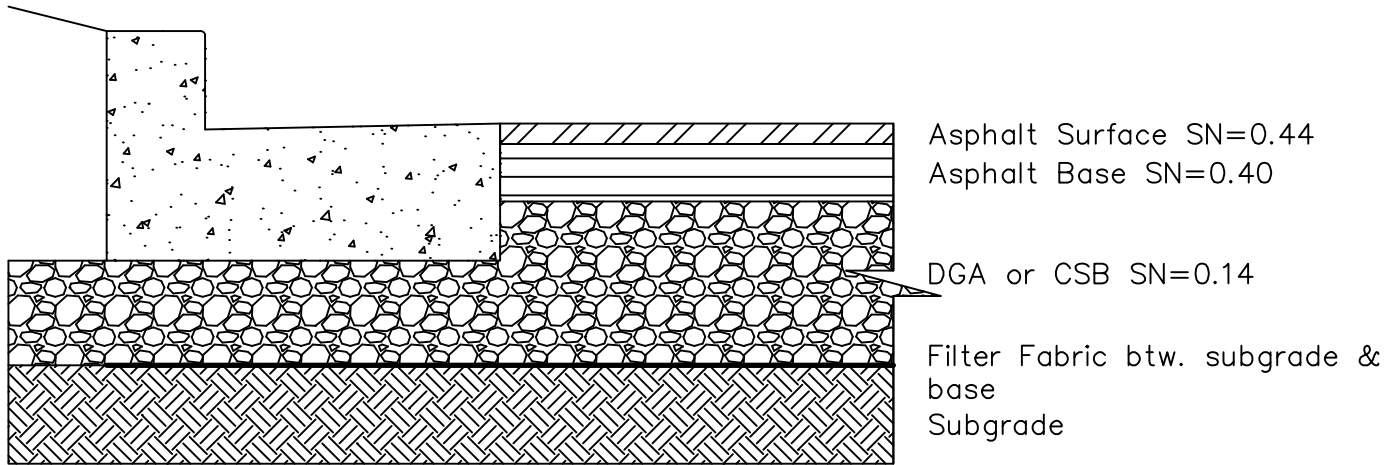


Note: If lot width is equal to or greater than 100 feet, Width of Pavement can be 20 feet.



Date: 11/28/18	Drawn By: BTS
TYPICAL STREET SECTIONS	
NELSON COUNTY FISCAL COURT ONE COURT SQUARE Bardstown, KY 40004 Phone: (502) 348-1880 Fax: (502) 348-1881	

Typical Pavement Section



Minimum Pavement Sections

Street Classification

Minimum Layer Thicknesses*

Residential Cul-de-sac (<1,000 ft.)	9" DGA, 3" Asphalt Base, 1.25" Asphalt Surface
Residential Collector (>1,000 ft.)	9" DGA, 3.5" Asphalt Base, 1.25" Asphalt Surface
Commercial	12" DGA, 4.5" Asphalt Base, 1.25" Asphalt Surface
Light Industrial (LIP)	12" DGA, 5.5" Asphalt Base, 1.5" Asphalt Surface
Industrial	14" DGA, 6" Asphalt Base, 1.5" Asphalt Surface

*Minimum pavement designs based on a 15 year design life and a CBR of 3 or less.

NOTES:

Alternate pavement designs may be submitted to the Office of the County Engineer for approval by a licensed Engineer with an accompanying geotechnical report.

Alternate designs shall be in accordance with the current edition of KYTC's Pavement Design Guide and Standard Specifications.

Use geotextile fabrics as needed in accordance with KYTC standards in saturated foundation areas and in embankment benching areas or as required by the County Engineer.

Roadside ditches shall be a minimum of six (6) inches below the bottom of the pavement stone base layer.

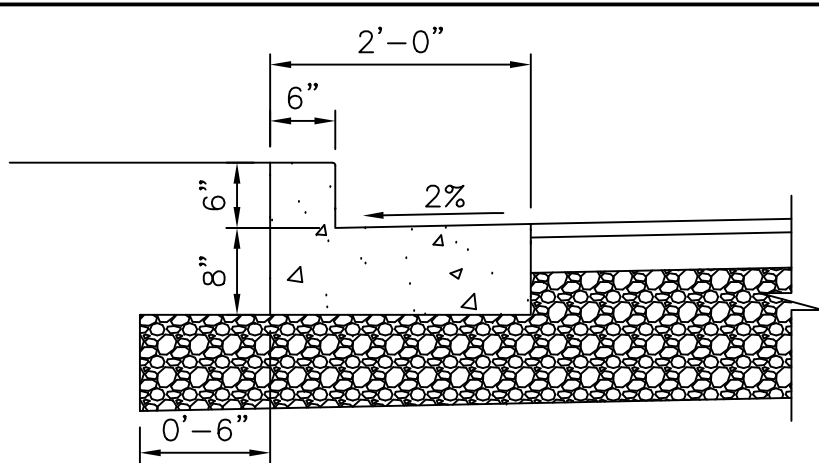
A subgrade drainage system shall be installed in accordance with the Standard Specifications with underdrains at a minimum spacing of 100 feet center-to-center along the edges of the roadway or as required by the County Engineer.

Date: 11/30/18	Drawn By: BTS	Not to Scale
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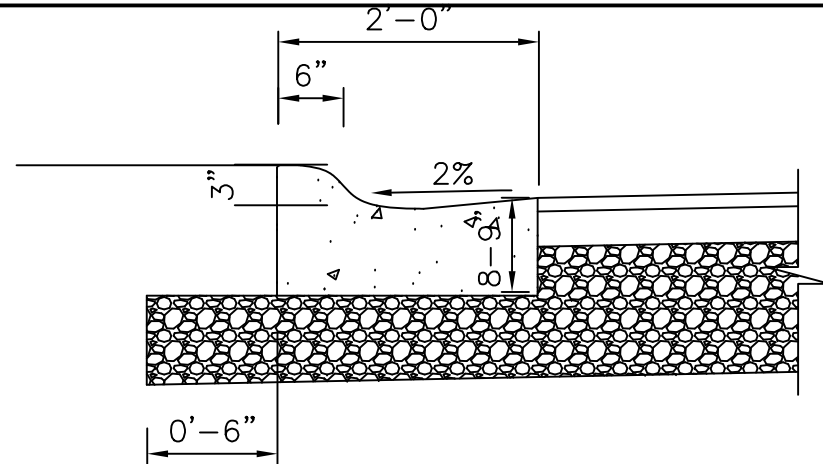
PAVEMENT DESIGN DETAIL

NELSON FISCAL COURT
ONE COURT SQUARE
Bardstown, KY 40004

Phone: (502) 348-1880 Fax: (502) 348-1881



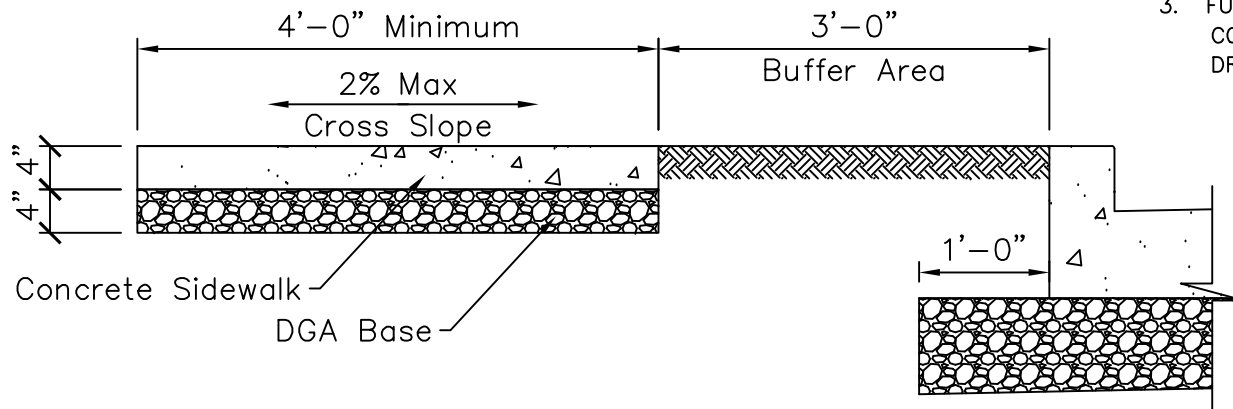
CURB & GUTTER DETAIL



3" ROLLED CURB & GUTTER DETAIL

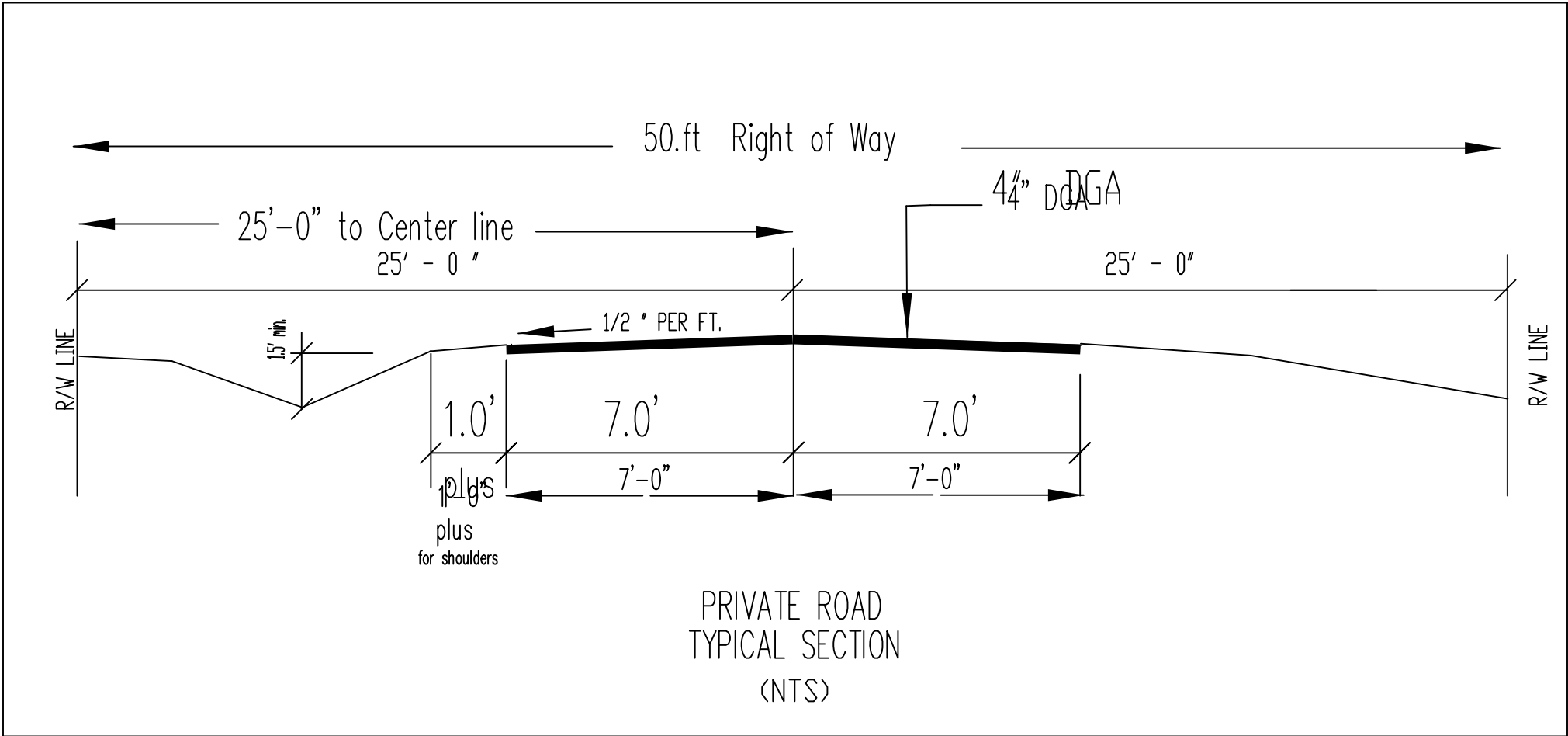
Notes:

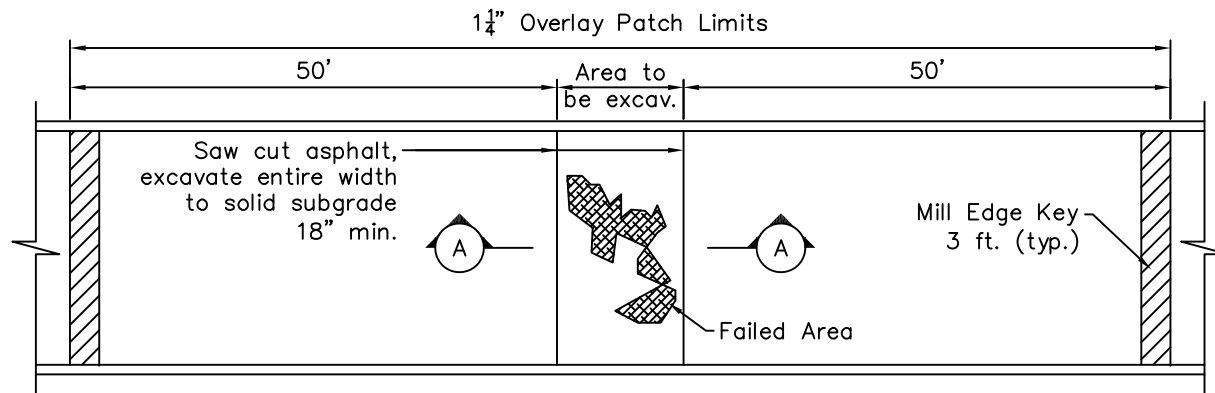
1. CONCRETE SHALL BE KYDOT CLASS "A"
2. SAWED CONTRACTION JOINTS SHALL BE CONSTRUCTED EVERY 20 FEET WITH A MIN. DEPTH OF 3", IN ACCORDANCE WITH KYDOT STANDARD SPECIFICATIONS.
3. FULL DEPTH EXPANSION JOINTS SHALL BE CONSTRUCTED AT CONTACT WITH NEW OR EXISTING CONCRETE AND AT ALL DRAINAGE INLETS.



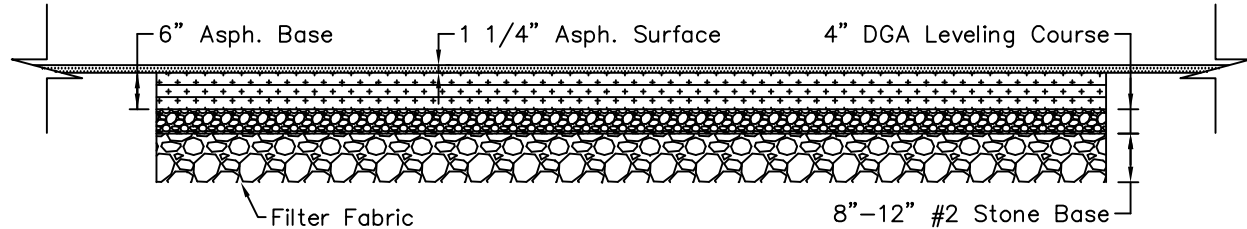
CONCRETE SIDEWALK DETAIL

Date: 11/28/18	Drawn By: BTS
TYPICAL STREET DETAILS	
NELSON COUNTY FISCAL COURT ONE COURT SQUARE Bardstown, KY 40004 Phone: (502) 348-1880 Fax: (502) 348-1881	





PLAN VIEW



SECTION A-A
(Minimum Section)

NOTES

- 1 1/4" Overlay patch is NOT required if the final asphalt surface has not been placed.
- If numerous failures exist, then entire road may be required to be overlaid.
- #2 Stone base layer shall be placed to "day light" to nearest ditch or cross drain and at an elevation difference to drain.
- Subgrade underdrains or "Bleeders" may be installed using min. 4" diameter perforated pipe with min. 6" envelope of size #57 stone.

Date: 11/30/18	Drawn By: BTS	Scale: Varies
ROADWAY FAILURE REPAIR DETAIL		
NELSON FISCAL COURT ONE COURT SQUARE Bardstown, KY 40004 Phone: (502) 348-1880 Fax: (502) 348-1881		

Highway Design Guidance Manual

Common Geometric Practices Rural Local Roads

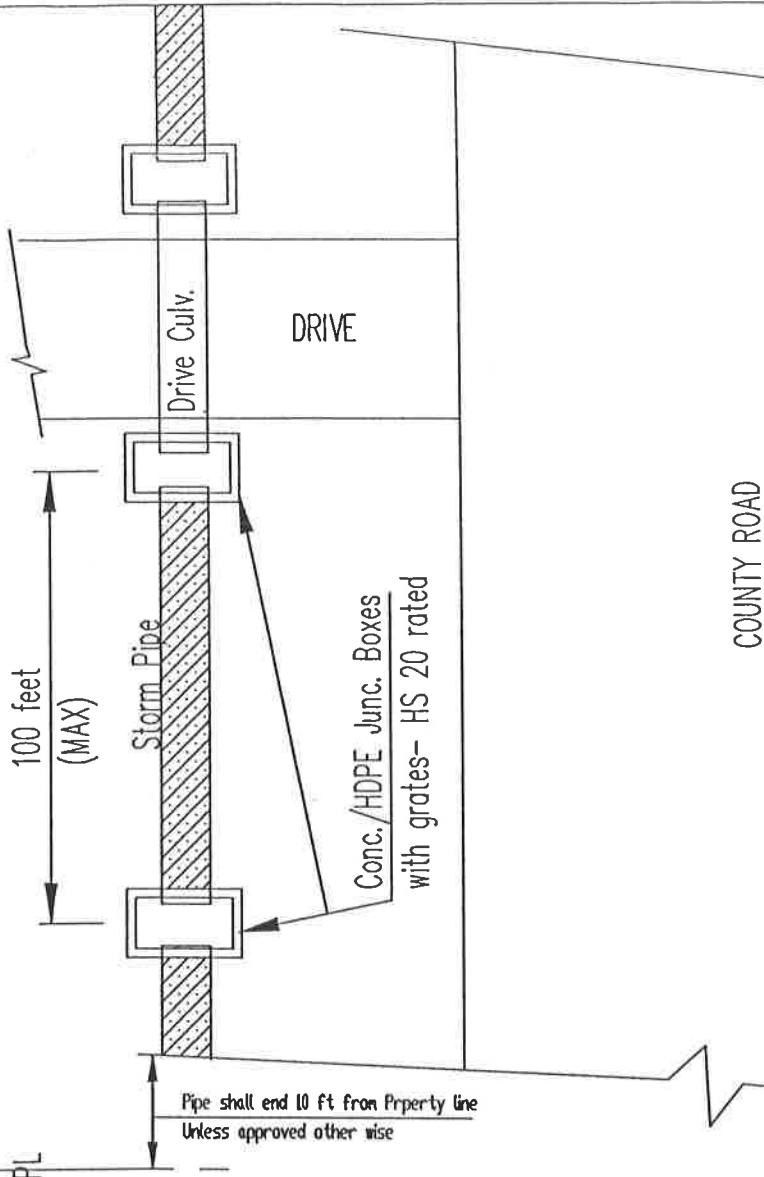
EXHIBIT 700-01									
COMMON GEOMETRIC PRACTICES RURAL LOCAL ROADS									
		TRAFFIC VOLUME							
		TERRAIN	UNDER 50 A.D.T.	50-250 A.D.T.	250-400 A.D.T.	400-1500 A.D.T.	1500-2000 A.D.T.	OVER 2000 A.D.T.	
MINIMUM DESIGN SPEED (M.P.H.)	⑥	LEVEL	30		40	50			
	⑦	ROLLING	20	30		40			
		MOUNTAIN	20			30			
LANE WIDTH (FEET) ④ ⑧	DESIGN SPEED		UNDER 400 A.D.T.		400-1500 A.D.T.	1500-2000 A.D.T.	OVER 2000 A.D.T.		
	15 MPH		9		10 ⑨	10		12 ⑪	
	20 MPH					11			
	25 MPH								
	30 MPH								
	40 MPH		10		11	12 ⑪			
	45 MPH								
	50 MPH		11						
	55 MPH								
60 MPH									
MIN. USABLE SHOULDER WIDTH (FEET) ⑤		ALL SPEEDS	2		5⑨⑩	6	8		
MIN. CLEAR ROADWAY WIDTH OF NEW AND RECONSTRUCTED BRIDGES		ALL SPEED	TOTAL WIDTH OF LANES +2' (EACH SIDE)		TOTAL WIDTH OF LANES +3' (EACH SIDE)		TOTAL WIDTH OF LANE + USABLE SHOULDER WIDTHS ⑫		
MINIMUM RADIUS (FEET)	DESIGN SPEED		eMAX. 4%		eMAX. 6%		eMAX. 8%		
	20 MPH		86		81		76		
	25 MPH		154		144		134		
	30 MPH		250		231		214		
	35 MPH		371		340		314		
	40 MPH		533		485		444		
	45 MPH		711		643		587		
50 MPH		926		833		758			
NORMAL PAVEMENT CROSS SLOPES ③		RATE OF CROSS SLOPE = 2%							
NORMAL SHOULDER CROSS SLOPES		EARTH = 8%			PAVED = 4%				
MAXIMUM GRADE (PERCENT)	M.P.H.	20	25	30	35	40	45	50	
	LEVEL	8		7			6		
	ROLLING	11			10			9	8
	MOUNTAIN	16	15	14		13	12	10	
MINIMUM STOPPING SIGHT DISTANCE ①	(FEET)	115	155	200	250	305	360	425	
MINIMUM PASSING SIGHT DISTANCE ②	(FEET)	400	450	500	550	600	700	800	
<p>① MINIMUM STOPPING SIGHT DISTANCE BASED ON HEIGHT OF EYE OF 3.5 FT AND HEIGHT OF OBJECT OF 2.0 FT. CONSIDER BOTH HORIZONTAL AND VERTICAL ALIGNMENT.</p> <p>② MINIMUM PASSING SIGHT DISTANCE BASED ON HEIGHT OF EYE OF 3.5 FT AND HEIGHT OF OBJECT OF 3.5 FT. CONSIDER BOTH HORIZONTAL AND VERTICAL ALIGNMENT.</p> <p>③ NORMAL PAVEMENT CROSS SLOPES ON BRIDGES IS 2%.</p> <p>④ CONSIDER CURVE WIDENING ON PROJECT WHEN TRUCKS AND/OR HORIZONTAL CURVATURE INDICATE A NEED.</p> <p>⑤ GRADED SHOULDER = USABLE SHOULDER +2 FT. WIDEN GRADED SHOULDER 1 FT FOR GUARDRAIL.</p> <p>⑥ WHERE SELECTED DESIGN SPEED IS > 50 MPH, USE COMMON GEOMETRIC PRACTICES EXHIBIT 700-02 FOR RURAL COLLECTOR ROADS.</p> <p>⑦ JUSTIFICATION FOR THE CHOSEN DESIGN SPEED SHOULD BE DOCUMENTED IN THE DESIGN EXECUTIVE SUMMARY.</p> <p>⑧ FOR ROADS < 400 ADT, REFER TO AASHTO'S "GEOMETRIC DESIGN GUIDELINES FOR VERY LOW-VOLUME LOCAL ROADS (ADT≤400)".</p> <p>⑨ FOR ROADS IN MOUNTAINOUS TERRAIN WITH DESIGN VOLUME OF 400 TO 600 VEH/DAY, USE 9 FT LANE WIDTH AND 2 FT SHOULDER WIDTH.</p> <p>⑩ MAY BE ADJUSTED TO ACHIEVE LANES + USABLE SHOULDER WIDTH OF 30 FT FOR DESIGN SPEEDS > 40 MPH.</p> <p>⑪ WHERE THE LANE WIDTH IS SHOWN AS 12 FT, THE WIDTH MAY REMAIN AT 11 FT ON RECONSTRUCTED HIGHWAYS WHERE SAFETY RECORDS AND ALIGNMENT ARE SATISFACTORY.</p> <p>⑫ FOR BRIDGES IN EXCESS OF 100 FT IN LENGTH, THE MINIMUM WIDTH OF LANES + 3 FT (ON EACH SIDE) MAY BE ACCEPTABLE.</p>									

STORM SEWER PIPING DETAIL

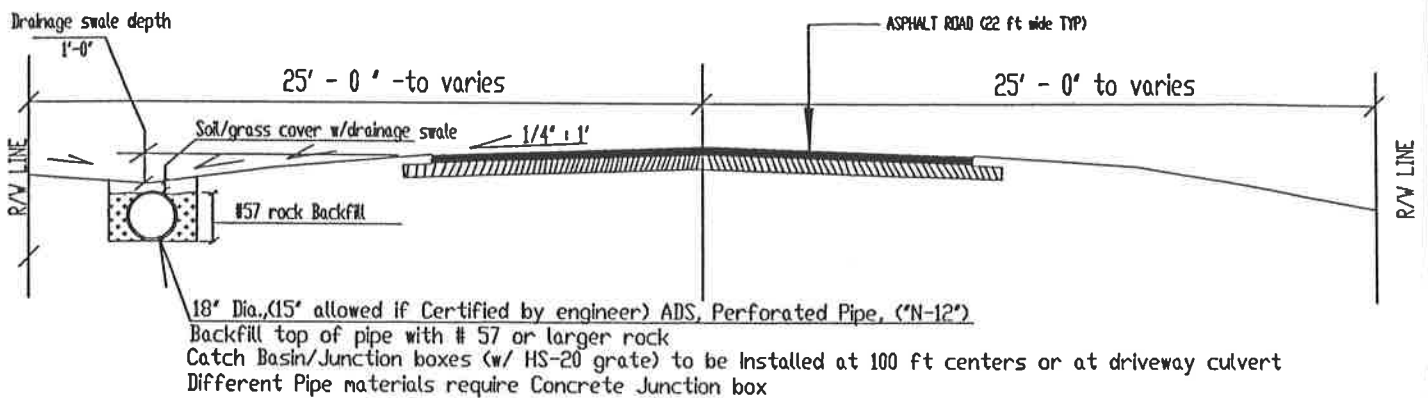
(rev 05/06/09)

NOTES:

1. Owner Shall Provide Grade Elevations Shots at all Existing pipes-cross drains
2. Owner Shall show size and location of nearest cross drain



TYPICAL COUNTY STREET PLAN
Storm Sewer Piping Vs. Drainage Ditch



TYPICAL COUNTY STREET SECTION
WITH
Storm Sewer Piping