Sussex County
Land Development Standards

5/22/2008

Transect Zones from Natural (top) to Urban Core (bottom)

Table of Contents

Website References and Resources

The following resources are endorsed by the Sussex County Department of Engineering and Planning:

- www.sussex.nj.us: The official County Website containing forms, applications, engineering standards, deed templates for dedications, Strategic Growth Plan, GIS mapping of geographical features, and the following:
  - County Map(s)
  - County Route Intersection Mile Post Data
  - Work Zone Safety Setup Guide
  - Design Exceptions Manual
  - Traffic Data Summary
  - Sight Distance Standards
  - Standard Construction Details
  - Access Permit Application Package
  - Road Opening Permit Application Package

For Centers:

Flexible Design of New Jersey's Main Streets
http://www.state.nj.us/transportation/publicat/pdf/FlexDesign/toc.pdf

List of Tables

List of Figures

I - TITLE, PURPOSE, APPROVING AGENCY

A. TITLE

This Ordinance shall be known as "Sussex County Land Development Standards"

B. PURPOSE

The purpose of this Ordinance is:

a. To provide rules, regulations, and standards for site plans and subdivisions and procedures for review of site plans and subdivisions within the County's jurisdiction to allow land development that is compatible and harmonious with the existing, planned, and contemplated infrastructure base of the County and to protect the public health, safety, and welfare.

b. To communicate the process of development review to Applicants and Municipalities.

c. To promote Villages and Centers with a pedestrian realm as a preferred land development type in order to implement the Sussex County Strategic Growth Plan.

d. To internalize external costs.

C. APPROVING AGENCY

The approval provisions of this Ordinance shall be administered by the Sussex County Planning Board in accordance with the County Planning Act (reference N.J.S.A. 40:27-1 et seq.)

The County Planning board, by the adoption of appropriate resolution, has vested its power to review and approve subdivision and site plan development plans in the Development Review Committee. The Development Review Committee may meet as necessary according to the meeting schedule adopted by the Sussex County Planning Board. Meetings are held in accordance with the Open Public Meetings Act.

D. LANGUAGE

The terms “shall”, “need(s) to”, “is required”, and “must” indicate mandatory requirements

The term “should” indicates a recommendation to address on the part of the Applicant (or Municipal planning board)

The term “may” indicates permissive action

II - DEFINITIONS

As used in this Ordinance, the following definitions shall have the meanings hereinafter set forth,

AASHTO - American Association Of State Highway Transportation Officials, 444 North Capital Street, N.W., Suite 249 Washington, D.C. 20001; www.transportation.org, an organization which sets standards for highway design.

ABUTTING COUNTY ROAD - Any existing county road or proposed county road as shown in the County Master Plan, or on the County Official Road Map as adopted by Resolution of the Board of Chosen Freeholders which adjoins the Lot or Parcel of land for which a Development Application has been submitted.

ACCELERATION LANE - An auxiliary lane within the Right of Way of a road for use by vehicles entering the traveled way at a lower speed in order to match and mingle with traffic traveling at a higher speed.

ACCESS CURBLINE SPACING – The distance measured along the curbline between curbline openings of two adjacent access points.

ACCESS DENSITY - The number of access points located along a section of county route, expressed as number of access points per mile. Calculation shall be based upon on a minimum one-half mile of county route, but may be extended to include longer typical sections.

ACCESS PERMIT – A permit issued by the Division of Engineering for the construction, maintenance and use of an Access Point connecting to a County Route.

ACCESS POINT – The location of intersection of a road, street, or driveway with a County Route.

ACCESS POINT OFFSET – the distance between the centerlines of access points along opposite sides of a County Route.

ADJACENT/ADJOINING - Proximity defined. Adjacent property is that property, within 200 feet of the subject premise and includes adjoining properties. Adjoining property is property that actually touches or is contiguous to the subject premise.

ADT – Average Daily Traffic; the highest estimated or observed two-way traffic volume during a 24-hour period.

ADVERSE DRAINAGE CONDITION - The absence or inadequacy of present drainage facilities or drainage easements in a drainage-way that would be affected, or that would have an impact upon a proposed subdivision or site development including; but not limited to:

a. Drainage facilities of such location, size, design, construction or condition that may not provide adequately for storm drainage.
b. Drainage conditions which may cause either flooding, erosion, silting or other damaging effects to a County Road or County drainage structure.
c. Drainage conditions which threaten to damage property as a result of storm drainage from, along or through a County Road or from a County Drainage structure.
d. Any development or modification of surface runoff which causes an increase in discharge from a county culvert, channel, or collection system.

AGRICULTURE PURPOSES - Farming and related pursuits not including the erection, alteration, enlargement, occupancy or use of any building designed for or suitable for residential, commercial or industrial use.

AGRICULTURE SUBDIVISION - The division of a lot, tract, or parcel of land into two or more lots, tracts, parcels or other provisions of land for agricultural purposes only.

APPLICANT - A Developer submitting an application for development.

APPLICATION FOR DEVELOPMENT – means the application form provided by the County Planning Board and all accompanying documents required by this Ordinance and by local ordinance for approval of a subdivision plat or site plan. It includes all forms required by a Municipal Reviewing Agency to be submitted by a developer to initiate approval of a proposed site plan, subdivision and/or variance.

MUNICIPAL FORMS - All forms required by a Municipal Reviewing Agency to be submitted by an Applicant to initiate approval of a proposed site plan, subdivision and/or variance.

AUXILIARY LANE – a lane striped for use, such as an acceleration lane, deceleration lane, two-way-common left turn lane or a dedicated left turn lane, not used for through traffic.

BARRIER FREE DESIGN - The design of facilities to eliminate physical obstacles which inhibit the mobility of the physically disadvantaged.

BEST MANAGEMENT PRACTICES (BMPs) - methods, measures, designs, performance standards, maintenance procedures, and other management practices which prevent or reduce adverse water quality impacts associated with

stormwater management methodology thereby resulting in reduced pollution of freshwater wetlands and open waters. BMP recommendations can be found within this Ordinance as well as the New Jersey Stormwater Best Practices Management Manual.

BRIDGE - A structure including supports and retaining walls erected over a depression or an obstruction, such as water or a highway, and having a passageway for carrying traffic, vehicular or pedestrian, and having an opening measured along the center of the travel way of more than five (5) feet between abutment faces or spring lines of arches.

BUILDING PERMIT - A permit issued by the Municipal Construction Official in accordance with the New Jersey State building codes authorizing specified construction to commence on a specific parcel of land.

CASH BOND – A certified check for the project amount made payable to the County of Sussex.

CD & PAPER PACKAGE: Single Copy paper submittals which include electronic files submitted on an optical compact disc (preferably CD-ROM) enclosed in a sleeve and attached to the inside back cover of the bound hardcopy application package, submittal or report.

CENTER – An area generally conforming to or planned to conform to the mixed use provisions of the State Development and Redevelopment Plan.

CLEARING - Any activity which removes the vegetation surface cover including the stripping, grubbing, and storage or removal of top soil.

CLEAR ZONE: - as defined in the AASHTO Roadside Design Guide, the total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area. The desired width is dependent upon the traffic volumes, speeds, and on the roadside geometry, as determined by the County Engineer in conformance with AASHTO guidelines.

COMPLETE APPLICATION - A copy of the County Application for Development form and all accompanying documents for any land development, site plan and/or subdivision approval required by this ordinance together with a copy of all documents required by the Municipal review agency for their review of the application.

CONCEPTUAL PLAN - A sketch of a proposed development submitted to the Development Review Committee for informal review, comments and suggestions. Neither the Applicant nor the Development Review Committee shall be bound by any such review.

COUNTY DRAINAGE FACILITY - Any drainage facility or stormwater conveyance device for which the County of Sussex is responsible in whole or in part.

COUNTY EASEMENT - An easement to the County of Sussex of an interest in Land for the purpose of the installation of utilities; the construction, reconstruction, widening, improving, repair, or maintenance of a County Road or County Bridge; the construction , reconstruction or alterations of facilities or amenities related to the safety, convenience or carrying capacity of the County Road/Bridge including items such as curbing, guide-rail, pedestrian walkway, lighting, drainage facilities, and traffic control devices; and for the purpose of maintaining a stable slope or a clear sight area or maintaining or altering stormwater drainage patterns.

COUNTY MASTER PLAN - A composite of the written goals and policies of the Master Plan for the physical development of the County, with the accompanying maps, plats, charts and descriptive and explanatory matter adopted by the County Planning Board pursuant to Revised Statute N.J.S.A. 40:27-2 and N.J.S.A. 40:27-4.

COUNTY PLANNING BOARD - The Planning Board, as established by the Sussex County Board of Chosen Freeholders Pursuant to N.J.S.A. 40:27-1, to exercise the duties set forth in that chapter with regard to the review and approval, where applicable, of all subdivisions of land (N.J.S.A. 40:27-6.2) and the review and approval of site plans for land development along County Roads or affecting County drainage facilities (N.J.S.A. 40:27-6.6)

COUNTY RIGHT-OF-WAY LINE – the outer most edge of the County property, separating County Right-of-Way from the abutting lots.

COUNTY ROAD/BRIDGE - A Public road or bridge under the jurisdiction of Sussex County where the County has an easement, is the owner in fee, or maintains the traveled right of way as shown on the Official County Road Map and the Official County Bridge Map adopted and amended by the Sussex County Board of Chosen Freeholders.

CULVERT – Any structure not classified as a bridge that provides an opening to carry water under a roadway.

CURBLINE - A line, whether curbing exists or not, which is the edge of the pavement or shoulder of the road or driveway.

CURB RETURN - The curb line along the curved or flared radius of a driveway opening or at a road intersection.

DAM – Any artificial dike, levee or other barrier, together with appurtenant works, which is constructed for the purpose of impounding water on a permanent or temporary basis, that raises the water level five feet or more above the usual,

mean, low water height when measured from the downstream toe-of-dam to the emergency spillway crest or, in the absence of an emergency spillway, the top of dam.

DECELERATION LANE - An auxiliary lane within the Right of Way of a road that permits vehicles to reduce speed and leave the adjacent traveled way of the road.

DEVELOPER - The legal or beneficial owner or owners of a lot or any land proposed to be included in a proposed development, including the holder of an option or contract to purchase, or other person or entity having an enforceable proprietary interest in such land, or the express written consent of the owner to file an application for development.

DEVELOPMENT – The division of a parcel of land into two (2) or more parcels; The construction, reconstruction, conversion, structural alteration, relocation or enlargement of any building or other structure; and any use or change in the use of any building or other structure, or land or extension of use of land, for which approval may be required pursuant to the Municipal Land Use Law, local municipal ordinance and/or this Ordinance.

DEVELOPMENT REVIEW COMMITTEE - The Committee of the Sussex County Planning Board vested with the power to review, approve or disapprove site plan and subdivision applications.

The Development Review Committee shall consist of any two (2) of the citizen members of the Planning Board, together with the County Planning Director or his appointed designee, and the County Engineer or his appointed designee.

DRAINAGE BASIN - All that area of land enclosed by a ridge line or underground structures that collect surface water runoff at a single point along a brook, stream, water course, drainage facility or easement.

DRAINAGE FACILITY – Those facilities comprised of lands or structures intended to actively or passively change the hydrologic conditions of wetlands or State Open Water, or to collect surface water runoff at a single point along a brook, stream, water course, or easement, by means of pumping, ditching, or otherwise altering water flow patterns.

DRAINAGE RIGHT OF WAY OR DRAINAGE EASEMENT – An enforceable interest in, or restriction to land (a “Right of Way”) or an easement, for the installation and/or maintenance of storm water sewers, culverts, bridges, retention/detention basins, drainage ditches or swales, and/or for the maintenance of natural drainage patterns and surface water sheet flow, and/or with regard to a natural stream or water course for preserving the channel and providing for the flow therein in order to safeguard the public against harm from flooding, sedimentation and erosion, or for similar storm drainage purposes.

DRIVEWAY – a private roadway providing access to a county route. A driveway is not a road, street, boulevard, highway, or parkway.

EASEMENT - A dedicated easement is a non-possessing interest held by one person or government entity in land of another whereby the first person or government entity is accorded partial use of such land for a specific purpose. An easement RESTRICTS but does not abridge the rights of the fee owner to the use and enjoyment of his land. (See Sight Easement)

ELECTRONIC COPY: Digital or electronic document and file submittals

EMERGENCY ACCESS - a driveway which shall only be used by qualified emergency response vehicles responding to an emergent situation.

EMERGENCY SPILLWAY – a spillway capable of passing the spillway design storm in the event that the principal and/or auxiliary spillway is blocked. No emergency spillway shall be designed such that its discharge will enter upon or negatively impact any county infrastructure. Emergency Spillways discharging upstream of county roadways must be conveyed safely below any county roadway.

E-PACKAGE – Plans and documents that are encapsulated in an electronic media accompanied by descriptive supporting documentation. This may be a CD-ROM with a hardcopy explanation of its contents.

FHWA – Federal Highway Administration, U.S. Department of Transportation.

FINAL SUBDIVISION PLAT - The Final Map of all or a portion of a subdivision, meeting all of the Standards and Regulations of this Ordinance, and meeting all the conditions established by the Development Review Committee and the Municipal Approving Authority in granting final subdivision approval. Plats shall comply with the New Jersey Map Filing Law (N.J.S.A. 46:23-9.9 et seq.).

FINAL SITE PLAN - The plan or plat of an approved Site Plan incorporating all the preliminary and final conditions of that approval granted by the Development Review Committee and the Municipal Approving Authority.

FLOODING - A general and temporary condition of partial or complete inundation of normally dry land areas from: an overflow of inland waters, and/or an unusual and rapid accumulation of runoff of surface waters and/or mud slides. The collapse or subsidence of land along the shore of a lake or other body of water caused by erosion and unusually high water level shall also be deemed flooding.

FLOOD PLAIN – As used in this Ordinance “Flood Plain” shall mean the area inundated by the “Flood hazard area design flood”, as is defined in the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-1.2.

FLOODWAY – As used in this Ordinance "Floodway" shall have that meaning set forth in the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-1.2.

GENERAL DEVELOPMENT PLAN - Any Applicant of a parcel of land greater than 100 acres in size may submit a General Development Plan of the entire parcel to the Municipal Planning Board for initial approval pursuant to N.J.S.A. 40:55D-45.2, et seq.

HARD COPY – Submittal on traditional paper.

HISTORIC SITE - Any real property, man-made structure or natural object or any group of the foregoing of historical, archaeological, cultural, scenic or architectural significance to this State, its communities or the Nation.

INSIDE TURNING RADIUS - The innermost encroachment line of a vehicle's wheels movement including any portion of the vehicle which overhangs beyond the wheelbase.

LOADING AREA, OFF-STREET - Designated area reserved for the sole purpose of loading and unloading vehicles, including the necessary vehicle maneuvering area. Loading areas must be designed to prevent vehicle encroachment into a county right-of-way.

LOT - A designated parcel, tract or area of land established by a plat or otherwise as permitted by law and to be used, developed or built upon as a unit.

MAINTENANCE GUARANTEE - Any security acceptable to the County Counsel to assure the maintenance of approved installations by Applicants for a period of two (2) years after acceptance of such improvements. All maintenance guarantees shall be in conformance with Sussex County Board of Chosen Freeholder resolutions.

MAJOR SUBDIVISION - Any subdivision not classified as a minor subdivision.

MARGINAL ACCESS - Access to a lot or lots from a right-of-way paralleling a County road.

MINOR SUBDIVISION - A subdivision of land for the creation of a number of lots specifically permitted by Municipal ordinance as a minor subdivision; generally having requirements that such subdivision does not involve (1) a planned development, (2) any new street or (3) the extension of any off-tract improvement, the cost of which is to be prorated pursuant to N.J.S.A. 40:55D-42). For the purposes of this Ordinance, the definition of "minor subdivision" employed in the municipality where the development is located shall apply.

MUNICIPAL AGENCY - A Planning Board, Board of Adjustment, or governing body when acting pursuant to the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq, as amended.

MUNICIPALITY - Any city, borough, town, township or village.

MUTCD - Manual On Uniform Traffic Control Devices; The Manual on Uniform Traffic Control Devices (MUTCD) is approved by the Federal Highway Administrator as the National Standard in accordance with Title 23 U.S. Code, Sections 109(d), 114(a), 217, 315, and 402(a),
23 CFR 655, and 49 CFR 1.48(b)(8), 1.48(b)(33), and 1.48(c)(2).

NEW JERSEY RESIDENTIAL SITE IMPROVEMENTS STANDARDS - Technical standards for streets, parking, water supply, sanitary sewers, and stormwater management relating to residential development. The standards are the minimum requirements for site improvements that must be adhered to by all Applicants for residential subdivision and site plans before planning boards and zoning boards of adjustment. They also represent the maximum that municipal boards can require of an Applicant.

OFFICIAL COUNTY MAP - The map, with changes and additions thereto, adopted and established, from time to time, by resolution of the Sussex County Board of Chosen Freeholder of the County pursuant to N.J.S.A. 40:27-5.

OFF-SITE - Located outside the lot lines of the lot in question but within the property (of which the lot is a part) which is the subject of a development application or contiguous portion of an abutting street or right-of-way.

OFF-SITE DRAINAGE EASEMENT - See "Right to discharge".

OFF-STREET PARKING AREA - An area providing vehicle parking spaces and aisles off the street and outside the county right-of-way.

OFF-TRACT - not located on the property which is the subject of a development application or on a contiguous portion of an abutting street or right-of-way.

OFFICE DOCUMENTS - include all application paperwork and reports exclusive of large format design plans commonly prepared within a CAD platform. Typical documents would include, letter correspondence, submittal checklists, traffic impact reports, stormwater reports, design exception reports, engineer’s estimates, deeds and easements.

ON-SITE - Located on the lot in question.

ON-TRACT - Located on the property which is the subject of a development application or on a contiguous portion of an abutting street or right-of-way.

OUTSIDE SWEPT PATH - The outermost encroachment line of a vehicle when making a turning movement including any portion of the vehicle which overhangs beyond the wheelbase.

OWNER - The person, corporation, government or other entity having a legally enforceable ownership interest in the property.

OWNER AUTHORIZATION - Consent in writing permitting Applicant to seek subdivision or site plan approval. Owner authorization is required for all applications to the County Planning Board.

PEAK HOUR – the 60 consecutive minutes during which the highest traffic volumes occur along a roadway or access point.

PEDESTRIAN REALM —A network of public sidewalks, pathways, and plazas that provide social, health, aesthetic, economic and/or historical benefits to pedestrians and provide access to jobs, entertainment, shopping, and homes.

PERFORMANCE GUARANTEE - Any security approved by the County Counsel and in conformance with Sussex County Bonding requirements determined to be acceptable in lieu of a requirement that certain improvements be made before the County Planning Board grants Final Approval to an Application for Development.

PRELIMINARY APPROVAL - The conferral of certain rights pursuant to N.J.S.A. 40:55D-46; N.J.S.A. 40:55D-48; and N.J.S.A. 40:55D-49) prior to final approval after specific elements of a development plan have been agreed upon by the planning board and the Applicant.

PRELIMINARY PLAT - A map indicating the proposed layout of the subdivision showing or being accompanied by all of the information required by these Standards.

PRELIMINARY SITE PLAN - A plan of an existing lot or lots showing proposed development with all of the details required by these Standards.

PRINCIPAL SPILLWAY - the primary or first used spillway during normal inflow and flood flows.

PUBLIC RIGHT-OF-WAY – A strip or area of land including overhead, surface or underground, for which the public at large has a legal “ways of passage” or a right to use in some specified manner or utilize said lands as deemed beneficial to the public good..

PUBLIC ROAD - A road that is open to common use by the general public, generally existing within a right-of-way.

RETENTION BASIN - A pond, pool or basin used for the permanent storage of stormwater runoff.

REVERSE ACCESS - Access to the rear lot area where the structure faces on a County Road.

REVERSE FRONTAGE – when access is provided via a local street or access road for lots fronting along a county route. No access for these lots is permitted directly into the county route. It is not uncommon for buildings located on these lots to front the county route.

RIGHT-TO-DISCHARGE - A legally recordable instrument granting to the County the right to discharge collected or surface waters upon lands exterior to the county right-of-way.

ROAD - any public way, whether open or improved or not, including any public thoroughfare such as a; street, avenue, boulevard, road, land parkway or freeway which is an existing or planned State, County or Municipal roadway, or a street or way shown upon a plat heretofore approved pursuant to law and including the land between the right-of-way lines, whether improved or unimproved, and comprising all pavement, shoulders, gutters, curbs, sidewalks, parking areas and other improvements within the right-of-way lines.

ROAD OPENING PERMIT – a permit issued by the Division of Engineering required for any work proposed to be completed within a county right-of-way.

SET-BACK LINE - A line established parallel to and a specified distance from the existing or proposed right-of-way sideline of a road by local zoning ordinances which restrict the placement of buildings and structures within such distance as specified.

SIGHT EASEMENT - A dedicated easement across property generally along the inside of a horizontal curve of a County or Municipal road which is required to provide the minimum Sight Distance

SIGHT DISTANCES are those distances specified in this Ordinance for the purpose of establishing a clear line of sight at road intersections or other points of access to County roads and Rights of Way. Sight distances shall be accommodated within areas whereby the County is granted rights to enter and remove obstructions to the clear line of sight, including County Right of Way, Sight Easement(s), and Sight Triangle Easement(s).

SIGHT TRIANGLE EASEMENT - A triangular shaped area established at all intersections or at a major driveway entrance, in accordance with the requirements of these standards, in which nothing shall be erected, placed, planted or allowed to

grow in such a manner as to obstruct vision between a height of two (2) feet and ten (10) feet above the center line grade of either intersecting street or driveway entrance.

Within this sight easement nothing shall be erected, placed, planted or allowed to grow in such a manner as to obstruct sight distance as defined herein.

SHOULDER - That portion of the roadway that lies between the edge of the traveled way and the curbline; excluding auxiliary lanes.

SOIL CONSERVATION DISTRICT - a political subdivision of the State of New Jersey authorized under N.J.S.A. 4:24-1 et seq.

STORMWATER - water resulting from precipitation (including rain and snow) that runs off the land's surface, is transmitted to the subsurface, or is captured by separate storm sewers or other sewage or other drainage facilities or conveyed by snow removal equipment.

STORMWATER RUNOFF – water flow on the surface of the ground or in storm sewer systems, resulting from precipitation.

STORMWATER MANAGEMENT BASIN - an excavation or embankment and related areas designed to retain stormwater runoff. A stormwater management basin may either be normally dry (that is, a detention basin or infiltration basin), retain water in a permanent pool (a retention basin), or be planted mainly with wetland vegetation (most constructed stormwater wetlands).

STORMWATER MANAGEMENT MEASURE - means any structural or nonstructural strategy, practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to induce or control the infiltration or groundwater recharge of stormwater or to eliminate illicit or illegal nonstormwater discharges into stormwater conveyances.

STRUCTURE - A combination of materials to form a construction for occupancy, use or ornamentation whether installed on, above, or below the surface of a parcel of land.

SUBDIVIDER – See "Applicant"

SUBDIVISION - The division of a lot, tract or parcel of land into two or more lots, tracts, parcels or other divisions of land for sale or development. The following shall not be considered subdivisions, if no new streets are created: (1) divisions of land found by the planning board or subdivision committee thereof appointed by the chairman to be for agricultural purposes where all resulting parcels are 5 acres or larger in size, (2) divisions of property by testamentary or intestate provisions, (3) divisions of property upon court order, including but not limited to judgments of

foreclosure, (4) consolidation of existing lots by deed or other recorded instrument and (5) the conveyance of one or more adjoining lots, tracts or parcels of land, owned by the same person or persons and all of which are found and certified by the administrative officer to conform to the requirements of the Municipal development regulations and are shown and designated as separate lots, tracts or parcels on the tax map or atlas of the Municipality. The term "subdivision" shall also include the term "resubdivision".

TECHNICAL MAJOR SUBDIVISION – A subdivision classified as a major subdivision by the Municipality due to variances or other matters rather than exceeding the number of lots that defines a minor subdivision.

THROUGH STREET -- Every road or portion thereof at the entrance to which vehicular traffic from intersecting access points are required by law to stop before entering or crossing the same and when stop signs are erected as provided by law.

TRAFFIC IMPACT REPORT – a study analyzing anticipated roadway conditions, on and off tract, with and without an Applicant's development. Reports shall contain an analysis of mitigation measures.

TRANSECT ZONE – One of a number of land use zones lying on a continuum from undeveloped to substantial urban density. General New Urban transect classifications (from highest to lowest density) are: urban core, urban center, general urban, suburban, rural, and natural.

TRAVELED WAY – the portion of the road provided for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

VARIANCE - Permission to depart from the literal requirements of a zoning ordinance pursuant to N.J.S.A. 40:55D-40b., N.J.S.A. 40:55D-70c., N.J.S.A. 40:55D-70d., of the Municipal Land Use Law.

WATER COURSE - Any natural swale, ditch, gully, stream, brook or river wherein water flows ordinarily, frequently or infrequently, but not necessarily continuously. This definition includes water courses which have been artificially treated, realigned or improved.

WAIVER – A means by which the Planning Board, for specific reasons, may reduce or eliminate a requirement.

WETLANDS – areas as defined within New Jersey Department of Environmental Protection Freshwater Wetlands Protection Rules found in N.J.A.C. 7:7A, including "Freshwater Wetlands".

III - APPLICATIONS—WHEN AND WHAT TO SUBMIT

A. ALL APPLICATIONS

1. By New Jersey Municipal Land Use Law (MLUL), there are two general types of land developments that must be submitted to the County Planning Board for review or approval: Site Plans, which do not alter property boundaries, and Subdivisions, which alter property boundaries. Subdivisions have two subcategories as defined by Municipalities; minor subdivisions require no construction of infrastructure and involve very few new lots; major subdivisions encompass the remainder. The types of site plans required to be submitted to the County for review or approval are described below. Submission materials for all applications follow.

2. One CD & Paper Package is required for all applications, as defined in section II - Definitions above. Revisions with changes for review by the County Department of Engineering and Planning approval may be submitted with either a hardcopy or e-package. The revision which addresses and resolves all conditions, comments, and requirements of the County Department of Engineering and Planning must also be submitted as a CD & Paper Package.

3. Any submission to the Planning Board must include a hardcopy cover letter. If submitting a revision that specifically addresses items in a review letter by the County Department of Engineering and Planning or Planning Board, changes must be described by their corresponding item number. These changes must also state the location of any plan revisions by sheet number and any revisions in reports by page number. The cover letter shall also provide the locations of any other revisions to plans or reports that are not items of this review letter. There shall also be a statement confirming that no additional revisions have been made to the plans or reports other than those listed.

4. Minimum necessary submissions include:

    a. Application fee and County application form,

    b. Drawings signed and sealed by a licensed professional in accordance with State Statutes,

    c. Copy of Municipal application for subdivision or site plan review,

    d. Sussex County Subdivision or Site Plan Checklist,

    e. ROW Source Document Worksheet for sites fronting a County Road

    f. Stormwater Management Plan for sites where stormwater can flow on or into County infrastructure,

g. A detailed intersection plan if a new access is being proposed along a County road, maximum plans scale of 1 in. =20 ft, refer to Sussex County Standard Details SC-4, SC-5, and SC-5a.

h. Traffic Report for site plans or major subdivisions if development meets the criteria for requiring a traffic report as listed herein.

B. CONCEPT

An informal Conceptual Plan review can save the Applicant considerable expense. By requesting a meeting for Conceptual Plan review before engineering plans are complete, valuable engineering time can be saved. Most Applicants do not foresee all impediments to approval, so the Conceptual Plan Review should be the first interaction with the County regarding any development that requires County Planning Board approval. During a conceptual review, the County might provide the following information:

- Provide awareness to the Applicant of state regulations.
- Provide comments regarding stormwater standards that are specific to County stormwater infrastructure.
- Provide comments regarding existing or proposed access to County roads.
- How requirements to accommodate pedestrians as per the Strategic Growth Plan can be incorporated into the site.

Any fee charged for a concept plan review will be credited towards the fee for a complete application.

C. SITE PLAN APPLICATIONS

1. When Required

Applications and subsequent revisions thereto shall be submitted to the County Planning Board for review of all Site Plan developments which include any proposed commercial, industrial, and/or multifamily structures containing five or more units, or any other land development requiring off-street parking or increasing impervious surface in excess of 1 acre, and for approval by the Board of those Site Plans located along county roads or affecting county drainage facilities.

Site plans for single family or duplex homes or land development not along a county road that include less than 1 acre of impervious surfaces which are exempt from county site plan review.

2. Application

a. Before submitting any site plans, Applicants are strongly encouraged to schedule an early field meeting, which is required for any site that has access onto a County Road or is proposing access onto a County Road.

b. Site plan applications shall be submitted for formal review or approval in two (2) stages: Preliminary Site Plan and Final Site Plan.

3. Preliminary Site Plan Detail Requirements

The Preliminary site plan application shall be submitted to the County Planning Board by the Applicant prior to the issuance of a Municipal zoning or building permit. One CD + Paper Package as described in Section IV.C below and data as required to show conformance with the standards established by this Ordinance herein shall be submitted to the County Planning Board. All engineering and surveying aspects of the preliminary site plan must be prepared and certified by a licensed professional engineer and surveyor as required by statute. In the event that some of the required items do not apply, a written request for waiver with supporting reasons shall be included.

4. Final Site Plan Detail Requirements

a. The Final Site plan application plat shall show all proposed amendments, modifications, or deviations from the terms and conditions of Preliminary Site Plan approval, together with all "as-built" conditions, if any, from any previously completed phase of an application for those developments being developed in phases. A copy of the approved Final Site Plan and "as-built" drawing(s) shall be submitted to the County Planning Board by the Applicant prior to the issuance of a Municipal certificate of occupancy.

b. One + CD Paper Package, which includes one copy of prints of the final site plan, copies of all supporting documentation and data (as required to show conformance with this Ordinance) and filing fee shall be submitted to the County Planning Board. All engineering and architectural aspects of the final site plan must be prepared and certified by a licensed professional engineer, surveyor and architect as required by statute. In the event that some of the required items do not apply, a written request for waiver with supporting reasons shall be included.

c. After the final site plan is approved, a CAD file of the final plats shall also be filed in electronic format meeting the standards developed by the Division of Engineering e-package described in section IV - C below.

5. Revisions Of A Previously Approved Site Plan Or Subdivision

Any proposal that involves revisions in a site plan or subdivision previously approved by the County Planning Board shall require submission of a complete site plan or subdivision application and payment of fees in accordance with all of the requirements of Section IV of this Ordinance, except as follows:

a. Where minor changes in the site plan or subdivision are requested by the Municipal planning board or other governmental agencies, no fees need to be paid and only a sufficient number of copies of those portions of the site plan or subdivision depicting or describing the proposed changes as may be necessary for distribution and a cover letter explaining what changes have been made and why, need to be submitted.

or

b. Where there are only minor changes in the site plan or subdivision proposed by the Applicant, which do not involve any significant changes in the layout of the site as determined by the County Planning Director, no fee will be required, but sufficient copies of the site plan or subdivision incorporating the changes as may be necessary for distribution will be required. A cover letter explaining what changes have been made and why, will also be required. Where such changes are technical in nature and do not affect the basis upon which the Planning Board approval was given, the County Planning Director, in consultation with the County Engineer, may administratively approve the changes and forward a copy of the approval letter to the Planning Board for informational purposes.

or

c. Where revisions in the site plan or subdivision only involve additional information required as a condition of a previous approval or where revisions in the site plan or subdivision are in accordance with a site plan or subdivision being approved in stages, no additional fees shall be required. A cover letter explaining what changes have been made and why will also be required.

D. SUBDIVISIONS

1. Application

All subdivisions of land within the County shall be submitted to the County Planning Board for review and/or approval prior to recording.

All Subdivisions affecting a County road or County drainage facility shall require approval by the County Planning Board prior to recording.

2. Subdivision Detail Requirements

Major subdivisions and minor subdivisions are defined in the New Jersey MLUL (N.J.S.A. 40:55D-1 et seq.). Whether a subdivision is minor or major is determined by the Municipalities' land use ordinance in which the development is proposed. Lot line adjustments are considered minor subdivisions.

a. MINOR SUBDIVISION

Minor Subdivisions may be filed by deed or by final plat as provided by N.J.S.A. 40:55D-47. Legible prints of the plat and of the minor subdivision application form shall be submitted to the County Planning Board. Minimum details required for review by the County Planning Board are listed in Appendix B-Forms (see Minor Subdivision Checklist). Approved Plats must be submitted in an e-package and a copy of property deeds signed by the Municipality prior to being recorded.

b. PRELIMINARY MAJOR SUBDIVISION

A CD + Paper Package including a legible print of the plat and of the application form shall be submitted to the County Planning Board. All preliminary plats and accompanying drawings shall be of a size to conform with the specifications of the attached checklists and shall be prepared and sealed, by a professional land surveyor licensed by the State of New Jersey. (See Appendix B):

c. FINAL MAJOR SUBDIVISION

Before approval of a final major subdivision, all improvements specified by the County Planning Board in granting approval for the preliminary plat shall have been installed and approved by the County Engineer. Alternatively, the Applicant may post adequate performance guarantees as set forth hereinafter at Section IV.F, to assure installation of the required improvements. The Applicant shall also make any required payment in lieu of improvements to County roads and/or a proportionate share of the cost of future installation of County drainage facilities or other improvements. All payments in lieu of improvements shall be in the form of a Certified Check. Any monies or guarantees received by the County shall not duplicate bonds or other guarantees required by Municipalities for Municipal purposes. A copy of bonds or guarantees given to the Municipality or joint bond, where two or more parties are concerned, shall be submitted to the County Engineer.

A CD & Paper package shall be submitted to the County Planning Board. When the Applicant has been informed that the final plat is approved, the Applicant shall submit an engineering epackage as described herein.

E. FILING REQUIREMENTS

After approval by the Sussex County Department of Engineering and Planning, Applicants must file subdivisions with the Sussex County Clerk.

1. Minor Subdivision

Minor Subdivisions may be perfected by filing them as a deed or a final plat with the County Clerk in accordance with N.J.S.A. 40:55D-47. If filed by plat, the plat shall comply with the applicable provisions of the "New Jersey Map Filing Law", N.J.S.A. 46:23-9.9 et seq.

1. After approval of the minor subdivision plat by the County Planning Board, CAD files must be submitted to the Department in an e-package that meets the Division of Engineering standards described in section IV.C below.

2. Final Major Subdivision

1. Two (2) signed mylar copies, certified and approved by the Municipality or Municipalities concerned, shall be presented to the County Planning Board office, and the County Planning Director shall sign the plat or, in his absence, it shall be signed by an alternate representative designated by the County Planning Board.

2. The Municipality or Municipalities in which the lands are situated may request additional copies.

3. The sizes of all maps and plans and any proposed land development shall be consistent with the sizes permitted under the "New Jersey Map Filing Law Act", as follows:

a. 8-1/2 x 13 inches
b. 15 x 21 inches
c. 24 x 36 inches
d. 30 x 42 inches

4. A CAD file of the final plats shall also be filed in electronic format meeting the standards developed by the Division of Engineering e-package described in section IV.C below.

3. Major Subdivision Revisions

One copy of all revised plats, including sketch plats, preliminary plats, or final plats shall be submitted to the County Planning Board by the Applicant or by the Municipal approving authority for County review and/or approval prior to approval by the Municipal approving authority.

IV - APPLICATION PROCESS – HOW TO SUBMIT AND GET APPROVED

A. FIELD MEETINGS

1. Field Meetings: Field meetings are required when a site plan or subdivision has an existing access onto a County Road, is proposing a new access onto a County Road, or if the site may need an access onto a County road in the future. The last instance particularly applies to minor subdivisions in which lot(s) are created upon which a current or future owner may expect to build a home, and such development may require or anticipate access to the County Road for which a safe access may be impeded by geographical or property line constraints.

2. Applicants must call the planning office to request a meeting, with information about the project at hand. Furthermore, the Applicant must provide the following at all field meetings:

    a. Sight distance measurements, to be provided at or before the field meeting, by measuring distances shown in the diagrams in Appendix D. This includes the following:

        i. Left turn-out sight distance
        ii. Right turn-out sight distance
        iii. Left turn-in sight distance
        iv. Tail lamp stopping sight distance

    b. Provide for a means of confirming sight distance measurements at the field meeting. A surveyor's transit with appropriate personnel is the only sure means.

    c. One set of plans, if not already submitted to the Planning office

B. TIMING

Applications must be submitted with a CD + Paper Package.

1. An application will be administratively incomplete if any component needed for a complete review is not provided as listed in III - A.4. An application will be administratively disapproved if all the required elements of an application are not submitted. Any statutory requirements for action within a particular time frame by the County Planning Board shall not run until an application is deemed complete.

2. Within thirty (30) days of receipt of a complete application, the County Planning Board shall either:

   a. Approve the site plan or subdivision as concerns existing and/or proposed County roads, bridges, culverts and drainage systems, and County owned property if all requirements are met, subject to such conditions as may be required.

   b. Disapprove the site plan or subdivision, stating reasons for the disapproval.

3. If the County Planning Board fails to report to the Municipal agency within thirty (30) days of receipt of any complete application for site plan or subdivision approval, any such site plan or subdivision application shall be deemed to have been approved by the County Planning Board unless an extension is requested and granted. An extension may be granted for an additional thirty (30) day period upon mutual agreement between the County Planning Board and the Municipal approving authority, with approval of the Applicant.

4. The action taken by the County Planning Board on all site plan and subdivision plats shall be duly set forth in writing, with a copy of the report and any subsequent resolution to be submitted to the Municipal agency and to the Applicant. The report and any subsequent resolution shall set forth all conditions required for County approval, and if disapproved, all reasons for disapproval.

5. There is no limit to the number of times that a submission may be disapproved. To prevent administrative delays with application revisions, the Applicant is required to submit a cover letter for each revision that describes how each planning or engineering condition is being met in the revision AND that indicates at which page or sheet each revision is shown. Additionally, the letter must certify that no other modifications have been made to the application documents or include a narrative for each modification.

6. No approved site plan or subdivision plat shall be altered without approval of the County Planning Board.

C. DATA STANDARDS

1. This data standard has been established to manage both hardcopy (paper) and electronic data submittals required by the County of Sussex. These standards are part of the comprehensive County initiative to best manage, inventory and utilize information. This section contains the submittal standards for planning application data. The data submittals will be divided into the following two categories, Office Documents and Design Documents. Within these groups data will be submitted in either paper copy or electronic copy as outlined in these standards.

2. The County intends to move toward the elimination of paper copy documents and as such intends to eliminate paper processes which are obsolete or redundant in an electronic process.

3. Standard Electronic Format for Office Documents

   a. File type: The required format is an Archival standards compatible Portable Document Format (PDFA) file generated directly from document files. They should be compatible with the latest Adobe Acrobat Version Readers. Scanned images of report text are not acceptable as the text cannot be searched. Scanned correspondence bearing the original signature and seal shall be included. Scanned documents will only be accepted when the native electronic files are not available or developed for the application.

   b. File naming: Application documents and report file names should be formatted as follows:

      i. The application number (SCPB#) i.e. 42X(PMS)06, where X is the revision letter.

      ii. A document descriptor prefixed with the following and a short narrative, such as: “Letter”, “Report”, “Est”, “Plan”, and/or “SW” for Stormwater

      iii. The document date shall be the final entry in the file name and shall be keyed as “YYYYMMDD”, as such January 2,2006 would be represented as “20060102”.

   c. Font should be those commonly available such as Times New Roman or Arial. Other fonts may not readily open or print from all computers. Less common fonts that are used (for instance ESRI symbols) must be embedded to allow printing in all environments.

   d. Security settings must be set so as to allow searching of text, printing at full resolution, adding comments (to facilitate electronic comment by reviewers, and for users to annotate their own copies if they wish), content copying and extraction (to facilitate preparation of management direction, and quoting of materials in other documents), making changes related to document assembly to allow users to rotate pages and create bookmarks and thumbnails to facilitate use of the document.

   e. Settings should not allow other modifications or utilize password protection of the document.

   f. Resolution: Minimum resolution should be 300 dpi for graphics and text, 400 dpi for graphics is preferable, 400 dpi for CAD documents, but file size should be kept down.

   g. File Size: file size shall not exceed what can be emailed to the County.

   h. Cartography: information on maps should be easily understood when reproduced in black and white – sole reliance on color to convey information means maps cannot be faxed or usefully printed in black and white. Where color is necessary or useful, combine it with techniques like line coding and patterned

fills to ensure all users can extract the information. This principle applies also to labels and other layers added to images.

i. Submissions must be on CD-ROM Read-only electronic media

j. All digital media shall be provided with the following label data on both the CD and Case:

   i. SCPB Number if known, and Municipality, Tax Block, and Lot number
   ii. Applicant Name
   iii. Submittal Date
   iv. Revision number

4. CAD FILE STANDARDS:

   a. Computer-Aided Design (CAD) is a tool used for producing design documentation and plan sets required for the planning application process. It can also provide a common medium of information exchange. In fact, the true power and potential of CAD is the ability to re-use and share the information contained within the CAD document. The key to realizing this potential is common organizing principles and standards for the production and dissemination of CAD information. The standard organization of files, layers and entities, as well as standardized software applications is essential for effective work and communication.

   b. This section establishes performance standards for CAD data provided to the County of Sussex with the application package. The County does not intend to influence the methods or means of practice of outside consultants. Consultants may use any CAD system to develop design documents as long as the delivered data conforms to the County's CAD data standards.

   c. Much of the CAD data created through the planning process will be brought into the Sussex County GIS parcel data system. Data received by the County must follow these CAD data standards to be readily useful within that system

   d. All Applicants must provide electronic copies of their design data with the application; application revisions shall be accompanied by revised electronic data submissions. In order to protect the Applicants and their professionals, CAD files shall be accompanied by a limited license form which states that the CAD files are for County purposes Pursuant to the application only. Information from the CAD file will be on public record, but electronic source files will not be maintained nor made publicly available.

   e. Electronic CAD files for Minor Subdivisions, Final Site Plans and Final Subdivision shall be submitted in conformance with the standards listed below.

   f. CAD Drawings: Consultants shall deliver at minimum, a CAD document in electronic format to the county. The document(s) must include all supporting CAD data and must be delivered as follows:

      i. In the Native CAD format as read only

ii. In the CAD "dxf" file format.
iii. Using the data structure defined these standards.
iv. File naming shall comply with the standards established for Office Documents.
v. Files shall be purged of extraneous information.

g. Standard Minimum Information Required: Each Applicant shall provide, on separate layers, the following data: (Submittals may contain other data provided it is organized on easily identifiable layers.)

i. Right-of-way with descriptors.
ii. Property Lines (Existing and Proposed) with descriptors.
iii. Lot and Block descriptors.
iv. Easements
v. Utilities, (existing and proposed) each type on an individual layer.
vi. Monumentation with State Plane Coordinates.
vii. Roadway pavement markings with descriptors.
viii. Traffic control devices with descriptors.
ix. Topographic data including contours at appropriate elevations.
x. Wetlands and Flood Plain delineation limits.
xi. Technical Requirements for the CAD data:
(1) Blocks shall not be exploded.
(2) Drawings shall be purged.
(3) Drawings shall be zoomed to the project extents.
(4) All layers shall be on.

h. Text and Fonts: Utilize only industry wide supported fonts, no custom fonts can be accepted. All fonts shall be provided with CAD file.

i. Layers: Specific layers shall be created and drawings organized such that the following data is isolated to the respective layer. Layer naming shall be readily discernible and generally follow the naming convention provided below. Layer naming deviating from the convention below will require layer name definitions and contents.

i. COS_PRPL: layer containing all proposed property line data
ii. COS_EXPL: layer containing all existing property line data
iii. COS_PRROW:
iv. COS_EXROW:
v. COS_Easements:
vi. COS_UTL_"TYPE"
vii. COS_TOPO
viii. COS_TXT_"Associated Item Descriptor"
ix. COS_WETLANDS
x. COS_FLOODPLAINDrawing creation:

xi. All lines shall intersect.

xii. When possible, proposed lots, easements and rights-of-ways shall be comprised of closed polygons.

xiii. All drawings shall be created at 1 to 1 “full scale”.

j. Coordinate Reference: All submittals shall be in NAD 83 New Jersey Plane Coordinates in U.S. feet and North American Vertical Datum 1988. The County Engineer may accept other coordinate data formats, on a case by case basis, if requested by the Applicant.

D. CONFORMANCE TO CONDITIONS OF APPROVAL

1. Failure to submit and comply with any of the conditions of minor subdivision or of either preliminary or final major subdivision or site plan approval subsequent to the receipt of Municipal final approval or a building permit shall be conditions for:

   a. Refusal of the County to issue a road opening and/or Access Permit for said development.

   b. A request to the local approval authority to revoke or to withhold the local Building Permit and/or Certificate of Occupancy for said development.

   c. Forfeiture of any performance bond or other payment guarantee required by the County to cover the costs of improvements over which the County has control.

   d. Appropriate court action initiated by the County Planning Board.

2. A written Notice of Noncompliance shall be forwarded by Certified Mail to the Municipal approval authority and Applicant requesting compliance with the conditions of subdivision or site plan approval within a period of time of not less than five (5) working days from the date such noncompliance is determined.

E. FEE SCHEDULE

Fees are established and amended from time to time by resolution of the Board of Chosen Freeholders. Fees shall be paid to the Sussex County Planning Board at the time of submission of the application. The most recent fees are provided on the County website. Checks shall be made payable to "Sussex County Planning Division."

1. When site plan or subdivision plans are revised to comply with Municipal or County requirements, the revised plat or plats will be subject to such further fees as established by the Freeholder resolution which sets such fees.

2. Subdivision or site plan plats received by the County Planning Board more than one year after the reception of a prior submission will be subject to payment of those fees then applicable as if the same were a first submission of such plat.

3. All required fees shall be paid at the time of submission of the application in accordance with the provisions of the duly adopted fee schedule available at the Planning Division or on the Sussex County web site. The omission of payment shall be cause for the application to be deemed administratively incomplete and disapproved for County Planning Board consideration. Checks shall be made payable to "Sussex County Planning Division"

F. WAIVER PROCEDURE

Waivers are a means by which the Planning Board, for specific reasons, may reduce or eliminate a requirement. The process of a waiver begins when an Applicant requests a waiver in writing in the form of a cover letter, sent to the Division of Planning, stating reasons for the request and providing supporting diagrams or information to support the argument for obtaining a waiver from a County standard.

Waiver requests shall include a narrative statement from a licensed professional planner, engineer, surveyor or architect as appropriate indicating the reasons for deviation from the standard. Such narrative shall incorporate an analysis of each standard from which the waiver is sought along with an opinion as to the effect of any waiver on public health, safety and welfare with particular emphasis on the impact of the proposed development on usage of the County road or facility by motorists, cyclists and pedestrians.

That request is then reviewed by Planning and/or Engineering staff and scheduled to be heard by the Planning Board. The engineering reviews are sent to the Applicant and board members prior to the Planning Board Meeting. This procedure can take over a week, and the Applicant should be aware of the deadline imposed by the planning division before waivers can be placed on the agenda.

The Board shall consider all waiver requests including all reports and recommendations from Board professionals. Matters deemed relevant by the Board (e.g. character of adjacent land use, proposed land use, actual and statutory speed limits, road geometry, location within or without a center identified in the Sussex County Strategic Growth Plan as amended, and the degree to which the standard is to be waived) shall constitute the basis for action on a waiver request. The Board shall make its determination, setting forth its findings and conclusions by resolution.

Wherever in these Standards reference is made to acceptance or approval by the County Engineer of a proposed amendment or alternative to any design standard specified herein, the request to the Engineer for such amendment or modification shall comply with the requirements of this waiver procedure, and the Engineer’s acceptance or approval shall not constitute a waiver, but it shall be reported to the Board for its consideration as provided above.

At the developer's request, and for good cause shown, the County Engineer shall have the discretion, after the Board has granted preliminary or final approval, to grant minor "field changes" to address unanticipated conditions arising at the time of actual construction.

G. PERFORMANCE GUARANTEES AND OTHER PAYMENTS

Performance Guarantees or Posting of a bond may be required as described in the ordinance in the Appendix, IX - A.7.

1. After approval of an application and prior to construction (or filing of a final plat) the Applicant must submit to the County Planning Board performance guarantees to insure the construction of all physical improvements as may have been required by the County Planning Board's approval. After acceptance of such improvement(s) the applicant shall provide a maintenance bond which shall remain in effect for not more than two years from the date of such acceptance.

2. The amount of performance guarantees and maintenance bonds, together with the amount of the applicant's payments in lieu of construction of County road, bridge or infrastructure improvements, and the applicant's proportionate share of the costs of future installation of same shall be provided by the Applicant's engineer for review and approval by the County Engineer. After review and approval by the Count Engineer the estimates shall be provided to the County Planning Board for its review and consideration for acceptance. Such estimates shall include the costs of all improvements and infrastructure required by the approval, and at a minimum shall include the costs of all proposed work items within the county right-of-way and traffic maintenance costs. The amount of Performance Guarantee and Maintenance Bond for shade trees along County roads (when applicable) shall follow the same procedure.

3. Performance Guarantee and Maintenance Bonding shall be provided in conformance with the Sussex County Policy entitled "Procedure Governing Bonding Requirements for Division of Engineering Permits and Sussex County Planning Board Approvals" adopted by the Sussex County Board of Chosen Freeholders on August 23, 2006, as amended. Non-cash bonds must be reviewed and approved as to form by County Counsel prior to approval of the associated development application.

4. Performance Guarantee and Maintenance Bonding shall be provided as needed to concurrently satisfy requirements of the planning application process as well as conditions set forth within Road Opening or Access Permits issued by the Sussex County Division of Engineering. Release shall require acceptance by the County Engineer confirming that all obligations have satisfactorily been met by the Applicant.

5. The Performance Guarantee shall be retained until all improvements have been completed to the satisfaction of the County Engineer and the County has received as-built plans for the improvements, and has formally accepted the improvements.

6. In cases where the County has a capital improvement project scheduled which would encompass the required infrastructure modifications and the county project has been funded within the County's 5-year Capital Improvement Program, the county may accept a contribution of monies in lieu of all or part of the improvements mandated by the Land Development Standards and/or required by the County Engineer from the Applicant. In instances when the County accepts a contribution in lieu of improvements, the approval of a subdivision or site plan shall be further conditioned on the receipt of such contributions in the form of a Certified Check made out to the "Treasurer, County of Sussex", and deposited in an account reserved for such improvements.

7. Fair Share Financial Contributions: At the written request of the applicant the County may accept a proportionate share contribution toward the cost of constructing capacity improvements of infrastructure attributable to the proposed development. These improvements may include roadway and structure widening, intersection improvements, and structures.

   a. Alternately, the County may require the Applicant to construct the improvement at the Applicant's expense and under County supervision as follows:

      i. Those improvements which are made necessary by the new development shall be entirely the Applicant's responsibility and not considered in the fair share determination. Examples of these improvements would include acceleration lanes, deceleration lanes, left turn lanes and traffic signals located at the Applicant's access point.

      ii. Those improvements or amenities intended or needed to facilitate the desirable safe operation of an infrastructure system shall be entirely the Applicant's responsibility and not considered in the fair share determination. Examples of these improvements and amenities would include things such as, pavement crosswalks, lane markings, signs, walkways, bikeways and shoulders.

   b. The fair share proportion at a location shall be the Mitigation Costs multiplied by the Contribution Factor (Mitigation Costs)x(Contribution Factor), determined as follows:

      i. Contribution Factor: Based upon system capacity impacts:

         (1) Transportation Contribution Factor = $\frac{ADTp}{ADTe + ADTp}$

Where: ADTe = existing two way ADT
ADTp = project generated ADT (two-way, no splits)

         (2) Stormwater contribution factor shall be computed on the basis of the applicant's acreage as a proportion of the total acreage of the drainage basin involved plus 10% for contingencies, in accordance with N.J.S.A. 40:27-6.2.

         (3) Impacts to facilities not governed by ADT or stormwater, including but not limited to pedestrian access, shall be handled by the County on a case-by-case basis. The County will generally follow the formula:

Contribution Factor = $\frac{X_D}{X_D + X_E}$

Where: X_D = Additional quantity resulting from proposed development

X_E = Existing quantity

ii. Mitigation Costs: Costs reflective of the entirety of the required improvements, including:

(1) Design and permitting
(2) Right-of-way acquisition
(3) Construction
(4) Construction Management

c. When the County has accepted a fair share contribution in lieu of completion of the identified improvements the following condition shall apply to the approval:

i. Improvements needed to offset negative impacts to the public health and safety MUST be completed prior to commencement of any development activities related thereto. No development activity shall commence until such time as the required infrastructure improvements have been completed. When the Applicant opts, with the County's consent, to contribute a proportionate share contribution in lieu of completion of the required upgrades or improvements the Applicant accepts and understands that commencement of the proposed project is contingent upon completion of said upgrades or improvements. Additionally, the Applicant accepts and understands that projects programmed into the County Capital Project Improvement Program schedule are contingent upon completion of required project design and permitting as well as predicated upon availability of project funding. As such, although the County may have the project scheduled into the Capital Project Improvement Program, completion dates are subject to modification reflective of actual time frames for design and permitting process and the allocation of adequate funding.

ii. At the Applicant's request and sole expense, the County will consider allowing the Applicant to design and construct required infrastructure improvements under County supervision in advance of a planned capital improvement.

8. Contributions shall only be considered by the County when:

i. There is a reasonable expectation by the County that the programmed capital project will be completed within a 5 year period.

ii. Postponement of the infrastructure improvements will not jeopardize public safety or welfare.

Any improvement not meeting the above parameters shall be installed by the Applicant prior to completion of the proposal.

9. The County Treasurer shall provide a suitable depository for the following described kinds of monetary transactions with the County:

   a. Proportionate Share Infrastructure Payments - Proportionate share of infrastructure payments shall be made payable to the "Treasurer, County of Sussex" and shall be submitted to the County Planning Board for record and transmittal to the County Treasurer. Such funds shall be used only for the specified County improvement unless such project is not initiated for a period of ten (10) years, pursuant to N.J.S.A. 40:27-.2, at which time those funds for each specific project reaching that time limit shall be transferred to the general fund of the County, provided that no assessment by the County for such facilities shall be thereafter levied against the owners of the land upon which the Applicant's prior contribution has been based.

   b. Performance Guarantee Payments - Shall be in conformance with the Sussex County Policy entitled “Procedure Governing Bonding Requirements for Division of Engineering Permits and Sussex County Planning Board Approvals” adopted by the Sussex County Board of Chosen Freeholders on August 23, 2006, as amended. Performance Guarantee payments shall be made payable to the "Treasurer, County of Sussex" and shall be submitted to the County Planning Board, with referral to the County Engineer, and transmission to the County Treasurer. Such payment shall be based upon and submitted with the written statement by the County Engineer that specifies the applicable construction standards for the required improvement.

   c. Maintenance Bonds - Maintenance Bonds shall be in conformance with the Sussex County Policy entitled “Procedure Governing Bonding Requirements for Division of Engineering Permits and Sussex County Planning Board Approvals” adopted by the Sussex County Board of Chosen Freeholders on August 23, 2006, as amended. All payments and bonds shall be submitted to the County Planning Board, referral to the County Engineer, and Transmittal to the County Treasurer.

   d. All performance and maintenance payment and bond forms shall be approved by the County Planning Board Attorney and/or by County Counsel.

10. Guarantees shall not duplicate Municipal Bonds. Any monies or guarantees received by the County under this paragraph shall not duplicate bonds or other guarantees required by Municipalities for Municipal purposes.

11. All work within a county right-of-way must be bonded with the County; bonds or guarantees held by Local Governments will not be accepted for work items within or impacting a county right-of-way.

12. Release of Performance and Maintenance Bond Guarantees

    Regarding releasing of bonds, refer to the Department of Engineering and Planning Administrative Procedure entitled, “Procedure Governing Bonding Requirements for

Division of Engineering Permits and Sussex County Planning board Approvals" in Appendix, Chapter IX - A.7

V - DESIGN STANDARDS

A. GENERAL

1. All developments subject to County jurisdiction pursuant to the County Planning Enabling Act, N.J.S.A. 40:27-1 et seq., which adjoin, include, or impact County roads, County bridges or other structures, or County drainage facilities shall be designed in accordance with the standards and requirements set forth in this Ordinance.

B. IMPROVEMENTS

1. The County Planning Board, upon recommendation by the County Engineer, shall require developments to include physical improvements for the safety and convenience of the traveling public Improvements shall include but are not limited to: the dedication of additional rights-of-way for roads or drainage-ways, adequate drainage facilities and easements, additional pavement widths, grading of rights-of-way, curbs, sidewalks, crosswalks, bicycle facilities, shade trees, soil erosion and sediment control, stream protection, stormwater management, marginal access streets, reverse frontage, off-street parking facilities, plus on or off tract highway and traffic safety improvements necessary to correct potential traffic and safety hazards which would be created by an increase in traffic volumes or impediments to traffic flows caused by the development

2. Off tract improvements will be required by the County Planning Board to remediate any degradation of service or negative impact to county roads or county drainage facilities resulting from the proposed development or subdivision.

3. Appropriate traffic calming facilities and techniques shall be incorporated into all designs. Designs should be tailored to promote conformance with target operating speeds which have been deemed safe and appropriate by the Sussex County Planning Board for adjacent land use Transect Zones as described herein.

C. ACCESS STANDARDS

1. General: The following design standards shall govern design of any existing or proposed roads, streets or driveways or other access connecting with any County road system. Sussex County Standard Design & Construction Details are included in Appendix C.

2. Roadway Type Classification: Roadway Type Classification describes both the function and the character of a roadway. The two primary classifications used within this manual include:

   a. Functional Classification: Roadways function as arterials, collectors, or local streets. A Functional Classification Map is available for reference on the County Web Site. A roadway of a specific functional classification may contain various transect segments dependent upon the environment through which the roadway traverses.

   b. Character Classifications: (Transect Zones) Transects are a system of ordering human habitats in a range from the most natural to the most urban. There are six Transect Zones (T-Zones) which describe the physical character of place at any scale according to the intensity of land use, as determined by the Smartcode model integrated development code. Land use types are of somewhat lesser importance in T-Zones. The County has adapted the Transect-based planning descriptions from the Smartcode. The design elements and criteria in this manual have been correlated to the T-Zone through which a road runs. The variation of standards according to the T-Zones will balance the needs of travelers with the needs of the community, thereby producing an optimal human environment. For example, design elements applicable to a T-5 or T-6 transect zone emphasize pedestrian safety and mobility. Transect Zones are defined as follows:

      i. T-1 Natural Zone: Consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology or vegetation. An example of this zone would be County Route (CR) 650, Deckertown Turnpike, located within the Highpoint State Park. Generally speaking, transect zone T-1 is rare for Sussex County Roads and will not apply to development review applications.

      ii. T-2 Rural Zone: Consists of open space, farmland, or generally sparsely settled areas. Access densities will generally be at or below 15 access points per mile. Examples of these environments would include CR 642, CR 521 north of SR 206 and most of CR 635 south of CR 637.

      iii. T-3 Sub-Urban Zone: Consists of low density residential subdivisions with possible retail and public use. These are typically the newer developed areas with residences situated on large lots with increased access spacing. Often access densities will be found in a range of 20 to 30 access points per mile. Marginal roads and reverse access roads are often incorporated into the development schemes. An example of this would include CR 626 between CR 519 and SR 206.

      iv. T-4 General Urban Zone: Includes various residential, commercial and public uses, possibly intermixed. Residential uses are typically developed on smaller lots which are generally less than one acre in size. In Sussex County this would include the typical “Lake Community”. This transect zone will often include pedestrian facilities and activity. The areas will have high access densities often between 30 to 50 access points per mile. Examples

would include CR 613 between the Plaza and CR 671, CR 607 between SR 206 and CR 605, CR 669 just north of the intersection with CR 616, CR 622 within the Town of Newton and again in the village of Swartswood and CR 639 south of the Sussex Airport.

v. T-5 Urban Center Zone: Consists of mixed use building types that accommodate retail, offices and apartments with compact site plans. In Sussex County they will include our more traditional villages such as can be found in the Borough of Branchville in addition to more isolated commercially developed areas. T-5 segments of County Roads represent existing or planned "Main Street" or village environments and include many of the following features: small lots, minimal building setbacks, adjacent sidewalks, on street parking, and streetscapes that encourage pedestrian movements. They will have a high access density along the roadway frontage, often between 50 to 75 access points per mile. Examples would include; CR 616 in the Township of Andover, CR 613 near the Mohawk Plaza, CR 630 in the Borough of Branchville, CR 607 between River Styx Bridge and CR 602, CR 517 in the Borough of Ogdensburg, CR 560 in Layton between the Sandyston Twp. Elementary School and CR 614, and CR 639 north of the Sussex Airport.

vi. T-6 Urban Core: these are the most vibrant urban places with the greatest variety of mixed use buildings. T-6 zones generally have continuous visually interesting building facades that transform a street into a true public space. This ambiance, sometimes referred to as a "Streetscape", will include common Center amenities such as minimal building setbacks, walking distance between buildings, sidewalks, on street parking, street furniture such as decorative lampposts and public seating; and a strong sense of place. All movement must feel at home to the pedestrians, such that movements of vehicles can be a steady flow, but be compatible with a walking pace. In Sussex County, T-6 zones are small, such that even a 1000 foot length is reasonable. The Town of Newton has localized sections bordering between the T-5 and T-6 Transect zones.

vii. SD: Special Districts: Includes sections of County Routes not contained within the previous transect zones or those sections specifically defined by the County as having other requirements or alternate importance. This would include restricted access sections of County Routes in which access densities are typically below 10 access points per mile. Examples would include the CR 517 bypass and CR 565 between SR 206 and Lynn Smith Road.

While these T-Zones are found to be intuitively recognizable, streets will be officially assigned with T-Zones by County staff in the development of its Circulation Plan, or with new applications if needed. Note that T-Zones are NOT determined for each individual lot, but rather determined by the character of the neighborhood, with the character of the proposed development being taken into strong consideration.

Figure V.C.1—Illustration of a gradient development pattern related to the various Transect Zones

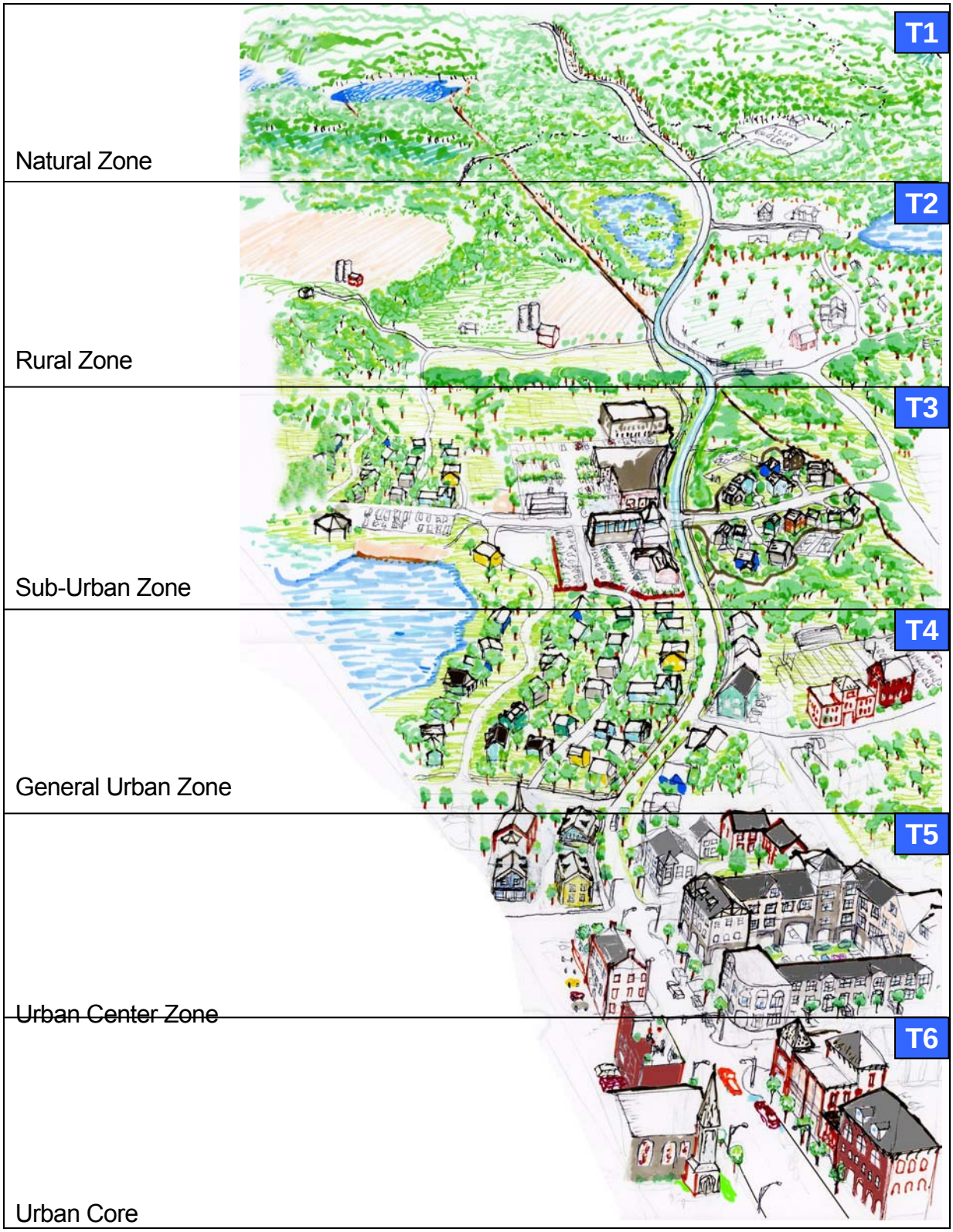


Figure V.C.2—Photographic Examples of Transect Zones

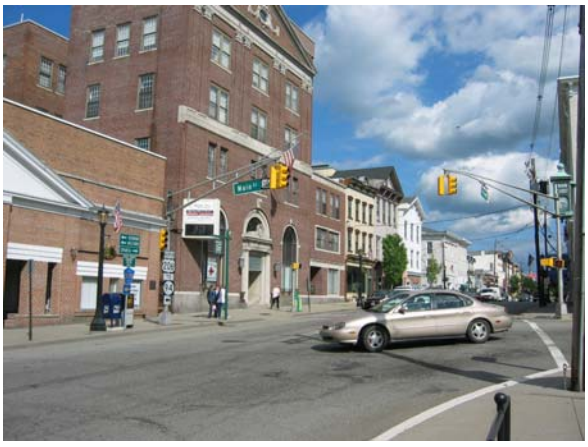
T-1: Natural Zone

T-2: Rural Zone
CR 650 in Montague

T-3: Sub-Urban Zone
CR 616 in Andover Twp.

T-4: General Urban Zone
CR 630 South of Branchville

T-5: Urban Center Zone
Branchville Center



T-6: Urban Core Zone
Downtown Newton

3. Speed: The County has investigated numerous reference sources and collaborated with other governmental agencies in developing a policy on establishing appropriate design speeds. Design speed impacts numerous roadway design elements and has a potential to reinforce a desired operating speed. From the standpoint of highway safety, a stronger relationship between the posted speed, design speed and operating speed is desired.

   a. Definitions specific to Speed

      i. Design Speed: The speed selected to determine the various design elements of a roadway.

      ii. Desired Operating Speed or Target Speed: The desired operating speed is the speed of traffic that, in the opinion of the highway designer and planner, best reflects the function of the roadway and the surrounding land use

      iii. Posted Speed: The legal speed limit on the roadway, typically not self enforcing.

      iv. Operating Speed: the speed at which a vehicle is observed to operate along the roadway typically measured at the 85th percentile speed.

      v. 85th Percentile Speed: The speed at which 85 percent of the roadway users are traveling at or below. Alternately, this is the speed at which 15 percent to the drivers are exceeding.

      vi. Pace Speed: the 10 MPH speed range within which most drivers travel, typically found to include 70 percent (70%) of all drivers and the 85th percentile speed.

   b. Design speeds utilized within these standards shall be in conformance with one of the following:

      i. The observed 85th percentile speed plus ten percent (10%) will apply where such data is available. The County maintains 85^{th} percentile data along various county routes and the County Engineer will determine applicability of this data to specific applications. When 85^{th} percentile data is available, the Applicant may verify and/or provide data more specific or current to a project location. 85^{th} percentile studies shall comply with the following minimum guidelines:

         - Radar or pneumatic road tube data collection.
         - Minimum of 100 vehicles for each direction.
         - Favorable weather conditions
         - Weekday, off peak (9:00 a.m. to 4:00 p.m.)
         - Free Flowing traffic via a platoon gap of 8 seconds
         - Unmarked vehicle data collection
         - Submit with report, Map of location, data, worksheet calculations,
         - NJDOT has data collection sheets available.

         Data shall be submitted to the County Engineer for review and acceptance, or

      ii. If there is no 85th percentile data available the design speed shall be based upon the legally posted speed adjusted in conformance with the following:

(1) Posted speed of 30 MPH or below: Use posted speed
(2) Posted speed of 35 or 40 MPH: Use posted speed plus 5 MPH
(3) Posted speed of 45 MPH or above: Use posted speed plus 10 MPH
(4) Unposted section of roadway: 50 MPH plus 10 MPH

iii. In order to improve safety, especially to users of non-motorized transportation, such as in Centers, residential areas, and roads with designated bicycle lanes, a Desired Operating Speed may be used if permitted by the County Engineer. The design speed may in limited situations be defined, also constrained by posted speeds, according to specific Transect Zones as outlined in the following table:

Table V.C.1 - Desired Operating Speeds
MPH (See Notes 1,2)

Transect Zone:	T-1,T-2 (Natural)	T-3 (Rural)	T-4 (Sub-Urban)	T-5 (General Urban)	T-6 (Urban Core)
Arterial	Up to 50	35-45	30-35	30-35	25
Collector	Up to 50	35-45	30-35	30-35	25
Local	Up to 50	30	25-30	25	25

Notes:

(1) The Desirable Operating Speed shall have the same adjustment factors as defined under 3.b.ii above.

(2) In no case should the design speed be selected below the legally posted speed limit. Use of a design speeds as contained within the Desirable Operating Speed table below the legally posted speed cannot be permitted until such time as a speed survey is completed in accordance with the requirements of and certified by NJDOT Traffic Engineering and Safety as required to adjust the legally posted speed along the county route.

4. Standard Design Elements: Below are guidelines in preparing a geometric design, however, deviations may be necessitated from time to time due to the many variables encountered in the course of preparing a design. The Applicant should be aware, therefore, that although the intersection layout may conform to these guidelines, The County Engineer may find that conditions dictate deviations in order to safeguard the public. The County Planning Board may consider any such recommendation of the County Engineer in making it's decision on an application. The County Engineer may approve design modifications which deviate from the standards contained herein provided the modifications will not degrade the underlying safety to the public. The Applicant shall provide verification data which demonstrates the design can safely accommodate the design maneuver. AASHTO turning templates for the design vehicle shall be used to demonstrate the adequacy of the design. Design vehicles shall not encroach into other lanes or impede the safe flow of traffic.

   a. Standard Design Vehicles

      i. Residential Access: AASHTO Type "P" vehicle.
      ii. Multi-Family Residential Access: AASHTO Type "SU" vehicle.

iii. Commercial Access: AASHTO Type "SU" vehicle, unless proposed facility warrants use of a larger design vehicle. Facilities serviced by larger vehicles shall be designed for the AASHTO Type "WB-62" with a regular cab tractor, unless the Applicant verifies that an alternate design vehicle is applicable.

iv. Street Access:

(1) Residential: AASHTO Type "SU" vehicle, the design shall be configured to accommodate larger vehicles (AASHTO "WB-50") within the pavement area.

(2) Streets in Centers with a Pedestrian Realm, provided that trucks are directed towards alternative route(s) such as loading alleys and/or a truck route: Type "P" vehicle. Such alternative route(s) for trucks shall accommodate WB-62 vehicles as per paragraphs iii above or iv(3) below.

(3) All other: AASHTO Type "WB-62" vehicle with a regular cab tractor

b. Access Alignment: The angle of intersection shall be measured at the intersection of the centerline of the intersecting access with the centerline of the County Route. The geometric design of an intersection connecting to a County Route should be governed by sound traffic engineering principles. Unless otherwise approved by the County Engineer, all accesses shall intersect the County Route in conformance with the following:

i. Two-Way Operation: Access points used for two-way operation will intersect the County Route at an angle as near to ninety (90) degrees as site conditions will permit. No exception will be granted for less than sixty (60) degrees.

ii. One-Way Operation: Access points used by vehicles in one (1) Direction of travel (exit only) shall intersect at an angle to as near ninety (90) degrees as site conditions will permit. No exception will be granted for an angle smaller than forty-five (45) degrees with a County Route.

iii. Or radial, in the cases where the roadway alignment is a horizontal curve.

iv. All access point angles shall be noted on the design plans.

c. Roadway Width and Corner Radii

i. Streets: All proposed roads shall have intersections with county roads designed in accordance with the current AASHTO standards as noted and modified in the Table V.C.2. The table is representative of the design parameters used for ninety (90) degree intersections, other angles may require adjustment to provide safe access movements. Lane and Shoulder widths shall reflect design values for actual ADT and Design Speed.

Table V.C.2 – Edge-of-Traveled-Way Designs for Intersections (See Note 3)					
All Transect Zones Except as Noted Below - Angle of Turn: 90 Degrees					
Design Vehicle[1]	Width (feet) Minimum Lane/Shoulder[2]	Simple Curve Radius (feet)	Simple curve radius with taper		
			Radius (feet)	Offset (feet)	Taper H:V
P	11/4	30	20	2.5	10:1
SU	11/4	50	40	2.0	10:1
WB-40	11/4		45	4.0	10:1
WB-50	11/4		60	4.0	15:1
Transect Zones T-5 or T-6 - Angle of Turn: 90 Degrees					
	Travel Lane/Shoulder (feet)	On-Street Parking lane on Main Street	On-Street Parking lane on Side Street	Radius (feet)	
P	13	0	0	15	
P	13	0	8	10	
P	12	8	8	5	
SU	13	0	0	45	
SU	12	8	0	40	
SU	12	8	8	15	

(1) At minimum, all intersections to county routes shall be designed in accordance with the SU design vehicle standard. When bus or truck traffic from the minor street exceeds five percent (5%) of the total traffic from the minor street, curb radii shall conform to the critical turning radius of the design vehicle.

(2) Lane and Shoulder width variations are possible as noted within other sections of these standards. Modification to lane, Shoulder or Parking Dimensions will require supporting data by the Applicant verifying modifications to the radii provide for the safe flow of traffic through the intersection. Refer to Section O "Road Improvements" for more detail.

(3) County Route widening at proposed intersections (shoulders and as applicable, lanes) shall be designed to comply with the dimensions provided in Section O, "Road Improvements".

ii. Driveways:

(a) The County has jurisdiction over driveways within the limits of it's right-of-way; however, the County is not responsible for maintaining driveways.

(b) The dimensions of driveways shall be designed to adequately accommodate the volume and character of vehicles anticipated to be attracted daily onto the land development for which a site-plan is prepared. Table V.C.5 contains the maximum and minimum dimensions for driveways connecting to a County road at ninety (90) degrees. Driveways serving large volumes of daily traffic or traffic over twenty-five (25) percent of which is truck traffic shall be required to utilize high to maximum dimensions. Driveways serving low daily traffic volumes or traffic less than twenty-five (25) percent of which is truck traffic will be permitted to use low to minimum dimensions.

(c) Curb return radii included in Table V.C.5 are specific to the indicated lane configurations. Applicants shall submit design data supporting radii tailored to a specific design. The County Engineer will consider

and may accept modifications of the return radii shown under certain circumstances, for example, left-turn-in curb return radii may be reduced when entrance ways are designed for one way traffic flow. The following must be provided for review and evaluation of reduced or modified curb radii:

(i) Curb returns must be designed to accommodate the safe and efficient flow of traffic through the proposed intersection specific to the design vehicle.

(ii) Radii shall be consistent with the design vehicle swept path buffered by at least 2 feet. The Applicant shall provide verification data which demonstrates the design can safely complete the Design Vehicle maneuver. AASHTO turning templates for the design vehicle shall be used to demonstrate the adequacy of the access point.

(d) Restricted Movement Access points (right-in right-out) shall include design elements tailored specifically for the intended design vehicle. These access points shall at minimum:

(i) Include restrictive widths and sweep curves intended to deter unpermitted and unintended movements.

(ii) Include concrete vertical curb.

(iii) Include proper signage.

d. Vertical Alignment:

i. Any vertical curve on a driveway shall be flat enough to prevent the dragging of any vehicle undercarriage. The profile dimensions given beyond the sidewalk are maximum for grades and minimum for grade lengths, if Municipal gradients are less they shall apply.

ii. Should the sidewalk be so close to the curb at a depressed curb driveway as to cause the ramp to be too steep and be likely to cause undercarriage drag, the sidewalk shall be appropriately lowered to provide a suitable ramp gradient.

iii. Approach Grades:

(a) All development streets or non-residential intersections with a County road shall be designed so that the grade of the access does not exceed two percent (2%), either negative or positive, for a distance of 100 feet measured from the County Route existing/future right-of-way line. For good cause shown the County Engineer may adjust an access grade not to exceed three percent (3%) for a distance of 50 feet behind the proposed stop bar.

(b) All residential driveways servicing four (4) or less residences shall be designed so that the grade of the driveway does not exceed two percent (2%), either negative or positive, for a distance of 25 feet measured from the edge line of the County road. Residential

accesses serving more than four (4) residences shall be designed in accordance with non-residential standards above.

e. Wearing Surface and Pavement Box:
   i. All Streets and driveways shall be paved in accordance with Municipal standards and Sussex County Standard Design & Construction Details.
   ii. All access points shall be paved in accordance with Municipal standards. Residential access points shall at minimum provide an asphalt wearing surface extending a minimum of 25 feet from the edge of the County Route asphalt. Paving shall not alter the drainage patterns along the county route.
   iii. All intersections exceeding a 20 vehicle Average Daily Traffic count (ADT) shall be paved to the finish grade top course no less than 100 feet from the edge of the county road extended as needed to provide a fully functional drainage system such that there are no drainage impacts to the county road. Extensions shall, at minimum, include the high point of the vertical roadway alignment sloping toward the county road.
   iv. Pavement box configuration shall be in conformance with Municipal standards or at minimum provide a 3 inch dense graded aggregate subbase and 2 inch asphalt wearing surface.
   v. Shoulder pavement shall be replaced such that new asphalt includes the area beginning at the existing white edge line extending into the driveway.
f. All accesses shall be designed with on-site turnaround.

5. Access Location Management: The standards in this subsection are to be used by the site designer to weigh considerations when locating new access driveways. Properties that are too small to accommodate the access spacing defined in this subsection shall not require an access spacing waiver provided the access location selected optimizes safety of the traveling public. When this situation occurs it is strongly recommended that an Applicant meet with the County prior to advancing designs.

   a. Permitted Access Points:
      i. Access Points: Unless otherwise approved by the Planning Board only one access point shall be permitted for each site plan or subdivision with frontage along a County road.
         (a) Redevelopment of existing properties are subject to consolidation of multiple access points unless otherwise approved.
         (b) All proposed lots of a subdivision shall provide indirect access through use of marginal or reverse frontage roads.
   b. All plans and deeds of perfection shall include the following notation unless otherwise approved by the Sussex County Planning Board: “The County Engineer shall issue no permits for direct access to the county road other than those approved by this application from any of the lots of this subdivision or subsequent subdivisions thereof”

c. No new access point shall connect on the following portions of a County road; a rotary; a ramp of an interchange; within 250 feet of the beginning of any ramp or other portion of an interchange, signal or street intersection.

d. Future traffic volumes shall be considered in determining acceptable access criteria for all locations. Traffic projections shall be based upon a minimum duration of 10 years. Growth rates shall be in conformance with NJDOT standards for the County, currently 2 ¼ percent per year. By no means shall the growth rate be less than observed County census data growth rates or those identified in the County Transportation Master Plan.

e. Traffic Generator Classifications:

   i. Minimum Use Generator: a single family residence or other activities which will generate less than 50 vehicle trips per day or five (5) peak hour trips.

   ii. Minor Use Generator: A use generating between 50 and 1,000 vehicle trips per day or less than 120 peak hour trips.

   iii. Major Use Generator: A use generating in excess of 1,000 vehicle trips per day or more than 120 peak hour trips.

   iv. Signalized Generators: Generally, signals would be required for use exceeding 5,000 vehicle trips per day or 500 peak hour trips. Other warrants may necessitate the need for a signal installation. Ultimately, installation of a signal will be at the recommendation of the County Engineer as may be deemed appropriate and required to adequately protect the safety and welfare for users of the transportation system and adjacent infrastructure.

f. Access Category as Keyed to Roadway Type: The County has adopted the national standard of keying access to roadway classification. This standard will only include those levels related to the County Road system. Access Category:

Table V.C.3– Access Categories Keyed to Roadway Type

Access Level	Roadway Classification	Direct Property Access (a)(c)	General Design Features
4	Minor Arterial	Restricted (b)	Multi-Lane Median may exist (b)
5	Major Collector	Yes	Multi-Lane
6	Minor Collector	Yes	Multi-Lane
7	Rural Local	Yes	Multi-Lane

(a) Access shall be limited to no more than one full access point as per item a above in this subsection, any proposal with multiple access locations including restricted movement (right-in and right-out) access, will require a waiver from the Sussex County Planning Board.

(b) Access along divided sections of County Routes shall be limited to restricted movement access (right-in and right-out), no left turn access shall be permitted.

(c) Whenever possible access shall first be provided from secondary roads and reverse frontage roads as per item a above in this subsection

g. Access denial criteria: Access will generally be denied under the following circumstances:

i. When reasonable alternative access can be provided from a roadway with a lower classification.
ii. When the denial does not significantly compound problems at nearby intersections of public roads.
iii. When the access is located within the functional boundary of an adjacent intersection.
iv. When the denial does not undesirably increase travel on residential streets or through neighborhoods.
v. When the proposed access does not meet spacing requirements.
vi. When the proposed access cannot meet design or safety requirements.
vii. When the proposal calls for more than one access per existing land parcel or contiguous parcels with less than 200 feet of frontage.
viii. When the access cannot provide safe levels of sight distance.

h. Location:

i. Access Curbline Spacing standards will be used to determine the minimum acceptable spacing between access points along a curbline as defined within table V.C.4 – Non-signalized Access Spacing.
ii. Access Point Offset - Consideration shall be given to the location of existing access points along the opposite side of the County Route. Where the access point does not connect with the County Route opposite an existing access point, the proposed access point shall be offset from the existing point by:
    (a) Major Generators: Major generators shall maintain 400 feet between access centerlines. Major generator shall maintain at minimum 300 feet centerline separation between all other access points.
    (b) Minor Generators shall maintain at minimum 200 feet between all other access points unless otherwise required.
    (c) Minimum use generators shall maintain at minimum 150 feet between all other minimum use generators.
    (d) Residential driveways are encouraged to be within 25 feet of a residential driveway on an adjacent property, measured between centerlines, as such a pair of closely spaced residential driveways is considered to be a “common access point”.
iii. Access Type:
    (a) Access along divided sections of County Routes shall be limited to restricted movement access (right-in and right-out), no left turn movements shall be permitted.
    (b) If an undivided highway becomes divided left-turn access shall be subject to closure.
iv. Driveways located along the same side of a County Route shall comply with the following minimum spacing standards contained in Table V.C.4– Nonsignalized Access Spacing:

Table V.C.4– Nonsignalized Access Spacing (feet)			
Access Level	Type of Generator		
	Minimum	Minor	Major
4	4 to 5 x DS (a)	7 to 8 x DS	9 to 10 x DS
5	3 to 4 x DS	5 to 6 x DS	7 to 8 x DS
6	2 to 3 x DS	4 to 5 x DS	5 to 6 x DS
7	2 to 3 x DS	3 to 4 x DS	4 to 5 x DS

(a) DS: Roadway Design Speed

(b) Bottom of Range should be applied to lower ADT accesses and upper should be applied toward ADT is the upper ranges

(c) Refer to Nomograph in Appendix F

6. A table of general design element requirements is shown below:

Table V.C.5– Standard Design Elements Non-Street Intersections (all distance measurements are in feet)					
One-Way Operation					
Driveway Type	Width	Depressed Curb Flare [1]	Curb Return Radii [1,3]	Sight Triangle	Approach Grade
Residential	12 min 15 max	3	5 min 15 max	Na	+/- 2% for 25 feet
Multi Family Residential	15 min 18 max	3 min 5 max	35 std	60x300 (4)	+/- 2% for 100 feet
Commercial	15 min 20 max	3 min 5 max	35 min 45 max	60x300 (4)	+/- 2% for 100 feet
Two-Way Operation					
Residential	12 min 15 max	3 min 5 max	5 min 15 max	Na	+/- 2% for 25 feet
Multi Family Residential	22 min 32 max	3 min 5 max	35 std	60x300 (4)	+/- 2% for 100 feet
Commercial	24 min 36 max	3 min 5 max	35 min 45 max	60x300 (4)	+/- 2% for 100 feet

(1) Depressed Curb Flares can be used in town center areas and as approved by the County Engineer along other curbed County Routes. All other designs shall include curb return radii unless otherwise approved by the County Engineer.

(2) Driveways connecting to a County road at an angle other than ninety (90) degrees shall have the same widths as shown in the Table above. The width of depressed curb and the radius of curb returns shall provide for the sharpest turning radii of vehicles using the driveway, keeping said vehicles within their prescribed lanes.

(3) Refer to Table V.C.2 for alternate radii correlated with various context areas. Variations in lane widths or Curb Return Radii must be supported by the Applicant with turning template data, refer to section V.C.4.c for submittal requirements.

All Applications must be supported by turning template data verifying proposed design.

(4) Streets designated as T-5 or T-6 may use V.C.D.2.d. Streets in T-4, T-5, or T-6 zones with on-street parking may conform to Figure V.D.1.

D. EASEMENTS

1. In addition to the rights-of-way dedications required under "DEDICATION AND RESERVATION OF ROAD RIGHT-OF-WAY" in section V.I of this Ordinance, easements shall be dedicated to the County of Sussex or other entity/person as noted herein.

2. Sight Triangle Easements (refer to Figure V.D.2) shall be provided to the County based upon one of the following categories;

   a. Where any street intersects a County road, 90 feet back on the collector or minor and 300 feet on the arterial.

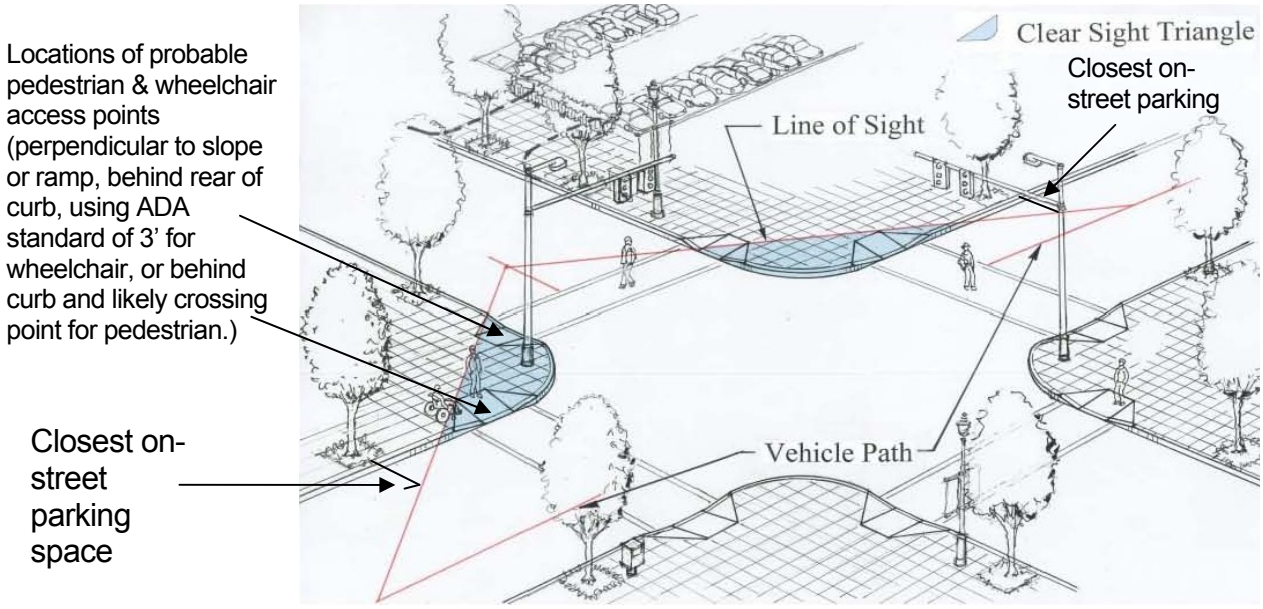
   b. When an arterial road intersects an arterial road and either road is in the County road system, two overlapping sight triangles shall be required, formed by 300 feet and 90 feet on each arterial road.

   c. Sight triangle easements measuring 60 feet back on the access point and 300 feet along the county route centerline shall be provided to the property owner for all non-residential or multi family residential access points.

   d. Within Transect Zone T-5 and T-6, sight triangle easements measuring 15 feet along the minor street offset from the curb line for access points, and a length equal to the design speed stopping sight distance along the county route centerline shall be provided to the County for all non-residential or multi family residential access points, provided that pedestrian accesses onto crosswalks are included in such triangle, as shown in Figure V.D.1. Note that an additional sight line(s) may be needed for pedestrians accessing a crosswalk onto a street without a stop control.

   e. Sight Triangle easements shall be cleared and graded to prevent sight obstructions by connecting points 2 feet above the County highway and the intersecting street prior to Access Permit approval or approval of the Final Plat or Final Site Plan. Refer to Standard Detail SC-3 in Appendix C.

Figure V.D.1 -- Sight Triangle with On-Street Parking in T-4, T-5, and T-6



Credit for illustration:
Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, Institute of Transportation Engineers
(parallel parking lines & notation added by Sussex County Division of Planning)

3. Sight Distance Easements (refer to diagram V.D.2) are required from adjacent property owners when required sight line traverses outside the Applicant's property over adjacent properties.

   a. Sight distance easements shall be cleared and graded to prevent sight obstructions in accordance with the sight distance details.

   b. All easements shall be cleared prior to Access Permit approval or approval of the Final Plat or Final Site Plan. Refer to Standard Detail SC-3 or a similar diagram.

   c. Sight Distance Easements shall be dedicated to the County, unless the sight easement is for the benefit of an access for one to four single family residence(s), in which case the Sight Distance Easements shall be dedicated to the owners of the lots of said residence(s).

4. Sight Triangle and Sight Distance Easements shall comply with the following:

   a. Clearing of all easements shall include removal of all tree stumps unless otherwise approved by the County Engineer.

   b. Slope easements shall be provided in conjunction with Sight Triangle or Sight Distance easements in cases where grading outside the sight easement is required to provide and maintain clear sight lines through the sight easement.

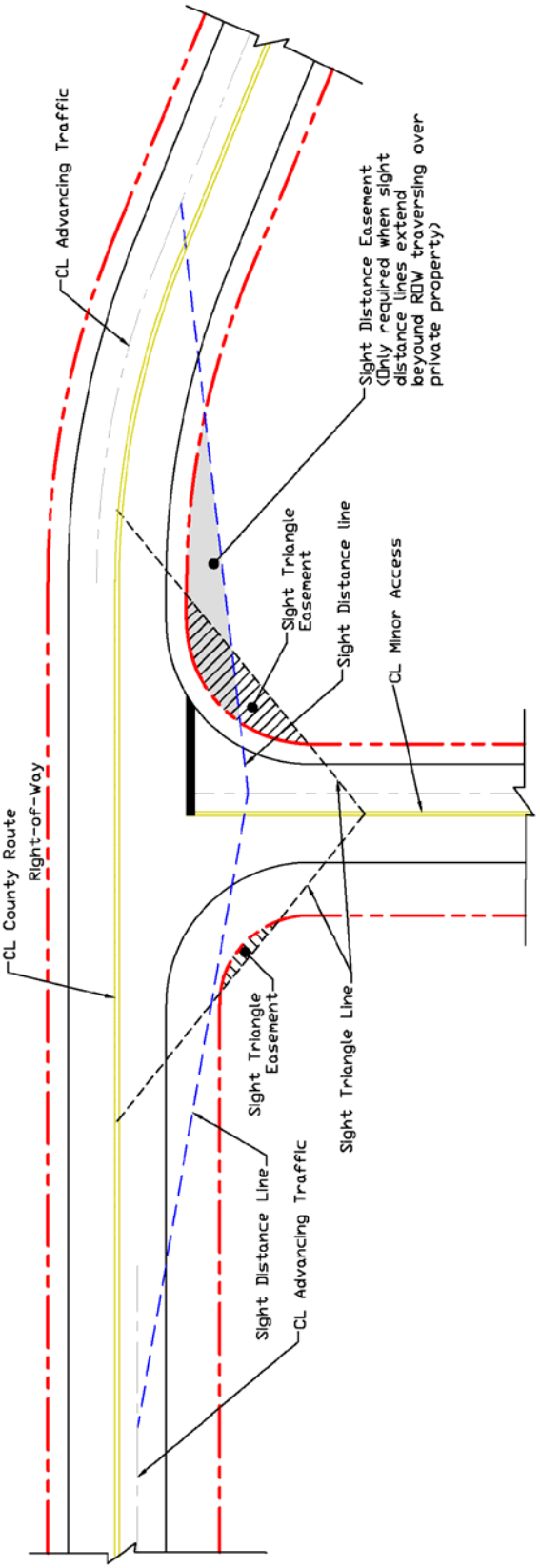


Figure V.D.2 – Sight Distance Easement

5. Discharge Easements: In addition to the rights-of-way dedications required under "DEDICATION AND RESERVATION OF ROAD RIGHT-OF-WAY" in Section V.I of this Ordinance, discharge easements including either (or both) Point Discharge or Sheet Flow shall be dedicated to the County of Sussex by the Applicant based upon any of the following categories;

   a. All developments over which the County Planning Board has approval jurisdiction which are traversed by a water course, drainage-way channel or stream shall provide a storm-water drainage easement or drainage right-of-way of such width as may be deemed necessary and adequate for the purpose of maintaining and preserving the drainage facility. The existing natural drainage features shall be preserved wherever possible in the design of the development. Drainage Easements shall be of the following type:

      i. Sheet Flow
      ii. Point Discharge
      iii. Other type as may be directed by the County Engineer.

   b. Any final development plat which is to be recorded in the Office of the Sussex County Clerk shall bear the notation "dedicated to the (Town, Township, Borough of____,) or County of Sussex, (whichever is appropriate) for storm drainage purposes" along with deed book and page on/or adjacent to the area being dedicated. In addition the Applicant shall furnish the proper official body with a written deed for the area dedicated.

   c. Where it is determined that a development that will affect a county road or county drainage facility must by necessity, design, or both, discharge storm drain runoff or alter the course of a stream to flow onto or across lands for which there is no drainage easement of record, the Applicant shall secure the necessary easement and/or release and file a copy of the easement and/or release with the proper Municipal body and/or the County of Sussex before final approval is granted to the development.

   d. Where a development alters the existing flow conditions by way of increased flow rates or flow volumes within an existing County stormwater collection system discharging onto other then a State Open Water, the Applicant shall provide a discharge easement for the altered flow.

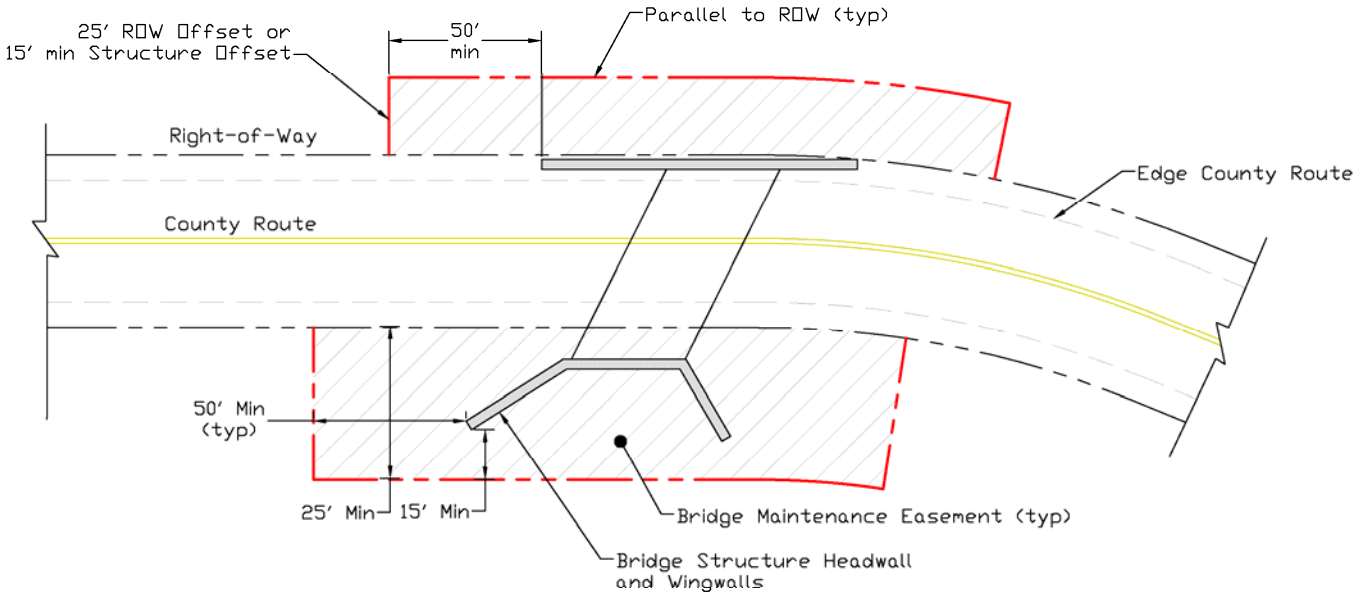
6. Bridge Maintenance Easements (See Figure V.D.3): In addition to the rights-of-way dedications required under "DEDICATION AND RESERVATION OF ROAD RIGHT-OF-WAY" in Section V.I of this Ordinance, bridge maintenance easements shall be dedicated to the County of Sussex by the Applicant based upon any of the following;

   a. The bridge maintenance easements shall generally be of adequate size to provide ample access to the county for maintenance of the bridge or structure.

The maintenance easement shall, unless otherwise required by the County Engineer, be configured as follows:

i. Side lines perpendicular to the existing (or dedicated) right-of-way lying at a distance of 50 feet distant from the outer most point of the structure in each direction along the right-of-way and extending for a distance of 25 feet away from the existing (dedicated) right-of-way sideline. The sidelines shall be connected with a line parallel to the existing (or dedicated) right-of-way line offset from the right-of-way a distance of 25 feet. At minimum, the line offset parallel to the right-of-way line shall be no closer then 15 feet to the outermost point of the bridge or structure.

Figure V.D.3 – Bridge Easement



TYPICAL BRIDGE
MAINTENANCE EASEMENT

E. SIGHT DISTANCES:

1. All new access points connecting to a County road shall be located to meet the adopted sight distance standards. See Appendix D. All Access Points will be:

   a. Analyzed for intervisibility of oncoming vehicles for the controlling turn movements from the minor and major intersection legs.

   b. Access points shall not be located at the crests of hills.

   c. All new access points connecting to a County road shall be located to provide minimum sight distances measured in each direction along the County road using sight distance standards in Appendix D.

d. Where 25 percent or more of traffic using the access point is comprised of single-unit trucks or tractor-trailer trucks, the above required sight distances shall be increased in accordance with Appendix D

2. All applications having or proposing an access to a County road shall include:

   a. Measured sight distance values for each proposed access point.

   b. Sight lines depicted in plan view.

   c. Sight line profiles, and when grading is required, 25 -foot cross sections along with limits of proposed work.

3. Sight distances shall provide the following clearances:

   a. Minimum of 6 inches above asphalt.

   b. Minimum of 24 inches clearance from non asphalt surfaces.

4. Location of point from which sight distance is measured.

   a. Sight distances shall be measured from a point 5 feet behind the proposed stop bar in the case of new streets and site plan driveways.

   b. Sight distance shall be considered as the least sight distance that is available from a point 5 feet behind the proposed stop bar and a point 5 feet behind the existing white edge line of the county road.

   c. For minor subdivisions, the sight distance to be considered shall be measured at the most restrictive point at a location that is from 5 feet to 15 feet behind the existing white edge line of the county road.

5. Formulas: All formulas are based upon AASHTO published standards, or as amended by AASHTO and accepted by the County Engineer. Following are the AASHTO formulas for the primary turning movement sight distances impacting County Roadways. Formulas are available from AASHTO for other movements as well as adjustment factors for the formulas provided when criteria deviates form that stated. As permitted by the County Engineer, the below formulas may be used to calculate required design sight distances in lieu of the tabular values provided in the Sussex County Sight Distance Standards.

   a. Primary analysis shall be provided for the controlling turning movements including at minimum:

      i. Left Turn from Stopped condition leaving Intersecting Access (Minor) onto Major Road

      ii. Left Turn from Stopped condition leaving Major Road into intersecting Access.

      iii. Right turn from intersecting Access (Minor) onto Major Road when controlling.

      iv. Intervisibility Distance as defined within the Sussex County Sight Distance Standards.

v. Intersection Sight Distance

Table V.E.1 - Intersection Sight Distance - US Customary		
$ISD = 1.47 V_{Major} t_g$		
Where: t_g = time gap for vehicle to complete maneuver, see below (seconds) V_{Major} = design speed of Major Road, MPH (refer to section V.C.3) ISD = intersection sight distance (feet)		
Maneuver	Time Gap (Design Vehicle)	
	P	SU
Left Turn from Minor onto Major (Stopped, 2-Lane no median)	7.5	9.5
Right Turn from Minor onto Major (Stopped, 2-Lane no median)	6.5	8.5
Left Turns from Major Road (Stopped, crossing one lane of traffic)	5.5	6.5

vi. Stopping Sight Distance:

(a) Continuous within the intersecting Access Point area of influence (when required by the County Engineer).

(b) Stopping sight distance for a vehicle approaching from behind a vehicle stopped along the Major Road awaiting an opportunity to execute a Left Turn from the Major Road into the intersecting Access.

Table V.E.2- Intersection Sight Distance - Equations
Tangent sections of roadway: $d = 1.47Vt + 1.075\frac{V^2}{a}$
Highways on Grades: $d = \frac{V^2}{30\left(\left(\frac{a}{32.2}\right) \pm G\right)}$
Where: t = brake reaction time, 2.5s V = design speed, MPH (refer to section V.C.3) a = deceleration rate, 11.2 ft/s^2 G = percent grade/100 d = stopping sight distance in feet

6. Sight Distance Waiver evaluation and denial criteria: Sight Distance Waivers will generally be evaluated using following:

i. Does the requested location optimize the available sight distances available along the property frontage?

ii. Is access possible from a lower classification roadway?

iii. Can the proposed access meet minimum AASHTO Sight Distance for the legally posted speed?

iv. Can the location provide AASHTO minimum Stopping Sight Distances for the project design speed?
v. Are there more than one accesses proposed per existing land parcel or existing lot?
vi. Does the proposal include sight distance improvements for adjacent existing substandard access points?
vii. Does the proposal eliminate existing substandard access points?
viii. Does the proposal incorporate on or off tract improvements that will facilitate conformance with the legally posted speed?

F. PERMITS

1. Access Permits shall be obtained from the Office of the County Engineer for all new or modified access points.

2. Road Opening Permits shall be obtained from the Office of the County Engineer for all work within the County's right-of-way.

3. The Applicant shall provide the County with Permit Numbers, Dates and Expirations from all agencies for which permits are required for the proposed work.

G. ROAD WORK AND WORK WITHIN A COUNTY RIGHT-OF-WAY

1. All work within the County's right-of-way shall be completed in accordance with New Jersey Department of Transportation Standard Details and Construction Specifications as modified by Sussex County, unless otherwise permitted by the County Engineer.

2. All roadway improvements shall be designed in accordance with the American Association of State Highway and Transportation Officials A Policy on Geometric Design of Highways and Streets latest edition, New Jersey Department of Transportation Design standards, either of which may be modified by the Sussex County Division of Engineering.

3. Proposed improvements not in compliance with these industry design standards shall require a Design Exception Report for acceptance by the Sussex County Engineer. The Sussex County Design Exception Manual is available for download from the Sussex County Web Site.

4. All road modification or alteration shall include appropriate traffic control and traffic control devices as defined by the MUTCD.

H. TRAFFIC CONTROL AND MAINTENANCE

1. Traffic control and traffic control devices shall conform with the Manual on Uniform Traffic Control Devices and with requirements of the County Engineer or the State of New Jersey, Department of Transportation, Bureau of Traffic Engineering.

2. The Applicant/property owner shall be responsible for all traffic control devices; which may include signals, pavement markings, signs, curbing, and other similar devices. Devices shall utilize the following materials:

   a. Signs shall have prismatic high intensity sheeting.

   b. Permanent Pavement Strips shall be long life epoxy; Temporary Strips shall be latex or other removable materials.

   c. Permanent Pavement Markings shall be high intensity wet reflective tape or thermoplastic, as directed by the County Engineer.

   d. Signals shall be camera controlled and have LED lenses. All signal designs shall be provided to the County Engineer for review and acceptance. All designs shall be in accordance with County Signal Standards.

3. All work within the County right-of-way shall include appropriate traffic maintenance and work zone safety. All Traffic Maintenance and Work Zone Safety shall be developed in compliance with the Sussex County Division of Engineering Work Zone Safety Set-up Guide, Manual on Uniform Traffic Control Devices and New Jersey Department of Transportation standards. All applications made to the County of Sussex Division of Engineering for Road Opening permits shall be accompanied by the Traffic Maintenance and Work Zone Safety Plan(s).

4. The Applicant may be required to construct or install all traffic related off-tract improvements made necessary by the development. Where applicable, the Applicant may be required to contribute their fair share of the costs for such improvements. Improvements will also include safety related design features such as, but not limited to, bridge improvements, guide rail improvements, sidewalks or bike paths, and sight triangle clearing.

5. If a degradation of service is deemed to be significant by the County Engineer the construction of the proposed application shall be predicated upon implementation of the related safety upgrades by the County or the Applicant. As the County may not have these improvements scheduled or funded, the Applicant, in an effort to expedite the proposed project, may solicit the county for permission to design and construct necessary improvements at their sole expense. Such design and construction shall be coordinated with the Sussex County Division of Engineering.

I. DEDICATION AND RESERVATION OF ROAD RIGHT-OF-WAY

1. All proposed developments which adjoin or include County roads, along which the existing rights-of-way of which do not conform to the right-of-way widths in the following schedule or County Master Plan or Official County Map when adopted, shall dedicate the required additional right-of-way width for the full frontage along the County road or roads.

Table V.I.1--Right of Way Dedication Schedule	
Type – Context Zone	Right of Way[1]
2 Lane – T5 or T6	56 feet (5' Walk, 3' Buffer, 8' Parking, 12' Lane)
2 Lane – T1 to T4	66 feet (8' Grading Buffer, 5' Walk, 3' Buffer, 5' Shoulder, 12' Lane)
4 Lane - T5 or T6	78 feet (56' section plus 11' Lane)
3 Lane Rural - T1 to T4	82 feet (66' section plus 16' center lane)

1. Right Of Way Width and typical half-section roadway description

2. Where the total additional right-of-way is to be secured from just one side of a County road, only one-half (1/2) of the required additional right-of-way shall be dedicated by the development as a condition of approval of the development. The development shall reserve the remaining area of right-of-way for future acquisition and shall so designate the area on the development maps. The building setback line shall be measured and shown from the future right-of-way line.

3. In addition to the above right-of-way requirements, slope right easements shall be provided when deemed necessary by the County Engineer. The additional right-of-way shall be that portion of the property which adjoins an existing or proposed County road or roads and which lies between the existing right-of-way or proposed future right-of-way line of the County road or roads and the limits of slope work.

4. Where either road or both roads are in the County road system, the intersection of right-of-way lines shall be designed to accommodate the curve radii as necessitated by the design standards.

5. Where any road classified as an arterial or collector road intersects with an arterial in the County Master Plan, Official County Map or Functional Classification Map, the right-of-way dedication shall be increased an additional 12 feet along the development frontage or frontage on both roads for a distance of 250 feet from the intersection of the centerline of the roads.

6. The construction of and/or the conveyance of land to the County for left turn lanes, jughandles, and overpasses to a development may be required by the County Planning Board upon recommendation of the County Engineer if one or more of the following conditions pertain:

a. Where the County Master Plan, County Transportation Master Plan, or Official County Map for a particular County road or County-Wide Traffic Plan exists which sets forth the proposed location of jughandles, left turn lanes, realignments, and/or overpasses.

b. Where the sight-distance is below that recommended in this Resolution

7. The final development plat which is to be recorded in the Office of the County Clerk of Sussex County shall bear the notation "Dedicated to the (Town, Township, Borough of) or County of Sussex for Road Purposes" which ever is appropriate along with the Deed book and page on the area to be dedicated which shall further be defined by metes and bounds or referenced to the filed map. In addition, the Applicant shall furnish the proper official body with a deed for the area dedicated as defined by metes and bounds.

8. When dedications are required, where no development map is to be filed with the County Clerk, the Applicant shall furnish the proper official body with a deed of the area to be dedicated as defined by metes and bounds. All final plans shall include the dedication book and page.

9. No subdivision with frontage on a County road showing lands controlling access onto County roads shall be approved with reserved strips.

10. No access on a county road shall be designed such that a vehicle will encroach onto the county road to complete any turning maneuvers. All turning maneuvers shall be completed on the subject property.

11. All accesses on a county road shall be designed with on-site turn around of vehicles. No access shall be approved which requires a vehicle to back into a county road.

12. RIGHT-OF-WAY ENCROACHMENTS PROHIBITED: No development which adjoins or includes a County road or roads shall be designed to permit any of the following uses with the County road right-of-way: conduct of private business; erection of buildings, permanent or temporary; sales or merchandising displays, unless located entirely on, but not blocking, a sidewalk in a T-5 or T-6 zone as designated by the Sussex County Engineering and Planning Department; vehicular parking areas, excepting on-street parking, where permitted as described in Section V.X and approved by the Sussex County Planning Board; servicing of vehicles, service equipment and appurtenances thereto; fencing of any kind, to include living and artificial or fabricated types; walls of timber, stone, concrete, metal or other materials, except in T-5 or T-6 zones in Centers as approved by the Sussex County Planning Board and meeting requirements in Section V.X.6.1.h, signs of all types, excepting traffic and regulatory and street signs, or entry or welcome signs in Centers as described in Section V.X and approved by the Sussex County Planning Board; shrubbery and horticultural materials, excepting trees designated to remain or to be planted as a requirement under these regulations.

J. REVERSE ACCESS

1. Reverse Access: For a major subdivision with frontage on a County road, the following is required:

   a. The access shall be on the reverse side of the County Road, utilizing an internal street or alley, thereby having no direct access to the County road.

2. Where access is available from more than one road or street, the access to any proposed development shall be from the road or street with the lower classification.

3. Waiver Consideration Criteria:

   a. Where a subdivision involves lands with frontage on a County Route, which due to its size, slope or other peculiar or unusual circumstances makes the provision of a marginal road or reverse access impractical or unnecessary

   b. Environmental constraints.

K. OFF-STREET PARKING

1. Number of Off-Street Parking Spaces: Each land development subject to County site-plan approval shall provide on its lot the number of off-street parking spaces required by any ordinance of the Municipality in which the land development is to be located. In addition, the standards specified below shall be applied.

2. Off-street parking areas shall be designed to prevent the maneuvering of vehicles into or out of parking spaces or the storage of vehicles within any portion of an entrance driveway in the County right-of-way in accordance with the following schedule:

Table V.K.1 - Entrance Driveway Length	
Number of parking stalls on Site	Minimum distance along entrance driveway from present or where applicable, future right-of-way line of the County road to parking space any parking aisle that has direct access
1 thought 20	20 feet
21 and over	30 feet for each 100 spaces or fraction thereof

   If the minimum distance required is more than 100 feet, and if more than one inbound lane is provided at the entrance in question, the length of the entrance driveway may be considered as the required length divided by the number of inbound lanes, provided each inbound lane is at least 50 feet long.

3. Off-street parking space, including adjacent parking across lanes or maneuvering space, shall be designed to prevent encroachment by vehicles on or over the

existing or proposed right-of-way of the County road, including the sidewalk area by means of curbing, fencing, or other methods approved by the County Engineer.

L. OFF-STREET LOADING

1. Each land development subject to County site-plan approval shall provide on its lot the number of off-street truck loading or unloading spaces required by any zoning, subdivision, site-planning or other ordinance of the Municipality in which the land development is to be located. In addition, the standards specified below shall be applied.

2. No part of any off-street truck loading or unloading space shall be located within the right-of-way of the County road including the sidewalk area. Off-street truck loading and unloading spaces shall be located and designed to permit any truck to maneuver from a driveway into and out of such space without encroaching upon any portion of a County road existing or proposed right-of-way including the sidewalk area by means of curbing, fencing or other methods approved by the County Engineer.

M. CUSTOMER SERVICE AREAS

1. Temporary stopping space or maneuvering space for customer's vehicles at a roadside business establishment (such as a roadside grocery stand, filling station or drive-in-bank) shall be located so that the stopping or maneuvering space is at least 5 feet back of the existing or (where applicable) future right-of-way line of the County road. Backing out onto street shall be prevented by use of curb devices and wheel stops along frontage except for the driveway or curb cut.

N. SHADE TREES

The following standards apply to trees planted near a County Road ROW, such that the growth of trees by their proximity are reasonably expected to impact the County Road ROW, County property, or County infrastructure after reaching maturity.

1. Shade trees may be required by the County Planning Board with recommendations from the County Shade Tree Commission and the County Engineer. Situations that warrant Shade Trees include, but are not limited to: Creating sufficient traffic calming to induce Desired Operating Speeds as described herein, enhancing a pedestrian realm in T-4 through T-6 Transect Zones, and preventing faster induced vehicle speeds that can result from visual cues from proposed development, such cues often being wider pavement and/or wider clearings adjacent to the roadway.

2. Species of trees must be selected that are suitable to thrive in the soil conditions on the site, have root growth and crown shape that will not be physically intrusive to surrounding utilities or County roads and structures.

3. Trees may not be planted such that their future growth will interfere with utility wires or other interference. If planting under wires, smaller tree species must be selected as appropriate.

4. No trees shall be planted within the right-of-way of any County highway unless a T-Zone and Clear Zone have been designated for the section of road in question by the County Planning and Engineering Department. Designated T-Zones are provided on the Sussex County Website, www.sussex.nj.us.

5. Where a T-Zone is designated and Clear Zone established by the County Planning and Engineering Department, trees must be planted in the County Road ROW but outside the Clear Zone where the Clear Zone does not extend past the ROW boundary. Plantings must follow guidelines in Appendix H.

6. Placement of shade trees shall be minimum of 1 foot outside the Clear Zone or County Road ROW as determined above, or at that point which would allow for proper root and trunk development without encroaching inside the Clear Zone or ROW. As a general rule, trees should be centered between the outer edge of the Clear Zone and ROW boundary if no sidewalk or bike path is proposed. Proposed tree locations are subject to approval of the County Planning Board with recommendations from the County Shade Tree Commission and the County Engineer.

7. The planting distance between trees shall be a minimum of 50 feet and a maximum of 70 feet as required by branch-spread at maturity, except that some flowering trees may be planted a minimum distance of 30 feet apart. Special purpose trees are only to be used as directed by the County Shade Tree Commission.

8. The minimum caliper of the trees shall be 2 inches measured at 3 feet above the ground.

9. The minimum height of the trees shall be 11 feet except flowering trees which may be of lesser height while conforming to the minimum caliper requirements in 4 above.

10. The trees shall be balled and burlapped (B & B) nursery-grown stock except for wild or field-collected types. Burlap shall be removed prior to planning.

11. Planting shall be in accordance with the tree planting diagrams depicted in Appendix H.

12. The soil for back-filling the hole shall be a mixture of three (3) parts loamy soil, two (2) parts coarse sand and one (1) part humus.

13. If the flare-out at the bottom of the trunk is not visible, the soil at the base of the trunk should be brushed out to expose the flare-out at the bottom of the trunk.

14. The surface of the planting area shall be mulched with wood-chips, hay, straw, or other suitable material.

15. Each tree shall be staked. Stakes shall be locust, oak, cedar or other material that will last 2 years. Stakes shall be 2 in. by 2 in. and 6 to 8 feet long.

16. Fastening and support shall be by means of 1-1/2 inch to 2 inch wide canvas tape or other material that will not harm the tree.

17. General methods, advice, and recommendations can be found in "Trees for New Jersey Streets", New Jersey Federation of Shade Tree Commission, Blake Hall - Rutgers College of Agriculture and Environmental Science, New Brunswick, New Jersey, 1965.

18. All planted material shall be properly protected from wildlife.

O. ROAD IMPROVEMENTS

1. Roadway Improvements: All roadway improvements shall be designed in accordance with the current edition of the American Association of State Highway and Transportation Officials Policy on Geometric Design of Highways and Streets. Any deviation from these standards shall be accompanied by a Design Exception Report. Design Exception Reports shall be in conformance with the Sussex County Division of Engineering Design Exception Manual.

2. All proposed improvements shall be in conformance with the New Jersey Department of Transportation (NJDOT) Standard Roadway Construction – Traffic Control – Bridge Construction Details, 2001 as amended by NJDOT or supplemented by the Sussex County Standard Construction Details.

3. Traffic Control Devices shall conform to the Manual on Uniform Traffic Control Devices.

4. Lane and Shoulder widths: At minimum, road widening shall be in conformance with the following table or as required by other sections of standards or design references listed. Note that roadways without a bike path within the ROW or fronting property, or sidewalk of at least 5 feet that can legally accommodate cyclists by local ordinance, must use Table V.P.1 - Bicycle Compatible Roadway Pavement Width.

Table V.O.1 - Lane and Shoulder Widths (feet)

See Notes 1-3 below

Functional Classification: Arterial					
Transect	T-1 or T-2		T-3 or T-4		T-5 or T-6
ADT Speed	< 2000	>2000	<2000	>2000	All
25	na	na	10-4	10-4	10-4
30	na	na	10-4	11-3	11-4
35	11-6	12-8	11-3	11-4	11-4
40	11-6	12-8	11-4	11-6	12-6
45	11-6	12-8	11-4	12-6	12-6
50	11-6	12-8	11-4	12-8	12-8
55	11-6	12-8	12-4	12-8	12-8
Dedicated Median Lanes					
All	12		11		11

Functional Classification: Collector					
Transect	T-1 or T-2		T-3 or T-4		T-5 or T-6
ADT Speed	< 2000	>2000	<2000	>2000	All
25	10-4	10-4	10-4	10-4	10-3
30	10-4	10-4	10-4	10-4	10-3
35	11-4	11-4	10-4	11-4	10-4
40	11-4	11-4	10-4	11-4	11-4
45	12-4	12-4	11-4	11-6	11-6
50	12-6	12-6	12-4	11-6	**N.a**
Dedicated Median Lanes					
All	12		11		10

Functional Classification: Local					
Transect	T-1 or T-2		T-3 or T-4		T-5 or T-6
ADT Speed	< 2000	>2000	<2000	>2000	All
25	10-3	10-3	10-3	10-3	10-3
30	10-3	11-3	10-3	10-4	10-3
35	11-3	11-3	11-3	11-4	10-3
40	11-4	12-4	11-4	11-6	11-4
45	12-4	12-6	11-4	11-6	Na
50	12-4	12-6	na	na	Na
Dedicated Median Lanes					
	12		11		11[4]

1) On Street Parking, when permitted by the County Engineer, can be provided in lieu of the minimum required shoulder width. Minimum of 8 feet parking isle shall be provided in lieu of the shoulder.

2) Shoulder widths may be increased as needed to accommodate other desirable characteristics such as pedestrian or bicycle compatibility.

3) The table denotes lane width and shoulder width as follows: 11-4 is descriptive of an 11 foot lane and 4 foot shoulder.

4) Eleven foot desirable, 10-foot minimum.

P. SIDEWALKS AND BIKEWAYS

1. Sidewalks:

   a. Each land development subject to County approval shall provide a sidewalk paralleling the County road right-of-way if such is required by any zoning, subdivision, site-planning or other ordinance of the Municipality in which the land development is to be located. Additionally, sidewalks will be required within the following context areas: T-5 and T-6, and as directed, T-4. Where no local ordinance requires a sidewalk, the County Planning Board may require the installation of a sidewalk in the County right-of-way in order to protect pedestrian traffic while facilitating vehicular traffic. If a sidewalk is required as a condition of approval under this Resolution or is required by a Municipality, such sidewalk shall be located in accordance with local specifications. The County of Sussex does not maintain sidewalks; sidewalks are usually built and maintained by Municipalities or in accordance with Municipal requirements within County rights of way.

   b. In the event that no local specifications exist the Sussex County Standard Details and NJDOT Standard Details shall apply. The County may, if not required by the Municipality require that all sidewalks built within the County right-of-way include a buffer between the curb and the inside edge of the sidewalk as depicted in Standard Detail SC-11.

   c. Whenever possible, sidewalks shall be a minimum of 4 feet in width and include a minimum 3 foot buffer between the curb and the inside edge of the sidewalk. Sidewalks adjacent to the curb line or in T-4 through T-6 zones shall be a minimum of 5 feet in width.

   d. Where the setback of buildings from the roadway exceeds 20 feet, sidewalk placement is encourage that takes the most direct and shortest route between building entrances on-site, existing sidewalks, and street or driveway crosswalks. Furthermore, sidewalks along the most direct and shortest route between Applicant's building entrances and building entrances in adjacent sites are encouraged, if arrangements can be made between the Applicant and those owners of the adjacent properties.

2. Bikeways

   a. Each land development subject to County approval shall provide a bikeway within or alongside the County road right-of-way if such is required by any zoning, subdivision, site-planning or other ordinance of the Municipality or County Transportation Master plan in which the land development is to be located.

   b. Incorporation of bikeways shall be designed in accordance with NJDOT Bicycle Compatible Roadways and Bikeways.

c. At minimum, all roadways shall be widened to provide a sufficient width of smooth asphalt to permit the shared use of the roadway by bicycles and motor vehicles. Actual widths for roadways without a bike path in the ROW or fronting property, or sidewalk of at least 5 feet in width that can legally accommodate bicycles by local ordinance, shall be in conformance with the preferred or minimum dimensions in the following Table V.P.1 - Bicycle Compatible Roadway Pavement Width. Note that roads which are significantly wider as a result of improvements due to new development may necessitate traffic calming to prevent an increase in actual vehicle travel speeds, as described in Section V.X below, or by planting shade trees (see Section V.N) as determined by the Department of Planning and Engineering.

Table V.P.1 - Bicycle Compatible Roadway Pavement Width Preferred, (Minimum)			
Design Speed	T-4, T-5, T-6 With On-Street Parking	T-4, T-5, T-6 Without On-Street Parking	T-1, T-2, T-3
ADT below 2000			
30 or below	(12 ft SL)	14 ft SL, (11 ft SL)	10ft SL (11 ft SL)
31-40	(14 ft SL)	5 ft BL, (14 ft SL)	4 ft SH (12 ft SL)
41-50	(15 ft SL)	5 ft BL, (15 ft SL)	6 ft SH (3 ft SH)
Over 50	Na	6 ft BL, (6 ft SH)	6 ft SH (4 ft SH)
ADT of between 2000 and 10,000			
30 or below	14 ft SL, (12 ft SL)	12 ft SL, (12 ft SL)	4 ft SH (12 ft SL)
31-40	6 ft BL, (14 ft SL)	5 ft SH, (14 ft SL)	4 ft SH (3 ft SH)
41-50	6 ft BL, (15 ft SL)	6 ft SH, (15 ft SL)	6 ft SH (4 ft SH)
Over 50	Na	6 ft SH, (6 ft SH)	8ft SH (6 ft SH)
ADT above 10,000 or Trucks over 5%			
30 or below	5 ft SH, (14 ft SL)	5 ft SH, (14 ft SL)	4 ft SH (14 ft SL)
31-40	6 ft BL, (14 ft SL)	5 ft BL, (4 ft SH)	6 ft SH (4 ft SH)
41-50	6 ft BL, (15 ft SL)	6 ft BL, (6 ft SH)	6 ft SH (6 ft SH)
Over 50	Na	6 ft BL, (6 ft SH)	8 ft SH (6 ft SH)

Key: SL = Shared Lane, SH = Shoulder, BL=Bike Lane

Source: NJDOT Bicycle Compatible Roadways and Bikeways, Planning and Design Guidelines. Numbers before parenthesis are the standard for bike routes and otherwise used whenever possible.

Table widths may warrant increases as needed to accommodate substandard sight distances, truck traffic or steep grades.

d. Other larger lane or shoulder widths as warranted by other portions of these standards will control.

Q. CURBING

1. Curbing shall be installed on each land development requiring site plan approval as determined by the County Engineer, including but not limited to the following conditions:

   a. Along any County road designated by the County Engineer, County Master Plan or Official County Map as an Urban Street or Road.

b. Along any County Road within Transect Zones T-5, T-6, and as directed by the County Engineer, T-4.

c. In any site development that includes the installation of sidewalks.

d. At any proposed street intersection.

e. Non-residential (serving 4 or more residences) and non-agricultural site access points.

f. Any access located within a curbed section of a County Route.

g. Along any other frontage where the Planning Board upon recommendation of the County Engineer finds that curbing is necessary by reason of a drainage condition or for reasons of public safety.

2. The alignment and grade of curbing is to be determined by that established or existing in the area and subject to the approval of the County Engineer.

3. Curbing shall:

a. Be located at minimum, 17 feet from the centerline of a standard two- lane county route. This may be modified as needed to accommodate alternate roadway widths. The offset distance may be reduced by the County Engineer as needed to match existing adjacent curbing centerline offset distances.

b. Be designed to provide a minimum 5 foot roadway shoulder or as defined under table V.O.1.

c. Terminate with a 10 foot taper curb parallel to the county road traveled way.

d. Be transitioned from the curb offset width to the existing edge road using a minimum 50 foot asphalt tapered shoulder to transition from the curb line offset to the existing edge of asphalt.

4. Where a proposed driveway is to serve any land development providing fifty (50) or more parking spaces, curbing shall not be carried across the driveway opening as a depressed curb; but swept back as curb returns as in the case of a street intersection. If the driveway serves a facility having less than fifty (50) parking spaces, a depressed curb driveway may be permitted or required.

5. Where depressed curbs are used at driveways, the following specifications shall apply:

a. Flares shall be in conformance with Table V.C.5 – Standard Design Elements

b. The union of existing to proposed curb shall occur at the nearest existing curb joint location.

c. The horizontal transition of depressed curb from full curb height to depressed curb height shall not exceed 18 inches, except where the sidewalk is narrow and close to the curb so that a portion of the sidewalk 4 feet or less from its outer edge has a slope exceeding 6:1. In this case, the depressed curb

transition may be modified to prevent the outer 4 feet of sidewalk from exceeding a slope of 6:1.

6. Any existing curb openings not required by or approved for use by the development shall be closed with the construction of new curbing.

R. SHOULDER PAVING

1. Each land development requiring County site plan approval shall install paving:

   a. In the area between the edge of existing pavement and proposed curbing. All existing pavement shall be removed and replaced in accordance with the standard paving details between the road white edge line and proposed edge of pavement or curb line.

   b. In the pavement taper area which transitions from the end of the taper curb to the existing edge road.

2. All paving shall be designed and constructed in conformance with the Sussex County Standard Design & Construction Details.

S. SPEED-CHANGE LANES

1. Speed-change lanes are auxiliary lanes, including tapered areas, primarily for the acceleration and deceleration of vehicles entering or leaving the through-traffic lanes. The need for a speed-change lane(s) will be evaluated by the County Engineer on a case-by-case basis and construction may be required by the Applicant. Criteria for evaluation will include, but is not limited to factors such as, traffic speeds, volume and character of both the through street and development street or site access. Speed-change lanes can include the use of either or both an Acceleration Lane or a Deceleration Lane. Deceleration lanes have been found to always be advantageous because the driver of a vehicle leaving the flow of traffic has no choice but to slow down. Failure to brake by following drivers because of a lack of alertness cause many rear-end collisions. Acceleration lanes are not as advantageous at stop controlled intersections because the exiting driver has opportunity to merge without disrupting traffic flow.

2. Where a new street or site access warrants acceleration and/or deceleration lanes they shall be provided by the Applicant and designed in accordance with table V.S.1

Table V.S.1 – Speed Change Lanes and Pavement Tapers		
Acceleration Lanes		
Design Speed	Full Width Lane	Taper Length
25 MPH to 39 MPH	200 feet	150 feet
40 MPH to 50 MPH	350 feet	200 feet
Over 50 MPH	450 feet	250 feet
Deceleration Lanes		
Design Speed	Full Width Lane	Taper Length
25 MPH to 39 MPH	150 feet	200 feet
40 MPH and Over	200 feet	250 feet

3. In all cases the full width widened roadway shall be preceded or terminated with an uncurbed, paved taper having a length set forth in the above schedule measured from the end of curb to the existing pavement.

4. Minimum Speed-Change Lane Width shall be 10 feet.

T. MEDIAN LANES

1. The Construction of dedicated median left turn lanes shall be required by the County Planning Board if one or more of the following conditions pertain:

    (a) Where the County Master Plan or an Official County Map calls for a designated left turn lane.

    b. Where the development proposes 100 parking spaces or more.

    c. Where a development proposes less than 100 parking spaces, but generates warrants for a left turn lane as per "Highway Research Record, Number 211, Aspects of Traffic Control Devices, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections."

    d. Design Speed shall be in conformance with section V.C.3.

    e. Design Hour Volume

        i. Based on ultimate build-out of the development

        ii. Projected to 20 years from date of construction of project

        iii. Either 15 percent% of projected ADT or highest measured peak volume (whichever is greater) shall be used for design hour traffic volumes on county highway.

    f. Directional splits

        i. County highway

            (1) 50/ 50 split
            (2) 60/40 split
            (3) 40/ 60 split
            (4) 75/25 split
            (5) 25/75 split

(6) 70/30 split
(7) 30/70 split

ii. Site trip generation to be analyzed for each of the directional splits listed using the following directional splits for site trip.

(1) 50/ 50 split
(2) 60/40 split
(3) 40/ 60 split
(4) 75/25 split
(5) 25/75 split
(6) 70/30 split
(7) 30/70 split

g. On any County Highway with a Functional Classification as a Rural Minor Arterial or as an Urban Minor Arterial.

h. On any County Highway with a Functional Classification as a Rural Major Collector or as an Urban Major Collector, where the County Highway has a 20-year projected Average Daily Traffic of 10,000 vehicles per day or greater.

2. Design parameters: All median lanes shall be designed in accordance with the Sussex County Standard Design & Construction Details and the following:

a. Minimum Lane widths in conformance with Table V.O.1 unless otherwise approved by the County Engineer or required by design volumes.

b. Taper lengths:

i. Design Speed < 40 MPH

$$TaperLength = DesignSpeed \times ShiftWidth$$

ii. Design Speed equal to or greater than 40 MPH

$$TaperLength = \frac{(DesignSpeed)^2 \times ShiftWidth}{60}$$

c. Radius: refer to Sussex County Standard Details SC-17 and SC-18

d. Stack Length: Minimum of 50 feet or as required by design (refer to Highway Research Record 211 or other applicable design standard.)

e. Pavement Markings: refer to Sussex County Standard Details SC-17 and SC-18.

U. TRAFFIC IMPACT REPORT

1. Any land development located along or affecting a County Route will be required (unless otherwise waived by the County Engineer) to submit a comprehensive Traffic Impact Report to the Planning Board if any of the following conditions exist:

a. Any proposed development which will generate in excess of 100 vehicle trips during the weekday, morning, evening or weekend peak hours using the latest "Institute of Transportation Engineering Trip Generation Rates."

2. The scope of the Traffic Impact Report shall be determined in consultation with the County Engineer and may include off-tract intersections and highway links that may be affected by the development.

3. The following items will be included in the Traffic Impact Report:

   a. Existing traffic volumes for adjacent and surrounding roadways and intersections, including ADT and Peak Hour weekday and weekend traffic.

   b. Existing level of service calculations based upon the latest edition of the Highway Capacity Manual.

   c. Morning & Afternoon peak hour trips generated by the proposed development and any other significant peak. Supporting information must be provided for the estimations.

   d. Schematic drawing(s) showing development generated trip distribution on surrounding roadway system. Full distribution of the distribution rational must be provided.

   e. Developed traffic volumes including level of service projections. Levels of service below "C" shall be mitigated.

   f. Improvements proposed to mitigate traffic impacts. Impacts shall be designed to meet or exceed a Level of service "C".

   g. Assessment of existing or anticipated traffic safety impacts.

   h. All data work sheets.

V. DRAINAGE STANDARDS

1. All subdivisions, minor and major, and site plans subject to County approval shall provide for the management of stormwater runoff in a manner consistent with the requirements established by the New Jersey Department of Environmental Protection and the Policies of the County of Sussex.

2. All subdivisions, minor or major, and site plans requiring Sussex County Planning Board approval and proposing a connection to or proposing site stormwater discharge which will be conveyed into a county stormwater collection system shall comply with the provisions of N.J.A.C. 7:8 "Stormwater Management" subchapter 5 "Design and Performance Standards for Stormwater Management Measures". N.J.A.C. 7:8-5.1 Scope term "Major Development" shall be herein after redefined to include all applications meeting the above noted conditions.

3. Any application proposing connection to a County Stormwater collection system shall include on the submitted plan all information relative to the system being connected to. This shall include any structures, grates, inverts, pipe type and size, flow arrows, and the type and location of outfall.

4. All developments shall be required to provide adequate drainage facilities along County roads, and improve existing County drainage structures and facilities requiring enlargement, modification or reconstruction as a result of the runoff or concentration of runoff from the development. New facilities shall be designed to conform to New Jersey Stormwater standards as promulgated by the Department of Environmental Protection. To facilitate the review of proposed drainage facilities for a development, design calculations prepared by the development engineer shall accompany the preliminary plat.

5. Calculations shall include computation of the basin area and the area of the development and the percent of the total basin area occupied by the development. Any application proposing connection to a county stormwater collection system shall include on the plans submitted all information relative to the county stormwater collection system. Information shall include

    - structure type, grate and inverts
    - pipe type, size, slope inverts and flow arrows
    - outfall type, invert and scour counter measures.

6. Designs should be submitted to the County for approval by the County Engineer for new bridges to be constructed on roads to be placed under Municipal jurisdiction, refer to section V.V.18.

7. The design of storm water runoff systems, structures and facilities shall be based on no less than the minimum standards enumerated herein and the requirements of the NJDEP. The minimum standards herein do not preclude high design standards being used.

8. Runoff Design Criteria:

    a. Calculation of stormwater runoff shall be based upon the USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in Section 4, National Engineering Handbook (NEH-4), dated July 2002, incorporated herein by reference as amended and supplemented. This methodology is additionally described in Technical Release 55 - Urban Hydrology for Small Watersheds (TR-55), dated June 1986, incorporated herein by reference as amended and supplemented. Information regarding the methodology is available from the Natural Resources Conservation Service website at http://www.wcc.nrcs.usda.gov/water/quality/common/neh630/4content.html or at Natural Resources Conservation Service, 220 Davidson Avenue, Somerset, New Jersey 08873; (732) 537-6040. Any other methodology shall require approval by the County Engineer.

b. For the purpose of calculating runoff curve numbers and groundwater recharge, there is a presumption that the pre-construction condition of a site or portion thereof is a wooded land use with good hydrologic condition. The term "runoff coefficient" applies to both the methodologies. A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or portion of the site for at least five years without interruption prior to the time of application. If more than one land cover have existed on the site during the five years immediately prior to the time of application, the land cover with the lowest runoff potential shall be used for the computations. In addition, there is the presumption that the site is in good hydrologic condition (if the land use type is pasture, lawn, or park), with good cover (if the land use type is woods), or with good hydrologic condition and conservation treatment (if the land use type is cultivation), and with the best rotational crop state (with agricultural crops.)

c. In computing pre-construction stormwater runoff, the design engineer shall account for all significant land features and structures, such as ponds, wetlands, depressions, hedgerows, or culverts that may reduce pre-construction stormwater runoff rates and volumes.

d. In computing stormwater runoff from all design storms, the design engineer shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site. To calculate runoff from unconnected impervious cover, urban impervious area modifications as described in the NRCS Technical Release-55, Urban Hydrology for Small Watersheds or other methods may be employed.

e. If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design of structural stormwater management measures. Where open channel flow and inlet control exist. In cases where outlet control, tailwater, and pressure flow exist, piping shall be analyzed using appropriate methodology for pressure flow conditions.

f. Design Parameters:

   i. Sussex County New Jersey 24 Hour Rainfall Frequency Data shall be as follows, or as updated by USDA Natural Resources Conservation Services

Table V.V.1 - Sussex County 24-Hour Rainfall Data							
	Design Return Frequency (year)						
	1	2	5	10	25	50	100
Rainfall (inches)	2.7	3.2	4.0	4.7	5.7	6.6	7.6

   ii. Standard Curve Numbers as published by NRCS and included within the appendix of these standards.

iii. Hydrologic Soils Groups shall be per NRCS definitions.
iv. Hydrographs shall be SCS Type III 24-hour storms
v. No increase in volume of runoff to county structures for 2,10,25,100 year storms without respective updates to discharge easements
vi. Reduction of peak runoff flows to county structures
    (a) 2 year; 50 percent of pre-development tributary from the subject property
    (b) 10 year; 75 percent of pre-development tributary from the subject property
    (c) 25 year; 75 percent of pre-development tributary from the subject property
    (d) 100 year; 80 percent of pre-development tributary from the subject property
vii. No diversion from pre-development water sheds
viii. Existing recharge areas shall remain and not be diverted or altered to run off the site
ix. NRCS Dimensionless Unit Hydrograph Model: Standard Unit Hydrograph

9. Design of Open Drainage Channels:

a. The size and shape of open channels must be designed to meet the requirements of runoff, depth, side slopes, gradient, and velocity imitations in accordance with site conditions. HEC-15 provides a detailed presentation of stable channel design concepts related to the design of roadside and median channels which convey a design discharge less than 50 cfs.

b. Channel Stabilization shall comply with the requirements established by the New Jersey Standards for Soil Erosion and Sediment Control. Manning Formula shall be used in the hydraulic design of open channels. Where open channel flow and inlet control exist. In cases where outlet control, tailwater, and pressure flow exist, piping shall be analyzed using appropriate methodology for pressure flow conditions.

c. Allowable soil velocities shall not exceed those stated in the following table, as may be amended by Soil Erosion and Sediment Control in New Jersey, or other appropriate standard:

Table V.V.2 - Allowable Velocity for various soil textures (Source NJ Soil Erosion and Sediment Control Standards)	
Soil Texture	Allowable Velocity (ft/sec)
Sand	1.8
Sandy Loam	2.5
Silt loam, loam	3.0
Sandy Clay loam	3.5
Clay Loam	4.0
Clay, fine gravel, graded loam to gravel	5.0
Cobbles	5.5
Shale (non weathered)	6.0
Concrete	12.0

d. Channel banks shall be protected by use of vegetation, rip-rap or paving, as design velocity dictates, subject to approval of the Soil Conservation District.

e. Use of side slopes steeper than 1:3 (V:H) is not encouraged for flexible linings other than rip rap or gabions because of the potential for erosion of the side slopes.

f. The values of "n" in the Manning Formula shall be taken from the following Tables or as derived using procedures defined within HEC-15:

Table V.V.3 - Typical Roughness Coefficients for Selected Linings See note 3				
		Manning's n[1]		
Lining Category[2]	Lining Type	Maximum	Typical	Minimum
Rigid	Concrete Finished	0.015	0.013	0.011
	Concrete Rough	0.017		
	Grouted Riprap	0.040	0.030	0.028
	Stone Masonry	0.042	0.032	0.030
	Soil Cement	0.025	0.022	0.020
	Asphalt	0.018	0.016	0.016
Concrete bottom with sides of:	Dressed Stone		0.017	
	Random Stone		0.020	
	Cement Rubble masonry		0.025	
	Dry Rubble Rip-Rap		0.030	
Unlined	Earth – Straight, Uniform	0.025	0.020	0.016
	Earth – Winding, Rough	0.060		0.040
	Earth – Weeds/Brush	0.10		0.80
	Rock Cut (smooth, uniform)	0.045	0.035	0.025
Natural Stream Channels	Clean, Straight		0.030	
	Sluggish, weeds/brush		0.10	
Gravel Bottom with sides of:	Random Stone		0.023	
	Rip-Rap		0.033	
Flood Plains	Pasture – no brush		0.030	
	Pasture with Brush	0.10		0.050
Rolled Erosion Control Products RECP	Open-weave textile	0.028	0.025	0.022
	Erosion control blankets	0.045	0.035	0.028
	Turf reinforcement mat	0.036	0.030	0.024

1Based on data from Kouwen, et al. (1980), Cox, et al. (1970), McWhorter, et al. (1968) and Thibodeaux (1968).

2Minimum value accounts for grain roughness. Typical and maximum values incorporate varying degrees of form roughness.

3Table Values based upon data contained within HEC-15, designers should verify and adjust "n" values as recommended by HEC-15 and needed to accurately model channel.

Table V.V.4 - Typical Roughness Coefficients for Riprap, Cobble, and Gravel Linings See Note 3				
		Manning's n for Selected Flow Depths[1]		
Lining Category	Lining Type	0.5 ft	1.6 ft	3.3 ft
Gravel Rip-Rap	D50 = 1 inch.	0.040	0.033	0.031
	D50 = 2 inch	0.056	0.042	0.038
Cobbles	D50 = 4 inch	-2	0.055	0.047
Rock Riprap	D50 = 6 inch	-2	0.069	0.056
	D50 = 8 inch	-2	-2	0.080

1Based on HEC-15 Equation 6.1 (Blodgett and McConaughy, 1985). Manning's n estimated assuming a trapezoidal channel with 1:3 side slopes and 0.6 m (2 ft) bottom width.
2Shallow relative depth (average depth to D50 ratio less than 1.5) requires use of Equation 6.2 (Bathurst, et al., 1981) and is slope-dependent. See HEC-15 Section 6.1.

3Table Values based upon data contained within HEC-15, designers should verify and adjust "n" values as recommended by HEC-15 and needed to accurately model channel.

4 Refer to HEC-15 for more specific date and to determine other roughness coefficients.

10. Drainage Systems on County Roads

    a. Adequate drainage facilities shall be required along any County road or within any county right-of-way where an Applicant would create an adverse drainage condition as a result of the construction of the development.

    b. When a proposed development:

        i. Includes a drainage system, or

        ii. The proposed development produces an increase in stormwater runoff which enters onto or impacts a county road, county right-of-way, and/or a county drainage system; the following procedure shall be followed:

            (1) Provide an analysis of the system drainage area analyzing pre-developed and post-developed conditions in accordance with these standards. Design points of interest shall be County structures and drainage systems including the system outfall.

            (2) Determine impacts to existing facilities specifically:

                (a) Identify capacity of existing system and its ability to accommodate additional storm water runoff from the proposed development.

                (b) Design new systems as may be required for proper stormwater management such that adverse impacts are mitigated. System shall be designed such that they comply with the following:

                    (i) Identify capacity of existing system and utilization of capacity.

                    (ii) Identify impacts to existing system by proposed development.

                    (iii) Upgrading of existing systems as may be required to provide adequate conveyance of emergency spillway.

(iv) Uncontrolled discharge of stormwater runoff into a county right-of-way will not be permitted.

(v) Unless otherwise approved by the County Engineer, all stormwater flow within a county right-of-way must be managed through the use of underground piped collection systems.

iii. The Applicant shall provide plans signed by a professional engineer licensed in the State of New Jersey detailing required improvements for the applicable design storm such that the capacity and design of the County road drainage system will accommodate storm water runoff from the development, these plans shall be presented to the County Engineer for review and acceptance.

iv. The Applicant shall obtain all applicable discharge easements and provide same to county.

v. Prior to the commencement of construction or any connection to a drainage system in any County right-of-way, the Applicant shall obtain a Road Opening permit for said connection and/or work from the County Engineer.

vi. The Applicant shall not proceed with his development until the drainage system has been installed/upgraded and all easements secured.

11. Design of Stormwater Collection System Piping:

a. The hydraulic characteristics of storm drain pipelines shall be calculated using the Manning Formula where open channel flow and inlet control exist. In cases where outlet control, tailwater, and pressure flow exist, piping shall be analyzed using appropriate methodology for pressure flow conditions.

b. Pipes shall be designed to carry the maximum runoff when "flowing full".

c. The minimum design velocity shall be 2.5 feet per second.

d. The maximum design velocity shall be 10 feet per second

e. Piped stormwater collections systems shall be designed for a 25 year storm unless they accept discharge from a stormwater management facility. System accepting discharge from or integral to a stormwater management facility discharge shall be designed to carry the peak design storm outflow. Systems receiving discharge from an emergency spillway shall be designed to accommodate flows as defined under section V.V.15

f. The values of “n” in the Manning Formula for pipe shall be in conformance with the following table:

Table V.V.5 - Manning Formula Values	
Concrete	0.013
HDPE	0.013
Plastic	0.012
Corrugated Metal	0.025
Cast Iron	0.013

g. Minimum pipe diameter shall be 15 inches.

h. Minimum pipe slopes shall be 0.5 percent

i. A drop of 0.1 foot shall be provided across each inlet or manhole between pipe inverts.

j. Transitions in pipe size, changes in pipe slope, changes in horizontal direction and/or junctions shall be located in an inlet structure designed to accommodate same.

k. Pipe of 30 inches in diameter and larger may be laid on a radius provided the radius is no less than twenty (20) pipe diameters.

l. Ends of pipes starting or ending in ditches or streams shall be enchased in headwalls or flared end sections.

m. All pipe outfalls shall incorporate riprap aprons or scour holes designed in accordance with soil erosion and sediment control design standards published by NRCS.

n. Pipe used in county right-of-way shall be class III reinforced concrete, wall B, or HDPE equivalent pipe if accepted by the County Engineer.

12. Design of Inlets

a. Inlet spacing shall be such that the white edge line is not flooded during the 25-year storm; inlet spacing shall not exceed 300 feet.

b. On grades in excess of 5 percent, inlets shall be paired or separated by 5 feet along the slope.

c. Inlets shall be located at the PC and PT of curb radius, not within any curves.

d. Shall be located to intercept stormwater before water crosses the intersection, crosswalk or enters the county road.

e. Constructed in accordance with current NJDOT standards as modified by the County Engineer.

f. Roadside inlets shall include a paved apron a minimum of 2.5 feet from the edge of the inlet. The apron shall be graded to direct sheet flow into the inlet.

g. All but water quality sump inlets shall be constructed with flow-through bottoms.

h. Hooded sump inlets shall be incorporated into the drainage design such that the hooded/sump inlet is located just prior to a connection with the county's system and when improvements include the county system a hooded/sump inlet shall be included just upstream of the system discharge or as directed by the County Engineer. All hooded sump inlets shall be designed to obtain maximum water quality, design shall conform with the hood manufacturers recommendations and as approved by the County Engineer.

i. Bicycle safe grates and heads in compliance with NJDEP standards shall be used on all inlets. All inlets shall include the notation "No Dumping Drains to Waterway"

13. Design of Manholes

    a. Manhole spacing shall not exceed four hundred feet.

    b. On grades in excess of 8 percent or where hydraulic characteristics show need, pressure-type manhole covers shall be installed on all manholes.

    c. Construct in accordance with current NJDOT standards as modified by the County Engineer.

    d. All but water quality sump manholes shall be constructed with flow-through bottoms.

14. Detention, Retention, Infiltration, Water Quality and Ground Water Recharge

    a. All Detention, Retention, Infiltration, Water Quality and Groundwater Recharge shall be designed in accordance with applicable NJDEP standards and NJDEP Best Management Practices Manual as may be modified herein or by the County Engineer.

    b. Where required by these standards, state standards, Municipal standards or as determined by the County Engineer, developments must construct detention/retention, ground water recharge or water quality facilities to control the volume of runoff, rate of discharge and/or quality of water being discharged from the site. If more than one set of standards exist the more stringent shall apply.

    c. Increases to site runoff volumes or discharge rates must be accompanied by an easement from the downstream point of discharge property owner allowing same.

    d. All water quality requirements shall be met by maximizing the use of non-structural management practices.

    e. All infiltration devices shall be designed to provide complete infiltration within 72 hours. Infiltration shall also consider and provide for infiltration when ground is frozen.

    f. All stormwater management facilities shall include maintenance and operation plans. Responsibility for maintenance of these facilities shall be clearly noted on the plans, and a document that is signed by the responsible party shall be provided.

    g. All basins shall be designed with pretreatment to maximize the functional life of the stormwater facility. Pretreatment is typically accomplished through use of a grass filter strip, forebay, or a manufactured treatment device.

    h. All basin design shall include soil parameters, seasonal high groundwater table observations, and as appropriate soil permeability rates.

    i. Specific Requirements for Detention Facilities:

        i. Shall include principal and emergency spillways that are pipes.

        ii. Outlet Structures shall

(a) Include a primary outfall conduit no less than 15 inches in diameter.
(b) Include anti-seep collars or filter diaphragms.
(c) Incorporate self cleaning trash racks.

iii. Shall not discharge directly over the pond berm.

iv. Pond side slopes shall not exceed 3:1. All fill sections of berms shall be armored for a minimum 6 inches in depth. Armoring shall extend a minimum of 10 feet beyond beginning of fill sections.

v. Length to width ratio should be at minimum 2:1 and maximize the distance between the pond inlet and pond outlet.

vi. Discharge through orifices and over weirs shall consider tailwater conditions. The system shall be analyzed for tailwater and outlet control conditions. Standard formulae shall be used only when open channel flow and inlet control exist downstream of the control structure to the point of discharge. In cases where outlet control, tailwater, and pressure flow exist, piping shall be analyzed using appropriate methodology for pressure flow conditions considering the backwater conditions for the design storm at the point of discharge of the principal or emergency spillway.

j. Specific requirements for Retention and Infiltration facilities:

i. Shall be designed to store entire volume of tributary area without discharge.

ii. Shall provide 2 feet minimum freeboard for the high-water design storm which shall be the emergency spillway design storm unless otherwise approved by the County Engineer.

iii. Shall provide a piped emergency spillway set at 1 foot above the 100-year design storm high water elevations.

iv. Retention facilities should only be utilized to treat the stormwater quality design storm or smaller. Retention and Infiltration may not be used to manage larger design storms unless incorporated with additional management methodologies.

v. Refer to Appendix G for additional requirements and general concepts of infiltration basins.

15. Emergency Spillways

a. Emergency spillways shall be designed to accommodate the following:

i. Ponds constructed in cuts except when meeting the requirements of a class IV Dam: 100 year design storm

ii. Ponds constructed using fill and Class IV Dams: 150 percent of the one hundred year design storm.

b. Increases to site runoff volumes or discharge rates must be accompanied by an easement from the downstream point of discharge property owner allowing the same.

c. Ponds shall be designed with at minimum 1 foot of freeboard between the emergency spillway design storm high water elevation and the top berm of the pond.

d. High-water elevation shall be established assuming the principal spillway is blocked.

e. Emergency Spillways shall not be located such that they will discharge or have a potential of discharging into a public right-of-way.

f. When emergency spillways discharge into a county stormwater collection system the county system shall be analyzed and upgraded as needed to adequately carry the emergency spillway design flow.

g. Emergency spillway design shall assume failure of the primary outlet structure. It shall be assumed that all lower orifices of the control structure are blocked, and that all flow is weir flow through the top grate of the outlet structure. The emergency spillway design storm shall be routed through the basin.

h. Primary emergency spillway outlet conduit shall:

   (a) Have a minimum diameter of 18 inches.
   (b) Include anti-seep collars or filter diaphragms.
   (c) Incorporate self cleaning trash racks.

i. In cases where outlet control, tailwater, and pressure flow exist, piping shall be analyzed using appropriate methodology for pressure flow conditions.

16. Outfalls:

a. Erosion protection is required when the storm drain outfall velocity at the surface adjacent to a channel, ditch, stream or at any open discharge point exceeds the allowable stable soil velocity. If the natural channel is subject to flooding, the outfall shall be protected from erosion by a headwall, gabions, or other suitable means. Riprap used for erosion control at outfalls shall be evenly graded stones with a top size based on the outfall velocity.

b. Conduit outfall protection shall be designed in accordance with soil erosion standards published by NRCS. Aprons shall be utilized whenever possible to reduce standing waters.

c. Rip-Rap sizing and installation shall be in accordance with soil erosion standards.

17. Water Quality:

a. The County goals for stormwater discharge are to reduce sediments to the maximum extent practicable, to minimize oil and grease impacts, and to trap buoyant debris. Water quality devices shall be incorporated into the design of stormwater collections systems for all sites in accordance with the current edition of the New Jersey Best Management Practices Design Manual.

b. All connections to a county stormwater collection system shall incorporate upstream stormwater management techniques designed to reduce post-construction load of total suspended solids by 80 percent of the anticipated load from the developed site. Design parameters shall be in compliance with NJDEP N.J.A.C. 7:8 except there is no minimum amount of impervious cover or disturbed area needed to trigger the regulation.

18. Bridges and Culverts

a. Structure Modifications and Construction

i. Where existing bridges and/or culverts are to be replaced, modified or enlarged, or where a new culvert or bridge is to be constructed which may at a later date be taken over by the County of Sussex, the Applicant and their professionals shall confer with the County Engineer before starting any development or construction plans.

ii. All bridge and culvert designs shall be completed in conformance with current County Policies.

iii. The County Engineer may require the Applicant to contribute funds toward the modification, enlargement or upgrading of an existing structure in lieu of completing the required modifications, enlargement or upgrade. This will be at the sole discretion of the County Engineer.

iv. A Municipality may petition the County to accept a bridge or culvert structure into the County's system. Only structures meeting the requirements of the County policies governing the acceptance of structures shall be eligible. All bridge and culvert designs must be completed in conformance with County Policies established by the County Engineer to be eligible for acceptance into the County Bridge and Culvert System.

v. The Applicant shall prepare plans for review and acceptance by the County Engineer. Structures not designed in collaboration with the County Engineer shall not be eligible for inclusion into the County Bridge and Culvert System.

vi. The Applicant shall secure all required Federal, State, and Local permits required for the proposed structure or modifications to existing structures. The County shall be provided all permits and support data as required by County Policy or directed by the County Engineer.

vii. All designs shall be completed in conformance with current regulations as published by AASHTO, NJDOT and modified by the County Engineer.

viii. Prior to commencement of construction, the Applicant will be required to coordinate construction activities with the County Division of Engineering. Any specific requirements will be identified by the County Engineer.

ix. Construction Inspection of existing structures will be under the direction of the County Engineer, inspection of new structures contained within the proposed street network of the application shall be inspected and certified by the Municipal Engineer. All certifications will accompany any Municipal

request for acceptance of a structure into the County's system. All inspections and work will be coordinated with the County Engineer.

x. Prior to commencement of any work within the County right-of-way or related to County owned bridge structures the Applicant shall secure all necessary permits for the work from the Sussex County Division of Engineering.

b. Impacts to County Bridges or Culverts

i. All developments, regardless of size, above an existing County bridge or culvert will be considered to directly increase the hydraulic requirements of that structure. Residential subdivisions of three (3) lots or less, not involving any other subdivision action within the prior 3 years, and not involving addition of pavement, are exempted from this requirement. The Applicant shall provide the County with hydraulic calculations evaluating impacts of the downstream structure by the submitted proposal.

ii. The Applicant's engineer shall perform all calculations of stormwater runoff based on consideration of the physical features of the drainage basin and the future development of the area based on the existing local zoning ordinances. All designs shall utilize the impacted bridge or culvert as the design point. The County Engineer shall on behalf of the County Planning Board review said calculations.

iii. The County Engineer shall investigate and as necessary require the Applicant to provide Traffic Impact Reports for any structure potentially impacted by the proposal. Potential impacts could include, but are not limited to either vehicular or pedestrian. The County Engineer shall determine the extent or impact to any structure affected by the Applicants proposal.

iv. An Applicant shall be required to fund or complete any design and construction required to correct any adverse impact to any structure as may be identified:

(a) When it will create an immediate or potential affect on a County drainage structure (bridge).

v. Modifications to structures shall comply with the requirements found within section 18.a above.

vi. The County Engineer may require a proportionate cost contribution for remediation of any impacts the proposal may be found to have on an existing impacted structure. The proportionate cost shall be equivalent to the Applicant's proportion or the impact as determined fair and reasonable by the Sussex County Planning Board, under advisement by the County Engineer using section IV - G.7.b.

19. Drainage Reports:

a. All applications shall include a Stormwater Drainage Analysis Report comparing the pre-developed conditions to the post developed conditions. All Reports shall include:

   i. Table of Contents with appropriate page numbering.

   ii. Calculations for volume, flow, recharge, peak flows and water quality.

   iii. Identification labels of structures that are consistent throughout the application (i.e. reports and plans must use the same identification.)

   iv. Include a separate section in the report detailing impacts to county structures. This section shall include:

      (1) Analysis using the county structure(s) or system(s) as the design point.
      (2) Separate analysis for each structure or system impacted.
      (3) Table of predeveloped curve numbers, assuming good conditions.
      (4) Tabulation of composite curve numbers.
      (5) Post-development curve numbers should not be less than pre-developed curve numbers, should this case exist designer shall include detailed explanation.
      (6) Summary table for pre-developed and post-developed conditions for each storm to each structure or system, including:
         (a) Event volumes
         (b) Peak flows
         (c) Composite curve number
         (d) Time of concentration
         (e) Subwatershed area
      (7) Pre and Post Development hydrographs based upon, SCS Type III 24-hour
      (8) Basin routings
      (9) Detention Facilities shall include:
         (a) Stage-Volume tables
         (b) Stage-discharge tables
         (c) Working curves for outflow, water elevation and volume discharge.
         (d) Primary Spillway data
         (e) Emergency Spillway data
      (10) Separate drainage Area Maps for pre and post conditions delineating:
         (a) Sub-watershed boundaries
         (b) Soil types
         (c) Land cover types
         (d) Time of concentration paths
         (e) Proposed and existing topography
         (f) Proposed and existing topology
      (11) Maintenance procedures and responsibilities.

(a) The entity that will be responsible for maintenance of any Stormwater Facility shall be clearly designated on the plans. In the case of major subdivisions, this shall be clearly stated on the Final Plat.
(b) Maintenance responsibility shall be clearly designated as a covenant in any deeds for the subject property where the Stormwater Facility is located.
(c) A signed document that clearly delineates maintenance responsibility for the Stormwater Facility shall be executed prior to approval of minor subdivisions, preliminary site plans, or preliminary major subdivisions.
(d) Maintenance procedures and schedules shall be clearly defined.
(e) The format and frequency of inspection reports shall be clearly defined
(f) Fiscal responsibility shall be clearly defined.
(g) Responsible contact person shall be clearly defined.

(12) Designer's liability
(a) The following shall be included in the report:

"It is specifically noted herein that the planning board review process is intended to be a review of the documents in a general manner only. Review submissions and comments shall not be construed as a comprehensive review or detailed checking of the Consultant's work by the County or its representatives. It remains the Consultant's professional responsibility to design and prepare the documents in accordance with proper engineering criteria and sound professional engineering judgment. The Consultant is completely responsible for all design documents, reports, supporting documentation, etc., that they prepare and it remains their responsibility to insure the integrity of the design and their work. I, the undersigned, accept full responsibility for the analysis and design of the Stormwater management system and accept responsibility for any damages, or modifications that are required that come about as errors or defects of this design that may be discovered at a later date."

_____ _____
Signature P.E. License No. Date

W. SURVEY DATA AND ESTABLISHING RIGHT-OF-WAY

1. Purposes of Section

The principal purposes of this section are:

a. To establish and maintain survey standards for Planning Application Submissions.

b. To improve the overall efficiency of the Sussex County review and approval process.

c. To define surveying policies, procedures, and application submittal data requirements.

d. To secure an optimum degree of County wide uniformity in surveying.

e. To receive accurate information establishing public rights-of-way and easements.

f. This Section, in general, covers surveying policies, procedures, and standards.

2. Importance of Surveys

a. Surveying is basic to all civil engineering works, providing the foundation and continuity for route location, land design, land acquisition, and all other preliminary engineering. A survey sets up a basic "framework" of control that is use in all land development applications.

3. Requirements:

a. All Maps and Documents shall be in conformance with the New Jersey Map Filing Law and the requirements set forth herein.

b. A New Jersey Licensed Land Surveyor is responsible for obtaining all records, measurements, and evidence to prepare a correct and accurate land survey, for providing a reproducible copy and paper copies of the land survey plats that depict the results of the survey, and for preparing and providing the corresponding Description of Property, prepared on company letterhead for all deeds.

c. All boundaries must be defined by mathematical survey expressions (with angular units being degrees, minutes and whole seconds of arc and horizontal distances, vertical elevations, radii of curves, lengths of arc, and New Jersey Plane Coordinate values of Northing and Easting stated in feet to two decimal places.

d. Accuracy: whether conventional surveying methods (traversing, triangulation or trilateration) or Global Positioning System (GPS) methods are used, shall meet or exceed Third Order, Class I accuracy as specified above.

e. The basis of bearings for all surveys will be the New Jersey Plane Coordinate System NAD 1983. NAD 1927 Datum may be projected/converted to NAD 1983 Datum using the Federal CORPCON, or better, software to make this conversion.

f. Control /GPS surveys provide the basis of bearings for the parcel survey in a given project area. In addition to labeling the north arrow, the plan must contain a factual note that explains the Establishment of the Bearing System or similar

title with language that explains how the bearing system for the project area was established and identifies the state or federal control stations used.

g. Route Surveys:

i. When route surveys and corresponding descriptions of roadways corridor or bicycle/walking/hiking trails are specifically required as part of any site specific engagement, the survey will be performed using conventional or GPS surveying methods that, as a minimum, meet or exceed Third Order, Class I accuracy and shall be rotated into published NJGCS NAD 1983 and shown on the final survey plan.

ii. Horizontal curve data to be included on plans and in descriptions:
(1) Radius
(2) Central or deflections angle (delta)
(3) Chord bearings
(4) All horizontal curves in road centerlines and sidelines shall be tangent curves

iii. The area of the corridor shall be provided in acres to three decimal places (0.001 acre).

h. A metes and bounds Description of Property shall be provided if the purpose of the survey is for a conveyance.

i. Monumentation

i. Right-of-way monumentation is required on all new property subdivisions. Right-of-way monuments shall be set by the Applicant in accordance with the New Jersey Map Filing Law along with these standards and shall be called for in the legal descriptions. Monuments will be set along County ROW at PC's, PT's, POT's and will be stamped "R/W" and company name in accordance with NJAC 13:40-5.1(d)3. Reduced state plane coordinate and combined scale factor for each monument shall be provided on the plat. Proposed monumentation to be shown on Preliminary Major Subdivision plans. Monuments approved in the Preliminary Major Subdivision shall be installed prior to filing the Final Plat or monuments shall be bonded as approved by the County Engineer prior to the Final Major Subdivision plat being filed.

j. MATHEMATICAL CLOSURE:

i. All property surveys must form closed polygons with all sides defined by mathematical survey expressions (bearings and distances on all straight-line segments/tie lines; radius, arc length, delta, chord bearing and chord distance on all curved lines.) General calls along roads or waterways are unacceptable. Tie lines are to be provided along waterways. A computer printout of the coordinate geometry for the surveyed parcel shall be

submitted to demonstrate mathematical closure and verification of areas. Last course shall be closing course. Also refer to NJDOT survey manual for additional references.

k. AREA:

i. The area of a parcel being surveyed is generally to be stated in acres. The area is to be rounded to the nearest one one-thousandth acre (0.001 ac.) unless said parcel is bounded, all or in part, by a waterway or a riparian claim in which case the area will be rounded to the nearest one tenth acre (0.1 ac.). If the entire parcel is less than 1 acre, the area shall be stated in square feet as well as acres. If the total area surveyed is less than one one-thousandth acre (0.001 ac.), then the area is to be stated in square feet only and rounded to the nearest square foot. Areas must be stated for the total surveyed area, the areas within road rights-of-way, areas of easements, areas of each lot within the surveyed tract.

l. Road Rights-of-Way:

i. Road rights-of-way and the principles of dedication of land for road purposes shall not be taken lightly by the surveyor. The lines of surveys prepared for the dedication of land are to run with the lines of the deed description as written in the record. If the fee title extends to the center of a public road, the survey lines should run to the center of the public road. The survey must also provide the bearings and distances of the right-of-way sidelines, as well as the area of the public right-of-way. The area in the right-of-way is subject to the paramount rights of the public and possible private rights and the area shall be stated as a separate item on both the plat and in the description. If there has been no dedication to define the sidelines of the right-of-way, the area of the right-of-way is defined as the area of the paved or traveled portion of the roadbed.

ii. In cases where senior road returns are in place as well as subsequent deeds or registered maps, right-of-way width in accordance with the road return, using geometry established by subsequent documents is generally the procedure for establishing the right-of-way.

4. Documentation:

a. Research: The New Jersey Licensed Land Surveyor is responsible for obtaining sufficient documentation and evidence to render a survey plat that is correct as well as accurate.

b. The survey shall indicate recording information for maps, deed book number and page number, or other pertinent information regarding the dedication of public ways or private easements.

c. Copies of source document(s) shall be provided for County Road Rights-of-Way. Source documents include turnpike documents that are filed with the State of New Jersey, Road Returns filed in the County Clerk's Office, Registered Maps filed in the County Clerk's Office, or deeds of dedication to the County of

Sussex or the Municipality that granted the right-of-way to the County of Sussex that are filed in the County Clerk's Office. Tax maps are not acceptable source documents for the purposes of establishing ROW.

Copies of these documents shall be provided with the Planning Board Application. Notes on the plan shall include the following:

Table V.W.1 - Required Plan Reference Notes

Document	Names	Dates	File Numbers	Width Data
Turnpike	Turnpike Name	Filing Date	Drawer Number	Right-of-way width
Road Return	N/A	-Date of Execution -Date of Filing	-Book of Roads -Page Number	Right-of-way width
Registered Map	Map Title	-Original Drawing Date -Revision Date -Date of Filing	Filed Map Number in Clerk's Office	Right-of-way width
Deed of Dedication	-Grantor -Grantee	-Date of Execution -Date of Filing	-Deed Book -Page Number	Right-of-way width

d. Plotting of coordinate geometry, showing point numbers used in survey analysis shall be provided for all dedications.

e. Coordinate geometry closure sheets, giving point numbers, coordinates, and inverses (in bearings and distances) between points, raw closure, and closure expressed as ratio shall be provided for all dedications. Last Course shall be closure error.

f. Where required, New Jersey State Plane Coordinates (NAD 83), and methodology used in computing them shall be provided. Also see NJDOT survey manual for additional references.

g. In all cases, existing monuments, such as iron pipes and iron pins, etc., shall be noted on the plats with offsets, if applicable. These monuments shall also be noted in the descriptions.

h. Descriptions and plats shall reference the source documents of existing rights of way.

i. Descriptions shall call out existing right-of-way lines and include source document references as noted below.

j. Descriptions for Final Major Subdivision plats shall be based on the lots that are in existence prior to the subdivision. Descriptions may reference the unfiled plat and lot designations as shown on the Final Plat. Deeds of dedication shall be executed by the Applicant prior to submitting the Final Plat for review. The Final Plat shall contain all deed references.

k. Source Document Checklist to be submitted with each application:

ROW Source Documents for Surveys Worksheet

FOR SUSSEX COUNTY ROUTE No. _____ Nearest Mile Marker to site: _____
Municipality _____Tax Block _____Lot _____

□ Found □Not Found	TURNPIKE For portions of (but not limited to) Routes: 517 in Vernon, 519, 565, 639, 645, 650, 655 Name_____ File No._____ Date_____ ROW Width_____ Relevant Courses Or Calls _____
□ Found □Not Found	ROAD RETURN Date Of Writing _____ Date Of Filing _____ Book Of Roads_____ Page_____ ROW Width _____ Municipalities _____ Relevant Courses Or Calls _____
□ Found □Not Found	FILED MAP Date Of Map _____ Filing Date _____ Registered Map Number _____ ROW Width _____ Preparer Of Map _____ License Number _____ Right-Of Way Map _____ Subdivision Map _____ Deed References _____ Other Document References _____ Station: From _____ To _____
□ Deed □Mortgage □Not Found ***For Help Searching***, See list of GRANTEE NAMES on next page	DEED or MORTGAGE: Book _____Page _____ROW Width=_____' Grantor _____ Grantee_____ Date Of Execution _____ Filing Date _____ Other Document References: _____ _____ _____ Map Stationing Reference _____ _____

Enter additional deed references below:

DEED Book_____ Page ____ROW=_____' Grantor _____ Grantee _____ Dates: Execution: _____ Filing: _____ Other Document References: _____ _____ _____ _____ Map Stationing Reference _____	DEED Book_____ Page ____ROW=_____' Grantor _____ Grantee _____ Dates: Execution: _____Filing:_____ Other Document References: _____ _____ _____ _____ Map Stationing Reference _____

Note: Resolutions from governing bodies may also specify ROW widths survey courses, and references to the above items

_____
Name of Professional Land Surveyor License No. Signature (affix seal)

To be filled-out by Sussex County Division of Engineering □ Found □Not Found	Deed Book _____ Page _____ Width _____ Grantor __ _____ Grantee _____(County Of Sussex)_____ Date Of Execution _____ Filing Date _____ Other Document References _____ _____ _____ _____ MAP STATIONING REFERENCE _____
To be filled-out by Sussex County Division of Engineering □ Found □Not Found	Deed Book _____ Page _____ Width _____ Grantor __ _____ Grantee _____(County Of Sussex)_____ Date Of Execution _____ Filing Date _____ Other Document References _____ _____ _____ _____ MAP STATIONING REFERENCE _____

POSSIBLE GRANTEE NAMES FOR RIGHT-OF-WAY DEDICATIONS

BOARD OF FREEHOLDERS
BOARD OF CHOSEN FREEHOLDERS
FREEHOLDER BOARD
COUNTY OF SUSSEX
SUSSEX COUNTY
SUSSEX COUNTY BOARD OF CHOSEN FREEHOLDERS
DEPARTMENT OF TRANSPORTATION
NEW JERSEY
NEW JERSEY DEPARTMENT OF TRANSPORTATION
NEW JERSEY, STATE OF
STATE OF NEW JERSEY
STATE OF NEW JERSEY, COMMISSIONER OF TRANSPORTATION
TRANSPORTATION DEPARTMENT
(MUNICIPALITY WHERE ROAD LIES)

Note: this list is not exhaustive.

Right-of-Way Analysis Table to be submitted with each application:

BLOCK	LOT	SOURCE DOCUMENT(S)	RIGHT-OF-WAY WIDTH(S)	MONUMENTS FOUND IN SUPPORT OF SOURCE DOCUMENTS	PAROLE EVIDENCE	WIDTHS OF PAROLE EVIDENCE CALLS	MONUMENTS FOUND IN SUPPORT OF PAROLE EVIDENCE CALLS

LOCATION					TURNPIKE				ROAD RETURN				FILED MAP			DEED							
CR	MM	MUNI	BL	LOT	NAME	DATE	DRAW-ER	WIDTH	BOOK OF ROADS	PAGE	DATE	WIDTH	No.	DATE	WIDTH	DEED BOOK	PAGE	DATE EXEC.	DATE FILED	GRANTOR	GRANTEE	WIDTH	**TOTAL WIDTH**

5. Plan Data:

   a. SIGNATURE AND SEAL OF THE NEW JERSEY LICENSED LAND SURVEYOR: The separate metes and bounds Description of Property must bear the original ink signature and embossed seal of the surveyor who prepared the survey plan. A rubber stamp facsimile or mechanically reproduced signature is not acceptable.

   b. ORIGINAL SIGNATURE AND SEAL: All survey plans and the original description must be signed and sealed by a New Jersey Licensed Professional Land Surveyor responsible for the work. To insure that the plan is the product of the licensee, the signature must be the original signature in ink on each copy of the plan of survey and original description. A rubber stamp or computer generated signature is unacceptable.

   c. POINT OF BEGINNING

      i. The point of beginning used in the metes and bounds description must be clearly labeled Description Point of Beginning or P.O.B. (or similar) and must be tied into a corner of record or road intersection. The NJPCS NAD 1983 Northing and Easting coordinate values stated in feet to two decimal places must be labeled on the plan and stated in the description. The surveyor must set a concrete monument at the point of beginning for each parcel, unless this requirement is waived or modified by the using agency at the time that the bids for a site-specific engagement are solicited.

6. DEED DESCRIPTION FORMAT

   a. The New Jersey Licensed Land Surveyor is responsible for preparing an original metes and bounds type description of the property that has been surveyed. The description shall be separate and apart from the prepared final plan of survey and must be submitted on an original company letterhead 8 ½ inch in width by 11, 13 or 14 inches in length. The media is to be a good quality paper; not legal left edge lined paper or plain paper. This description is to agree with the results of the survey in every particular and for that reason, the description must not include any information that does not appear either graphically or factually stated in note form on the plan. All courses of the description must be numbered in sequence. One description may include several contiguous dedications in common ownership grouped together into one or more survey tracts. The description must be labeled “DESCRIPTION OF PROPERTY”, contain a heading, describe the beginning point, (including its New Jersey State Plane Coordinates in NAD 1983) and will continue in the said bearing system. The total area of the survey and of each lot within the surveyed dedication must be clearly stated in the description.

Qualifying and augmenting clauses if used shall also state particular areas: specifically the area within public road rights-of way.

b. All Dedications Identified On The Survey Must Be Stated.

c. The areas of all dedications and within the surveyed parcel must be clearly stated in the description as well as on the plan of survey. If there is more than one dedication included in the surveyed parcel, state the total area of the survey and the area for each included dedication according to the categories indicated on the Surveyor's Certification and Summary Form. Additionally, provide separate areas for other possible situations, if any, as previously indicated.

d. Final Paragraph Of Description:

   i. To provide a uniform closing call for survey the final paragraph in all descriptions must read as follows:

The above description was written pursuant to a survey of property designated as Block _____, Lot _____, on the Municipal tax map of Municipality name, County of Sussex, State of New Jersey. Said survey was prepared by your firm's name and address, date, revised through (__last revision date, if any__) and is marked as file No. _____.

e. Prototype deeds are available on the County's Web Site for use by Applicants.

7. CORNER MARKING

a. The New Jersey Licensed Land Surveyor is responsible for determining the ultimate user of the survey, the survey plat and the corresponding description(s) as defined by the New Jersey State Board of Professional Engineers and Land Surveyors. For the purposes of this State Board rule, the Ultimate User of any ROW of Easement dedications shall be considered the County of Sussex. To clearly define where corner markers must be set and where they may be omitted, the following shall apply:

   i. Corner markers must be set at the limits of a project area where the limits adjoin private lands not being dedicated as a part of the project. This shall apply to dedication and easement area for public access and public use rights

   ii. Corner markers shall be omitted when corner or the corners fall within a waterway bed, unless, in the professional judgment of the surveyor, the corners should be set. Corner markers that are omitted must be identified on the plan as omitted by contractual agreement using the language required by the State Board of Professional Engineers and Land Surveyors. (See N.J.A.C. 13:40-5.1/d).

iii. A detail of the stamping or casting of each type of cap, disk, shiner, etc., actually set to mark corners shall be drawn on the survey plan and shall be stamped with the name of the survey firm and include the month and year set.

iv. At the time of the survey, any corner location that is found to be inaccessible must be set as an offset on line. The marker must be set on line as near to the corner as is practical, stamped "OFFSET" on the cap, and clearly identified on the plan as having been set back from the corner, with the actual distance to the corner clearly labeled.

v. To maintain the coordinate system for potential future surveys or resurveys, the surveyor must set a minimum of two concrete monuments, visible from one to another whenever possible, at each grouping of contiguous parcels in a project area. One monument is to be selected as a description point of beginning and the NJSPCS Northing and Easting values must be stated. If the corner selected to be the Description Point of Beginning was previously marked, then a monument must be set on an alternate corner to maintain the two monument minimum requirement.

vi. Corner markers that are found in the field to be within a radius of 1.5 feet of the true corner, shall be presumed to mark the corner and no new corner marker shall be set. The plan of survey shall clearly indicate the offset distances (north/south and east/west) of the found marker from the true corner.

X. CENTER STANDARDS

1. Introduction

Planning approaches in New Jersey have evolved over the years as we have learned more about the impact of development on the natural and cultural landscape. While we now have a much greater understanding of the natural capacity of our communities to sustain the physical demands of development, e.g. water supply, waste treatment and stormwater management, we have also continued land development using an old paradigm that assumed that resources were unlimited. The County took the lead in reaching a consensus for development that balances quality of life with efficient use of resources, through efforts culminating in the Sussex County Strategic Growth Plan (SCSGP). The SCSGP proposes, as its centerpiece, the redistribution of development from sprawl to compact, mixed-use Centers. This new blueprint for the future comes with the need to reflect on the development standards long used by the County in evaluating the impact of development on county roads and drainage facilities.

2. Why The County Has Different Standards For Centers

It has long been the contention of the County that County roadways principally function to convey motor vehicles quickly and efficiently through the County. Very little consideration was given to the impact on this function by the historic Centers served by the network. The premise was that they had been Centers for decades or centuries and the changes brought about by development around them were simply to be accommodated. In fact, efforts were made to move County roads out of Centers (e.g. the CR 517 by-pass in Sparta) as it was not considered possible to simultaneously address Municipal concerns for traffic calming, parking, street furniture, etc. and the overarching County objective of motor vehicle movement. The period of constructing by-pass roads has passed. We must now turn our attention to the necessary compromises between the two, often conflicting functions of a Main Street and an arterial highway. In their most pure forms, the two are diametrically opposed to each other. Whereas highways are generally friendly to motorists by allowing them fast passage, Main Street must be primarily pedestrian friendly and provide amenities to the community It must offer parking, street lights, litter baskets, parking meters, mailboxes, and other elements that cannot be installed outside of traditional sight triangle and intervisibility easements. As motorists must yield the right-of-way to pedestrians in crosswalks, speed controls, “bumpouts”, landscaped islands and the like are desirable elements of a Main Street. Pedestrians and bicyclists, by virtue of their vulnerability and the specific objective of facilitating movement in and around the center by non-motorized means shall be provided safe

and convenient access even where it requires inconvenience to motorists. For example, Road widths must be carefully calibrated with the urban design elements of the buildings and other facilities along the Main Street.

3. Paradigm Shifts And Their Concepts

The following separate set of design considerations are to be applied by County review professionals and Planning Board members in considering development along County roads in Centers. These design elements are critical to the maintenance of a low-speed, vibrant, and mixed-use environment that does not cater to rushing motor vehicles. They are, however, quite straightforward and are designed to implement the Center Design Standards found in the Sussex County Strategic Growth Plan.

4. Site Standards And The Pedestrian Realm

County standards in this document function most effectively if they are combined with site standards which are compatible with a pedestrian realm. Municipalities are strongly encouraged to allow and even adopt site standards that make walking the standard form of mobility for all people.

Centers and villages have Transect zones which vary from T-4 to T-6. For a description of Transect Zones (T-Zones), refer to Roadway Type, section V.C.2. Higher T-Zones must give transportation priority to the pedestrian realm.
The most important character of a site to accommodate pedestrians is the layout of its buildings. Building layout affects how short and direct a route we can take by walking from one building or public space to another. Building front entrances must be closer together than the style of development that we are used to seeing get built. Rather than being surrounded by parking spaces, buildings must link to the pedestrian realm.

In order to accomplish this, the most common constraints on land uses must be reconsidered. The front and side setback must be reduced to allow for short walking distances. The allowable height of structures should be given more analysis. For example, landmarks such as church steeples make the most endearing visual points of a town and provide a “sense of place”. The simple fact that higher density increases land value must not be overlooked, nor should providing short walking distances between destinations. Municipalities are encouraged to analyze where the peak density can be permitted, and what design standards are appropriate. One should also consider how such zones would permit development that allows people to walk between shops, retail, and office.

5. Elements Of Transportation

1. Vehicle speeds must be controlled by creating an environment in which people tend to slow their vehicles. In fact, speed in T-5 or T-6 zones should be kept to a "snail's pace" to provide safety for pedestrians of all ages—from baby strollers to the elderly. Slow vehicle speeds are also compatible with on-street parallel or angled parking.

2. Controlling Vehicle speed is crucial for the safety and general welfare of Centers. While high traffic flow can add to the vitality of the street, high vehicle speeds are detrimental for the following reasons:

   Noise: Studies have shown that quality of life for residents is dramatically reduced for people residing close to a road, and the detrimental effects were proportional to vehicle speed.

   Safety: The fatality rate of motor-vehicle accidents with pedestrians increases dramatically above 20 MPH. Two studies report that the chance of a pedestrian in an accident being killed goes from 5% at 20MPH to 37%-45% at 30 MPH.

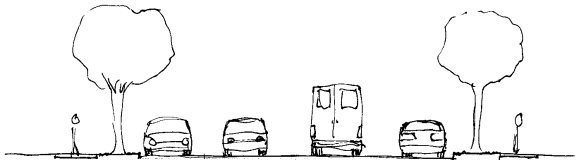
   Fear: People perceive faster-traveled streets as being more dangerous, and are unwilling to bring children or themselves onto sidewalks where they may feel vulnerable to out-of-control, high-speed vehicles.

   Low design and measured speeds have historically been achieved with streetscapes with a combination of narrower lane widths, on-street parallel or angled parking, and/or streetscapes. Illustrative cross sections are shown below.

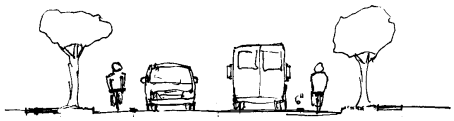
Figure V.X.1 – Illustrative Cross-Sections for Streets in Centers

T-4 Zone

2-LANE with Front Yards

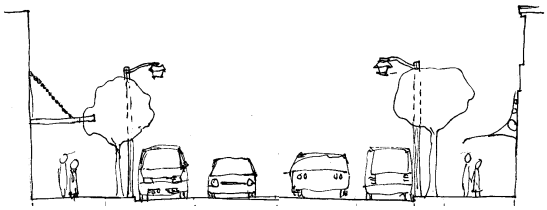


WITHOUT PARKING:



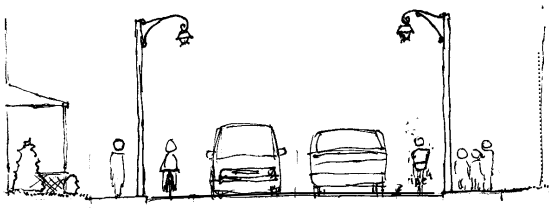
T-6 Zones

"Main Street", 2-LANE



T-5 Zone

2-LANE with small or Zero Setback



T-6 Zone with Median

with bicycle-compatible lane width

These cross-sections illustrate streets that are friendly to pedestrians. The lampposts and shade trees add to the experience and overall character of the street, which also induce drivers to slow down. In-street temporary pedestrian warning yield signs, wider painted lines on the edge of the traveled way, and variations in pavement texture can be used in conjunction with street character to induce lower vehicle speeds.

3. Cross-Connections: Traditional centers rely on a tight street grid that provides more intersections, which in turn provides drivers and pedestrians with more routes. More intersections also improve pedestrian access and interest. Connectivity is improved

because actual walking routes tend to be shorter, and perceived distances are even more manageable. Walking along an unchanging roadway for 1000 feet feels arduous for anyone not seeking physical fitness, but a 1000 feet walk with street crossings, window shopping or front-yard gardens and other streetscape features comes naturally to a broad spectrum of personalities. (A. Nelessen, Visions For A New American Dream)

Cross-Connector Criteria: The planning board ought to consider that cross-connector roads be required in new developments in Centers under the following conditions:

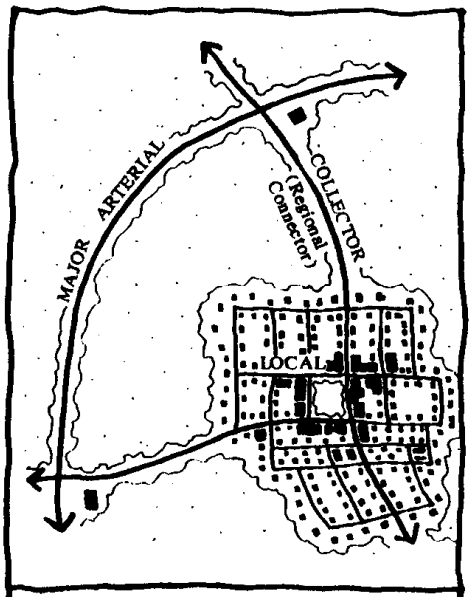
Such connector roads link to existing intersections, thereby creating a more-organized street grid with multiple travel routes.

The connector creates blocks with roughly 1600 feet of perimeter. (Peter Calthorpe, "Centers: the Missing Element of New Urbanism".) This translates to an average block length of 400 feet, which can vary, but should be no more than 700 feet in any situation.

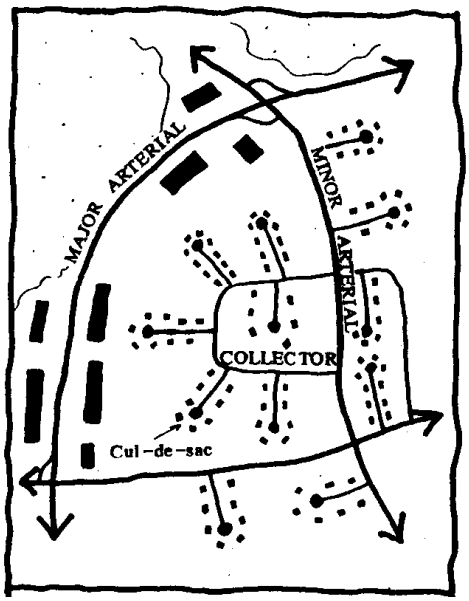
Note that in Centers, new sites still would not have more than one driveway entrance or exit for each site along a county road without a waiver from the County Planning Board.

Figure V.X.2 - Comparison of Street Grids Diagrams

a. Desired Street Organization in Centers



b. Avoid mobility-limiting street layouts like the conventional one shown below



Source: The County Strategic Growth Plan, Appendix D, Principal 6"

4. Sight Clearances: Where extensive traffic-calming streetscapes are planned or built in Centers, sight distance requirements may be based on Stopping Sight Distances, instead of the more stringent Turn-Out Sight Distances, in T-5 or T-6 zones. Sight triangles are not needed if the sight distance line is behind pedestrian entrance points as illustrated in Figure V.D.1. See the section on Traffic-Calming Streetscapes below to paint a picture of what a traffic-calming streetscape in a commercial T-5 or T-6 Zone in a Center could resemble.

5. Pedestrian Accessibility: Building Main Entrances must front the pedestrian-oriented streetscape. Generally, buildings should have a zero front yard setback. Sidewalks must be pleasing to walk on and provide direct, short linkages between public spaces and building entryways. Furthermore, the sidewalk itself should be an open public space with the help of street furniture.

6. Street Furniture: Although freestanding signage is not typically an issue in Centers, street lights, benches, mail and newspaper boxes will be located in what would otherwise be considered sight lines to be cleared.

7. Gateways: "Welcome" signs to Center entrances may be constructed in the County ROW, provided they are not in the direct path of sight lines. (See the section regarding Gateways below.)

8. Obstacles: to free flow of traffic are appropriate as traffic calming devices and parking protection elements. Appropriate obstacles described in the next section are required in T-5 or T-6 Zones, with consideration given to context.

9. Large-Vehicle Turning: Large curb radii required to accommodate large vehicles create large gaps in sidewalks and require longer street crossings. As a result, large vehicles that infrequently enter a site or an intersection should be given more freedom to encroach upon oncoming traffic lane(s), based on V.C.4.a above.

10. Parallel or Angled On-street Parking: is permitted as a part of traffic-calming streetscapes

11. Stormwater Management: Regional drainage provisions requiring off-site mitigation or attenuation may be substituted at the Planning Board's sole discretion for immediate or on-site provisions.

6. Traffic-Calming Streetscapes

Traffic Calming methods are popular for reducing the speed that motorists naturally tend to drive. Case studies have revealed that traffic calming methods are most effective when combined with one another and not isolated features in the roadway. The statement, "The whole is greater than the parts" applies to traffic calming features in that a strong overall character that can be seen from a distance makes

even the most aggressive drivers feel uncomfortable to continue speeding. This strong visual effect is referred to as a traffic calming “streetscape”.

1. Introduction to Streetscape Features:

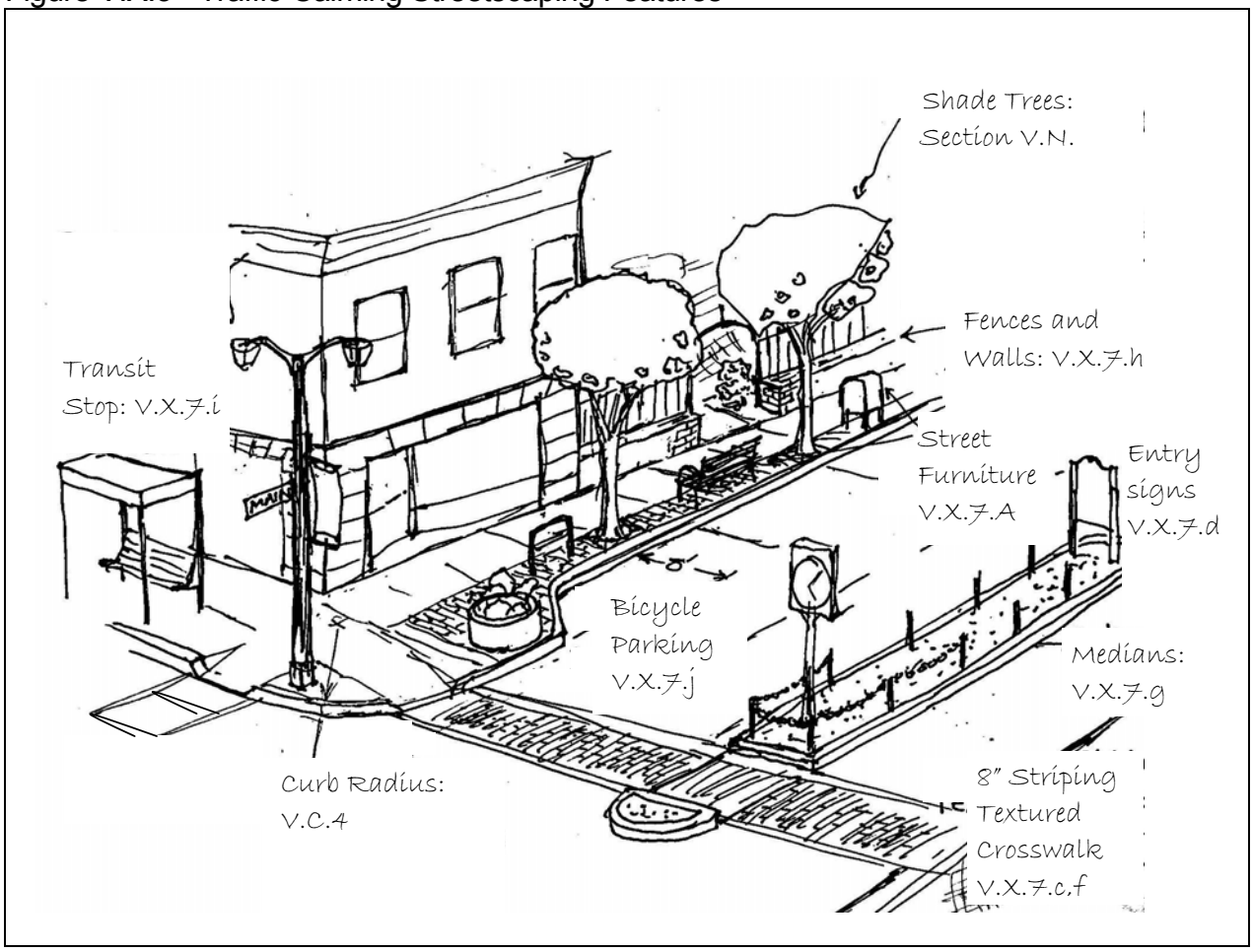
   The following streetscaping measures are permitted within Center-designated County road ROWs by the County of Sussex:

   a. Street furniture (i.e. lampposts with banners, benches, etc.)
   b. Curbed bulb-outs
   c. Textured (brick, or color-impregnated and stamped) crosswalks
   d. Signage that is unique to the location, such as welcome signs to the Center
   e. Gateways & Cross-Street banners
   f. Lane striping
   g. Medians
   h. Walls and fences
   i. Transit Stops
   j. Bicycle Racks
   k. Shade Trees

   The County encourages many of these features to be built simultaneously when possible. However, property owners and/or other responsible entities shall be responsible for the installation of streetscaping features. The county will only maintain crosswalks that are within County road ROW. Otherwise, all features must be maintained by the Municipality or property owners.

Traffic-calming features are described in greater detail below.

Figure V.X.3 - Traffic-Calming Streetscaping Features



7. Traffic-Calming Streetscape Features

a. Street furniture

Street Furniture, such as benches, tables, trash receptors, mailboxes, lampposts, above-ground planters, information kiosks, etc. are required to be installed along pedestrian routes in or near the County Road ROW. The following guidelines apply:

i. Location of Street furniture shall be outside the cartpath and relate to the function. For example, benches should face storefront windows or a common area where people gather. Bicycle racks should be placed near major entrances to buildings.

ii. Different items of street furniture should relate to each other in terms of design and color.

iii. Protect street furniture from vehicles with a distance of 2 feet from the face of the curb.

iv. Railings are discouraged.

v. See bicycle parking standards below.

b. Curbed bulb-outs

i. Dimensions: Bulb-outs shall be used where there is on-street parking or heavy lane-striping to keep the flow of traffic directed away from the bulb-out. The angle of the curb when transitioning from a wide to narrower cartpath width shall be a minimum of 40 degrees and a maximum of 60 degrees from the direction of travel.

ii. Curb Radius Shall be a minimum of 25 feet to 30 feet, or based on a demonstration by the design engineer that the largest common vehicle can negotiate the turn with at least a 2 feet buffer from the wheel tracks.

c. Textured Crosswalks:

Textured crosswalks shall be paved with stamped and stained pavement texture. Textured crosswalks shall also have white borders at least 8 inches wide to make them visible to approaching motorists.

d. Entry signs:

Welcome signs to the Center are permitted in the County road ROW, provided that they do not block sight lines. They should be placed near the entrance to the town center to assist with traffic calming.

e. Banners:

Lampposts should have mounting points for vertical banners. High-mounted temporary banners that span the entire street shall allow 16 feet of clearance from the roadway for large vehicles.

f. Lane striping: Striping should be wider, at 8 inches wide, white and painted 10 to 11 feet from the road centerline.

g. Medians: Shall be aesthetic, with low-maintenance

plantings and other decorative items such as stones, bollards, lampposts, etc. Medians and crosswalks should be integrated to refuges for pedestrians. The median provides a spot for slow-walking pedestrians (or anybody crossing high-volume streets) to rest and turn their heads to watch for one direction of vehicular traffic at a time.

h. Fences and Walls:

These regulations are for aesthetic purposes and are not to impinge on Municipal ordinances:

Table V.X.1 - Fences in County Road ROW		
Fence Type	Max. height (in feet)	Min distance to sidewalk (in feet)
Masonry, post-and-chain	3	0.3
Masonry	4	1.5
Wrought-iron gating	6	1.5

No chain-link fences are permitted along County roads in centers.

i. Transit:

Transit stop shelters shall not block sidewalks and should include at least one bench, a transit schedule, and some degree of protection from the elements. Shelter design must meet NJ Transit standards. Included in those standards are TCRP report 19 titled, “Guidelines for the Location and Design of Bus Stops” and Technical Specifications IFB No. 06-056X titled, “Purchase and Installation of 150 Bus Shelters”.

j. Bicycle Racks:

In T-5 or T-6 zones, bicycle racks that are specifically designed to fit between sidewalks and curbs should be provided in front of storefronts and main entrances to buildings. They should be located at least 4 feet from other street furniture.

k. Shade Trees

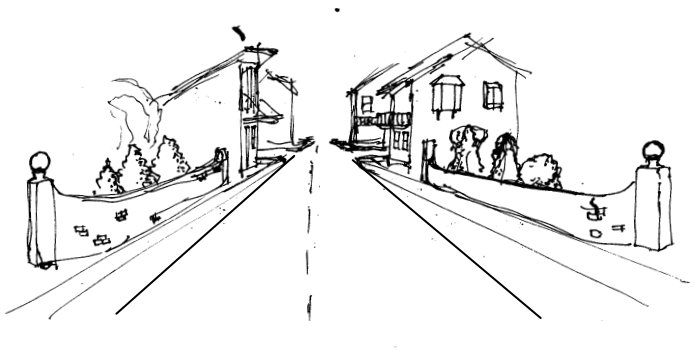
Shade Trees (sometimes called street trees) are typically located within the right-of-way and need to be appropriately spaced, sized, selected, and positioned such that future growth will not interfere with existing or proposed utilities, vehicle traveled way, headroom for pedestrians, sight triangles, or crowd each other. See section N for requirements and Appendix H for tree planting guidelines.

8. Gateways

a. Gateways are entrances to regions that provide the following functions:
   i. Heighten the awareness of a "sense of place" or emotion
   ii. Calm traffic, if combined with adjacent improved streetscape character
   iii. Promote small-scale development that is integrated with the community

b. Sussex County Gateways may consist of the following elements:
   i. Narrower lane striping, 10 feet wide with a 5 feet shoulder
   ii. Change in pavement microchannel to affect vibration in vehicles
   iii. Large signs that "welcome" travelers into the community.
   iv. Landscaping or decorative walls on opposite sides of the road
   v. A pair of modest-scale Buildings with architectural emphasis meeting Center Core design guidelines

This example gateway in Sussex County has a pair of mirror-image decorative stone walls.


Walls can add architectural emphasis in a village or center as well.

Gateways must be designed by a licensed architect, landscape architect, or urban designer.

VI - SEVERABILITY

If any section, subsection, paragraph, clause, phrase, or provision of this Ordinance shall be adjudged invalid or held unconstitutional, such section, paragraph, clause, phrase, or provision shall be severed from this Ordinance and such adjudication shall not effect the validity of the remaining sections, subsections, paragraphs, clauses, phrases, or provisions of this Resolution.

VII - REPEAL OF CONFLICTING RESOLUTIONS

All resolutions or parts of resolutions which are inconsistent with the provisions of this Ordinance are hereby repealed to the extent of such inconsistency.

VIII - EFFECTIVE DATE

This Ordinance shall take effect as provided by law.
Passed and adopted at a regular meeting of the Board of Chosen Freeholders of the County of Sussex held at the County Administration Building, Newton, New Jersey.

IX - ANNUAL REVIEW OF LAND STANDARDS

The Land Development Standards adopted by the Board of Chosen Freeholders are subject to review and amendment from time to time. Such review shall consider changes in statewide policy and procedure, advances in transportation safety analysis and design, land use decisions by Municipalities (e.g. designation of centers) and the like. The Board shall require an annual report by the Planning and Engineering and legal staff that shall review changes in approach to land use and the impact of those changes on county road and drainage facilities. The report shall make recommendations for amendments to the Land Development Standards as deemed appropriate by the professional staff. Any recommended changes to the Land Development Standards shall be consistent with the adopted Strategic Growth Plan.