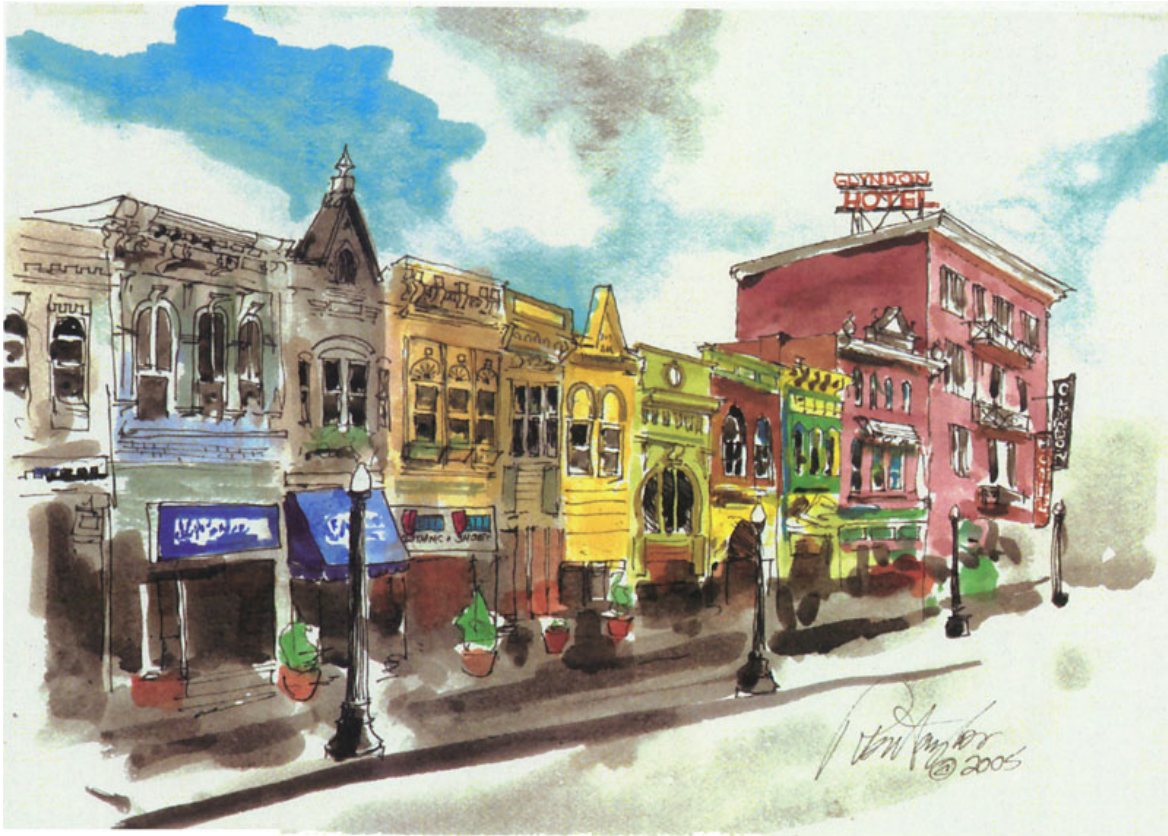


CITY OF RICHMOND, KENTUCKY



Richmond, Kentucky Main Streetscape

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DEVELOPMENT ORDINANCE

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ARTICLE I INTRODUCTION

100 OVERVIEW

This ordinance is designed to guide land use management together with land division and development decisions in the City of Richmond, Kentucky as a means of implementing the city's Comprehensive Plan. It is the desire of the City of Richmond and the Richmond Planning Commission that the use of this document will facilitate the orderly development of the city in the future.

The sequence of development in the city usually begins with a determination of how the land is to be used. Following this decision, the land may need to be divided into additional tracts or parcels (subdivided) prior to the final step involving the physical development of the land. This ordinance consists of two primary elements: (1) The Use of Land and Structures and 2) The Division and Development of Land.

The ordinance has been written in such a way as to provide a degree of flexibility in the use and development of land while being careful to protect the health, safety, and general welfare of citizens. One goal of the ordinance is to present the land use and development process in a format that is more easily understood by the intended user. A second goal is to recognize that the particular qualities of Richmond are distinctive and need to be recognized in the overall development process. A third goal is to avoid excessive regulations and costs associated with land use and development decisions.

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ARTICLE II GENERAL PROVISIONS

200 TITLE

This ordinance shall be known and may be cited to as the City of Richmond, Kentucky Development Ordinance.

201 AUTHORITY

These regulations are adopted under the authority granted in Kentucky Revised Statutes (K.R.S.) Chapter 100.

202 PURPOSE

The purpose of this ordinance is to promote public health, safety, morals, and the general welfare of the City of Richmond, Kentucky, to facilitate orderly and harmonious use, subdivision, and development of land and structures, to protect the visual or historical character of the area, and to regulate the density of population and the intensity of land use in order to provide for adequate light and air. In addition, this ordinance is designed to provide for vehicle parking and loading space, as well as to facilitate police and fire protection, prevent the overcrowding of land, blight, danger, and congestion in the circulation of people and commodities, and prevent the loss of life, health, or property from fire, flood, or other dangers. These regulations are used also to protect airports, highways, and other transportation facilities, public grounds and facilities, historic districts, primary agricultural land and other natural resources, and other specific areas of the city, which need special protection.

203 JURISDICTION

On and after the date of adoption, these regulations shall govern the use of land and structures and the subdivision and development of land within the corporate limits of the City of Richmond.

204 MINIMUM REQUIREMENTS

In their interpretation and application, the provisions of this ordinance shall be held to be minimum requirements. The Planning Commission may require standards above the minimum contained herein whenever it finds that the protection of public health, safety, and welfare warrants such increases.

205 CONSISTENCY WITH OTHER PROVISIONS

Whenever there is a discrepancy between minimum standards set forth in these regulations and those of other lawfully adopted rules, regulations, resolutions, or ordinances, the most restrictive or highest standard shall apply.

206 SEPARABILITY AND SEVERABILITY

Should any section of provision of these regulations be for any reason held void or invalid by any court of competent jurisdiction, it shall not affect the validity of any other clause, section or provision thereof which is not it self-void or invalid.

207 RELATION TO THE COMPREHENSIVE PLAN

The implementation of these regulations is closely related to the attainment of goals and objectives contained in the current Comprehensive Plan for Richmond, Kentucky. The sections of the plan dealing with land use and subdivision development should serve as primary reference points in administering these regulations.

208 REPEAL OF CONFLICTING ORDINANCES

All ordinances or parts of ordinances in conflict with this ordinance or inconsistent with the provisions of this ordinance are hereby repealed to the extent necessary to give this ordinance full force and effect.

209 EFFECTIVE DATE

This ordinance shall become effective from and after the date of its approval and adoption by the City of Richmond, Kentucky. City Ordinance 18-10.

06/19/2018

Effective Date

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ARTICLE III ADMINISTRATION AND ENFORCEMENT

300 THE CITY OF RICHMOND

The Richmond City Commission consists of a Mayor elected for a four-year term, and four Commissioners each elected for two-year terms. This body is responsible for overall governance of the city, with the City Manager overseeing the daily operations. The commission's specific responsibilities as pertain to planning; land use, and development activities are as follows:

1. Development, adoption, administration, and amendment of laws, regulations, and rules for conduct of governmental affairs.
2. Adoption of the Goals and Objectives of the Comprehensive Plan, which serves as the general guide for future growth and development.
3. Making the final decisions regarding all applications for land use changes, and oversee the administration of subdivision regulations and building codes.

301 THE RICHMOND PLANNING COMMISSION

The Richmond Planning Commission is a seven (7) member body whose members are appointed by the Mayor of Richmond with concurrence of the City Commission. In accordance with the requirements of K.R.S. 100, the planning commission has the following responsibilities:

1. Preparation of the comprehensive plan
2. Review and revisions to the comprehensive plan
3. Review and act upon all applications for the subdivision of land
4. Review and make recommendations to the appropriate governmental body on all applications for amendments to the land use regulations and official land use map.
5. File certificates of land use restrictions

302 THE BOARD OF ADJUSTMENT

The City of Richmond Board of Adjustment consists of five (5) members appointed by the Mayor of Richmond with concurrence of the City Commission. The Board has the following responsibilities as pertains to this ordinance:

1. The power to hear and decide applications for conditional use permits
2. The power to act on applications for non-conforming uses and structures
3. The power to act on applications for variances
4. The power to hear and decide cases where it is alleged by an applicant that there is an error in any order, requirement, decision, grant, or refusal made by the Chief Enforcement Officer in the enforcement of these regulations.

303 DEPARTMENT OF CODES AND PLANNING

The City of Richmond Department of Codes and Planning shall be responsible for overall administration of the Richmond Development Ordinance. The City Commission shall appoint a Planning and Zoning Director to oversee the specific duties of this office.

304 CODES AND PLANNING OFFICER

The Planning and Zoning Director shall be the person in charge of the daily administration of the Development Ordinance. The Chief Enforcement Officer may be designated to issue building permits and certificates of occupancy in accordance with the literal terms of the regulation, but may not have the power to permit any construction, or to permit any use or any change of use which does not conform to the literal terms of the Development Ordinance. Both the Planning and Zoning Director and the Chief Enforcement Officer have the authority to issue citations for the violation of city ordinances.

305 ORDINANCE ENFORCEMENT BOARD

The Ordinance Enforcement Board shall: a) Hear and decide all appeals from the action or inaction of the Office of Ordinance Enforcement or other authorized departments or otherwise from the enforcement of the applicable building code, the property maintenance code, or the fire prevention code, storm water ordinance, water use ordinance, or sewer use ordinance, b) enforce city ordinances pursuant to the provisions of KRS 65.8821. All enforcement proceedings shall proceed pursuant to the provisions of KRS 65.8801-8838. Review of enforcement proceedings shall be as specified in KRS 65.8831. All appeals to the Ordinance Enforcement Board shall proceed pursuant to Section 5 in Ordinance 04-11. The City Clerk shall be the records custodian and administrator of all enforcement proceedings of the Ordinance Enforcement Board.

306 VIOLATIONS AND PENALTIES

306.1

Whenever a violation of this ordinance occurs or is alleged to have occurred, any person may file a written complaint with the Planning and Zoning Director stating fully the causes and basis of the complaint. Any person affected by the decision, notice, or order of the Office of Code Enforcement, except for zoning matters, or any person affected by a decision, notice, or order of a city official or agent who is acting under the applicable building code (except appeals under the Kentucky Building Code, KRS 198B.070), property maintenance code, or fire prevention code, and storm water ordinance shall have the right to appeal to the Ordinance Enforcement Board by filing a written notice of appeal with the City Clerk within fourteen (14) days after the decision, notice, or order was served or made. The filing fees for a Notice of Appeals shall be \$25.00, and shall be paid upon filing the Notice of Appeal with the City Clerk.

Upon receipt of a Notice of Appeal, the Ordinance Enforcement Board shall convene a hearing to consider the appeal within fourteen (14) days of receipt. All parties to the appeal shall be notified of the time and place of the hearing by letter sent by certified mail, by personal service, or by leaving the notice at the person's usual place of residence with any individual residing therein who is 18 years of age or older and who is informed of the contents of the notice, no later than seven (7) days prior to the date of the hearing. The Ordinance Enforcement Board shall issue its decision on the appeal within ten (10) working days after the hearing. All appellate decisions of the Ordinance Enforcement Board may be appealed to the Madison District Court within thirty (30) days of the Ordinance Enforcement Board's final decision. Appeals from action or inaction of the enforcement of the Kentucky Building Code shall be made to the Kentucky Board of Housing, Buildings, and Construction, pursuant to KRS 198B.070. Fines for violation of ordinance enforced by the Ordinance Enforcement Board are described in appendix G of this Ordinance.

306.2

Any person or entity claiming to be injured or aggrieved by any final action of the planning commission shall appeal the final action to the circuit court. Such appeal shall be taken within thirty (30) days after such action. Such action shall not include the commission's recommendations made to other governmental bodies. All actions that have not been appealed within thirty (30) days shall not be subject to judicial review, provided any appeal of a planning commission action granting or denying a variance or conditional use permit authorized by KRS 100.203(5) shall be taken pursuant to this subsection. In such case, the thirty (30) day period for taking an appeal begins to run at the time the city commission grants or denies the map amendment for the same development. The planning commission shall be a party in any such appeal filed in the circuit court.

306.3

Any person or entity claiming to be injured or aggrieved by any final action of the city commission relating to a map amendment shall appeal from the action to the circuit court. Such appeal shall be taken within thirty (30) days after the final action of the city commission. All final actions, which have not been appealed within thirty (30) days, shall not be subject to judicial review. The city commission shall be a party in any such appeal filed in the circuit court.

306.4

Persons speaking at the public hearing in favor of the decision being appealed are not required to be parties to such appeal.

306.5

Violations of the provisions of this ordinance or failure to comply with any of its requirements shall constitute a misdemeanor.

306.6

Any person or entity that violates any of the provisions of KRS 100.201 to 100.347 or any of the regulations adopted pursuant thereto for which no other penalty is provided, shall upon conviction, be fined not less than ten dollars (\$10) but not more than five hundred (\$500) for each conviction. Each day of violation shall constitute a separate offense.

306.7

Any person, owner, or agent who violates Chapter 100, KRS shall, upon conviction be fined not less than one hundred dollars (\$100) nor more than five hundred dollars (\$500) for each lot or parcel which was the subject of sale or transfer, or a contract for sale or transfer.

306.8

Any person who intentionally violates any provision of KRS 100.3682 to 100.3684 shall be guilty of a misdemeanor punishable by a fine of not less than one hundred dollars (\$100) nor more than five hundred dollars (\$500).

306.9

The planning commission may appoint enforcement officers who shall have the authority to issue citations for violations of these regulations, which the officer has observed, but shall not have the powers of peace officers to make arrests or carry deadly weapons. The defendant shall appear within a designated time pursuant to the citation. The procedure for citations issued by an enforcement office shall be as provided in KRS 431.015.

306.10

The use of a single family detached dwelling located in any R-1 zoning district as a (i) Rooming and Boarding House; or (ii) as a Group Home not including, however, a “residential care facility” within the meaning of KRS 100.982 and KRS 100.984 shall subject the owner thereof to a fine of not less than \$100.00 nor more than \$500.00. Each day of such use shall be considered to be a separate violation. Any such fine assessed not paid within 30 days after the date that the assessment shall have become final shall be added to the City ad valorem tax bill for the property in question and shall bear interest and penalties the same as are applicable to delinquent ad valorem taxes.”

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ARTICLE IV

THE USE OF LAND AND STRUCTURES

400 PURPOSE

The purpose of this section of the ordinance is to classify, regulate, and restrict the use and location of land and buildings designed for specific uses, to regulate and determine the area of yards, and other open spaces surrounding buildings, to regulate and limit the density of population, and to realize the general purposes set forth in Section 202 of this ordinance. In order to accomplish this purpose the City of Richmond is divided into land use districts.

401 PROCEDURES

The present land use districts were established with adoption of the original zoning ordinance and through subsequent amendments to the written text and the official zoning map.

401.1 AMENDING THE TEXT

A proposal to amend the text of Article IV, The Use of Land and Structures, may originate with the Planning Commission or the City Commission. Regardless of the origin of the proposed amendment, it shall be referred to the Planning Commission before adoption. The Planning Commission shall hold a public hearing after notice as required by K.R.S. 424, and make a recommendation as to the text of the amendment, and whether the text amendment shall be approved or disapproved, stating the reasons for its recommendation. In the case of a proposed amendment originating with the City Commission, the Planning Commission shall make its recommendations within sixty (60) days of the date of its receipt of the proposed amendment. It shall take an affirmative vote of a majority of the City Commission to adopt the proposed amendment.

401.2 AMENDING THE OFFICIAL MAP

- A.** Prior to application for amendment to the Official Land Use Management Map, the applicant is encouraged to have a conference with the Administrative Official to discuss the proposed land use change.

- B. Amendment application.** A proposal to amend the Official Land Use Management Map may originate with the Planning Commission, the City Commission, or the owner of the property in question. No person who is not a licensed attorney shall be permitted to appear before the Planning Commission on behalf of an applicant for purposes of representing the applicant relative to the requested land use change. Any person may appear with an applicant for purposes of offering testimony or evidence concerning the requested land use change. The application for an amendment shall contain at least the following items:
1. **Interests and Ownership.** The applicant's name, address, and interest in the application and the name, address, and interest of every person, firm, or corporation represented by the applicant in the application, the name and signature of the owner or owners of the entire land area to be included within the proposed district and all encumbrances of such land and the names and addresses of owners of all adjacent property. If the applicant is not the owner, then the owner shall submit an affidavit certifying the person acting as a representative has the authority to act in his/her behalf.
 2. A copy of the deed(s) of the property in question describing the property with sufficient particularity so as to enable the City's GIS Department to make the necessary changes to the Official Land Use Management Map, together with a conceptual boundary map depicting the location of the property in question. If the deed(s) is insufficient for these purposes, the applicant shall be required to include with the application a current survey and a current surveyor's legal description.
 3. **Reason for the amendment.** The reason and justification for the proposed amendment stated in the application is consistent with Section 401.2 C, 3, (A, B) of this ordinance.
 4. **Effect of the amendment.** A statement giving the nature, description, and effect of the proposed amendment on surrounding land uses and properties must be included.
 5. A development plan may be required by the Planning Commission in conjunction with the application, and shall be reviewed by both the Technical Advisory Committee and the Planning Commission in keeping with Section 401.3. If a development plan is approved as part of the land use map amendment, a certificate of land use restriction must be filed.
 6. Such other information as is specified in the zoning map amendment application form promulgated by the Planning and Zoning Department including, without limitation, proposed Findings of Fact and Conclusions of Law relating to the proposed zone change.

C. Planning Commission Action. Following receipt of an application, the Planning Commission shall fix a time for a public hearing in keeping with the scheduled business meeting. The applicant shall then give public notice thereof in accordance with KRS Chapter 424; such notice shall include publication at least once and shall be made not less than seven (7) days nor more than twenty-one (21) days before the date of the hearing. The applicant shall also give notice at least 14 days in advance of the hearing by first class certified mail, return receipt requested, to the owners of the adjacent properties. A list of property owners with correct names and addresses shall be furnished to the Planning Commission along with copies of all returned receipts and affidavits of publication as evidence of compliance prior to the hearing. In addition, the applicant shall post a notice on the property for fourteen (14) consecutive days. This notice shall be in compliance with KRS Chapter 100.212 and with any requirements established by the Planning Commission.

1. If the property classification of which is proposed to be changed adjoins property in a different planning unit, notice of the hearing shall be given at least fourteen (14) days in advance of the hearing by first class mail to the Planning Commission of that planning unit.
2. If the property that is being proposed for a change in land use classification is part of a proposal for annexation by the City and is before the Planning and Zoning Commission for that body's recommendation as to the appropriate land use classification, the annexation applicant shall provide to the City's Planning and Zoning Department all of the information and documentation required as to an application for a zoning map amendment, together with such current survey and certified plat as is required pursuant to applicable provisions of the Kentucky Revised Statutes and applicable regulations of the office of the Kentucky Secretary of State together with proposed Findings of Fact in support of the zoning classification requested by the annexation applicant. It shall further be the responsibility of the annexation applicant to comply with each and every other requirement set forth in applicable provisions of the Kentucky Revised Statutes relating to annexation, all as may be amended from time to time.
3. The requirements of this Development Ordinance are based on the recommendations included in the Richmond Comprehensive Plan. Before any amendment to the Official Land Use Management Map is granted, the Planning Commission must first find that the proposed map amendment is in agreement with the Comprehensive Plan, or in the absence of such a finding, that one or more of the following apply:
 - (a) That the original land use classification given to the property was inappropriate, and that the proposed land use classification is appropriate, or
 - (b) That there have been major changes of an economic, physical, or social nature within the area involved which were not anticipated in the adopted

comprehensive plan, and which have substantially altered the basic character of such area.

Both the Kentucky Revised Statutes and this Development Ordinance set out specific standards, which govern the Planning Commission's consideration of an application for a land use change. Applicants are cautioned that unless substantial evidence is presented to the Planning Commission relating to these specific standards, the law requires that the Planning Commission recommend that the application for a land use change be denied.

4. The Planning Commission shall hold a public hearing and shall make a finding of fact, which shall be recorded in the minutes, and records of the Planning Commission. The Planning Commission may vote to approve, reject, or defer action on the proposed amendment. After voting, the Planning Commission shall forward its finding of fact and recommendation in writing to the City Commission. A tie vote shall be subject to further consideration by the Planning Commission not to exceed thirty (30) days, at the end of which if the tie has not been broken, the application shall be forwarded to the City Commission without a recommendation for approval or disapproval.

- D. Action by the City Commission. The appropriate legislative body shall not act upon a proposed amendment to the Official Land Use Management Map until it shall have received the written finding of fact and recommendation from the Planning Commission. If the Planning Commission denied the requested map amendment, before the City Commission can approve such amendment, it must take a majority vote of the membership of the legislative body to override the recommendation of the Planning Commission. When the legislative body has disapproved an application for a land use map amendment, an additional request for a change in land use for that tract of land shall not be filed within twelve (12) months of the date of disapproval.

401.3 DEVELOPMENT PLAN REQUIREMENTS

1. As referenced in Section 401.2 B (5), the Planning Commission may require a development plan in conjunction with a proposal to amend the official map.
2. An application shall be submitted as part of any development plan, and shall be made on a form provided by the Codes and Planning Officer. The application shall contain the following information; in addition to items indicated on the Development Plan checklist (refer to Appendix A).

3. At such times as a development plan has been approved by the Planning Commission, one copy shall be returned to the developer for compliance with final approval requirements. Such approval shall be effective for one (1) year from the date of approval. During that time, the general terms and conditions under which the development plan was granted will not be affected by any changes to these regulations. An extension of six (6) months may be granted provided the developer submits a written request to the Planning Commission and it is approved. The approval date for each development plan is the date of the planning and zoning business meeting that the plat is approved with or without conditions.
4. Development Plan Review Procedures:
Upon receipt of a development plan prepared in accordance with the provisions above, the appropriate Codes and Planning Officer shall immediately forward copies to the Technical Advisory Committee which shall review the development plan for compliance with any applicable codes, ordinances, or standards.
5. Recommendations:
The reviewing agencies shall review the plan for compliance with the standards, codes, or ordinances, which they are responsible for administering. The agencies shall, within seven (7) days of receipt of a development plan, make a recommendation to the Planning Commission, in writing, to approve, disapprove, or approve with modifications or conditions.

402 CERTIFICATES OF LAND USE RESTRICTION

When land use restrictions are imposed to include variances, conditional use permits, conditional land use management conditions, unrecorded preliminary subdivision plats and development plans, but not including land use management map amendments which impose no limitations or restrictions upon the use of the property other than those generally applicable to properties within the same land use district and not including any recorded subdivision plat, a certificate of land use restriction must be completed by the appropriate body (Planning Commission, Board of Adjustment, or City Commission), which finally adopts or imposes the land use restriction. The certificates shall be in the format provided for in the Appendix B to these regulations, and shall be filed with the County Clerk within thirty (30) days of the date upon which the body takes final action to impose or adopt the restriction. The Fiscal Court shall collect the County Clerk's filing fee (\$11.50) from the applicant at the time any processing is initiated which may result in the imposition, adoption, amendment or release of any land use restriction. The fee shall be refunded to the applicant in the event no land use restriction is imposed or adopted as a result of the proceeding. The County Clerk shall upon receipt of the fee, file and maintain these certificates among the official records of the office. The County Clerk shall index the certificates by property owner, and if applicable, name of subdivision or development. The County Clerk shall maintain in the office a record of the name and address of the agency having custody of the official land use management map for each planning unit within the county.

When a restriction reflected on the certificate is amended, a new certificate shall be filed. In the case of such amendment or in the event the original restriction is released, the previous certificate shall be released by the secretary of the body which amended or released the restriction in the same manner as releases of encumbrances upon real estate. The failure to file, file on time, or to complete the certificate properly or accurately shall not affect the validity or ability to enforce any land use restriction or regulation. A subsequent proper filing may cure an improper filing. Nothing herein shall affect the running of time for any appeal or other act for which a time limit is prescribed in these regulations.

When a land use management map amendment is filed for more than five (5) contiguous properties, or a land use restriction is imposed upon two (2) or more properties or lots in the same proceedings, a single certificate shall be filed for all the properties or lots collectively, and a single fee shall be paid.

403 CONDITIONAL USE PERMITS

403.1

The Board of Adjustment shall have the power to hear and decide applications for conditional use permits to allow the proper integration into the community of uses which are specifically named in the Land Use Management Regulations which may be suitable only in specific locations in the district only if certain conditions are met.

403.2

The board may approve, modify, or deny any application for a conditional use permit. If it approves such permit, it may attach necessary conditions such as time limitations, requirements that one or more things be done before the request can be initiated, or conditions of a continuing nature. Any such conditions shall be recorded in the board's minutes and on the conditional use permit along with a reference to the specific section in the regulations listing the conditional use under consideration. The board shall have the power to revoke conditional use permits, or variances for non-compliance with the condition thereof. Furthermore, the board shall have a right of action to compel offending structures or uses removed at the cost of the violator and may have judgment in personal for such cost.

403.3

Granting of a conditional use permit does not exempt the applicant from complying with all of the requirements of building, housing, and other regulations.

403.4

In any case where a conditional use permit has not been exercised within the time limit set by the board, or within one year from the date when the permit was granted by the board, if no specific time limit was then set, such conditional use permit shall conclusively be deemed to have been forever revoked and lapsed, and the use permissible for the property shall revert to such as existed prior to the grant of the permit.

403.5

The Chief Enforcement Officer shall review all conditional permits except those for which all conditions have been permanently satisfied, at least once annually and shall have the power to inspect the land or structure where the conditional use is located in order to ascertain that the landowner is complying with all of the conditions which are listed on the conditional use permit. If the landowner is not complying with the conditions on the conditional use permit, the Chief Enforcement Officer shall report the fact in writing to the chairman of the Board of Adjustment. The report shall state specifically the manner in which the landowner is not complying with the conditions on the conditional use permit and a copy of the report shall be furnished to the landowner at the same time it is furnished to the chairman of the Board of Adjustment. The board

shall hold a hearing on the report within a reasonable time, and notice of the time and place of the hearing shall be furnished to the landowner at least one week prior to the hearing. If the Board of Adjustment finds that the facts alleged in the report of the Chief Enforcement Officer are true and that the landowner has taken no steps to comply with them between the date of the report and the date of the hearing, the Board of Adjustment may authorize the Chief Enforcement Officer to revoke the conditional use permit and take the necessary legal action to cause the termination of the activity on the land which the conditional use permit authorizes.

403.6

Once the Board of Adjustment has completed a conditional use permit and all the conditions required are of such type that they can be satisfied completely and permanently, the Chief Enforcement Officer, upon request of the applicant, may, if the facts warrant, make a determination that the conditions have been satisfied and note the conclusion in the margin of the copy of the conditional use permit which is on file with the county clerk as required in KRS 100.329. Thereafter, said use if it continues to meet the other requirements of the regulations, will be treated as a permitted use.

403.7

When an application is made for a conditional use permit for land located in or abutting any residential district, written notice shall be given at least fourteen (14) days in advance of the public hearing on the application to the applicant, the Chief Enforcement Officer, and owner of every parcel of property adjoining the property to which the application applies and such other persons as the regulations shall direct. Written notice shall be by first class mail with certification by the board's secretary or other officer that the notice is mailed. It shall be the duty of the applicant to furnish to the board the name and address of any owner of each parcel of property as described in this subsection. Records maintained by the property valuation administrator may be relied upon to determine the identity and address of said owner. In the event such property is in condominium or cooperative forms of ownership, then the person notified by mail shall be the president or chairperson of the owner group, which administers property commonly, owned by the condominium or cooperative owners.

403.8

All conditional use permits approved by the Board of Adjustment shall be recorded at the expense of the applicant in the office of the county clerk.

404 VARIANCES

404.1

The board shall have the power to decide on applications for variances. The board may impose any reasonable conditions or restrictions on any variance it decides to grant.

404.2

Before any variance is granted, the board must find all of the following, which shall be recorded along with any imposed conditions or restrictions in its minutes and records issued in written form to the applicant to constitute proof of the variance:

- A.** The requested variance arises from special circumstances, which do not generally apply, to land in the general vicinity, or in the same district.
- B.** Such special circumstances are not the result of actions of the applicant taken subsequent to the adoption of these regulations.
- C.** The strict application of the provisions of the regulations would deprive the applicant of a reasonable use of the land or would create an unnecessary hardship on the applicant.
- D.** Reasons that the variance will not adversely affect the public health, safety, and welfare, will not alter the essential character of the general vicinity, and will not cause a hazard or a nuisance to the public.
- E.** A variance applies to the property for which it is granted, and not to the individual who applied for it. A variance runs with the land and is transferable to any future owner of the land, but the applicant cannot transfer it to a different site.
- F.** All variances approved by the Board of Adjustment shall be recorded at the expense of the applicant in the office of the county clerk.

405 NONCONFORMING USES AND STRUCTURES

405.1

The lawful use of a lot or a structure, existing at the time of adoption of any land use regulations affecting it may be continued, although such does not conform to the provisions of such regulations, except as otherwise provided herein.

405.2

A nonconforming use may lapse for a period of one year without being considered abandoned. The property owner may appeal to the Board of Adjustment for an additional year prior to the end of the first year. Any lapse of a nonconforming use for a period of more than two years will result in the property being required to conform to existing land use requirements regarding appropriate uses.

405.3

A residential dwelling may be built upon a lot which was nonconforming at the time this ordinance was adopted even though such lot fails to meet the requirements for area or frontage, or both, that are generally applicable in the district. However, dimensional requirements other than those applying to area or frontage (or both) of the lots shall conform to the regulations for the district in which such lot is located. Variances must be obtained from the Board of Adjustment as described in Section 404 of this ordinance.

405.4

The Board of Adjustment shall not allow the enlargement or extension of a nonconforming use beyond the scope and area of its operation at the time the regulation, which makes it nonconforming, was adopted. Nor shall the board permit a change from one nonconforming use to another unless the new nonconforming use is in the same or a more restrictive classification.

405.5

Should any nonconforming structure or nonconforming portion of a structure be damaged, destroyed, or demolished by any means, it may be reconstructed or repaired, but not to exceed the number of cubic feet existing in it, and not to extend or enlarge the scope and area of its operation prior to its damage, destruction, or demolition.

405.6

Administrative Review – The Board of Adjustments shall have the power to hear and decide cases where it is alleged by an applicant that there is error in any order, requirement, decision, grant, or refusal made by an administrative official in the enforcement of the land use regulations. Such appeal shall be made within thirty (30) days.

405.6.1

Procedure for Appeals to the Board - Appeals to the Board of Adjustment may be taken by any person or entity, claiming to be injuriously affected or aggrieved by an official action or decision of any land use regulations enforcement officer. Such appeal shall be taken within thirty (30) days after the appellant or his agent receives official notice of the action, by filing with said officer and the board a notice of appeal specifying the ground thereof, and giving notice of such appeal to any and all parties of record. Said officer shall forthwith transmit to the board all papers constituting the record upon which the action appealed from was taken and shall be treated as and be the respondent in such further proceedings. At the public hearing on the appeal held by the board, any interested person may appear and enter his appearance, and all shall be given an opportunity to be heard. The board will rehear an appeal only in cases where new evidence is available, or where the appealing person or entity desires a complete transcription for the court record.

405.7

Public Notice of Appeal Hearing - The board shall fix a reasonable time for hearing the appeal and give public notice in accordance with KRS Chapter 424, as well as written notice to the appellant and the Planning and Zoning Director at least one week prior to the hearing, and shall decide it within sixty (60) days. The affected party may appear at the hearing in person or be represented by an attorney.

405.8

Appeals From Board of Adjustment - Any person or entity claiming to be injured or aggrieved by any final action of the Board of Adjustment shall appeal from the action to the circuit court of the county in which the property, which is the subject of the action of the Board of Adjustment, lies. Such appeal shall be taken within thirty (30) days after the final action of the board. All final actions, which have not been appealed within thirty (30) days, shall not be subject to judicial review. The Board of Adjustment shall be a party in any such appeal filed in the circuit court.

406 LAND USE CLASSIFICATION AND DESIGNATION

PURPOSE

The purpose of this section is to regulate the use of land and structures conducted within the different districts, to insure that they are in keeping with the purposes of the district, and are compatible with one another. For the purpose of determining which uses shall be permitted in the different districts, the uses shall be defined and listed by categories in Section 406.1 below.

406.1 CATEGORIES OF USES

There are three categories of uses that are appropriate in determining the degree of review and regulation of land in the city:

- 1. Principal or Permitted Uses:** These uses are deemed to be most appropriate permitted outright in a district without the granting of any special conditions or the review by any body other than the planning commission.
- 2. Conditional Uses:** These uses may or may not be appropriate in a district dependent upon the existing situation. In order for these uses to be approved for a district, restrictions on location, size, extent, and character of performance may be required in addition to those already imposed by the ordinance, and require review by the Board of Adjustments.
- 3. Accessory Uses:** These uses are subordinate to or complement the principal use of the land or structure; Accessory uses do not require any further review by the planning commission or the Board of Adjustment.

406.2 Unclassified Uses:

The Planning and Zoning Commission shall, upon application to it, make a determination as to whether an unclassified use is appropriate within a given zoning classification, taking into consideration the classified uses most closely related to the use being proposed and the zoning classifications in which such uses are permitted or conditional uses. When the Commission has determined which, if any, zoning classification is appropriate for the proposed unclassified use; it shall further determine whether such use shall be a permitted use or a conditional use within such zoning classification.

406.3 LAND USE DISTRICTS:

Land use districts are divisions of land use in which more specific land use categories are identified. Each of the districts is described below with the purpose it is designed to serve. Where there is no permitted (P) or conditional use (C) indicated for an allowable use in a land use district, that use should not be permitted (excluding accessory land uses which are covered in Section 409B).

A. Residential Districts

Residential districts are established to provide suitable sites and surroundings for dwelling units. The ordinance recognizes that there should be a diversity of settings in order to meet individual housing preferences.

1. R-1A, R-1B, and R-1C Single-Family Residential Districts:

These residential districts are designed to provide for low to medium density neighborhoods of detached single-family residences and related uses, and to exclude uses that are not compatible with residential uses.

The R-1A district allows no more than 3.6 dwelling units per gross acre.

The R-1B district allows no more than 4.6 dwelling units per gross acre.

The R-1C district allows no more than 5.1 dwelling units per gross acre.

2. R-2, Two Family Residential (Duplex) District:

This district is designed to establish neighborhoods of single-family and two-family dwellings free from other uses not compatible to the district. The density shall not exceed 5.1 dwelling units per gross acre.

3. R-3, Multi-Family Residential District:

This district is designed to establish areas where multi-family dwelling units are allowed at densities not exceeding 14.24 dwelling units per acre.

4. RE, Residential Estates:

This district is designed to allow single-family residential land use in annexed rural/agricultural areas of the city that are not adjacent to existing developed districts, to encourage a more harmonious relationship with surrounding land uses, and to encourage the maintenance of open space. The maximum density of Residential Estates shall be one (1) unit per acre.

5. MP, Mobile Home Park/Community District:

This district is designed to accommodate mobile and manufactured homes in a planned residential setting with a maximum density of eight (8) units per acre. Mobile home parks shall comply with state regulations for Kentucky Mobile Home and Recreational Vehicle Parks as permitted in K.R.S. 219.310 to 219.410. In addition to the requirements set forth by K.R.S. each park shall provide a centrally located storm shelter within the park. Such storm shelters shall be located underground unless engineered drawings are approved by the Codes Enforcement office for above ground installations. Space within the shelter shall be provided at a rate to accommodate all occupants of the park.

6. PUD (PLANNED UNIT DEVELOPMENT) ZONE

a. PURPOSE:

- b.** The purpose of Planned Unit Development regulations is to encourage and allow more creative and imaginative design of land developments than is possible under district zoning regulations. Planned Unit Development is intended to allow substantial flexibility in planning and designing a proposal. This flexibility often accrues in the form of relief from compliance with conventional zoning ordinance site and design requirements. .

No PUD shall be permitted on less than **forty (40)** acres of land. However, development of a smaller tract adjacent to an existing PUD Zone may be permitted, if the proposed development conforms to and extends the original development as if the new area had been a part of the original development. Please refer to appendix I for all Planned Unit Development requirements and procedures.

B. Business Districts

1. B-1, Neighborhood Business District:

The purpose of the B-1 District is to encourage the establishment of areas for convenient type business uses designed to meet the needs of residents in immediate neighborhoods. Such districts shall be located with access to a collector street.

2. B-2, Central Business District:

The purpose of the B-2 (Downtown) District is to accommodate and encourage further expansion and renewal in the historic business core area of the city. A variety of business, governmental, residential, and other related uses are provided in an effort to provide the mix of activities necessary to establish a truly urban character.

3. B-3, Highway Business District:

The purpose of the B-3 District is to establish areas that are suitable for highway business uses only. This district is specifically designed to serve the traveling public. B-3 districts are generally located at intersections of major arterial streets or at interchange areas along I-75. Strip development is not encouraged.

4. B-4, Planned Shopping Center District:

The purpose of the B-4 District is to encourage the establishment of large clustered areas that are pre-planned for business uses. The ordinance recognizes different levels of shopping centers designed to meet the needs of variable sized market areas:

- a. Neighborhood Shopping Center** - This shopping center provides convenience goods for surrounding neighborhoods and is located at the intersection of collector or major arterial streets, having access to both streets. The minimum area required is five (5) acres.
- b. Community Shopping Center** - This shopping center provides shopping goods for a larger area to include the entire community. These centers shall be located at the intersection of major arterial streets, having access to both streets. The minimum area required for a community shopping center is fifteen (15) acres.
- c. Regional Shopping Center** - This shopping center provides shopping goods for the entire community as well as outlying areas. A regional shopping center shall be located at the intersection of two major arterial streets or at the interchange of I-75. The minimum area required for this shopping center is (25 acres).

5. P-1, Professional Office District:

The purpose of the P-1 District is to encourage the establishment of groupings of professional, executive, administrative, and similar service-type uses. These districts shall be located on collector or arterial streets. The P-1 district is also designed to act as a buffer between more intensive commercial uses and high density residential uses.

C. PSP, Public and Semi-Public District:

The purpose of the PSP District is to provide for public and quasi-public uses to include schools, parks, universities, government buildings, churches, hospitals, and other related uses.

D. Industrial Districts:

1. I-1, Dispersed Industrial Sites:

The purpose of the I-1 District is to provide for small manufacturing cluster and dispersed industrial sites. These districts are designed to accommodate industries and wholesale business establishments, which have a minimal impact on surrounding land uses. This district may also serve as a transitional area between more intensive industrial districts and less intensive business or residential districts. Other uses, such as fire and emergency rescue facilities, ambulance and emergent health care facilities, day care facilities providing service to industrial employees, and similar uses which are deemed compatible and consistent with the primary purpose and uses in this district may be approved by the board of adjustment as a conditional use, on a case by case basis.

2. I-2, Industrial Park District:

The purpose of this district is to encourage the grouping of both small manufacturers and larger-scale industries on a pre- planned site. Other uses, which support and are compatible with the primary uses in these districts, may be approved by the board of adjustment as a conditional use on a case-by-case basis. Other uses, such as fire and emergency rescue facilities, ambulance and emergent health care facilities, day care facilities providing service to industrial employees, and similar uses which are deemed compatible and consistent with the primary purpose and uses in this district may be approved by the board of adjustment as a conditional use, on a case by case basis.

E. Agricultural Districts:

The purpose of this district is to provide for land that is presently in non-urban uses (farmland, idle or vacant land, dispersed residences, etc.) being annexed into the city that shall remain in these non-urban uses until development is anticipated. The minimum area required for inclusion in this district is one (1) acre.

F. Overlay Districts:

In accordance with K.R.S. 82.660, the City of Richmond may establish Overlay Districts to provide additional regulations for design standards and development within any area of the city (See Section 410).

In accordance with K.R.S. 82.660, the City of Richmond may establish Overlay Districts to provide additional regulations for design standards and development within any area of the city determined to be:

1. An area that has historical, architectural, natural, or cultural significance that is suitable for preservation or conservation.
2. An area that is located near a body of water, or along an established commercial corridor that has a special character related to the location that is suitable for conservation.

Provisions for Establishment of an Overlay District:

1. An accurate description of the boundaries of the district.
2. A description of the historical, architectural, cultural, aesthetic, natural, or other distinctive characteristics of the district that are to be preserved or conserved.
3. A delegation of responsibility for the administration of overlay regulations to an appropriate entity of city government pursuant to KRS 82.670.
4. The standards, guidelines, or criteria that shall govern development within the district preserve, conserve, or protect the historical, architectural, cultural, aesthetic, or other distinctive characteristics of the district. These standards, guidelines, or criteria may be set out descriptively or by illustrations, and may incorporate by reference established architectural standards or guidelines.
5. Upon the effective date of the establishment of an overlay district, no person shall begin any major structural change or any ordinary repairs to any building or structure or change or create any surface parking lot, or clear a parcel or lot of trees or other major vegetation, or change the appearance to signage within an overlay district until the city has issued a permit, without cost, certifying that the person has complied with the provisions of these regulations. This prohibition shall not apply to emergency repairs that need to be made to a building or structure within an overlay district.
6. Development plans are required for all proposed development in overlay districts, in accordance with Section 401.3.
7. The body delegated to administer this section of the ordinance shall follow the procedure described in Section 410 in establishing an overlay district.
8. Overlay district regulations shall not conflict with the land use management regulations for the district and shall not permit uses prohibited by underlying district regulations or prohibit uses permitted by underlying district regulations.

Downtown Historic District (DH):

The purpose of a Downtown Historic District is to protect and preserve certain areas or individual structures and premises designated as having historic or architectural significance, and to encourage uses that will lead to their continuance, conservation, and improvement in a manner appropriate to the area's heritage.

Transportation Corridor District (TC-1):

The purpose of this Transportation Corridor Overlay District is to protect and enhance the economic and aesthetic character of the Robert R. Martin Bypass by insuring that proper planning and management principles are followed in future changes proposed for this area (see the comprehensive plan).

406.4 DIMENSIONAL REQUIREMENTS

Residential District	R-1A	R-1B	R-1C	R-2	R-3	R-E	MP	PUD
Minimum building site area (sq. ft.)	12000	9500	8500	8500	6500*	1 ac	4000	30ac/
Minimum building site width at front R-O-W line	75	60	50	60	50	50	30	*****
Minimum front yard setback***	25	25	25	25	25	25	25	*****
Minimum side yard setback	10	7	5	5	5	10	15	*****
Minimum rear yard setback****	35	20	15	20	20	25	15	*****
Maximum structure Height**	35	35	35	35	65	40	25	*****

* 6500 is the minimum area for first unit; each additional unit requires an additional 2800 square feet.

** Accessory structures are limited to size and placement where structural failure cannot impact adjoining property or Rights-of-Way

*** In older established residential areas, any new residential structure shall be set back from the street a distance similar to that of existing structures in order to maintain overall neighborhood appearance.

**** All corner lots shall be twenty-five percent (25%) larger due to the increased easement areas.

***** All P.U.D. regulations shall fall under Appendix I.

Business District	B-1	B-2	B-3	NH	B-4 C	R	P-1
Minimum building site area (sq. ft.)	10000	-	10000	5 ac	15 ac	35ac	10000
Minimum building site width at front R-O-W line	50	25	50	200	500	1000	50
Minimum front yard setback	25	0	25	35	100	100	25
Minimum side yard setback	10	0	10	25	25	50	25
Minimum rear yard setback	15	0	15	25	35	50	25
Maximum structure Height**	35	100	100	35	65	100	65

* In older established business areas, any new business structure shall be set back from the street a distance

similar to that of existing structures in order to maintain overall neighborhood appearance.

** Accessory structures are limited to size and placement where structural failure cannot impact adjoining property or Rights-of-Way

<u>Public/Semi-Public District</u>	<u>PSP</u>
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Minimum building site area (sq. ft.)	10000
Minimum building site width at front R-O-W line	100
Minimum front yard setback	25
Minimum side yard setback	15
Minimum rear yard setback	25
Maximum structure height**	60

** Accessory structures are limited to size and placement where structural failure cannot impact adjoining property or Rights-of-Way

<u>Industrial District</u>	<u>I-1</u>	<u>I-2</u>
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Minimum building site area (sq. ft.)	1 ac	Minimum of 5 consecutive tracts for park site 1 ac (minimum building site)
Minimum building site width at front R-O-W line	100	200
Minimum front yard setback	25	25
Minimum side yard setback	25	0 when abutting a Industrial zone 50 when abutting any other zone (25 feet required landscape/noise buffer)
Minimum rear yard setback	25	0 when abutting an industrial zone 50 when abutting any other zone (25 feet required landscape/noise buffer)
Maximum structure height	65	100 (Industrial Park covenants may be more restrictive)
Maximum Accessory Structure Height (from ground) Water Tower, Gravity Bins, Stacks, Vents, etc.		200 (Industrial Park covenants may be more restrictive)

<u>Agricultural District</u>	<u>A</u>
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Minimum building site area (sq. ft.)	1/5 ac*
Minimum building site width at front R-O-W line	100
Minimum front yard setback	50
Minimum side yard setback	25
Minimum rear yard setback	25
Maximum Residential building height	35

* Minimum building site for single-family dwelling is 1 acre; minimum site for a farm is 5 acres.

406.5 ALLOWABLE LAND USES

<u>RESIDENTIAL</u>	<u>R-1A</u>	<u>R1-B</u>	<u>R-1C</u>	<u>R-2</u>	<u>R-3</u>	<u>RE</u>	<u>MP/C</u>	<u>PUD</u>	<u>A</u>
Detached Single Family Dwellings*	P	P	P	P	P	P		P	P
Duplex Dwellings				P	P			P	
Town homes and Condominiums				P	P			P	
Multi-Family Dwellings					P			P	
Hotels and Motels					C				
Bed and Breakfast Inns	C	C	C	C	C	P		C	C
Residential Care Facilities	P	P	P	P	P			C	
Mobil/Manufactured Homes**							P		P
Mobil/Manufactured Home Parks/Communities**							P		
Beauty Salon / Barber Shop	C	C	C	C	C	C	C	C	C

* Includes modular homes

** Mobile/manufactured homes are allowed as permitted (P) uses in the A and MP/C districts in the City of Richmond. Mobile/manufactured home parks/communities are allowed in the MP/C district within the City.

<u>RESIDENTIAL</u>	<u>B-2</u>	<u>B-3</u>
<u>Loft Apartment</u> <u>Single-family</u>	C	C
<u>Loft Apartment</u> <u>Multi-family</u>	C	
<u>Basement Apartment</u> <u>Single-family</u>	C	
<u>Basement Apartment</u> <u>Multi-family</u>	C	

Conditions & Definitions for Loft & Basement Apartments

1. Loft and basement apartments must meet or exceed all current building codes.
2. Loft apartments in B-3 zones are only acceptable where the unit is used to serve the business for employed personnel for means of; night watchmen, maintenance personnel, or the like.
3. Parking requirement for B-2 zones in the “Downtown District” shall be resolved and set by the Board of Adjustments. Bicycle racks/storage shall be provided as part of new/redevelopment, or as applicable.
4. Loft apartment: A residential dwelling unit(s) located above the first floor of a building.*
5. Basement apartment: A residential dwelling unit(s) located below the first floor of a building.*

* For these purposes, the first floor shall be that floor which is located at street level and from which primary access to the building is located. If there is uncertainty as to what is the first floor or the building, that question shall be resolved by the Board of Adjustment.

<u>Public and Semi-Public</u>	<u>R-1A</u>	<u>R1-B</u>	<u>R-1C</u>	<u>R-2</u>	<u>R-3</u>	<u>RE</u>	<u>MP/C</u>	<u>P U D</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>	<u>P S P</u>	<u>A</u>
Schools	C	C	C	C	C				P	P	P		P		
Police and Fire Stations									P	P	P		P		
Governmental Offices									P	P	P	C***	P		
Parks and Playgrounds	C	C	C	C	C	C	P	P						P	P
Swimming Pools, Sport/Recreation Facilities									C	C	C			P	C
Utility Facilities*															
Cellular Antenna Towers**															
Libraries, Museums									P	P	P		P		
Churches	C	C	C	P	P				P	P	P	C***	P		P
Cemeteries														C	C
RV Park							P								

* Public utilities operating under state authority shall not be required to receive Planning Commission approval for the location or relocation of any of their service facilities. However, the utility in question shall provide the Planning Commission with information on the proposed change (see KRS 100.324).

** Cellular antenna towers are permitted on existing structures in all districts except residential district.

*** Bearing in mind that the primary contemplated use of a property within a B-4 zoning district is retail-type businesses, the Board of Adjustment should consider, in addition to the factors to be taken into consideration in evaluating a request for a conditional use as set forth elsewhere in this zoning code, the question of the length of time that the area proposed to be occupied has been unoccupied at the time of the application for a conditional use.

<u>BUSINESS and PERSONAL SERVICES</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>	<u>PSP</u>
Private Recreation and Sport Centers		C	C	C		
Art Galleries, Exhibition Halls		P	P	P		P
Private Golf Courses			C	C		C
Arenas and Amphitheaters			C			P
Private Clubs and Lodges	C	P	P	P		C
Photography, Art	P	P	P	P		P
Barber and Beauty Shops	P	P	P	P		P
Health Centers, Weight Loss Facilities	C	P	P	P		
Tanning Salons	C	P	P	P		
Auto Repair, Auto Parking	C	P	P	C		
Auto Body Shops	C	P	P	C		
Miscellaneous Repairs	P	P	P	P		
Laundromats	C	P	P	P		
Tailors, Seamstresses, Upholstering		P	P	P		
Photo Developing	P	P	P	P		
Video Rental Shops	C	P	P	P		
Amusement and Recreation		P	P	P		
Pet Boarding Facilities			C*			

*In making a determination as to whether any given proposed site would be suitable for the location of a Pet Boarding Facility, the Board of Adjustments should take into consideration the following factors: (1) Larger lots or sites should be preferred over smaller lots or sites. An emphasis should be placed on separation between outdoor pet runs or pens from adjoining property. Greater distances from the outdoor runs or pens to adjoining property are preferable to lesser distances. (2) Outdoor pens or runs should be screened from neighboring residential uses by either landscaping or privacy fencing. (3) Except in unusual circumstances where pens or runs are isolated from surrounding property, all animals should be placed indoors before 8:00 p.m. (4) To the extent possible, outdoor run and pens should be located to the rear of any building. (5) The types and numbers of the animals to be boarded should be taken into consideration.

<u>RETAIL TRADE</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>	<u>PSP</u>	<u>A</u>	<u>I-2</u>
Food Store (NH/Convenient)	P	P	P	P				
Food Stores (Community)	C	P	P	P				
General Merchandise		P	P	P				
Auto Dealers		P	P					
Service Stations	C	P	P	C				
Apparel and Accessory Stores	C	P	P	P				
Furniture, Furnishings and Appliances		P	P	P				
Eating and Drinking Establishments	P	P	P	P				
Drug Stores / Pharmacies	P	P	P	P				
Office Supplies		P	P	P	P			
Toys and Sporting Goods	P	P	P	P				
Books, Records, Tapes	P	P	P	P				
Hardware and Related	C	P	P	P				
Gifts, Jewelry, Novelties	P	P	P	P				
Bicycles, Motorcycles		P	P	P				
Auto Parts and Supplies		P	P	P				
Package Liquor, Beer, Wine		P	P	P				
Pet Stores and Pet Grooming	P	P	P	C				
Farm Equipment / Supplies			P				P	
Feed, Seed, and Garden Supplies			P	P				
Computers, Electronics		P	P	P				
Miscellaneous Retail	C	C	C	C				
Manufactured Home Sales			P					
Hotel and Motels	C	P	P					
Microbrewery	C*	C*	C*	C*				
Micro-Winery	C*	C*	C*	C*				
Brewpub	C	P	C	C				
Fireworks (Permanent) Ord. 92-42								P
Fireworks (Seasonal) Ord. 92-42			P	P				

* The Board of Adjustments, in assessing whether a Microbrewery or a Micro-Winery is appropriate at any given proposed location, should take into consideration the size, scope, and appearance of the proposed Microbrewery or Micro-Winery contrasted with the nature and appearance of other businesses in the vicinity; the degree to which the operations and activities to be performed by the proposed facility will be consistent or inconsistent with the existing uses of other properties in the vicinity; together with such other considerations as are pertinent to the question of whether the proposed facility is appropriate at the particular proposed location. The Board shall have the right to require the applicant to submit to it all such information relating to the nature and appearance of the proposed structure and facilities and the operations and activities involved as the Board may deem necessary to its consideration of the requested Conditional Use Permit and, if the permit is to be granted, to impose such restrictions as it may deem necessary and appropriate.

<u>Professional Services</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>
Architects, Engineers	P	P	P	P	P
Accountants	P	P	P	P	P
Banks, Investment Services	P	P	P	P	P
Business Consultants	P	P	P	P	P
Real Estate	P	P	P	P	P
Tax Service	P	P	P	P	P
Attorneys	P	P	P	P	P
Advertising / Public Relations		P	P	P	P

<u>Health Services</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>	<u>PSP</u>
Hospitals		P	P			P
Physical Therapy	C	P	P	P	P	
Assisted Care Facilities	C	C	P	P		
Doctor / Dentist Offices	P	P	P	P	P	
Hospices	C	C	P	P		
Veterinary Offices			C			
Pain Clinics			C		C	
Massage Therapist			P		P	

<u>Educational and Social Services</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>	<u>PSP</u>	<u>I-1</u>
Child Care Facilities	C	C	C	C	C	C	C
Counseling Services		P	P		P		
Social Service Organizations		P	P	P			
Business / Technical Training		P	P	C	P	P	

<u>Warehousing and Storage</u>	<u>B-1</u>	<u>B-2</u>	<u>B-3</u>	<u>B-4</u>	<u>P-1</u>	<u>PSP</u>
Warehouse		C	C			
Mini-Warehouses	C	C	P			
Moving and Storage		P	P			
Truck Freight Terminals		P	C			
Food Lockers		P	P			
Wholesale Distributors		P	P			

<u>Manufacturing</u>	<u>I-1</u>	<u>I-2</u>
Food and Related	C	P
Apparel and Finished Goods	C	P
Lumber and Wood Products	C	P
Paper and Related		P
Printing / Publishing	P	P
Chemicals / Petroleum	C	P
Rubber / Plastics	C	P
Leather Products		P
Stone, Clay, Concrete, Glass	P	P
Primary Metals	P	P
Industrial Equipment	P	P
Transportation Equipment	C	P
Temporary Towing/Auto Storage Center (90-day limit)		P
Electronics	P	P
Distribution Center	P	P
Commercial & Industrial Warehousing (not mini-warehouses)	P	P
Truck Freight Terminals	C	P
Other uses which, in the opinion of the Board of Adjustment, are deemed to be compatible and consistent with the permitted uses in this zone	C	C
Adult (sexually explicit) Entertainment		P
Massage Parlor		C
Brewery	P	P
Winery	P	P
Distillery	P	P
Microbrewery	P	P
Micro-Winery	P	P

<u>Agriculture*</u>	<u>A</u>	<u>B1</u>	<u>B2</u>	<u>B3</u>
Crop Production	P			
Pastures	P			
Timber	P			
Orchard fruits / Vineyards	P			
Horticulture	P			
Livestock Production**	P / C			
Poultry Production**	P / C			
Farm Machinery Repair / Servicing	P			
Aquaculture	P			
Agricultural Products Retail Outlet ***	P	C	C	P
Commercial Nursery ***	P			C

*See the definition of agricultural uses in Article VI. a five acre or larger lot the principal use of which is for a single-family dwelling is not considered as an agricultural use.

**High density livestock activity such as cattle / hog feed lots, and similar intensive feeding operations are prohibited.

*** See Appendix J

407 THE OFFICAL LAND USE MAP

407.1 OFFICIAL MAP

For the purpose of administering this chapter, the City of Richmond is divided into land use areas and districts, the boundaries of which are shown on the Official Land Use Management Map.

407.2

The Official Land Use Management Map for the City of Richmond shall be identified by the title "Official Land Use Management Map of Richmond, Kentucky, and shall bear the signature of the Mayor attested by the City Clerk and bearing the seal of the city following the statement "This is to certify that this map is the Official Land Use Management Map of Richmond, Kentucky, as adopted by Ordinance 06-05 by the City Council on February 28, 2006."

407.3

If in accordance with the provisions of this chapter and KRS Chapter 100, amendments are made in the district or overlay district boundaries or other matters portrayed on the Official Land Use Management Map of the City of Richmond, such amendments shall be made to the Official Map promptly after the amendment has been approved by the appropriate governing body with and entry on the Official Map as follows: "By official action of the City Commission, this map is amended as authorized by Ordinance 06-05_which entry shall be signed by the Mayor and attested by the City Clerk.

407.4

No changes of any nature shall be made to the Official Land Use Management Map or matter shown thereon except in conformity with the procedures set forth in this chapter and in KRS Chapter 100. Any unauthorized change of whatever kind by any person or persons shall be considered a violation of this chapter and punishable as provided herein.

407.5

Regardless of the purported copies of the Official Land Use Management Map which may from time to time be made or published, the Official Land Use Management Map which shall be located in the office of the Planning and Zoning Director, shall be the final authority as to the current land use classification of land and water areas, buildings, and other structures in the city.

407.6

In the event the Official Land Use Management Map becomes damaged, destroyed, lost, or difficult to interpret because of the nature or number of changes and additions, the appropriate governing body may adopt a new Official Land Use Management Map which shall supersede the prior map, but no such correction shall have the effect of amending the original Official Land Use Management Map, or any subsequent amendment thereof. The new Official Land Use Management Map shall be identified by the same signature, seal, and wording as provided in the original map.

408 INTERPRETATION OF BOUNDARIES

Where uncertainty exists with respect to the boundaries of any of the land use areas or districts as shown on the Official Land Use Management Map, the following rules shall apply:

1. Boundaries indicated as approximately following the center lines of streets, highways, or alleys shall be construed to follow such center lines.
2. Boundaries indicated as approximately following platted lot lines or property lines shall be construed as following such lot lines or property lines.
3. Boundaries indicated as approximately following city limits shall be construed as following such city limits.
4. Boundaries indicated as following railroad lines shall be construed to be midway between the main tracks.
5. Boundaries indicated as following shore lines shall be construed to follow such shore lines, and in the event of change in the shore line, shall be construed as moving with the actual shore line; boundaries indicated as approximately following centerline of streams, rivers, creeks, or other natural drainage courses shall be construed to follow such center lines.
6. Boundaries indicated as parallel to or extensions of features indicated in divisions 1 through 5 above, shall so be construed
7. Where physical or geographical features existing on the ground are at variance with those shown on the Official Land Use Management Map, or in other circumstances not covered by divisions 1 through 5 above, the Planning Commission shall interpret the district or overlay district boundaries.

409 SUPPLEMENTARY USE REGULATIONS

A. Home Occupations shall be permitted as an accessory use in all residential land use districts in Richmond, provided they comply with all of the following:

1. A home occupation permit shall be obtained from the Administrative Official who shall inspect the site where the home occupation is to be located to insure compliance with this section of the ordinance. If the terms of this section are being violated, the Home Occupation Permit may be revoked.
2. Allowable uses include but are not limited to professional offices, workshops, studios, and personal services. Neither, retail sales, or processing (manufacturing) of any product shall be allowed.
3. The use shall be conducted entirely within the principal dwelling or attached garage. In agricultural districts, the use may be conducted in an accessory structure
4. The use shall not occupy more than 25% of the gross floor area of the structure.
5. There shall be no evidence of the use visible from the exterior of the dwelling. Signs are not permitted for Home Occupations.
6. There shall be no noise, odors, fumes, dust, or vibrations emitted from the building.
7. There shall not be more than one employee who is not a family member residing at that location.
8. Two off-street parking spaces shall be provided for customers and clients in addition to off-street parking for the residents.

B. Accessory Uses and Structures

1. Accessory uses and structures are subordinate to the principal use of the land or building, are located on the same lot, and serve a purpose that is customarily incidental to the principal land use or principal building use.
2. **Residential accessory structures** shall be permitted in all residential and agricultural districts (except where prohibited by private land use restrictions/covenants).
3. In-ground swimming pools shall be completely enclosed by a fence or wall at least four feet in height (separate from a fence or wall around the perimeter of the lot. The walls of an above ground swimming pool may be considered part of the required fence height. All gates or opening in the fence shall be equipped with self-closing and self-latching devices. Pools shall not be located beneath or within five (5) feet of an overhead electric line. All ladders shall be removed while the pool is not in use; and decks, steps, or other means of access to an above ground pool shall be secured within a fence or be equipped with self-closing and self-latching devices.
4. Residential accessory structures may be located in a side yard or rear yard provided they comply with all setback requirements and do not occupy more than 25% of the yard area. A maximum of two (2) roofed accessory structures shall be allowed per lot.
5. **Non-residential accessory structures** shall be permitted in all commercial, industrial, and public/semi-public districts provided they comply with all the district requirements. These structures include but are not limited to the following; storage buildings, storage silos, heating and mechanical equipment, conveyor equipment, trash dumpsters, compactors, incinerators, or electric substations.

C. Roadside Sales.

Included in roadside sale are temporary stands and temporary places of business for sales of locally-grown fruit, flowers and vegetables, crafts, seasonal items such as Christmas trees, Memorial Day flowers, and fireworks, and similar seasonal merchandise. Roadside sales shall be permitted in B-3 districts, provided

1. A business license has been obtained from the city.
2. A roadside sales permit shall be obtained from the Chief Enforcement Officer who shall approve the site, and may issue a three day or 21 day permit; however, not more than three permits may be issued to the same vendor at the same location during any calendar year.
3. Temporary structures permitted may include booths, tents, trucks, or tables, but no campers or manufactured structures shall be permitted.
4. One sign not more than 12 square feet in area may be permitted.
5. No merchandise or signs shall be displayed on any public way.
6. Adequate off-street parking shall be provided for customers. If located on a commercial establishment lot, the sale area shall not occupy any of the required off-street parking spaces.

D. Yard and garage sales. Yard and garage sales may be allowed in any district, provided that:

Sales shall be allowed during daylight hours only.

No vendors, merchants, or retail sales shall be allowed.

No merchandise or signs may be placed on any public way.

One sign may be allowed on the site, not more than four square feet in area and posted not more than 24 hours prior to the sale, and shall be removed immediately after the sale.

E. Fences, Walls, and Hedges.

Fences, walls, and hedges serve to enclose similar land uses and to separate different land uses.

They also serve as buffers to screen activities that might be inharmonious. There are two types of these devices; 1) those that do not impede visibility by more than twenty (20) percent and 2) those that do impede visibility by more than twenty (20) percent. Type 1) includes but is not limited to chain link, woven wire, split rail, and other similar fences, and low density vegetative screens.

These devices shall be permitted in any rear or side yard in any district, in the front yard of an agricultural district, and in the front yard of a residential district provided they do not exceed four (4) feet in height, and do not interfere with visibility for vehicular movement. Type 2) includes but is not limited to masonry walls, board and stockade fences, and chain link fences with inserts. These devices shall be permitted in the rear yard in any district provided it shall not exceed six feet in height.

* No improvements shall be placed on the drainage or utility easements unless approved by the planning and zoning office.

Barbed wire, electrified fences or other similar protection devices shall not be permitted in any residential district or adjacent to any residential use in the City of Richmond. These devices shall be permitted in agricultural districts, in conjunction with agricultural uses.

F. Storage of vehicles.

Storage of recreational vehicles including campers, boats and trailer, motor homes, off-road vehicles, and other non-licensed vehicles may be stored in any district, provided:

1. Recreational vehicles shall not be stored in the front yard, on the front driveway, or in the street.
2. Not more than two recreational vehicles shall be stored on any lot, nor shall their storage impede visibility of vehicular or pedestrian traffic.
3. Recreational vehicles may not be stored on any public way for more than twenty four (24) hours.
4. Only operable, functional recreational vehicles possessing current vehicle registration, when registration is required, are permitted. No commercial trucks shall be stored on residential property.
5. Only recreational vehicles registered to the occupant may be stored on the occupant's lot.

G. Outdoor uses.

Unless specifically permitted elsewhere in this chapter, all usages, including storage or displays thereof, shall be conducted entirely within completely enclosed structures. The following shall be exempted from this requirement:

1. Uses located within commercial or industrial districts.
2. Agricultural uses within any district.
3. Commercial storage or display of automobiles, trucks, boats, or recreational vehicles.
4. Trash dumpsters, compactors, or receptacles, firewood, similar materials. These uses shall be located in the rear or side yard and screened from public view.

H. Separate building site required.

Unless specifically permitted elsewhere in this chapter, a separate building site shall be provided for each individual building or use, except for permitted accessory building or accessory uses.

I. Visibility at Intersections.

On a corner lot, nothing shall be placed, erected, planted, or allowed to grow in such a manner as to materially impede vision in the area bounded by the street lines of such corner and a line joining points along said street lines. Refer to the Access Management and Roadway Manual, Chapter 3 for specific dimensions. Corner lots shall be graded to proper elevations in order to comply with this provision.

J. Yard requirements at district boundaries.

Whenever two different districts adjoin, the minimum width and depth requirements of both, adjoining front, side, and rear yards shall be the more restrictive of the two districts.

K. Landscaping.

In the City of Richmond, a landscape plan shall be submitted with subdivision plats or development plans or the building permit applications (as appropriate), for review and approval by the Landscape Committee.

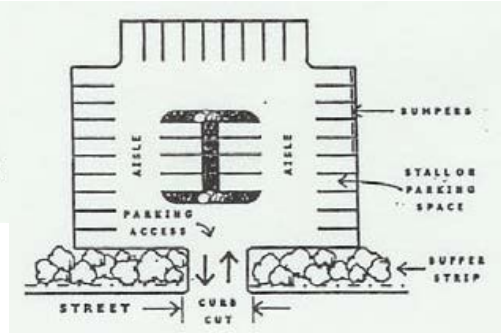
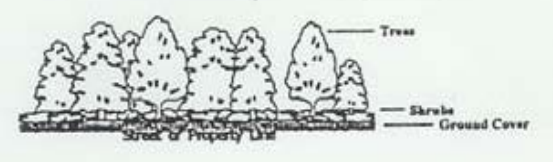
- 1) **Purpose:** The purpose of these landscape requirements is to enhance the aesthetic qualities of development and to minimize the friction that might occur between different land uses. In addition, the planting of trees, shrubs, and ground cover, and use of fences, walls, and earthen mounds help to retard erosion, channel vehicular and pedestrian circulation, protect surrounding property values, reduce the effects of air, odor, visual, and noise pollution, and reduce glare from outdoor lighting.
- 2) **Developer's Responsibility:** The landscape requirements set forth in this section shall be provided as a condition of development by the developer or owner of the property being developed. An owner securing a change in land use classification which creates a different situation shall be the one deemed responsible for creating the different situation, and shall provide the required landscape buffer as a condition of such land use change. If the different situation already exists or is created by a general land use change not sponsored by the property owner, the landscape buffer shall be provided as a condition of the approval of any subdivision of the affected land.
- 3) **Compliance:** The Planning and Zoning Director shall be responsible for insuring compliance with this section of the ordinance as part of the subdivision plat or development plan review. The Planning and Zoning Director shall inspect the premises prior to the issuance of a certificate of occupancy to insure that the landscape buffer is in place. If, due to seasonal variance, planting is not practical at the time required for the issuance of the certificate of occupancy, the developer shall post a bond to cover cost of the landscape buffer, shall plant the landscape buffer as soon as reasonably possible, and shall notify the Planning and Zoning Director who will inspect the landscape buffer to insure that it is in compliance with these regulations.
- 4) **Exceptions:** In a situation where by reason of exceptional topographic, dimensional, shape, or other special conditions, the enforcement of this section would create an undue hardship on the applicant, the applicant may request a variance or waiver of such requirements.
- 5) **Relationship to Yard Requirements:** The landscape buffer areas set forth in this section shall be included in the minimum yard required by the land use district in which the development is taking place. If the buffer area is greater than the yard requirement, the yard requirement shall be extended to accommodate the buffer.
- 6) **Buffer Area Conflicts:** Where landscape buffers are required in the same location as utility easements, the two may be combined providing that the total width and screening requirements are met and it is not in violation of any required utility easements.
- 7) **Provisions of Planting Materials and Barriers:** Such trees, shrubs, ground covers, and barriers as required shall be provided by the developer by the developer or owner and considered as any other site improvement.

- 8) **Inclusion on Subdivision Plats and Development Plans:** Areas to be set aside for landscape buffer areas shall be shown on the subdivision plat or development plan. In addition, each lot shall have on shade tree planted for each 50 feet of street frontage. Trees shall have a minimum trunk size of two inches in diameter unless otherwise specified. Plants shall be nursery grown and adapted to the local area.
- 9) **Maintenance of Landscape Buffer:** Landscape buffers and trees shall be maintained by the property owner.
- 10) **Minimum Landscape Buffer Requirements:** The landscape buffers as described below shall apply to all common boundaries between different "land uses". The buffer effect may be accomplished by trees or shrubs and barriers in any combination that accomplishes the objectives of these requirements. In addition, ground cover shall be provided in the form of grass, low shrubs, or mulch. Plants shall be those that are acclimated to the local environment.

<u>Adjoining Land Uses</u>	<u>Buffer Width</u>	<u>Trees, Shrubs or Barriers</u>	
Single and Two-family Residential	10 feet	1 small or medium tree @ 40 foot intervals	6 foot continuous hedge or 4 foot wall/fence
Single-Two-family and Multi-family/Mfg. Home Park/Community	10 feet	1 small or medium tree @ 40 foot intervals	6 foot continuous hedge or 4 foot wall/fence
Multi-family and Mfg. Home Park/Community	10 feet	1 medium or large tree @ 40 foot intervals	continuous hedge or at 10 intervals with wall/fence
Single/Two family and Commercial/Industrial	15 feet	1 medium or large tree @ 40 foot intervals	6 foot continuous hedge or intermittent planting w/wall, or 6 foot wall/fence
Multi-family/ Mfg. Home Park/Community and Commercial/Industrial	10 feet	1 medium or large tree @ 40 foot intervals	6 foot continuous hedge or intermittent planting w/wall or 6 foot wall/fence
Commercial and Industrial	10 feet	1 medium or large tree @ 40 foot intervals	4 foot continuous hedge or trees at 10 foot intervals w/ wall, or 4 foot wall/fence
All Land Uses and Freeways/Hwys/RRs	20 feet	1 medium or large tree @ 30 foot intervals	6 foot continuous hedge or 6 foot wall/fence
All Land Uses and Utility stations, landfills, salvage yards, etc.	15 feet	1 medium or large tree @ 30 foot intervals	6 foot continuous hedge or 6 foot wall/fence
All Land Uses and Agricultural district	10 feet	1 medium or large tree @ 30 foot intervals	6 foot continuous hedge or 6 foot wall/fence

A combination of shrubs and trees and/or fences and walls may be used to accomplish the screening of properties. Where there is an existing vegetative screen (along a fence line, etc.) the developer may need only to supplement what is already in place. For more specific information on screening/buffer requirements, see Section ___ of this ordinance.

Parking Area Landscaping. Review of any landscaping requirements for parking lots and the intersection of parking lots and streets should pay careful attention to the selection of plants and setbacks to insure that vehicular traffic visibility is not impeded.



- 11) **Screening Fence or Wall:** If a fence or wall is used to provide screening, it shall be constructed such that visibility through any portion of the fence or wall is not greater than 80%. The fence or wall shall be of sufficient height to accomplish the purpose for which it is designed but shall not be greater than eight feet, nor less than four feet in height. The fence or wall may be constructed of wood, masonry, metal provided it is aesthetically pleasing.
- 12) **Landscaping or Screen Planting;** If trees or shrubs are to be used to provide screening, a species shall be used such that visibility through the screening is blocked by at least 80% throughout the year. The effective screening height of the trees or shrubs shall be at least four feet in height at the time of planting.
- 13) **Landscaping in Parking Lots:** A landscape plan is required for all commercial, industrial, and multi-family residential development. For every one hundred (100) square feet of vehicular use area (or fraction thereof), five (5) square feet of landscaped area shall be provided, in addition to landscaping around the perimeter of adjacent buildings. For every two hundred fifty (250) square feet of landscaping required one (1) tree shall be provided. The minimum size for a landscaped area shall be sixty-four (64) square feet, with at least a dimension of eight (8) square feet. The spacing of landscape areas shall be in such a manner as to provide coverage throughout the extent of the area in question. Planting shall include a combination of trees, shrubs, and ground cover as determined appropriate by the landscape review committee.
- 14) **Landscape Review Committee:** A Landscape Review Committee has been appointed, consisting of a registered landscape architect or horticultural specialist, a member from the general public, and a representative of the Codes and Planning Office. The committee shall review the proposed landscape plan in conjunction with the TAC meeting and submit its recommendations to the Planning Commission. The Codes and Planning Office shall inspect the landscape planting prior to issuance of a certificate of occupancy.
- 15) **Landscaping Required for Residential Lots:** Residential lots are required to have a minimum of two (2) trees per lot in R1-B and R1-C zones and a minimum of three (3) trees per lot in R1-A zones with a minimum diameter of two and a half (2 ½) inches.

410 OVERLAY DISTRICTS

410.1 Downtown Historic District (H-1)

A. Purpose. The purpose of the Downtown Historic District is to protect, perpetuate, and encourage the nondestructive use of structures and districts as having substantial historic, cultural, or architectural importance within the City of Richmond; to increase community pride and enhance the identity of the City by protecting the City's heritage and prohibiting the avoidable destruction or defacement of its cultural assets; to strengthen the City's economic base by encouraging the preservation of its viable and distinctive neighborhoods; to prevent creation of environmental influences adverse to such purposes; and to assure that new structures and uses within the district will be in keeping with the character of the area to be preserved and enhanced.

B. Application of Regulations

The Downtown Historic District classification and regulations there under shall be in addition to existing land use classification and management regulations applicable to the area. The area included in the Downtown Historic District is shown on the map entitled "Downtown Richmond" in the Comprehensive Plan.

C. Procedure for Establishment of Historic Districts

The procedures for establishing historic districts shall be as follows:

1. **Application:** An application for the establishment of a Historic District may be filed only by the Board of Architectural review, the Planning Commission, the Richmond Commission, the owner of the subject property, or by a person with written authorization of the owner. Said application shall be filed with the Board of Architectural Review on the appropriate form. Upon the filing of an application by a governmental body, the Board of Architectural Review shall promptly notify the owner(s) by certified mail.
2. **Review and Recommendation by the Board of Architectural Review:** Upon the filing of an application for the establishment of a Historic District, the Board of Architectural Review shall study and review the application. Before taking action on the application, the Board shall give proper notice of a public hearing thereon in the same manner as prescribed for other amendments to the Land Use Management Map. The public hearing shall be conducted within sixty (60) days after the filing date, and the Board's recommendations shall be submitted in writing to the Planning Commission.
3. **Action by the Planning Commission and the City Commission:** The Planning Commission and City Commission shall follow the procedures for amending the Official Land Use Management Map as described in Section 401.2 of this ordinance.
4. **The Board of Architectural Review:** The Board of Architectural Review shall consist of five members appointed by the Mayor of Richmond with the approval of the City Commission as provided for in Ordinance No. 04-02. The Board shall consist of at least one member of the architectural or related profession, the real estate profession, a resident or business occupant of a Historic District in Richmond, and a person who has displayed an active involvement in historic preservation.

- 5. Board Authority:** The Board shall not consider interior arrangement or use, but shall consider the historic or architectural qualities of the exterior of the contributing buildings concerned and the relationship of the contributing buildings to all others in the district so as to avoid incongruity and promote harmony therewith. In all instances the Board shall regulate those outside surfaces of a contributing building that can be viewed from a public right-of-way or street. Nothing in this ordinance shall be construed to prevent ordinary maintenance or repairs, which do not involve a change of design, material, or of the outward appearance of a building. The authority of the Board shall apply in such cases of material change as painting previously unpainted masonry, sandblasting wood or masonry, or repainting masonry walls.
- 6. Procedures:** Before a person may undertake any exterior changes to any property or structure in a Historic District (to include demolition), a Certificate of Appropriateness shall be required. The individual must apply for the certificate on a form provided by the Codes and Planning Office. All applications for a Certificate of Appropriateness shall be reviewed by the Board at a public hearing, except where the Board has granted the Building Inspector the authority to review an application without a public hearing or board action. Notice of the hearing shall be given by first class letter to all surrounding property owners at least fourteen (14) days prior to the hearing and give notice of the hearing by publication in the newspaper of highest circulation in Richmond, Kentucky, Kentucky not earlier than twenty-one (21) or later than seven (7) days before the public hearing.

At the public hearing, the Board shall consider the request for a Certificate of Appropriateness by examining the staff report, and hearing testimony of the applicant, and interested citizens speaking in favor or in opposition of the proposed changes. In review of material submitted, the Board shall examine the architectural design and the exterior surface treatment of the proposed construction on the site in question and its relationship to other structures within the area, the relationship of the proposed construction to the design of the building and other pertinent factors affecting the appearance and efficient functioning of the historic district or structure. The Board shall vote to approve or disapprove all or a part of the application within ninety (90) days after the completed application is filed. If the application is approved, the Building Inspector shall promptly issue the Certificate of Appropriateness. The applicant may then apply for a building permit to begin work. If the application is disapproved, the Board shall promptly transmit a written report stating the reasons for such disapproval to the applicant. A new application for the same property shall not be submitted until one year has passed.

If the Board of Architectural Review disapproves an application for a building permit in an Historic District, the applicant of said permit may appeal to the Planning Commission, which shall hold a public hearing thereon and shall vote on said appeal within ninety (90) days after the notice of appeal is filed with the Commission. If the Commission finds that the application for a building permit conforms to the intent of the Historic District regulations and it votes to approve the application, the Commission shall issue a Certificate of Appropriateness to the applicant and transmit a copy to the Building Inspector. In such cases, no building permit or certificate of occupancy shall be issued by the Building Inspector on said application for one (1) year from the date of the decision by the Commission. After one year has passed, the Building Inspector shall issue the building permit provided the applicant meets all other requirements of law. Any person or persons aggrieved by any decision affecting an Historic District shall have the right to file a civil suit within thirty (30) days from the date of the decision in a court of competent jurisdiction under the usual rules of procedure governing orders and injunctive relief provided the

situation warrants it. If the Board fails to act upon the application within (90) days after the application has been filed (unless there is an agreement for an extension), the application shall be deemed approved.

(For a complete description of the requirements of Historic Districts, see Appendix F).

410.2 Transportation Corridor District (Robert R. Martin Bypass, TC-1)

- A. Purpose.** The purpose of the Transportation Corridor District is to protect and enhance the economic and aesthetic character of selected transportation corridors by insuring that property planning and management principles are followed in future changes proposed for these areas
- B. Criteria and Specifications.** The Comprehensive Plan describes proposed corridors to be developed in the future. Selected highways and arterial streets are of critical importance to the City of Richmond. They carry high volumes of traffic, serve as entryways for visitors and residents, and are indicators of the quality of life found in the city. Standards are provided to insure that traffic moves efficiently, that land uses are harmonious, and that the area is visually attractive.
- C. Applicability.** The Transportation Corridor District is intended to be applied to areas parallel to the rights-of-way of selected major highways and arterial streets for a depth of 750 feet on either side of centerline of the highway. The district is measured perpendicular to the right-of-way except at intersection where it may be expanded to allow for exit and entry ramps. The actual boundaries shall be determined at the time of adoption of the district and shall be shown on the Official Land Use Management Map.
- D. Buffer Requirements.** Landscape buffers are required parallel to the rights-of-way on properties within the Transportation Corridor. Buffers shall be a minimum of 20 feet in width. In determining the need for additional buffer widths, the Planning Commission shall consider the topography of the area, the existing and proposed land uses, the size of adjacent parcels, the traffic volumes of the corridor, and any additional factors the Commission deems reasonable in carrying out the purpose of this ordinance. District buffer requirements are described in Section 409 J, 10).
- E. Service Roads.** In order to facilitate the efficient movement of traffic, and to reduce the number of access points onto the major highway or arterial street where possible, a parallel service road shall be constructed as part of the proposed development. Parallel service roads shall be set back from the highway right-of-way a minimum of "250" feet measured to the proposed service road right-of-way and shall be tied into such service roads on adjacent properties as they are developed.
- F. Procedures.** Corridor Overlay Districts may be proposed by the City Commission or the Planning Commission by filing an application with the appropriate Administrative Official. The application shall clearly identify the essential character or qualities of the area that is to be protected by establishment of the district. The Planning Commission shall review the proposed designation in a public hearing as spelled out in Section 401.2, C. The City Commission shall act on the Planning Commission's findings in keeping with the provisions of Section 401.2, D.

- G.** Once a Transportation Corridor District has been approved, any proposed development within that corridor shall be subject to these requirements in addition to the existing requirements of the underlying district. Such plats or development plans must be approved by the Planning Commission in accordance with appropriate sections of this ordinance.

411 PARKING

A. Purpose

The purpose of this section is to establish requirements regulating the quantity and design of off-street parking areas, to relieve traffic congestion in the public ways, and to minimize potential detrimental effects of off-street parking on adjacent properties.

411.1 GENERAL REQUIREMENTS

- A. The provisions of this section are the minimum permissible off-street parking requirements and shall apply to all applicable districts.
- B. No building or structure shall be constructed, enlarged, or altered, or its use changed or enlarged, unless off-street parking has been provided in conjunction with this section.
- C. Each application for a building permit shall include sufficient information or plans to enable the Planning and Zoning Director to determine whether or not the requirements of this section have been met, to include:
 - 1. Location and dimensions of all parking spaces, driveways, aisles, and pedestrian walkways as per this ordinance and the Access Management and Roadway Manual.
 - 2. Provisions for pedestrian and vehicular circulation, lighting, and drainage.
 - 3. Number of anticipated employees, company-owned vehicles, building rooms, offices, square footage, or other related information for determining the number of spaces required.
 - 4. Landscaping plan
- D. All required off-street parking should be located on the same building site, or on a site adjacent to the land use served.
- E. Collective off-street parking may be provided; however, the required number of spaces provided shall not be less than would otherwise be required individually.
- F. Upon written application and certification by the owner, adjacent off-street parking spaces may be shared if the hours of usage for the uses in question do not coincide.

B. OFF-STREET PARKING AND DESIGN STANDARDS:

411.2 Access

- A. Access to off-street parking areas within the City of Richmond shall be as follows:
 - 1. The location, width, and number of entrance and exit driveways serving public accessory parking facilities, drive-in businesses, fee parking lots, and public parking lots, shall be planned in such a manner as not to interfere with either the use of adjacent property or the flow of traffic on the streets to which they connect. The interconnection between off street parking areas shall be provided.
 - 2. Location and other criteria for construction of curb cuts shall be approved by the Director of Planning and Zoning. Refer to the Access Management and Roadway Manual for construction guidance.

3. Entrance or exit driveways shall be wide enough to accommodate two-way traffic with travel lanes having a minimum width of twelve (12) feet for each lane. One-way directional traffic flow shall be at least fourteen (14) feet in pavement width or as specified by the Fire Marshal.
4. The radius of the driveway apron shall be at least twenty (20) feet or as specified by the Fire Marshal.
5. All parking spaces, except those required for single household and detached dwellings, shall have access to a public street or alley in such a manner that any vehicle leaving or entering the parking area from or into a public street or alley shall be traveling in a forward motion.
6. Properties located in a residential district shall not be utilized to provide parking for or access to non-residential districts. However, the Board of Adjustments may authorize a conditional use permit to grant the development of a parking area in a residential district, provided that such parking area is no farther than two-hundred (200) feet from the use which it is serving.
7. On any residential property where the garage access is located in the side or rear yard of the property, there shall be a minimum ten (10) foot driveway accessing the garage.
8. Parking of vehicles in any parking lot shall be by marked stalls only.

B. Setbacks

The location of off-street parking facilities and access drives for more than five (5) vehicles, excluding single and two household dwellings, may be located in the required yards unless otherwise specified elsewhere in this ordinance. In no case however, shall the parking area or access drives be located closer than five (5) feet from any right-of-way, five (5) feet from any non-residential property line and fifteen (15) feet from any residential property line.

C. Landscaping and Screening

In addition to the setback requirements specified in this chapter for off-street parking for more than five (5) vehicles, screening shall be provided on each side of the parking area that abuts any residential district or use.

D. Paving and Drainage

Any off-street parking area for more than five (5) vehicles and its access drives shall be graded and drained so that the natural flow of surface water shall not be channeled or concentrated onto adjacent property by means other than a designated drainage course. Parking areas and access driveways shall be improved with an asphalt or concrete surface in accordance with Section 513.17. Pavers may also be used if approved by the Planning Commission. Pavers shall include durable materials suitable for parking such as cobblestones, brick, concrete formed blocks, or cut stone, provided the materials are specifically designed and installed for vehicular loads.

E. Barriers

Whenever a parking lot extends to property line, fencing, wheel stops, concrete curbs or other suitable barriers shall be provided in order to prevent any part of a parked vehicle from extending beyond the property line, encroaching on a sidewalk, or destroying the screening materials.

F. Visibility

Access of driveways for parking areas shall be located in such a way that any vehicle entering or leaving such parking area shall be clearly visible by any pedestrian or motorist approaching the access or driveway from a public street, private street, or alley. Refer to the Access Management and Roadway Manual, Chapter 3.

G. Marking

All parking areas for two or more vehicles shall be marked with paint lines or in some other manner approved by the city and shall be maintained in a clearly visible condition. This item is applicable in the city only.

H. Maintenance

Any owner of property used for parking areas shall maintain such areas in good condition.

I. Signage

Where necessary, entrances, exits, and the intended circulation pattern shall be clearly marked in the parking area. Signs may also be permitted which indicate the operator of the parking facility. Stop signs shall be installed where parking areas exit to a public way.

J. Lighting

Lighting shall be in conformance with Section 414 of this ordinance.

K. Stacking Spaces for Drive Thru Businesses

Business utilizing drive through windows or those that offer drive through facilities shall provide sufficient stacking space for five (5) vehicles. For the purposes of this article, one stacking space shall be construed as a minimum of nine (9) feet in width and nineteen (19) feet in length. Such stacking space shall begin at the point of business transaction and shall accommodate five (5) vehicles without obstruction to through vehicular traffic or parked vehicle areas. The point of business transaction shall include teller windows, fast food order, location, a gasoline fuel pump, car way bay, or the drive through automated teller window.

L. Parking of Commercial Vehicles

Commercial vehicles with or without signage, which are over nine (9) feet in width or nineteen (19) feet in length, shall not be parked in a parking area. Such vehicles shall be parked or stored in the required off-street loading space(s).

M. Parking on Unimproved Surfaces Prohibited

No motor vehicle shall be parked or stored on any area not improved in accordance with Section D above. Both the owner of any such improperly parked and stored vehicle and the owner or occupant of the property on which the vehicle is parked or stored shall be considered in violation of this section.

N. Fire Lanes

1. **Fire Apparatus Access.** Plans for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction.

a. A marked fire apparatus access road shall also be known as a fire lane.

2. **Access to Building.**

a. A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building.

b. Fire department roads shall be provided such that any portion of the facility or any portion

of an exterior wall of the first story of the building is located not more than 150 feet from the fire department access roads as measured by an approved route around the exterior of the building or facility.

- c. When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13D, or NFPA 13R, the distance in (b) shall be permitted to be increased to 450 feet.
 - d. Fire department access roads shall have an unobstructed width of not less than 20 feet.
 - e. Fire department access roads shall have an unobstructed vertical clearance not less than 13 feet 6 inches.
 - f. Vertical clearance shall be permitted to be reduced, provided such reduction does not impair access by fire apparatus, and approved signs are installed and maintained indicating the established clearance when approved.
3. **Surface.** Fire department access roads shall or other approved notices shall be designed and Maintained to support the imposed loads of fire apparatus and shall be provided with an all Weather driving surface.
- a. Where required by the AHJ, approved signs or other approved notices shall be provided and maintained to identify fire department access roads or to prohibit the obstruction thereof or both.
 - b. The required width of a fire department access road shall not be obstructed in any manner, including by the parking of vehicles.

To be an effective fire access road (fire lane), the width shall be not less than 20 feet (18.2.3.4.1.1). The fire access road shall extend to within 50 feet of an accessible door. No portion of a building shall be further than 150 feet from the access road if the building is not sprinklered. No portion of a building shall be further than 450 feet of the access road if fully sprinklered. In my from the access roadway to the furthestmost point of the building the distance shall not exceed 150 feet if no sprinkler suppression is present or 450 feet if the building is fully fir sprinklered, measured in a direct path around the building exterior with no obstructions in the pathway. The vertical distances are 13 feet 6 inches max or, in the case of the Richmond Fire Department, 1 foot above the height of our tallest apparatus. The all-weather driving surface shall be asphalt or concrete. Signs or painted markings shall be present to show the existence of the fire access road. Signs should be reflective 12 inches by 18 inches with a white background and red letters 2 inches in height stating “NO PARKING FIRE LANE”. Painted markings should be done in red paint. The length of the fire lane will need to be debated but could be as small as the longest fire apparatus that The Richmond Fire Department has.

411.3 Determination of Required Spaces

In computing the number of parking spaces required by this ordinance, the following shall apply:

1. Where floor area is designated as the standard for determining parking space requirements, floor area shall be the sum of the net lease able horizontal area of all floors of a non-residential building.
2. Where seating capacity is designated as the standard for determining parking space requirements, the capacity shall mean the number of seating units as determined by code.
3. Where the required parking is determined by the number of employees, the maximum number of employees on duty on the premises at one (1) time, or any two (2) successive shifts, whichever is greater, shall be used.

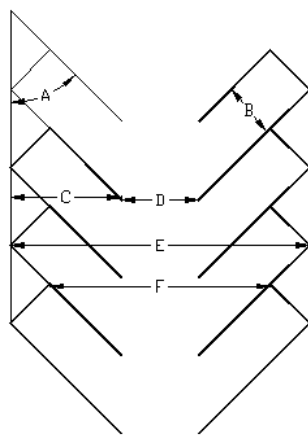
4. Fractional number shall be increased to the next highest whole number.
5. When the building floor area is designated as the standard for determining parking space requirements and that number is less than the minimum standard, at least one (1) parking space shall be provided on the premises.
6. For development of potentially mixed uses, parking requirements shall be determined based on the most restrictive of the uses.

411.4 Parking Space Dimensions

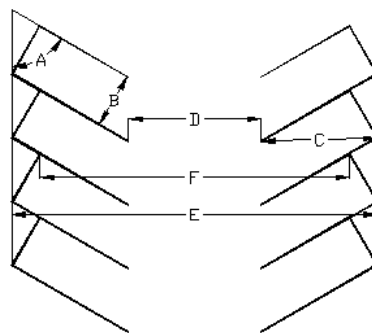
Each off-street parking space shall have the following dimensions and shall be of useable shape and conditions:

A	B	C	D	E	F
Parking Angle	Stall Width	Length of Stall	Aisle Width	Curb to Curb Width (Single Bay)	Bay Width (Center to Center)
0 Degree	10 feet	21 feet	24 feet	42 feet	42 feet
45 Degree	10 feet	20 feet	14 feet (24 ft two-way)	55 feet	45 feet
60 Degree	10 feet	21 feet	18 feet (24 ft two-way)	60 feet	55 feet
90 Degree	9 feet	20 feet	24 feet	62 feet	62 feet
90 Degree	10 feet	19 feet	24 feet	62 feet	62 feet

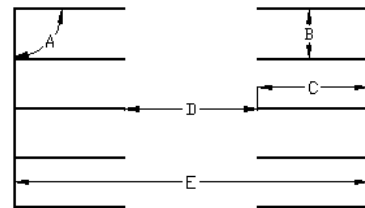
* When 90 Degree parking is fronting a landscape area the length of stall (C) may be reduced to seventeen (17) feet with wheel/curb stops.



45 DEGREE PARKING



60 DEGREE PARKING



90 DEGREE PARKING

411.5 Parking Space Requirements:

The number of parking spaces required for selected land use activities along with the criteria for determining the spaces are indicated below. If a particular use is not included in the list, the Planning and Zoning Director will determine the requirements based on the land use most closely related to the one in question.

Uses	Space Requirements
<u>Residential</u>	
Single/Multi Family, Duplex, Condo	2 per first bedroom, 1 per each additional bedroom
Group quarters	3 spaces for every 5 beds
Assisted living facility	1 per every 2 beds
<u>Commercial</u>	
Automobile repair	2 spaces per service bay (excluding the bay) + one space per employee, and 1 space per employer vehicle
Automobile sales	1 space per 400 sq. ft. of net floor area of sales, shop and garage, + 1 space per employee
Banks, financial institutions	1 space per 200 sq. ft. of net floor area + Stacking spaces for drive through
Car wash	5 stacking spaces per lane for automatic: 4 stacking spaces + 2 drying spaces per stall
Convenience store	1 space per 200 sq. ft. of net floor area, + 1 space per island, + 1 space per employee
Day care center, child/ Pre-school	1 space per employee, + 1 space for each 6 children, + 1 space per faculty vehicle
Service stations	1 per pump + 1 per bay + 1 per 200 sq. ft. gross floor area for offices/retail activities
Funeral homes	1 per 100 sq. ft. gross floor area
Grocery stores	1 space per 175 sq. ft. of net sales floor area
Health/fitness facility	1 space per 200 sq. ft. of net floor area
Hotels, motels	1 per sleeping room + 1 per employee
Mini-storage facility	3 spaces + 1 per 100 storage units
Offices	1 space for each 200 sq. ft. of net floor area
Retail sales/service	1 per 200 sq. ft. gross sales floor area
Restaurants, sit-down	1 per 150 sq. ft. gross floor area
Restaurants, drive through	5 stacking spaces per lane
Warehouses	1 per 600 sq. ft. gross floor area

*** Where the proposed use is not known, the high volume requirement will be used.**

Public / Semi-public
Uses

Space Requirements

Bowling alley	4 per lane + 1 per 100 sq. ft. gross floor area for other uses
Theaters, arenas, stadiums	1 space per 3 seats
Parks, recreation areas	4 spaces per acre
Golf courses	4 per golf hole + 1 per 250 sq. ft. gross floor area of pro-shop, concession, etc.
Libraries, museums	1 per 400 sq. ft. gross floor area
Elementary/Middle Schools	One space for each 3 auditorium seats, or 1 space per classroom (whichever is greater)
High school	1 per employee + 1 per 6 students + + 12 visitor spaces
Vocational/Technical	1 per employee + 1 per 2 students
College/university	1 per employee + 1 per 4 students
Government buildings	1 per 250 sq. ft. + 1 per 4 patrons (whichever is greater)
Police/fire stations	1 per employee on maximum shift + 1 per facility vehicle + 1 per 250 sq. ft. of net floor area
Civic clubs, related activities	1 per 200 sq. ft. of net floor area
Churches/places of worship	1 per 4 seats in sanctuary
Hospitals/clinics	2 spaces per bed or 1 space per 150 sq. ft. net floor area, whichever is greater.
Manufacturing	1 per 1 ½ employees on maximum shift + 1 space per facility vehicle

411.6 Loading and Unloading Areas:

Whenever the normal operation of any development requires that goods, merchandise, or equipment be routinely delivered to or shipped from that development, a sufficient off-street loading and unloading area must be provided in accordance with this section to accommodate the delivery or shipment operations in a safe and convenient manner.

The loading and unloading area must be a minimum of four (4) feet from the rear of any building and of a sufficient size to accommodate the number and types of vehicles that are likely to use this area, given the nature of the development in question. The following table indicates the number and size of spaces that, presumptively, satisfy the standard set forth in this section. However, the Planning and Zoning Director may require more or less area if reasonably necessary to satisfy the foregoing standard.

<u>Gross Leasable</u> Area of Building	<u>Number of Spaces*</u>
1,000-19,999	1
20,000-79,999	2
80,000-127,999	3
128,000-191,000	4
192,000-255,999	5
256,000-319,999	6

Plus one (1) space for each additional 72,000 square feet or fraction thereof.

* Maximum dimensions of 12 feet x 55 feet and overhead clearance of 14 feet from street grade required

Loading and unloading areas shall be located and designed so that the vehicles using them can; 1) maneuver safely and conveniently to and from a public right-of-way, and 2) complete the loading and unloading operations without obstructing or interfering with any public right-of-way or any parking area.

No area allocated to loading and unloading may be used to satisfy other area requirements for off-street parking.

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412 SIGNS

412.1 PURPOSE

The purpose of this section of the ordinance is to protect the public health, safety, and general welfare by regulating existing and proposed outdoor advertising, billboards, and outdoor signs of all types. It is further the intent of this section to protect property values, create a more attractive economic and business climate, enhance and protect the physical appearance of the community, and preserve the scenic and natural beauty of the City. Additionally this section is designed to reduce sign or advertising distractions and obstructions that may contribute to vehicular accidents, reduce hazards that may be caused by signs overhanging or projecting over public rights-of-way, and keep intact and enhance community aesthetics and development.

412.2 PERMITS REQUIRED

No sign, except as is excluded in Section 412.3, may be constructed, erected, moved, enlarged, illuminated, or substantially altered in design or construction without a permit issued by the City of Richmond Department of Planning and Zoning or Codes Enforcement. Application shall be made to the City as prescribed by the Department of Planning and Zoning or Codes Enforcement.

412.3 SIGNS EXCLUDED FROM PERMITTING

The following signs shall not require a permit:

1. Permanent signs not larger than two (2) square feet in size of the type normally associated with residential use such as for property address and owner identification.
2. Signs erected by, on behalf of, or pursuant to the authorization of a governmental body, including legal notices, informational signs, and traffic signs.
3. Integral decorative or architectural features of a building or works of art not containing letters, trademarks, moving parts, or lights.
4. Signs painted on or otherwise permanently attached to currently licensed motor vehicles that are not used primarily as signs.
5. One temporary construction identification sign with construction related permits posted per site not exceeding thirty-two square feet in area. Such signs shall not be erected prior to the issuance of a building permit for the site, and shall be removed within ten days of building occupancy.
- 6.. Historical markers.

412.4 COMMERCIAL AND BUSINESS SIGNS

1. A single business on a single lot shall be allowed one free-standing sign per street frontage and one wall or façade sign per drive or parking isle frontage.
2. A shopping center or building with multiple business occupants shall be limited to one free-standing sign per street frontage. An out lot within a shopping center shall be allowed a separate free-standing sign. Each individual tenant space shall be allowed one wall or façade sign per drive or parking isle frontage.
3. The dimensions of the wall sign in business, commercial and industrial districts shall not exceed three (3) square feet of sign area for each linear foot of building frontage.

4. The maximum surface area of a free-standing sign in commercial and industrial districts shall be two (200) hundred square feet, except in a B-4 district where the maximum surface area of a free-standing sign shall be six (600) hundred square feet.
5. B-4 districts shall be permitted one free standing sign per development entrance accessed by public roads.
6. The maximum height of a free-standing sign shall be forty feet measured from the ground to top of sign cabinet.

412.5 SETBACK REQUIREMENTS

1. Placement of a free-standing sign shall conform to sight distance regulations of the City Access Management Manual. The sight visibility study shall be performed, signed and stamped by a Kentucky Licensed Civil Engineer for conformance with City Ordinance and safe design standards. The minimum setback from the street pavement edge shall be ten feet and must reside entirely on the subject property to include any grade work, foundation, overhang or protrusions.
2. In commercial or industrial districts no sign or advertising structure shall be erected or placed closer than fifty feet to a side or rear yard line of a residential district.
3. No sign shall be placed at a location where it constitutes a safety hazard or where it causes excessive light or glare for adjacent property.

412.6 TEMPORARY SIGNS

1. All temporary signs not excluded in Section 412.3 shall require a permit. A permit remains in effect for forty-five days from the date of issuance.
2. No temporary sign placed on the ground shall exceed thirty-two square feet in area. No temporary sign suspended above the ground shall exceed fifty square feet in area and shall be constructed and attached securely and such that it will not be a safety hazard.
3. No temporary sign other than those set forth in Section 412.3 which do not require a permit shall be located on any commercial or industrial property.

412.7 GENERAL REQUIREMENTS

In addition to the requirements stated above, all permitted signs shall adhere to the following requirements:

1. With the exception of properly-permitted, lawfully-existing billboard signs, and except as is otherwise specifically set forth in this ordinance, off premises business or commercial signs are prohibited. A sign shall be deemed to be a business or commercial sign if it advertises a business, commercial establishment, product, or service.
2. Signs for home occupations are prohibited in residential districts.
3. No sign in a residential district shall be illuminated.
4. All wiring, fittings, and materials used in the construction, connection, and operation of an illuminated sign shall be in accordance with the provisions of the most recent National Electric Safety Code.
5. Any illuminated sign located in the City's downtown business (B-2) and neighborhood (B-1) district shall emit light of a constant intensity and shall display only one

- message. A waiver may be granted to signs whose only other message is a display of weather, date, or time.
6. No sign shall project from the front or face of a building a distance of more than two feet. No sign shall be placed on the roof of any building so as to project beyond the front or face of the building or which extends higher than the top of the roof.
 7. No permanent sign or part thereof shall consist of banners, ribbons, streamers, spinners, or other similar moving devices.
 8. No sign shall be installed, erected, or attached in any fashion to a fire escape or emergency exit.
 9. Any sign placed in a public right-of-way in violation of this provision may be removed and disposed of by the City.
 10. Any canopy shall be at least eight feet above the sidewalk and shall not extend any closer than eight inches to the pavement edge, including any support being used.
 11. Any sign found by the Department of Codes Enforcement to be in danger of falling or in need of repair or maintenance shall be removed or repaired by the owner upon written notice from that Department within fourteen (14) calendar days.
 12. Any sign in lawful existence at the time of the enactment of this ordinance shall remain a lawful sign, but shall not be enlarged or expanded. A non-conforming sign may be replaced only with a sign that conforms to the requirements herein set forth.
 13. Digital, LCD, or LED reader board signs are not permitted in the City's downtown business (B-2) and neighborhood (B-1) district. No such sign shall be constructed, placed, or erected in any other location in the City unless the Board of Adjustments shall first have granted an application for permission from that Board to do so at a specific location and with such conditions as the Board may deem appropriate to the location.
 14. All commercial free-standing signs shall be removed when the business to which it pertains is no longer in operation at the premises where the sign is located within fourteen (14) calendar days.
 15. No sign shall be attached to or painted on the surface of any tree, utility pole, street light or right of way fence.
 16. All signs which advertise an upcoming event shall be removed within three (3) days after the occurrence of the event.
 17. It is the responsibility of the applicant and sign installer to contact and locate any/all utility services before installation of any sign.
 18. Signs in overlay districts must seek the applicable City Board approval before a permit shall be issued.
 19. Free standing signs shall submit engineered structural plans, details and site plans showing utilities and visibility triangles.

413 CELLULAR ANTENNA TOWERS

Purpose: Due to the semi-public nature of cellular antenna towers and other wireless communication systems, it is the purpose of this section to regulate these facilities in order to:

1. Accommodate the need for cellular or wireless communications towers while regulating their location and number in the City of Richmond.
2. Minimize the adverse visual effects of such facilities through proper site and design.
3. Avoid potential damage to adjacent properties from structural failure of communication towers and support structures.
4. Encourage the joint use of any new and existing communications towers and support structures in order to reduce the number of such structures needed in the future.

413.1 Use Regulations: The following regulations shall apply to cellular or wireless communications antennas and towers.

1. A cellular or wireless communications antenna that is mounted to an existing communication tower or other tall structure shall be permitted as a principal use in districts as provided for in Section 406.5. Otherwise, they will be treated as conditional uses.
2. Any cellular or wireless communications antenna that is mounted to an existing structure shall be compatible in color with that structure.
3. Cellular or wireless communications sites shall not be located any closer than five hundred (500) feet from any residential district.
4. The cellular or wireless communications company shall be required to demonstrate, using the latest technological evidence that the antenna or tower must be placed where it is proposed in order to satisfy its necessary function in the company's grid system.
5. If the cellular or wireless communications company proposes to build a new tower as opposed to mounting an antenna on an existing structure, it is required to demonstrate that it has contacted the owners of nearby tall structures within a one (1) mile radius of the site proposed. Has asked for permission to install the cellular or wireless communications antenna on these structures, and was denied for reasons other than economic ones. "Tall structures" shall include, but not limited to, smoke stacks, water towers, buildings over 50 feet in height, antenna support structures or other cellular or wireless communications companies, other communication towers, and roadway lighting poles.
6. The city or county may deny the application to construct a new cellular or wireless communications tower if the applicant has not made a good faith effort to mount the structure on existing structures.
7. The applicant shall demonstrate that the antenna/tower is to be constructed at the minimum height necessary in order to function satisfactorily.
8. The applicant shall demonstrate that the proposed cellular or wireless communications tower and its antenna are safe and the surrounding properties will not be negatively affected by tower failure, falling ice, or other debris, electromagnetic fields or radio frequency interference. In addition, all towers shall be fitted with anti-climbing devices as approved by the manufacturers, and shall be enclosed (along with support structures) by fence that is a minimum of eight (8) feet in height to prevent unauthorized access.
9. In order to limit the number of antenna support structures needed in the future, the proposed new tower shall be required to accommodate other users, including other cellular or wireless communications companies, and local law enforcement and emergency agencies.

10. The applicant must demonstrate that it is licensed by the Federal Communications Commission (FCC) to engage in such activities.
11. A site development plan shall be required as part of the application process.

Note: For additional requirements on cellular towers, see Appendix E.

414 OUTDOOR LIGHTING

The following regulations shall apply to any outdoor lighting located within the City of Richmond only, in any district where there are parking spaces for five (5) or more vehicles, or where a building, sign, or electrical permit is required for the installation of lighting fixtures.

A. Submission of Lighting Plan

Any building, structure or use of land that requires a review and approval of a parking plan, as specified in this article, shall provide a lighting plan. A lighting plan may also be required at the determination of the Chief Enforcement Officer, when a building, sign, or electrical permit application for lighting fixtures is filed. The lighting plan shall provide the following information as a minimum:

1. A photometric plan showing the proposed intensity levels of the lighting throughout the site, indicating foot-candle measurement shall be provided. The lighting plan shall include the property lines and right-of-way lines for the site, and shall include the first fifty feet of adjacent property, at a minimum. Light levels shall be indicated a minimum of thirty feet onto adjacent properties. The lighting plan shall indicate all site lighting including on-building security, flood, and other lights in the evaluation. The initial output of lamp fixtures, as defined by the manufacturer, is the value to be considered in the intensity analysis.
2. The lighting plan shall indicate the locations of each of the proposed fixtures.
3. The lighting plan shall indicate the minimum, maximum, and average intensity/illumination for the site.
4. Details of all proposed outdoor lighting fixtures shall be provided, indicating manufacturer, model and style of the fixture. A graphic representation of the fixture is requested. The fixture lamp type (i.e. low pressure sodium, metal halide, etc.) shall be indicated on the proposed plans.
5. The proposed height of the lighting fixtures shall be indicated.
6. The hours of use of the lighting fixtures shall be indicated on the plans.

B. Height

All outdoor lighting shall be designed, located, and mounted at heights no greater than twelve (12) feet above grade for non-cutoff-lights and twenty-two (22) feet above grade for cutoff lights. A greater height may be authorized in any district by a variance approved as required in Section 404. Lighting height should not exceed the permitted building height. The following guidelines are provided based on the intensity of the proposed use.

Height Range by Activity Level:

Low: 10 ft. to 15 ft.; medium: 10 ft. to 18 ft.; high: 10ft. to 22ft.

Average illumination by Activity Level:

Examples of Activity Levels for Open Parking Facilities:

High: Regional shopping centers, motorist services at expressway interchanges, athletic facilities, and regional cultural or civic facilities.

Medium: Community and neighborhood shopping centers, office parks, hospitals, commuter lots, community facilities (cultural, civic, recreational).

Low: Multi-family dwellings, education facilities, churches, local commercial and industrial use.

C. Illumination

Outdoor lighting shall be designed and located with a maximum illumination of 0.5 footcandles at the property line. Lighting for parking areas and where security lighting is needed shall have a minimum of 0.5 footcandles. The guidelines for illumination levels listed below are based on the activity levels described above.

Average Illumination by Activity Level

Low: 1.0 footcandle; medium: 2.0 footcandles; high: 3.0 footcandles.

Maximum Illumination (foot candles) by Activity Level

Low: 5.0 footcandles; medium: 10.0 footcandles; high: 15.0 footcandles.

Uniformity of Illumination (maximum/minimum footcandle ratio)

Should not exceed 15:1

Illumination of Access Drive

Should not exceed average footcandles maintained at adjacent public record.

D. Light Trespass

Light trespass is any form of artificial illumination emanating from a light fixture (or illuminated sign) that penetrates other property and creates a nuisance. A lighting plan shall be provided by the property owner proposing the installation of outdoor lighting fixtures and shall meet the following minimum standards for light trespass:

1. Outdoor light fixtures shall be directed so that there will not be any objectionable direct glare source visible from any property, and shall be properly installed and thereafter maintained.
2. At a height of five (5) feet above the property line of the subject property, illumination from light fixtures shall not exceed 0.5 footcandles in a vertical plane on adjacent property.
3. Appropriate fixture lamp types and shielding shall be installed to prevent light trespass onto adjacent property.

E. Shielding

All outdoor lighting for non-residential uses shall be located, screened, or shielded so adjacent lots located in residential districts are not directly illuminated. Shielding may also be required for high intensity light fixtures to prevent glare to adjacent uses, public right-of-ways, and drivers.

Perimeter lighting should be cut-off fixtures to prevent light trespass onto adjacent properties.

F. Color and Glare

No outdoor lighting shall be of such intensity or color distortion as to cause glare or to impair the vision of drivers, pedestrians, or adjacent properties. Shields and/or filters are required for light fixtures with high intensity and glare potential. All lighting shall be provided by cut-off fixtures with no extended/projected lenses.

G. Factors for Evaluation

The following factors shall be considered in the evaluation of lighting plans:

Pole height
Type of luminaries
Site coverage- average maintained
Uniformity: (1) maximum: minimum, (2) average: minimum
Intensity at property line

H. Location

Outdoor lighting need not comply with the yard requirements of each district, except that no such light shall obstruct vision in the sight triangles as specified elsewhere in this ordinance.

I. Exemptions

1. All outdoor lighting fixtures producing light directly by the combination of fossil fuels, such as kerosene lanterns or gas lamps, are exempt from the requirements of this section.
2. Holiday lighting shall be exempt from the requirements of this section.
3. All temporary emergency lighting needed by police or fire departments or other emergency services, as well as all vehicular luminaries, shall be exempt from the requirements of this section.

J. Special Approval

Search lights, laser source lights, or any similar high-intensity light shall not be permitted, except in emergencies by police and fire department personnel at their discretion, unless a temporary sign/use permit is issued by the Chief Enforcement Officer.

K. Modifications

Should any outdoor light fixture or the type of light source therein be changed after the permit has been issued, a change request must be submitted to the Chief Enforcement Officer for his approval, together with adequate information to assure compliance with this section, which must be received prior to substitution.

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ARTICLE V

THE DIVISION AND DEVELOPMENT OF LAND

500. PURPOSE

The purpose of Article V is to regulate the subdivision and subsequent physical development of the land within the city limits of Richmond to insure that lots, streets, sidewalks, public utilities, drainage facilities, and other related items are completed in such a way as to protect the health, safety, and general welfare of the public. The Access Management and Roadway Manual shall be used to provide specific documentation for the location of streets, driveway access points and construction of roadway and related facilities. Each set of plans for the development of land in Richmond shall have a Compliance Statement included as part of the submission of documents for review of the plans. A copy of the Compliance Statement can be found in Appendix D of the Access Management and Roadway Manual. These regulations spell out the procedure for submission, review, and recording of plats, the specification for format and contents of all subdivision plats, requirements for design of and specifications for lot layout, physical improvements of street, utilities, and other facilities, and the extent to which they shall be installed or dedicated as conditions precedent to approval of any plat. In addition, provisions for good and sufficient surety to insure proper completion of physical improvements, and specifications for the extent to which land is to be used for public purposes are included.

501. AUTHORITY

The legal authority for the subdivision and development of land is based upon KRS 100.277 as follows:

1. No person or his agent shall subdivide any land before securing the Planning Commission's approval of a plat designating the areas to be subdivided, and no plat of a subdivision of land within the planning unit's jurisdiction shall be recorded by the County Clerk until the plat has been approved by the Planning Commission and the approval entered thereon in writing by the chairman or other authorized officer of the Planning Commission.
2. No person owning land comprising a subdivision, or his agent, shall transfer, sell, or agree to sell any lot or parcel of land located within a subdivision by reference to, or by exhibition, or by any other use of a plat of such subdivision, before such plat has received final approval by the Planning Commission, and has been recorded. Any such instrument of transfer, sale, or contract shall be void and shall not be subject to be recorded, but all rights of such purchaser to damages are hereby preserved. The description of such a lot or parcel by metes and bounds in any contract or instrument of transfer or other document used in the process of selling or transferring same shall not exempt the person attempting to transfer from penalties provided, or deprive the purchaser of any right or remedies he may otherwise have.
3. When a tract of land is being divided and the property owner declares that the intended use is for agriculture, the Planning Commission shall review all survey plats of deeds submitted for must give testimony and provide a written notarized affidavit stating that the primary use of the land is for agricultural use and not for residential building development for sale or lease to the public (see definition of Agricultural Use). Additionally, the Planning Commission may require that a statement be placed on the plat to the effect that the land is not to be used for residential building development for sale or lease to the general public. If

the intended use of the land for agricultural purposes is obvious from the initial plat review, the Planning Commission may designate the Planning and Zoning Director authority to sign off on the plat.

502. ADMINISTRATIVE PROCEDURES

502.1 Planning Commission Authority and Responsibilities

The Richmond Planning Commission shall be responsible for administration of this section of the ordinance and shall have authority to engage in the following activities:

1. Review, process and take final action on all plans and plats as described in these regulations.
2. Receive applications, fees, drawings and maps as a result of subdivision review of various plats and plans and coordinate inspection services for constitution of public improvements.
3. Distribute copies of approval plans and plats to various legislative units and utility companies for review, comment and /or approval.
4. Maintain files for subdivision plats and plans.
5. Appoint administrative officers (city and county) to administer and enforce these regulations.
6. Seek advice if necessary from consultants and other local, regional, and state, agencies regarding subdivisions proposals.
7. Hear and take action on dimensional variances when a proposed development requires subdivision review and one or more variances (KRS 100.243). In determining whether a variance should be granted or not, the Planning Commission shall use the criteria outlined in KRS Chapter 100.
8. Hear and take action on individual waiver requests other than dimensional variances to seek relief from a requirement in the regulations. Upon written request by the applicant, the Planning Commission shall review and take action on a waiver request as a result of an unusual or extreme circumstance, while still meeting the intent in these regulations. Such circumstances may include new construction technology, existing topography, or site conditions that have existed for some time and are not the result of actions of the applicant. A waiver request must clearly demonstrate a hardship placed upon the applicant.

502.2 The City Commission's Authority and Responsibilities:

The legislative body's authority and responsibilities as governed by these regulations consist of the following.

1. Perform on-site construction inspections of public improvements in accordance with the approved plans or plats unless delegated to the Planning Commission.
2. Assure that all inspected public improvements are complete and have been constructed in accordance with the plans, plats, and specifications as approved by the Planning Commission and as required by each legislative unit and utility.
3. Review guarantees and bonds for the proper installation of public improvements as described in these regulations.
4. Make recommendations to the appropriate legislative authority for maintenance purposes of public improvements (includes street rights-of-way and utilities) on record plats and street rights-of-way on minor plats approved by the Planning Commission.

502.3 Amendments

The Planning Commission may revise, modify, or amend the regulations by appropriate action taken at a scheduled meeting after the required notice and subsequent public hearing. All amendments are referenced in the beginning of this document and have been adopted in accordance with KRS Chapter 100.

502.4 Procedures for Obtaining Subdivision Approval

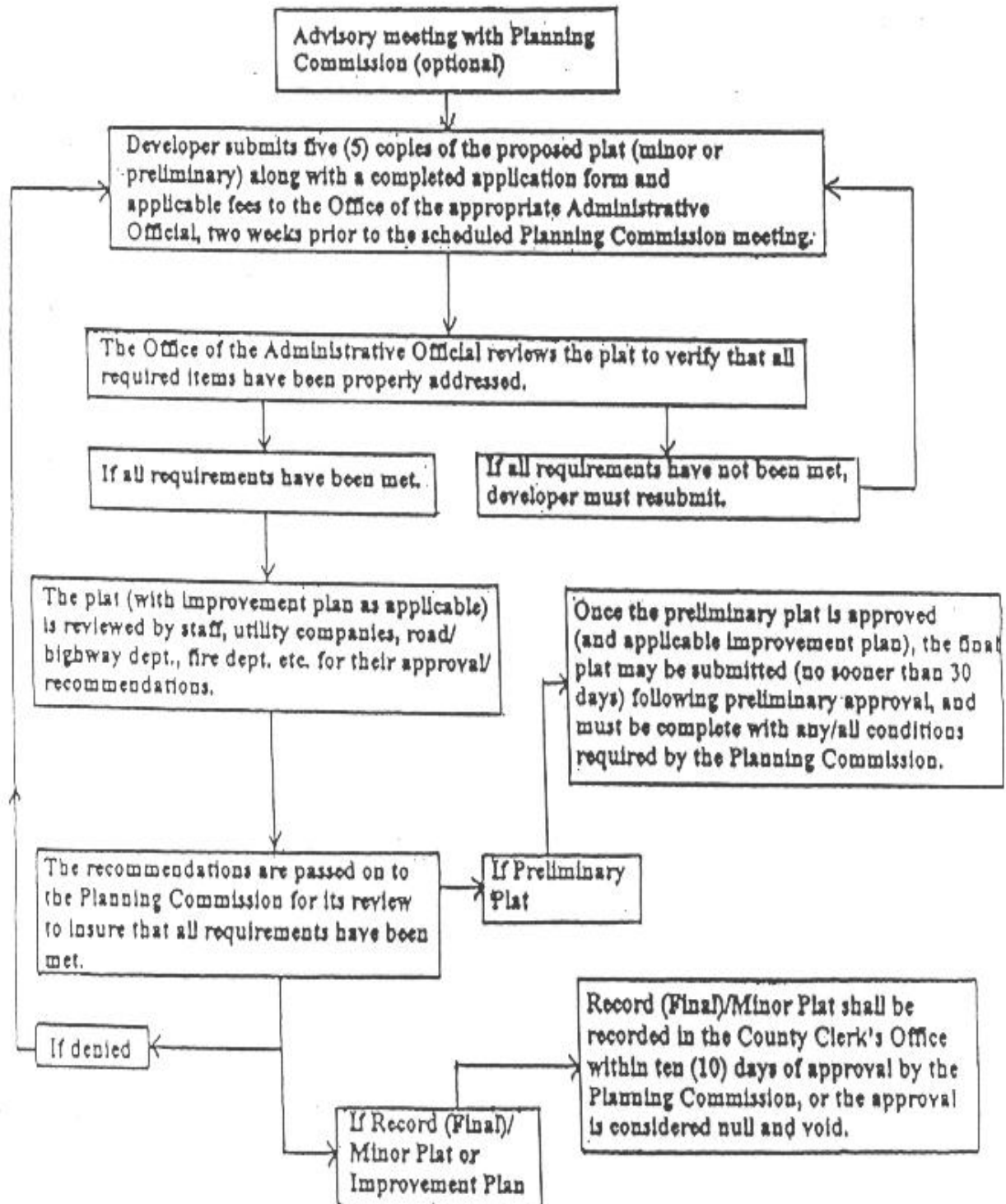
The procedure for obtaining approval of a subdivision plat from the Planning Commission generally includes the following:

1. Voluntary Advisory meeting with the Planning Commission staff.
2. The definition and determination of minor and major subdivision review.
3. Minor subdivision- plat review and approval.
4. Major subdivision- preliminary plat review and approval- improvement plan review and approval- record (final) plat review and approval.

The Planning Commission is assisted by the Technical Advisory Committee in the review process. The TAC shall review all plats for compliance with the technical provisions of the regulations prior to submission of the plat to the Planning Commission. The TAC shall meet monthly prior to the regular meeting of the Planning Commission.

The following chart briefly outlines the procedures and types of subdivision reviews:

SUBDIVISION PLAT AND IMPROVEMENT PLAN REVIEW PROCESS



502.5 Advisory Meeting with the Planning Commission

Prior to the preparation of any subdivision plan or plat, a subdivider or applicant is encouraged to meet with the Planning Commission's Planning and Zoning Director and staff in order to expedite the processing or review of each subdivision plan or plat. This meeting is intended to familiarize the subdivider with the current regulations and to ascertain the location of any planned development projects and infrastructure, which may affect the property being considered for subdivision. This step does not require a formal application or the filing of a plat with the Planning Commission, but does require the subdivider to submit the following information:

1. Name of the subdivision, date, direction, and scale.
2. Name and addresses of property owner(s).
3. A sketch plat of the property showing shape, approximate dimensions, and total acreage.
4. A vicinity map showing the general location of the property, existing roads, surrounding property, and major physical features.
5. Generalized layout of proposed streets and lots.
6. Available and proposed utilities.
7. Relationship to services, including schools, parks, etc.
8. Intended use for all parcels of land.

502.6 Minor Subdivisions

The Planning and Zoning Director shall determine whether the proposed subdivision constitutes a minor or major subdivision. To qualify as a minor plat, a subdivision must meet one of the following requirements:

1. The subdivision contains no more than three (3) contiguous lots (counting the remainder of the parent tract). If more than three lots are involved then said lots shall be handled as a re-subdivision and processed as a preliminary and final plat.
2. The parcel to be subdivided will not involve the construction of any public water lines, storm or sanitary sewers, and streets, which require the review and processing through preliminary and final plats.
3. The subdivision provides for the transfer of land between adjacent property owners and does not involve the creation of any new lots or building sites.
4. The subdivision includes three (3) lots of record that are being consolidated to create a lesser number of parcels and involves no new public improvements.

Any plat that does not meet the above criteria shall be considered a major plat. Subdivision plats that are submitted for multi-family residential, commercial, and industrial development shall be considered as major plats and are subject to the preliminary and final plat review process, and submission of development plans.

502.7 Minor Plat Submission

The sub divider shall submit an application for Minor Plat Approval to the Planning and Zoning Director with fifteen (15) signed copies and 2 digital copies (either .dwg or .dgn format) of the minor plat prepared in accordance with all applicable requirements of this ordinance. This application shall be filed in the Planning and Zoning Department according to the schedule provided by that department. For a list of information items to be provided in a minor plat, see Plat Requirements in Section 503. The Planning and Zoning Director shall review the minor plat to insure that it meets all the applicable requirements, and shall take one of the following actions; 1) approve the minor plat; or 2) disapprove the minor plat. If the minor plat is disapproved, written notice of such action, including the reasons for disapproval shall be mailed to the applicant and notification given to the Chairman of the Planning Commission. If the minor plat is approved, the Chairman of the Planning Commission shall sign a copy of the original minor plat, which shall be forwarded directly to the county clerk's office for recording.

502.8 Major Subdivisions

Any subdivision not meeting the requirements of Section 502.6 shall be considered as a major plat and subject to a two step review process; 1) review of the preliminary plat, and 2) review of the final plat.

502.9 The Preliminary Plat

The purpose of the preliminary plat is to provide a graphic statement of the proposed development of a tract of land. The preliminary plat is "preliminary" in the sense that the Planning Commission may make recommendations for improving the design or improvement standards before they become finalized on the land. Upon approval of the preliminary plat by the Planning Commission, the developer is authorized to proceed with the construction plan process. If the proposed subdivision is to be constructed in more than one phase, the developer shall show the entire proposed development on the preliminary plat. Phases shall occur in such a way as to minimize the cost of extending utilities.

502.10 Submission

The developer shall apply for approval of a plat/plan on the application form provided by the Department of Planning and Zoning according to the schedule provided by the department. The completed application shall be submitted to the Planning and Zoning Director along with the plat/plan and the Plat Requirements Checklist in accordance with the requirements of Appendix A. The Planning and Zoning Director may refuse to accept the proposed subdivision application if it is determined to be incomplete. The plat/plan shall be prepared by a registered engineer or surveyor (as applicable) at a scale not greater than one (1) inch = one hundred (100) feet, and shall be on one or more sheets 24x 36 inches in size and include 2 digital copies. When plats/plans are being submitted for any plat/plan, GPS monumentation on State Plane Coordinate for that plat/plan shall be established and submitted digitally with that plat/plan.

502.11 Number of Copies

The developer shall submit fifteen (15) copies of the plat/plans, three (3) copies of the Best Management Plan and calculations, and two (2) digital copies with required supplementary information to the Planning and Zoning Director for distribution to the Technical Advisory Committee and the Planning Commission for review and recommendations.

502.12 Plat Review

The TAC shall conduct technical review of the plat and submit written comments to the Planning Commission no later than ten (10) working days prior to the Planning Commission work session. These comments will focus on any concerns or conditions that need to be addressed regarding the plat. The Richmond Utilities Board's procedure for review of water, sanitary sewage, and gas is specified in their Infrastructure Development Manuals.

The Planning Commission shall review the report of the TAC and shall receive additional information at its regular work session. The developer or an authorized representative shall be present at the meeting to answer questions or provide additional information. The intent of the work session is to generate discussion and provide pertinent information needed by the Planning Commission in their decision-making process. Conditions not yet met will be recorded in the minutes of the work session. Conditions shall be met before the plat will be voted on in the business session. If signatures have not been completed due to extenuating circumstances, the Planning Commission may approve the plat pending signatures.

Final consideration of the proposed preliminary plat will normally be made during a Planning Commission business meeting (regular or special called). In determining whether a preliminary plat shall be approved, the Planning Commission shall consider the following:

1. Conformance with plat requirements.
2. Adequate allocation of areas for streets, parks, schools, public and semi-public buildings, homes, utilities, businesses and industries.
3. Distribution of population and traffic in a manner so as to create conditions favorable to health, safety, convenience, and the harmonious development of the community.
4. Comments from other agencies and officials. Notice shall be given to other local governments if the subdivision includes a street extending into their jurisdiction.
5. Comments made by the public at the Planning Commission meeting.

No preliminary plat shall be approved until an access permit has been obtained from the state highway department (if applicable).

502.13 Planning Commission Action

Within sixty (60) days of the Planning Commission business meeting on the preliminary plat, the Commission shall make one of the following decisions; 1) approve the plat, 2) approve the plat pending signatures, 3) disapprove the plat, unless such time is extended by agreement of the Planning Commission and the developer, or 4) postpone taking action for specific stated reasons up to thirty (30) days. If the Planning Commission finds that the preliminary plat does not meet the requirements of the regulations, it shall either disapprove the plat or approve the plat, subject to signatures being completed within the same time period. Failure of the Planning Commission to act within the specified time shall be considered as approval of the plat. Approval of the preliminary plat by the Planning Commission does not constitute final approval of the subdivision, but is merely an authorization to proceed with the preparation of the final plat and construction of public facilities. In the event of a disapproval or conditional approval of the preliminary plat, a statement in writing by the Planning Commission setting forth the reasons for disapproval or the conditions for approval, shall be entered into the records of the Planning Commission.

502.14 Effective Period of Approval

At such times as a preliminary plat has been approved by the Planning Commission, one copy shall be returned to the developer for compliance with final approval requirements. Such approval shall be effective for one (1) year from the date of approval. The approval date for each plat is the date of the planning and zoning business meeting at which the plat is approved with or without conditions. During that time, the general terms and conditions under which the preliminary plat was granted will not be affected by any changes to these regulations. An extension of six (6) months may be granted provided the developer submits a written request to the Planning Commission and it is approved.

502.15 Adjustment of Preliminary Plat Requirements

The Planning Commission may waive the requirements in any individual case where in the Commission's judgment such a waiver would be in the public interest and would eliminate undue hardship. No waiver shall be granted which will have the effect of nullifying the intent and purpose of the regulations. In granting any waiver, the Commission shall attach such conditions as are necessary in its judgment to secure substantially the objectives of the requirements being adjusted. Any waiver of these requirements shall be requested specifically in writing by the developer with reference to the particular section to be waived. This request shall be accompanied by the submission of the preliminary plat and be entered in the minutes of the review meeting at least thirty (30) days prior to the plat elapsing.

502.16 Amending the Preliminary Plat

If the developer desires to make a substantial change in a preliminary plat that has been approved by the Planning Commission (such as a sufficient change in the number of lots, major realignment of street, changes to the stormwater infrastructure, or use of previously dedicated property), an amended preliminary plat must be filed in accordance with procedures previously described. The updated amendments must also meet the current regulations.

502.17 Construction Plans

All final plats, which contain a lot or lots requiring instillation of improvements shall have fifteen (15) copies of construction plans submitted to the Planning and Zoning office for approval 10 days prior by 12:00p.m. to the Technical Advisory Committee meeting. Upon review and approval of the construction plans per method and procedure adopted by the planning commission, one (1) set shall signed approved by the Planning and Zoning Director/ Planning and Zoning Engineer and returned to the applicant. Said construction plans shall be submitted and approval at minimum 30 days prior to approval of the final plat.

The applicant shall not proceed with any construction of subject improvements, which include roadways, storm sewer, or any other improvements in which the city will ultimately be taking ownership of until such time as he or she is in receipt of approved construction plans. Construction of such improvements shall comply with approved construction plans. The Planning Commission shall approve any deviation from approved plans of construction.

Based upon the Planning Commission's approval of plans, the Planning Commission shall not be liable for any error or omission of the design and/or construction.

A City of Richmond Planning and Zoning employee shall inspect all construction at various phases throughout the construction. In addition to the City of Richmond inspector the applicant/developer shall have his engineer submit the city's storm sewer infrastructure construction and functionality inspection form upon completion of the site and before a final plat shall be approved.

If, prior to inspection, any phase of construction is obscured by a subsequent phase of construction, the City Inspector shall order the applicant/developer to cease development. Test to determine conformance to the construction standards of the development ordinance shall be performed by a qualified Registered Engineer at the expense of the applicant/developer. If the tests are not satisfactory the said Inspector may require the removal of any material necessary to correct the construction deficiency.

The construction plans shall consist of but not be limited to: a proposed grading plan, storm water plans (drainage calculations, layout of all storm lines, detention design and outlet structure design). Roadway design (plan, profile and critical cross sections), layout of all sanitary sewer and water lines and any permits that may be required on the project. All water and sanitary sewer plans will continue to be submitted to Richmond Utilities for their approval.

502.18 Final Plat

The final plat serves as a plat of record for public recording and transfer of land, and as a check to assure that subdivision requirements (including any conditions stipulated in the preliminary plat) have been met. The final plat shall conform substantially to the preliminary plat and construction plans as approved, and it may constitute only a portion of the preliminary plat, which the developer proposes to develop and record. No final plat shall be approved until at least thirty (30) days following the approval of the construction plans. The Planning Commission at the business meeting will review no final plat until either all improvements on the preliminary plat/construction plans have been made or all unfinished items have been guaranteed by a bond or an irrevocable letter of credit.

Final plats cannot be submitted for approval less than 30 days after the preliminary plat and construction plans have been completed and approved with a signed and stamped copy on file with the City of Richmond's Planning and Zoning office.

502.19 Submittal

Within one (1) year of approval of the preliminary plat, the developer shall file the final subdivision plat for review and action by the Planning Commission. Failure to submit the final plat within a year's time shall require re-approval of the expired preliminary plat. An extension of six (6) months may be granted provided the developer submits a written request to the Planning Commission and it is approved.

The developer shall submit an application for final plat approval along with the plat requirements checklist to the Planning and Zoning Director. At the time of filing, a non-returnable filing fee shall be paid according to the fee schedule. The final plat shall be prepared and sealed by a registered engineer or surveyor (as applicable), at a scale not greater than one inch = one hundred (100) ft. on one or more sheets 24 x 36 inches in size. All final plats are to be submitted in digital format for G.I.S. mapping purposes only, as provided for in the city's Digital Submission requirements. The developer shall submit a CAD drawing that is geo-referenced and to real world scale. Submission shall be in a .dwg or .dgn format.

502.20 Number of Copies

Fifteen (15) copies of the final plat along with two (2) digital copies, together with any street profiles or other required plans shall be submitted to the Planning and Zoning Director.

502.21 Plat Review

The Technical Advisory Committee shall review the final plat as to computations, certifications, monuments, and related items, to insure that all required improvements have been completed to the satisfaction of city engineering standards. The TAC shall submit a written report to the Planning Commission for their consideration in reviewing the plat. In case a security bond or certified check has been posted, the developer's engineer will provide a detailed breakdown of the individual project development costs as well as the percentage of work completed on each improvement. The developer's engineer will verify that the amount of the surety is sufficient to cover the cost of required improvements yet to be completed.

502.22 Planning Commission Action

Within thirty-five (35) days after the review of the final plat, the Planning Commission shall approve or disapprove the plat. Failure of the Planning Commission to act upon the final plat within thirty-five (35) days shall be deemed approval of the plat. If the plat is disapproved, the grounds of the disapproval shall be stated in the records of the Planning Commission and the developer will be notified of the reasons for disapproval. Approval by the Planning Commission shall not constitute acceptance by the public of the dedication of any streets, other public way, or ground. When streets have been constructed, inspected, and approved, the dedicated street or public way shall be accepted for maintenance by the city within forty-five (45) days and shall be a public way for all purposes.

503. PLAT/DEVELOPMENT PLAN REQUIREMENTS

See Appendix “A” for the checklist for plat/plan requirements.

504. ENFORCEMENT

Chapter 100 of K.R.S. enables the Planning Commission to establish standards for local development as well as to establish the procedures necessary for implementing these standards. The statutes also include specific provisions for the enforcement of these regulations and penalties for the violation thereof as set forth in Section 306.

The city shall have a cause of action for all appropriate relief, including injunctions against any governmental bodies or any aggrieved person who violates this chapter or regulations adopted hereunder (K.R.S. 100.337).

505. PLATS OF RECORD

Much of the authority for regulating land subdivisions comes from the necessity for recording parcels of land within the County Clerk's Office as a condition for transfer of ownership.

All final/minor plats approved by the Planning Commission shall be recorded at the expense of the applicant in the office of the County Court Clerk. Following approval of the final/minor plat the Planning and Zoning Director shall return one (1) copy of the plat to the developer with Planning Commission certification thereon for filing with the clerk as an official plat of record. The plat being recorded shall be no more than 24 x 36 inches in size. A final/minor plat shall be recorded within one year of approval by the Planning Commission or else the approval automatically expires. The developer may request an extension of six (6) months by submitting a written request to the Planning Commission prior to the plat's expiration (K.R.S. 100.344).

506. LAND SOLD IN VIOLATION (K.R.S. 100.377)

When it has been discovered that land has been sold or transferred, or that a contract has been entered into for the sale or transfer of land in violation of the provisions of this chapter pertaining to the regulation of subdivisions, the owner or owners of record shall file plats of the land in accordance with this chapter. When land is transferred or sold, or a contract has been entered into for sale or transfer of land in violation of this chapter, the land shall be governed by the subdivision regulations both prior to and after the platting of the land by the owner of record, as if a plat had been filed in accordance with the provisions of this chapter pertaining to subdivision regulations.

507 APPEALS

Any person or entity claiming to be injured or aggrieved by final action of the Planning Commission shall appeal from the final action to the Madison County Circuit Court. Such appeal shall be taken within thirty (30) days after such action. Such action shall not include the Planning Commission's recommendations made other governmental bodies. All final actions, which have not been appealed within thirty (30) days, shall not be subject to judicial review.

508 DESIGN AND IMPROVEMENTS

508.1 Minimum Standards

The standards set forth in this section are authorized under K.R.S. 100.281 and are considered to be minimum acceptable standards of design for safe, efficient, and economical development within the city. Where the Planning Commission determines that excess capacity facilities are needed, as defined in the respective sections, the city shall be responsible for arrangements to cover the cost of that capacity required beyond what is needed to serve the immediate development.

508.2 Developer's Responsibility

Generally, the developer shall be responsible for providing the land and constructing those public improvements required to serve his development. It is also the responsibility of the developer to notify the proper governmental agency when improvements are underway so that work can be inspected to insure compliance with this ordinance. Additionally, the developer is required to notify the appropriate governmental agency when work is completed so that a final inspection can be conducted.

508.3 Site Conditions

508.31 Land Suitability

If the Planning Commission finds that land proposed to be subdivided is unsuitable for subdivision development due to flooding, poor drainage, topography, or there such conditions, which may endanger life, health, or property, the Planning Commission, shall not approve the land for subdivision unless adequate methods are proposed by the developer for alleviating these unsuitable conditions.

In addition, the Planning Commission may refuse to approve what it considers to be scattered or premature subdivision of land which would involve danger or injury to the public health, safety, or

welfare by reason of a lack of water supply, schools, proper drainage, adequate roads or transportation facilities, or other public services, or which would necessitate an excessive expenditure of public funds for the supply of such facilities or services.

508.32 Natural Features

The street plan and lot layout of the proposed subdivision shall be so designed as to preserve natural features such as trees, streams, natural lay of the land, and the disposition of top soil.

509 LOT DEVELOPMENT

The size, proportion, and orientation of individual parcels of land and the buildings placed on them will vary with intended type of land use and with the geologic characteristics of the land. Other principles of lot use and layout are more generally applicable and are basic to principles of good subdivisions design.

509.1 Lot Area and Dimensions

Section 406.3 specifies the minimum lot area and dimensional requirements for each land use classification.

509.2 Single Building Per Lot

Each separate principal use building shall be situated on a separate and single Subdivided lot of record.

510 LOT LAYOUT

510.1 Lot Lines

All side lines of lots should be at right angles to straight streets and radial to curved streets.

510.2 Corner Lots

Corner lots shall be laid out so as to provide at least minimum front yard requirements along both street frontages. Access to corner lots shall be as specified in the Access Management and Roadway Manual.

510.3 Double Frontage Lots

Lots shall not be laid out so that they have frontage on more than one street except for corner lots, or when the rear of the lot faces an arterial, freeway, or railroad right-of-way and the front of the lot faces on a minor street.

510.4 Topography and Site Grading

All parcels or lots shall be laid out in proper relationship to the topography and shall provide a building site of adequate size that will minimize problems of drainage and soil erosion.

Purpose: It is the intent of this Section to recognize that steep terrain, native vegetation, natural drainage courses, and other physical features characterize certain areas of the City. The intent is also to establish standards of development for these areas that help to protect the public health, safety, and welfare by minimizing potential for erosion, sedimentation, flooding, and landslides, while at the same time protecting and enhancing the visual quality of the City's natural landscape. Specific regulations and guidelines are necessary to address the following:

1. Protection of the people and property from hazards and problems associated with storm water runoff, flooding, and erosion.
2. Minimizing the threat and consequential damage of landslides in hillside areas.
3. Aesthetic enhancement of the community.
4. Assisting with water quality and quantity issues throughout the community.

In order to complete the goals above, the city has compiled a set of design standards that are listed below:

1. The maximum slopes for any cut or fill shall be a maximum of 2:1 (two feet of horizontal run for each foot of rise or fall), except
 - a. Earthen dam embankments
 - b. Rock cuts
 - c. Where certified by a professional geotechnical engineer and supporting documentation.
2. Earthen dam embankments shall be 3:1 maximum unless a modification application is approved. The intent of the earthen dam embankment slope regulation is to provide for public safety, soil stability, and dam maintenance considerations.
3. When certification is provided by a professional geotechnical engineer it must be accompanied by a detailed plan for compacting of the fill/cut the disturbed material, a stabilization plan, and schedule.
4. Retaining walls may also be required whenever topographic conditions warrant or where necessary or determined by the city reviewer. All retaining walls shall be designed and submitted to the codes office by an engineer licensed in structures and certified in the state of Kentucky.
5. Any use of explosive/blasting materials for construction purposes will require the following: (1) Blasting Notification (2) the blasters name (3) blaster's license number and (4) the required fees filed with the City of Richmond's Planning and Zoning office before any blasting can occur.

510.5 Land Remnants

If remnants of land exist after subdividing and have no apparent future use, which can be properly controlled, they shall be incorporated into the lot pattern of the proposed subdivision.

511 BUILDING SETBACK LINE

The building setback line for development of a parcel of land shall be in accordance with the requirements of Section 406.3

512 LOT IDENTIFICATION

512.1 Monuments

Permanent monuments of concrete or steel rods shall be set at all lot corners, angle points, and points of curves in streets and their locations marked on the final plat.

512.2 Lot Numbers

All parcels of land in a subdivision, other than streets, shall be given a consecutive lot number. This requirement applies to lots intended for non-residential use.

512.3 Property Numbering System

Individual lots shall be given a street address by the 911 Office.

513 TRANSPORTATION

Proposed streets shall be considered in their relationship to existing and planned streets, to topography, connectivity with other streets, public convenience and safety, and in relationship to proposed land uses to be served. Where it is desirable, consideration shall be given to other modes of transportation.

513.1 Streets

Streets, as ways for movement of vehicular traffic, served two principles functions:

1) The movement of people and goods, and 2) access to adjoining properties. Unfortunately, these two functions often conflict due to the fact that the smooth flow of vehicular traffic is interrupted by the number of access points allowed. To adequately provide for these two competing functions, sound traffic engineering principles require the use of a street classification system with several levels. Each classification serves the two functions in varying degrees. See the Access Management and Roadway Manual for additional documentation on streets.

513.2 Street Classification System

The street classification system and definitions for the various types of streets is documented in the Access Management and Roadway Manual, Chapter 2.

513.3 Conformance with Plan

The arrangement, location, character, width, grade, and construction of all streets shall conform to the Transportation Plan Element of the city's Comprehensive Plan, and shall be considered in relationship to existing and planned streets, topography, access to adjacent land, and public safety and convenience.

513.4 Street Classification Standards

Street classification standards, including the width of right of way, minimum pavement widths and percent grade for local, collector and arterial streets can be found in the Access Management and Roadway Manual, Chapter 10.

513.5 Responsibility for Streets

The developer shall construct all subdivision streets including all clearing, grading, laying of sub-base, base, and pavement, curbs and gutters, culverts, drain boxes, and related structures.

513.6 General Street Design Criteria

The Access Management and Roadway Manual shall guide the design for block length, street intersections, intersections and sight distance, street names, street signs, dedication of right of way, dead-end streets, half-streets, streetlights and other criteria of design.

513.7 Street Construction

The Access Management and Roadway Manual shall guide the construction of streets, including grading and embankments, cut section elevation, solid rock excavation, sub-grade preparation, concrete streets, bituminous concrete on macadam base, street cross sections, curbs and gutters and other criteria.

513.8 Pedestrian Walkways

- 1. Purpose-** Pedestrian walkways (sidewalks) are designed to provide for pedestrian safety and circulation. They also serve as important elements in the recreational system by providing space for walkers, hikers, and joggers.
- 2. Responsibility-** Sidewalks are the responsibility of the developer and are to be provided in all residential subdivisions on both sides of the street. Pedestrian walkways shall be required for all commercial and industrial lots as determined by the Planning Commission.
- 3. Standards-** The Access Management and Roadway Manual provides design criteria for sidewalks in Chapter 13

513.9 Bikeways/Shared-Use Trails

1. A bikeway may be substituted for a sidewalk in areas where schools, parks, or other public facilities exist and may cause a high volume of bicycle traffic, in order to insure the safety of cyclists and encourage greater use of the bicycle as an alternate means of transportation.
2. The Access Management and Roadway Manual provides guidance on design of shared-use trails, bike lanes and bike routes in Chapter 13.

513.10 Street Signs

Subdivisions shall have permanent street signs installed by the developer according to city standards. Reference Chapter 8 of the Access Management and Roadway Manual.

514 PUBLIC UTILITIES/FACILITIES

514.1 Administration

The administration of these regulations by the Planning Commission shall take into account the relationships between new development and the adopted community plans for public facilities and utilities. Proposed development shall be considered in terms of required service by sanitary sewer facilities, water supply, storm water drainage, energy supply, and communications services. Where necessary, the Commission shall require the provision of exclusive utility easements consistent with the need to serve the proposed and future development.

Specifications for public utility improvements shall meet the requirements provided by the agency responsible for the requested service.

514.2 Water, Gas, and Sanitary Sewer System Improvements

All development within the City of Richmond shall be served public water and sanitary sewer. The provision of gas is optional. The developer shall be required to provide an adequate potable water supply to all lots in the subdivision/development. The water distribution system shall be designed and constructed so as to form an integral part of the existing water distribution system and shall be in conformance with the city's Comprehensive Plan. In addition, the distribution system shall be in accordance with the current standards of the Natural Resources and Environmental Protection Cabinet, the State Fire Rating Bureau, and the Richmond Utilities Infrastructure Development Manuals. These manuals are incorporated herein by reference and include detailed specifications and drawings indicating the required practices and materials to be used for the construction of projects that will be turned over to Richmond Utilities upon completion. Additionally itemized in the Infrastructure Development Manuals are guidelines for the required submittals, construction, inspections, and as-built construction documentation of the subject project.

The quantity of water delivered to the water distribution system shall be sufficient to supply adequately, dependably, and safely, the total reasonable requirements of its customers under maximum consumption conditions.

The water distribution system shall provide for fire protection in addition to meeting domestic use requirements. Fire hydrants shall be spaced not farther than five hundred (500) feet apart as measured over hard surfaced roads, and in no event shall the distance between a fire hydrant and a building exceed three hundred (300) feet. Fire hydrants shall meet the minimum specifications and be installed in conformity with requirements of the Richmond Fire Department and the Richmond Utilities Board. All Richmond Fire Department connections shall have a sign posted near the fire department connections that states the following information:

DO NOT BLOCK
Fire Department Connection
Business Name

Fire Department Connection number will be assigned by the Richmond Fire Department. Sign shall be reflective, 12" w by 18" h, white back ground with red letters and letter shall be 1 1/2". All commercial buildings shall have Knox boxes placed on the building and any other building deemed necessary by the City of Richmond Fire Chief. Location will be assigned by the Richmond Fire Department. All fire connections shall have Knox Fire Department Connection caps placed on the fire department connection. Knox boxes and Knox Fire Department connection caps shall be ordered thru the Richmond Fire Department. The costs of the above items are the responsibility of the developer and or property owner.

Water mains shall be a minimum of eight (8) inches in diameter. Water, gas, and sanitary sewer system improvements are provide by the Richmond Utilities Board. Following the Technical Advisory Committee meeting, the developer and the developer's engineer shall be required to execute and agreement with Richmond Utilities in accordance with the Procedures Manual For Richmond Utilities Infrastructure Development and the related Technical Manuals.

Richmond Utilities will not be responsible for the technical accuracy of the design plans, and will review the plans from a general design and administrative basis. Following the project's completion as per the Richmond Utilities Acceptance Requirements, the developer's engineer is responsible for providing a copy of the recorded deed on computer disk as well as a 24" x 36" blue/line drawing. The developers engineer will also provide Engineer's Digital Record Drawings (as-built drawings) on computer disk and 24" x 36" blue/line copy of the drawing before or at the time of the Developer's Request of Acceptance of Donated Utilities. In addition, the developer's engineer will insure that the As-Built drawings and the final plat shall be properly geo-referenced onto the Richmond Utilities Geographic Information System (GIS) Base Map.

During the installation of all water lines and fire hydrants, the developer and/or the contractor must notify the Richmond Fire Department and the Richmond Utilities Board so they may inspect said improvements. No improvements shall be covered or concealed until they have been approved by both agencies. No building permits shall be approved until the system is activated.

Sanitary sewage disposal shall be available for all proposed development and shall be designed, constructed, and inspected by the Richmond Utilities Board and shall meet the following requirements:

1. The minimum lateral size pipe connection to any residential dwelling shall be four (4) inches inside diameter (i.d.).
2. The minimum size sewer pipe to be used in a residential subdivision shall be eight (8) inches.
3. Each lot shall be provided with a separate and independent lateral.
4. Multi-family dwelling units two (2) through twelve (12) units shall be connected to a minimum six (6) inch i.d. lateral line before connecting to the sewer main. Each individual multi-family unit shall be connected to the six (6) inch common lateral line with a minimum four (4) inch i.d. sanitary lateral. Sanitary lateral design for multi-family developments of more than twelve (12) units shall be reviewed and must be approved by the Richmond Utilities Board prior to commencement of construction.
5. No sanitary sewer system shall be used for disposal of storm waters.
6. Sanitary sewage system plans shall show pipe sizes, types of pipe, location, type, and size of all lift or pumping stations and treatment facilities (as needed). Such plans shall be

designated as a logical extension of the existing public sewer system including trunk lines as needed to serve the subject tract and future extensions of the system.

Whenever the City of Richmond deems it appropriate and necessary to protect public health, safety and general welfare, and in keeping with the implementation of the Comprehensive Plan, the developer may be required to install water and sewage system improvements in excess of stated requirements. In these cases, the developer may be reimbursed by the utility agency for the difference in cost between the facilities actually needed in the development and the cost of facilities necessary to provide for planned future development.

514.3 Electric, Telephone, and Other Improvements

Electric, telephone, cable, and other related services not described elsewhere in these provisions should be provided within each subdivision according to the specifications of the appropriate agency providing the service.

514.4 Storm Water Management

These regulations affect all subdivision and development of land within the City of Richmond. Storm sewer systems are designed to collect and convey storm water runoff from street inlets, runoff control structures, and other locations where the accumulation of storm water is undesirable. The objective is to remove runoff from an area fast enough to avoid unacceptable amounts of ponding damage and inconvenience.

In general, the amount of storm water runoff should be equal in terms of pre-development and post-development given the design of the storm water system. Storm water runoff from a site or subdivision shall not adversely impact natural drainage from an uphill drainage basin or to a downhill drainage basin or adjacent properties. The property owner shall be responsible for storm water drainage facilities located on private property where runoff will be collected within that property and be minimally discharged over a larger area before the storm water naturally drains on adjacent properties unless a large drainage basin exists or is being planned. Storm water drainage easements shall be required if storm water is discharging directly from a pipe to an adjoining property and being dispersed on the property. No storm sewer construction shall occur until permission has been granted by the appropriate agency. All stormwater infrastructure components shall be inspected and certified by the owner/developer's engineer.

In addition, the City of Richmond operates under the requirements of the Kentucky Pollutant Discharge Elimination System (KPDES), under which the city must develop, implement, and enforce a program to reduce pollutants from any storm water runoff resulting from construction activities that result in a land disturbance greater than or equal to one (1) acre. Accordingly, all construction site development of one (1) acre or more must provide the following information before commencement of construction activities:

1. Provide the city's Code and Planning Office with a signed copy of the completed Notice of Intent (NOI) form, KPDES Form NOI-SW within forty eight (48) hours prior to the initiation of site work.
2. Provide a completed copy of the site-specific Best Management Practices Plan at a scale not greater than 1"=50 feet to the city's Code and Planning Office at the time of request for a

development plan review by the Planning Commission. This information shall be available for review by the Technical Advisory Committee at its regular meeting.

3. Provide the city with any updates to the Best Management Practices Plan made during the actual construction process, within twenty-four (24) hours of final design.
4. Provide the city with a signed copy of the Notice of Termination (NOT) within forty-eight (48) hours of submittal to the state.

As provided for in Ordinance 03-57, the city has the right to 1) enter and inspect construction sites with any land disturbances for the presence of properly installed and functioning sediment control Best Management Practices and to assure compliance with the BMP site specific plan, 2) to review the records of the permittee and/or his contractor at both on-site and off site locations that pertain to the development, installation, maintenance, and operation of the BMP Plan, and 3) to require modification to the BMP Plan along with the correlating physical placement of the modifications at the site, when in the opinion of the city the current BMPs are not functioning to the degree necessary to prevent or minimize erosion or to provide proper sediment control. All expense for modifications required by the city shall be borne by the permittee and/or his contractor. No expense for proper maintenance or operation shall be borne by the city.

Where the permittee and/or his contractor is found to be in non-compliance, each non-compliance item shall be corrected within five (5) working days of notification. The first occurrence of non-compliance shall result in an issue of Notice of Violation; the second occurrence or continued non-compliance shall result in a stop work order; the third occurrence or continued non-compliance shall result in a five hundred dollar (\$500) fine per calendar day of non-compliance along with a filing of a complaint with the Kentucky Division of Water. The city has the right to take civil action against any permittee and/or contractor that consistently and persistently fails to comply with the requirements of Ordinance 03-57.

Stream Buffers

The purpose of this section is to establish minimum acceptable requirements for the design of buffers to:

1. Protect the streams, wetlands, and floodplains of the City of Richmond.
2. To protect the water quality of watercourses, reservoirs, lakes, and other significant water resources.
3. To protect the riparian and aquatic ecosystems
4. To provide for the environmentally sound use of City's land resources.

It is the desire of the City to protect and maintain the native vegetation in riparian and wetland areas by implementing specifications for the establishment, protection, and maintenance of vegetation along all stream systems within our jurisdictional authority.

Streams

Perennial and intermittent watercourses identified through site inspection and US Geological Survey (USGS) maps. Perennial streams are those which are depicted on a USGS map with a solid blue line. Intermittent streams are those which are depicted on a USGS map with a dotted blue line. Both Perennial streams and intermittent streams are subject to design guidelines for stream buffers.

The specifications read as follow:

Stream Buffer:

1. Protects the physical and ecological integrity of the stream ecosystem.
2. Begins at the edge of the stream bank of the active channel and extend a minimum of 25 feet from the top of the bank.
3. Allowable uses within this zone are highly restricted to:
 - a. Flood control structures
 - b. Utility right of ways
 - c. Footpaths
 - d. Road crossings, where permitted.

The Stream buffer, including wetlands and floodplains, shall be managed to enhance and maximize the unique value of these resources. Management includes specific limitations on alteration of the natural conditions of these resources. The following practices and activities are restricted within this buffer.

1. Clearing of existing vegetation
2. Soil disturbance by grading, stripping, or other practices
3. Filling or dumping
4. Drainage by ditching, underdrains, or other systems

The following structures, practices, and activities are permitted in the stream buffer, with specific design or maintenance features, subject to the review and approved of the planning and zoning department:

1. Roads, bridges, paths, and utilities:

- A. An analysis needs to be conducted to ensure that no economically feasible alternative is available.
- B. The right-of-way should be the minimum width needed to allow for maintenance access and installation.
- C. The angle of the crossing shall be perpendicular to the stream or buffer in order to minimize clearing requirements.
- D. Development plans must include a flood study to determine impacts on FEMA regulatory floodplains. Increase in the base flood elevation or any change to the regulatory floodway must be addressed through proper submittals to FEMA.

2. Stormwater Management:

- A. An analysis needs to be conducted to ensure that no economically feasible alternative is available and that the project is either necessary for flood control, or significantly improves the water quality or habitat in the stream.
- B. In new developments, onsite and nonstructural alternatives will be preferred over larger facilities within the stream buffer.
- C. When constructing storm water management facilities (i.e., BMPs), the area cleared will be limited to the area required for construction and adequate maintenance access
- D. Material dredged or otherwise removed from a BMP shall be stored outside the buffer.
- E. Individual trees within the forest buffer that are in danger of falling, causing damage to dwellings or other structures, or causing blockage of the stream may be removed.

All drainage buffer areas shall be maintained through a declaration of protective covenant or by property owners in which case shall be documented on the final plat and/or the approved development plan. Any approved covenant shall be recorded in the land records and shall run with the land and continue in perpetuity.

514.5 Basic Design Criteria

- A. Degree of Protection Required-**The storm drainage system shall be adequate to handle the runoff from storms having various frequencies of occurrence for various degrees of site development, in accord with the following general categories:

Conservation, agricultural, residential, commercial, industrial, and concentrated high value areas	25 year frequency
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Flood control facilities	100 year frequency
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The runoff computed from these storm frequencies shall be from the area within the subdivision and all other areas draining thereto.

B. Determination of Quantity of Runoff for Design of Storm Water Collection Systems-

Each portion of the storm water drainage collection system shall be capable of handling the peak flow of runoff. For drainage areas less than 200 acres, the method that shall be used is the "Rational Method." For areas greater than 200 acres, either the "Soil Conservation Service (SCS) Method or the "Rational Method" of the Kentucky Transportation Cabinet, Bureau of Highways shall be used:

1. "Rational Method" where $Q = CIA$

Q = peak runoff quantity in cubic feet per second; C = runoff coefficient varying with perviousness and other characteristics of the drainage area; I = average intensity of precipitation in inches per hour, varying with frequency of storm occurrence, duration or concentration time, and area of the tributary watershed; A = area in acres of tributary watershed.

A. Runoff Coefficients: The runoff coefficient is the portion of the precipitation expressed as a decimal, that will reach a given storm water facility. Each lot within a subdivision contributes runoff from the roof, driveway, sidewalk, and street. Generally the smaller the lot width, the less impervious area. As the lot increases in width so does the impervious area. Weighted coefficients shall be used with the impervious areas $C = 0.95$, and all other areas $C = 0.40$. Residential developments shall be calculated using lot impervious areas follows:

Runoff Coefficients/Land Use Imperviousness		
Land Use	Average % Impervious	Hard Surface Area
Previous and/or existing pre-developed areas	Varies	Varies
Residential Uses, Average Lot Size/Width:		
3 acres/300 feet	6	8000
2 acres/200 feet	7	6750
1 acre/100 feet	12	5500
1/2 acre/100 feet	23	5500
12500s.f./80 feet	34	5000
9000s.f./70 feet	42	4500
7500s.f./60 feet	44	4000
6000s.f./50 feet	48	3500
Multi-family residential	75	tbc*
Commercial/Office	85	tbc*
Industrial	72	tbc*
Impervious areas including Streets, roofs, flatwork	72	tbc*

* tbc (to be calculated)

B. Intensity of Precipitation: The "point" values of average precipitation intensity in inches per hour, at Richmond can be extrapolated from Exhibit # 2-504.5 Kentucky Bureau of Highways "Rainfall Intensity-Duration-Frequency Curves" for Lexington. For any given storm duration (concentration time to runoff) the curves show the average precipitation intensity of storms having 2, 5, 10, 25, 50, and 100 year frequencies.

B. Concentration Time (TC): The time of concentration (TC) in minutes, is the estimated time it will take the storm runoff from the most remote part of the area to reach the point of the storm drainage system under consideration. This includes the time for water to flow over roofs, through roof gutters and downspouts, over ground, turfed areas, streets, through street gutters to the nearest inlet of the drainage system plus the time of flow in sewer pipes to the point under consideration. Unless otherwise determined by overland flow charts or nomographs, the Time of Concentration (TC) for inlets of storm water collection systems may be used as follows:

Characteristics	Concentration time	
	Flat	Steep
For residential and undeveloped areas	15 min.	10 min.
Residential on 1 acre or larger lots	10 min.	8 min.

At no time shall the Time of Concentration be greater than 30 minutes for design of storm inlets.

2. SCS Method- all formulas, constants, and data shall be used with regard to current manual from the U.S. Natural Resources Conservation Service.

3. Regional Method of Bureau of Highways- all formulas, constants, and data shall be used with regard to the "Regional Method" from the Current Manual of Instruction of Drainage and Design, Ky. Transportation Cabinet, Bureau of Highways.

4. Flow Times- Flow times in sewers or conduits to the point of design may be determined from the hydraulic properties of the sewers upstream of that point, assuming average flow-full velocity at the proposed sewer slopes.

5. Pipe Capacities- Public storm sewer pipes shall be designed to carry peak flows as determined by the methods previously described. At the design storm the drainage system shall be designed as open channel (non-surcharged) flow. Sizes shall be determined by Manning's Formula. For roughness coefficients see the KYTC Drainage Manual.

6. Minimum Pipe Size- The minimum diameter for public storm sewer pipe shall be fifteen (15) inches.

7. Minimum and Maximum Velocities- Velocities in public storm sewer pipes, when flowing full at average peak flows, shall not be less than two (2) feet per second. Velocities shall not exceed fifteen (15) feet per second at the flow's re-entrance into the natural stream, unless approved by the Planning Commission's Engineer. The outlet velocities of all headwalls shall be shown on the profiles of the storm water system.

- 8. Gradients of Pipe-** The sewer pipe shall be laid on gradients so that the velocity (flowing fully) shall be kept within the foregoing stated minimum and maximum unless other special provisions are made. Pipe sizes should be so selected as to avoid large differences in velocities between consecutive reaches.
- 9. Hydraulic Grades-** To insure against surface ponding or street flooding due to surcharging, the hydraulic grade line (HGL) in any inlet or manhole may not be higher than the inlet grade. The HGL shall be shown on all profiles of the storm water system. Design of all public storm sewer appurtenances shall consider the balance of energy plus the loss due to entrance in all structures having a critical change in horizontal or vertical alignment. In no case shall the difference in invert elevations be less than the result of equal crowns when a smaller pipe empties into a larger one. In no case shall storm sewer pipe sizes be reduced more than one standard increment of pipe diameter due to an increase in invert gradient after balancing the energy losses within the structure.
- 10. Manholes (Junction Boxes)-** Manholes shall be constructed in accordance with standards as shown in the current Standard Drawings, Ky. Dept. of Highways Manual. Drop manholes may be required to reduce the slope of any sewer that has a velocity that exceeds twenty (20) feet per second. Pipes shall not extend more than two (2) inches into the side of the manhole, and the invert of the outlet pipe shall be at the bottom.
- 11. Inlets (Catch Basins) Capacity-** The capacity of the grate on the inlet should not be less than the quantity of flow tributary to the inlet. Inlets at low points or sags should have extra capacity as a safeguard for street flooding from flows overtopping the street curb. A safety swale designed for the one hundred (100) year storm shall be placed at the low points or sags. Curb openings on combination inlets should be used for overflows in the event that the grate is clogged. Special inlets may be required for streets with steep gradients to provide the extra capacity such situations require. All curb inlets are to be a minimum of five (5) foot open throat boxes and ten (10) foot where needed. Pipes shall not extend more than two (2) inches into the side of the manhole, and the invert of the outlet pipe shall be at the bottom. Inlet spacing shall be based upon gutter and inlet capacity, street slope and contributing drainage area. The spacing of inlets should insure that street drainage generated along continuous grades or sags will not damage and flood private properties. For the design storm, no more than five (5) cfs shall enter any grade inlet; no more than eight (8) cfs shall enter any sump inlet; and no more than two and a Half (2.5) cfs is permitted to flow in side yards between houses. Along continuous grades (less than two (2) percent- 400 feet maximum;
Along continuous grades (two (2) percent and over)-600 feet maximum
At sag locations (draining less than two (2) percent grades)-
400 feet maximum between inlets or from a high point;
At sag locations (draining two (2) percent and more grades)-
600 feet maximum between inlets or from high point inlets may be required when drainage areas and /or street slopes are excessive.
- 12. Intersections-** Storm water runoff crossing the intersection of a street shall be kept to a minimum and must be approved by the Planning Commission's Engineer.

- 13. Outfalls-** When storm sewer system outfalls into a flood plain of any major water course, the outfall must not be subject to frequent floods or backwaters. Standard headwalls and/or headwalls with wingwalls including rock channel protection as aprons for erosion control, shall be constructed for all outfalls. Suitable baffles or other energy dissipaters shall be provided if maximum velocities are exceeded. The invert of the first storm sewer appurtenance upstream of the outfall structure shall be above the elevation of the calculated one hundred (100) year flood plain for all channels with a drainage area of more than fifty (50) acres within the project shall be shown on the Improvement Plan.
- 14. Culverts and Bridges-** Culverts and bridges shall be designed in accordance with the methods given in the Kentucky Dept. of Highways Manual of Location and Design, except that storm water quantities to be handled by the culverts and bridges shall be determined on the basis described in these standards. The allowable headwater (AHW) shall not be greater than $HW/D=2.+$.
- 15. Headwalls-** Standard headwalls for pipe sizes 15 inch through 24 inch and headwalls including wingwalls and aprons for pipes larger than 24 inches shall be constructed at the outfall of all storm sewers in accordance with Standard Construction Drawings as provided in the current KYTC Standards Drawings Manual.
- 16. Other Drainage Improvement Measures-** Other drainage improvement measures may be undertaken to provide the necessary hydraulic characteristics required for adequate drainage. These other measures include stream bed clearing, removal of obstructions, stabilization of banks of areas to eliminate erosion, widening, deepening or realignment of streams, construction of ponds behind dams, or other measures for adequate drainage.
- 17. Specifications for Construction and Materials-** See Street and Storm Drainage Construction Specifications.
- 18. Lot Grading-** Within the limits of the public right-of-way adjacent to street pavements, all final grading for grass strip, sidewalks, and yards shall comply with minimum and maximum grades in accord with typical sections for streets as shown in the current city street specifications. For lots that drain toward the street, the areas between the right-of-way line and the curb shall be graded so that water drains to the street at a minimum grade of one (1) inch per foot (approximately 8 percent) except where sidewalks are required (see typical sections). All grading behind the street shall be done in a fashion that does not allow ponding of water adjacent to the paved street. For lots that drain away from the street, the area between the right-of-way and the curb shall be graded so that water drains away from the street at a minimum of 1/2 inch per foot (approximately 4 percent) except where sidewalks are required
- 19. Top Soil:** If grading results in the stripping of top soil, top soil shall be uniformly spread over the lots as grading is finished. Temporary silt barriers should be installed around stock-piled top soil in order to control erosion.
- 20. Trees:** All development projects should provide for retention of any existing tree that can be utilized in the final development plan, and the grading should be adjusted to the existing grade of the trees where practical.

21. Swales: Swales carry surface runoff from roofs, yards, and other areas to the rear of lots or along common property lines to streets or other drainage areas to prevent ponding of water near buildings or other portions of the lot. Surface drainage swales shall have a minimum grade of two (2) percent and shall be constructed so that the surface water will drain onto a street, storm inlet, or natural drainage area. Swales for handling lot drainage shall be constructed as a part of final lot grading and be seeded and mulched or sodded as soon as possible to prevent erosion.

22. Roof and Subsurface Drains: roof downspouts, footing or foundation drains shall be discharged onto the same parcel of land from which the water is generated. Roof downspouts shall be piped to natural drainage areas away from the street or onto concrete splash blocks, which direct water away from the building into swales, or other natural drainage areas. Downspouts constructed toward the street shall be discharged on the surface as far back onto the lot as possible and in no case be closer than twenty (20) feet back from the nearest edge of the right-of-way line. All subsurface drains shall be constructed toward the rear of the lot or connected into the storm sewer system. Any connection into a storm sewer system must be approved by the inspector. Outlets for roof drains shall have erosion controls in place at the outlet areas to minimize erosion on site.

C. Erosion Controls

1. General- In order to minimize runoff damage to downstream properties, sediment pollution of public and private waters and hydraulic overloading of existing drainage facilities, the storm water runoff from a subdivision or development site shall not exceed the pre-development discharge from that subdivision or development site, calculated by using an undeveloped runoff coefficient $C = (0.40)$.

2. Drainage Channels- Erosion controls for drainage channels shall be provided to control runoff velocities as follows:

Velocities of less than two (2) fps. Design velocities should generally be greater than 1.5 fps to avoid excessive deposition of sediments. When flat slopes are unavoidable, concrete paving should be used to accelerate runoff.

Velocities between one and one-half (1.5) and four (4) fps. The bottom and sides of the earth channel shall be seeded, mulched, and fertilized to an elevation of three (3) feet above the design water surface. Seeding shall be a perennial or annual mixture of grass seeds. At a rate of seventy five (75) pounds per acre. Acceptable whole fertilizer shall be applied at a rate of seventy-five (75) pounds per one thousand (1000) feet. On slopes of over five (5) percent, the bottom and sides of the earth channel shall be sodded and pegged to remain in place. Where seeding or sodding is required and the soil is not capable of supporting vegetation, appropriate action shall be taken to bring the soil to an acceptable condition, which will support the growth of seed or sod.

Velocities over four (4) fps. The bottom and sides of the earth channel shall be protected from erosion with an application of stone rip-rap, coarse aggregate and/or dumped rock channel linings. The type of application thickness and quantities shall be designed by the engineer to insure maintenance free permanent stabilization.

Reinforced concrete pavement at least four (4) inches thick may also be used at bends, changes in alignment, junctions with other ditches, and at other locations where erosion is likely to occur. On slopes over ten (10) percent, consideration should be given to the construction of larger sized channel linings, gabions (wire boxes) or paved channels with energy blocks or dissipaters to

reduce excessive velocities and damage to receiving streams. Consideration should be given for the construction of other methods of lining for erosion control including check dams, drop structures, gabions, etc. subject to approval by the Planning Commission's engineer.

3. Detention/Retention Basins- Detention/Retention Basins shall be provided for all subdivisions and developments. These basins may be designed for each individual lot, but regional basins are encouraged to be provided throughout the development. Such facilities shall be designed so that no standing water will remain in detention basins during dry weather, or the design of retention basins that will not allow standing water to stagnate and present health hazards. In certain cases, other non-basin detention/retention techniques such as underground vault storage may be utilized when approved by the Commission. Individual site storm water management shall be reviewed under the current regulations. The amount of water to be detained shall be determined by the method described in Section 514.5. Such facilities shall be constructed in such a way that failure of the structure will not result in loss of life, damage to homes, or any interruption of public utility use or service. Addition of trash racks and/or rip-rap around outlet structures in detention/retention areas shall be installed by the owner/developer.

Storage Requirements- The amount of detention/retention required for a subdivision or development shall be the amount determined from the inflow-outflow hydrograph based on the twenty-five (25) year storm frequency. If the Modified rational Method is used by computer program, the storm duration used shall be the one that produces the maximum storage. If calculating by hand, the duration shall be greater than the time of concentration.

Discharge From Basins- The discharge from the detention/retention basin shall be controlled by a multi-stage release structure and not be greater than a pre-developed runoff rate based on two (2), and twenty-five (25) year storm frequency at that particular storage point where the discharge occurs. The routing of an emergency spillway shall be shown based on the one hundred (100) year storm frequency. Trash racks shall be installed on the low inflow outlet in detention basins.

Maintenance of Basins- Unless dedicated to and accepted by the City, the owner of each lot and/or the developer of each subdivision shall be responsible for properly maintaining each retention/detention basin in order for such facility to function according to its design and purpose. Maintenance for the detention/retention areas shall be noted on the plat/development plan, including access roads. If publicly dedicated, the area shall be included within the right-of-way and shown on the final plat/development plan. The area of the pond or lake shall be owned and maintained by the adjoining residents. This shall include maintaining the shoreline and removing sedimentation, and shall be included in the subdivision's restrictive covenants.

D. Drainage Channel or Water Course Relocations- In order to minimize hillside slippage near relocated drainage channels or water courses due to drainage channel depth or character of the earth in the drainage channel fill and side slopes, precautions shall be taken to compact the fill and side slopes, provision of under drainage, bank protection of reinforcing or other measures. Additional easement width shall be provided at such possible slide areas.

E. Best Management Practices- All subdivisions developments shall have a Best Management Practices (BMP) document prepared and submitted with the plat or development plan. This document shall meet the minimum requirements as stated in the current Kentucky Best Management Practices for Construction Activities prepared by the Ky. Division of Water. Three (3) copies of the document shall be submitted and a copy shall be on site at all times. All graded

areas are to be maintained at all times to prevent erosion and excessive runoff. Several methods used to prevent soil erosion during development are included in the current city street specifications such as drainage swales, silt checks, temporary retention dams, etc., and are to be used during the grading operation. All slopes and graded areas are to be seeded as soon as practical after the grading operation has been completed and/or building development has been finished. Additional erosion control measures to prevent erosion and excessive runoff may be required if the developer or builder has not accomplished it.

F. Mud and Debris- Until all lot and street improvements in the subdivision have been completed, the developer/contractor and or builder shall take such measures as are necessary to prevent erosion of graded surfaces, and to prevent the deposit of soil and debris from graded surfaces onto public streets, into drainage channels or sewers, or onto adjoining land.

G. Specifications for Construction and Materials- In all other respects, the design, materials, and construction shall be as specified in Sections 206,212, 601, 610, 703, and 710 of the Ky. Standard Specifications for Road and Bridge Construction.

H. Equipment on Streets- At any time equipment without rubber tires use any existing pavements, all necessary precautions shall be taken to insure that the street surface, gutters, and curbs, receive no damage.

515 COMMUNITY FACILITIES AND OPEN SPACE

The process of land subdivisions and development represents a long-term commitment to a particular land use. Included in the land uses are those that are deemed appropriate for community facilities. It is important that sufficient land be set aside for public purposes.

515.1 Official Public Properties Map

If the city has adopted an Official Public Properties Map as provided for in KRS 100.317, which includes such public uses, then, in addition to the provisions for reservation, the city may prevent the development of such area by refusing to issue a construction permit. Unless such permit is granted, no person shall recover any damages for the taking for public use of any improvement or structure constructed within the lines shown on the Official Map. Any such structure or improvement shall be removed at the expense of the owner when the land is acquired for public use.

515.2 Unforeseen Development

Where it is considered essential by the Planning Commission in its review of large scale or planned unit development not anticipated in the adopted Comprehensive Plan, the Commission May require the reservation for purchase of such areas of an extent and location suitable for the needs created by such development for public use for no more than two (2) years.

516. CONSTRUCTION GUARANTEES

516.1 Completion of Improvements

Prior to the submission of the final plat to the Planning Commission for approval, the developer shall either have completed all improvements required by applicable City ordinance or code and/or

depicted on the Preliminary Plat/Construction Plans or shall tender with the application for final plat approval an Irrevocable Letter of Credit as a construction guarantee as to the remaining improvements, such letter of credit to be in the form prescribed by the City's Department of Planning and Zoning and in the amounts to be determined in accordance with the further provisions of this ordinance.

516.2 Construction Performance Guarantees

The developer may execute and file guarantees of construction with the city in lieu of any items listed in the Minimum Construction Standards Prior to The Issuance of the Construction Guarantee section A of this ordinance from the Preliminary Plat/Construction Plans, when requesting approval of the final plat. However, no structure on a lot can be sold or issued a Certificate of Occupancy until such time as all improvements applicable to that lot are completed.

The letter of credit shall be filed with the Planning and Zoning department of Richmond in the amount of: (i) one hundred twenty-five percent (125%) of the cost of the completion of all remaining improvements; and, (ii) as a guarantee against faulty materials or poor workmanship, 25% of the cost of the construction and installation of all required improvements and infrastructure which have been construction at the time of the application for final plat approval, all of such costs to be estimated and determined by the City's Engineer or the Planning and Zoning staff together with any fees associated with inspection of the property. The letter of credit shall be security for the full performance by the developer for the construction and installation of all improvements to the property required by applicable City ordinance or code and/or depicted on the Preliminary Plat/Construction Plans, all of which shall be completed, except as may be otherwise set forth herein, within twenty-four (24) consecutive calendar months of the date of approval of the final plat, or within the time frame of a mutually agreed upon extension applied for by the developer and formally approved by the Planning and Zoning Commission, such extension, however, not to exceed an additional twelve (12) consecutive calendar months. Any application for such extension shall be made in writing, shall be filed not less than ninety (90) days prior to the expiration of the initial twenty-four (24) month period, and shall express in detail the circumstances which have given rise to the developer's inability to complete the development within the initial twenty-four (24) month period. The application shall be filed with the Department of Planning and Zoning not less than ten (10) days prior to the workshop session at which it will come before the Planning and Zoning Commission for initial review and consideration.

Any provisions hereinabove to the contrary notwithstanding, at such time as all require improvements are complete, inspected, and accepted by the City, with the exception only of portion of sidewalks which adjoin any vacant lot or lots, the developer may (i) apply for a reduction in the amount of the posted letter of credit; and (ii) apply for an extension of time beyond the maximum time for completion set forth above within which to construct and install sidewalks adjoining such vacant lot or lots; provided, however, that no such extension shall encompass a period of time in excess of five (5) years from the date of final plat approval. If such application be made and granted, the letter of credit shall be reduced to an amount equal to one hundred twenty-five percent (125%) of the estimated cost of completing remaining sidewalks.

Failure of the developer to complete all required improvements to the property within the time limits above set forth shall entitle, but not require, the City to make one or more draws against the letter of credit for the cost of completion. The fact of the existence of the letter of credit securing the developer's responsibilities and obligations hereunder shall not relieve or release the developer

from its primary liability to complete such improvements; rather, such liability shall exist and continue until such time as the improvements are in fact completed and accepted by the City.

At such time as the developer has completed all required improvements, the developer shall notify the Director of Planning and Zoning, who will then procure necessary inspections. Such notification shall be accomplished by the developer's submission to the Department of Planning and Zoning of a written request for final inspection including all development completion reports required, same to be signed and stamped by a licensed engineer as to accuracy, together with all fees payable for City inspection. If the improvements are in conformance with the requirements, Director will so notify the Planning Commission and shall recommend the release of letter of credit.

No developer, or any principal, owner, director, shareholder, member thereof, nor any other entity in which the developer or any principal, owner, director, shareholder, or member thereof is, as to such other entity, a principal, owner, director, shareholder, or member thereof, who shall have failed to complete any required improvements, including sidewalks, in a timely manner as hereinabove set forth shall be eligible to submit another preliminary or final plat or any development plan for any commercial or business project-until all outstanding developments have been completed and all development infrastructure has been accepted by the City.

Section A.

MINIMUM CONSTRUCTION PRIOR TO ISSUANCE OF THE CONSTRUCTION GUARANTEE

The following minimum construction standards must be completed and have passed inspection by the appropriate agency prior to posting a construction guarantee or submittal of a final plat. Twenty-five percent (25%) of the total cost of all installed improvements must have a construction guarantee posted to ensure against faulty materials or poor workmanship. No structure on a lot can be sold or issued a Certificate of Occupancy until such time as all improvements applicable to that lot are completed.

1. Street Sections: All dense graded aggregate (DGA), base, curb and gutter, except panels for utility crossings, must be in place. The surface course of bituminous, sidewalk, and bike trail/lane may be included in the construction guarantee.
2. Storm Sewer System: The system must be completed to the point that it is functional according to the approved engineered plans. The design engineer shall submit in writing the functionality of the storm system. Twenty-five percent (25%) of the total cost of the storm water detention or retention system must be bonded to ensure against faulty materials or poor workmanship and shall remain a construction guarantee throughout all phases of development.
3. Signage: All street signs and directional signs must be in place. Street stripping may be bonded.
4. Utilities: It is the responsibility of the utility provider to approve and accept any and all utilities.
5. Buffers: Approved buffers or landscape buffers may be included in the construction guarantee.
6. Exceptions: The Planning Commission may approve changes from these minimum construction requirements in cases where the developer requests a modification. For any such exception, the developer shall be required to show good cause for the exception and prove that the intent of these Regulations shall not be impaired by the exception. The

Commission shall not take action on any such case until it has received recommendations in writing from the affected utility or department. The Commission may require special conditions to be attached to the final plat where such conditions are necessary to protect the public interest in the timely completion of the public improvements.

Section B

PROCEDURE FOR CONSTRUCTION GUARANTEE RELEASE

When the developer has completed infrastructure improvements compliant with the approved preliminary/construction plans and final plat, the following procedure shall apply:

1. No Partial Reduction of Construction Guarantees: The Planning Commission shall not release, nor reduce, any part of a construction guarantee until all infrastructure improvements have been properly installed.
2. Final Inspection/punchlist: The developer shall request and pay all fees for the Planning and Zoning Department to perform a final inspection/punchlist. The developer shall submit an inspection and punchlist from a licensed civil engineer stating the condition and completion of all infrastructures in accordance with the approved plans.
3. Notice to the Planning & Zoning Commission: If the inspection from the Planning and Zoning Department finds the improvements are completed in conformance with all requirements, the Planning and Zoning Director shall inform the Planning Commission to reduce the construction guarantee to the warranty period.
4. Camera/Video Inspection: At the developers' expense, a camera/video inspection of all storm infrastructure is required with engineer's approval.
5. Project Completion Forms: Developer is responsible for submitting all local, state and federal project termination forms as applicable to the project.
6. Planning Commission Action: The Planning Commission shall act to reduce the construction guarantee to the warranty period on the recommendation of the design engineer and Planning and Zoning Department.
7. Warranty Release: After one (1) year the Planning and Zoning Department shall perform a final inspection/punchlist. If the development is conforming with the approved plans, the Planning and Zoning Department shall recommend to the Planning Commission to release the construction guarantee in its entirety. The Planning Commission shall then make the recommendation to the City Board of Commissioners to accept the project as City Infrastructure.

Section C

ISSUANCE OF A TEMPORARY CERTIFICATE OF OCCUPANCY

The Department of Planning and Zoning shall have the authority, notwithstanding the fact that the development in question as detailed in the approved development plan has not been fully completed, to authorize the issuance of a temporary certificate of occupancy by the Department of Codes Enforcement only in the following circumstances:

1. The Development at issue is either a multi-family or commercial development;
2. The Development as actually constructed when application is made for the temporary certificate of occupancy is in conformity with all applicable building codes as determined by the Department of Codes Enforcement and is, accordingly, suitable and ready for occupancy;

3. Landscaping will require certification from a landscape architect/professional for seasonal conditions pertaining to plantings with a cost estimate for landscape completion.
4. The only work remaining to be completed consists of either or both of landscaping and final coat blacktopping, and, in the case of final coat blacktopping, the local blacktopping plants have closed and blacktop material cannot at present be obtained;
5. The applicant has executed the "Agreement Relating to the Issuance of a Temporary Certificate of Occupancy" in the form set forth in the appendices and has posted the security therein described.

516.3 Maintenance and Repair Improvements

The developer is responsible for the maintenance and repair of the improvements installed. The developer shall be responsible for any damage done to the improvements by construction traffic, local traffic, or by any other means, and shall insure the accessibility to all occupied lots until final acceptance for maintenance by the city. Upon completion of work and prior to public acceptance, the developer shall clean up all ground occupied or affected with his work. Failure to maintain or repair improvements may result in withholding approval of subsequent units of the development, or the billing of the developer for such cleanup services performed by the city.

In developments where the infrastructure has been accepted by the City of Richmond any/all developers/contractors working within the development will be responsible for repairing of City's infrastructure if damaged. Liens may be placed on all properties under construction to cover the full amount of repairs to city infrastructure.

516.4 Liability Insurance

The developer shall furnish proof of such insurance as required by the city which shall indemnify and save harmless the city from any and all liability arising from any conditions related to the construction or installation of improvements by the developer. The insurance shall not be allowed to expire earlier than one year from the date of acceptance of maintenance by the city. A copy of the policy shall be filed with the City Clerk.

517. SCHEDULE OF FEES, CHARGES, AND EXPENSES

The City Commission has established the following schedule of fees, charges, and expenses applicable for implementation of the Development Ordinance. The schedule shall be posted in the Codes and Planning Office, and shall only be amended by the City Commission. Payment of all required fees, charges, and expenses shall be made as per these regulations to the Office of Codes and Planning. The schedule is as follows:

Application/Item	Fee Amount \$
Land Use Map Amendments (Annexation/Zoning Change)	\$500.00 per parcel
Zoning Classification/all official Letters & Signatures	\$30.00 per copy/item
Preliminary/Amended Preliminary Plat	\$300.00
Construction Plan Review (infrastructure)	\$800.00
Final/Amended Final Plat	\$300.00
Punchlist for Construction Guarantee	\$200.00
Certificates of Land Use Restriction	Madison Co. Courthouse Fee
Minor/Easement/Consolidation Plat	\$150.00
Development/ Amended Development Plan	\$450.00
Construction Guarantee for Issuance of Temporary C.O.	\$100.00
Land Disturbance Permit (commercial under one (1) acre)	\$100.00
Land Disturbance Permit (any over one (1) acre)	\$400.00
Flood Plain/Flood Zone Permit	\$200.00
Blasting Notification	\$500.00
Conditional Use Permit	\$200.00
Request for a Variance/Waiver	\$200.00 per item
Appeals	\$100.00 per hearing
Application for Non-Conformity	\$200.00
Right of Way Encroachment Permit	\$100.00
Sign Application	\$50.00
Home Occupation Application	\$50.00
Cell Tower Application	\$2500.00
Hard Copy of Development Ordinance/Manual	\$40.00 each
Various application to the Board not listed	\$100.00
Compensation for all Special Call Meetings (paid by all Applicants)	\$1500 per agenda item

* Engineering review and Certificate of Plan Completion are included in fee schedule.

** Fee schedule does not include any recording fees. It is the responsibility of the applicant/owner to file City approved documentation at the Madison County Courthouse.

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DEFINITIONS

(A) For the purpose of these regulations certain words, phrases, and their derivatives are defined as follows:

(1) The words **person** or **subdivider** includes a firm, association, organization, partnership, trust, company, or corporation, as well as an individual.

(2) Words used in the future tense include the present; words used in the present include the future; words used in the singular form include the plural form; words use in the plural form include words used in the singular form; words used in the masculine from include the feminine form; words used in the feminine form include the masculine form.

(3) The word **shall** is a mandatory requirement; the word **may** is a permissive requirement, and the word **should** is a preferred requirement.

(B) For the purposes of this Ordinance, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

Access Management Refers to regulations stated in this document, which promotes the safe reasonable access between public and private roads and adjacent land. Refer to the Access Management and Roadway Manual for further documentation on this subject.

Accessory Use or Structure A use of structure on the same lot with, and of a nature customarily incidental and subordinate to the principal use or structure.

Administrative Official An individual appointed by the Planning Commission to act on the Commission's behalf in carrying out the provisions of these regulations, or an individual appointed to assist the Administrative Official and authorized to act on his behalf, or to perform the duties of the Administrative Official in his absence.

Adult Establishment See Appendix K

Agricultural Use Agricultural use means the use of a tract of at least (5) contiguous acres of land for production of agricultural or horticultural crops, including but not limited to livestock, livestock products, poultry, poultry products, grain, hay, pastures, soybeans, tobacco, timber, orchard fruits, vegetables, flowers or ornamental plants, and aquaculture, including provisions for dwellings for persons and their families who are engaged in the above agricultural use on the land, but not including residential building development for sale or lease to the public, and shall also include, regardless of the size of the tract of land used, small wineries licensed under K.R.S. 243.155, and farm wineries licensed under K.R.S. 243.156. Commercial feed lots and the raising of fur-bearing animals is not considered to be normal agriculture uses. For the purpose of this chapter, a five acre or larger lot the principal use of which is for single-family dwelling shall not be considered an agricultural use.

Alley A marginal access street providing access to the properties, which it abuts.

As Built Drawings Drawings that accurately reflect the improvements as constructed on the site.

Alteration Any change, addition, or modification in construction or type of occupancy; any change in the structural members of a building such as walls and partitions, columns, beams or girders, the completed act of which may be referred to herein as altered or reconstructed.

Babysitting Service Facilities for the care and maintenance of three or less children, not related by blood or adoption, whether conducted during the daytime or overnight.

Cross reference See definition of **Day Care Center**, below.

Basement That portion of a building which is partly or wholly below grade but so located that the vertical distance from the average grade to the floor is greater than the vertical distance from the average grade to the ceiling. A basement shall not be counted as a story.

Bed and Breakfast Establishment A building occupied as a dwelling unit, but which also has guestrooms or suites which are used, rented, or hired out to be occupied or which are occupied for sleeping purposes by persons not members of the single-family unit. The building shall be further defined as either a bed-and-breakfast inn, or a bed-and-breakfast home.

Bed-and-Breakfast Home A bed-and-breakfast establishment having five (5) or less guestrooms or suites.

Bed-and-Breakfast Inn A bed-and-breakfast establishment having six (6) or more guestrooms or suites.

Billboard See **Sign, Off-Premise**

Block A parcel of land within a subdivision that is bounded by streets and the exterior boundary of the subdivision.

Brewery Any place or premises where malt beverages are manufactured for sale, including all offices, granaries, mash rooms, cooling rooms, vaults, yards, and storerooms connected with the premises; or where any part of the process of the manufacture of malt beverages is carried on; or where any apparatus connected with the manufacture is kept or used; or where any of the products of brewing or fermentation are stored or kept.

Brewpub A Microbrewery or Micro-Winery which includes a restaurant.

Buildable Area The portion of a building site remaining after the required front yard, rear yard, side yards, and building setback lines and buffer zones have been provided.

Buildable Lots Which meet all design criteria in these regulations. The intent of this type of lot is to construct buildings on it. Non-buildable lots cannot be used for building purposes, but can be platted for transfer purposes only.

Building Any covered structure, either temporary or permanent, intended for the shelter, housing, or enclosure of person, animals, chattels, or property of any kind.

Building Height The vertical distance from established grade to the highest finished roof surface in the case of flat (or nearly flat) roofs, or to a point at the average height of roofs having a pitch of

more than one foot in 4 1/2 feet. Where a building is located on sloping terrain, the height may be measured from the average ground level of the grade at the building wall.

Building, Main or Principal A building in which is conducted the principal use of the lot on which it is situated.

Building Permit A written permit issued by the Administrative Official authorizing the construction, repair, alteration or addition to a building or structure.

Building Site The lot or tract of contiguous lots, which comprises the land occupied by a principal building and any accessory buildings and including open spaces, yards, minimum area, and off-street parking facilities.

Carport A shelter for one or more vehicles, which is not fully enclosed by its walls, and one or more doors.

Cellular Antenna Tower A tower constructed for, or an existing facility that has been adapted for, the location of transmission or related equipment to be used in the provision of cellular telecommunications services or personal communications services.

Cellular Communications Services A retail telecommunications service that uses radio signals transmitted through cell sites and mobile switching stations.

Cemetery Land used or intended to be used for the burial of human or animal dead and dedicated for cemetery purposes to include columbarium, crematory, mausoleum, and mortuary, if operated in connection with and within the boundaries of such cemetery.

Clinic, Dental Medical A building in which a group of physicians, dentists, and allied professional or assistants are associated for the purpose of carrying on their profession; the clinic may include a dental or medical laboratory, but it shall not include inpatient care or operating rooms for major surgery.

Co-location Locating two (2) or more transmission antennas or related equipment on the same cellular antenna tower.

Compatibility Standards Standards that have been by the City of Richmond under the authority of KRS 100.348 for the purpose of protecting and preserving the monetary value of real property located within the city's jurisdiction.

Completely Enclosed Structure A building enclosed by a permanent roof and solid exterior walls pierced only by windows and customary entrance and exit doors.

Comprehensive Plan Refers to the current Richmond Comprehensive Plan, which is designed to deal with all functions of the city over the entire area.

Certificate Refers to required certifications for minor and record plat reviews as noted in 290.035 through 290.038, and 290.90 through 290.036.

Conditional Use A use which is essential or would promote the public health, safety, or welfare in one or more land use districts, but which would impair the integrity and character of the land use districts in which it is located, or in adjoining land use districts, unless restrictions on location, size, extent, and character or performance are imposed in addition to those imposed in the land use regulations. Such uses may be permitted in a district as conditional uses, only when specific provisions are made in this chapter.

Conditional Use Permit Legal authorization to undertake a conditional use, issued by the Administrative Official pursuant to authorization by the Board of Adjustment, consisting of two parts:

- (1) A statement of the factual determination by the Board of Adjustment, which justifies the issuance of the permit;
- (2) A statement of the specific conditions, if any, which must be met for the use to be permitted.

Condominium The ownership of a single unit within a multiple unit structure or complex in which all common elements are held in joint ownership by the owners of the individual units. (Statutory Reference: Horizontal Property Law, KRS Chapter 381)

Construction Plans A set of plans that are submitted after the preliminary plat has been approved and before the final plat can be submitted. These plans shall consist of but not be limited to : a proposed grading plan, stormwater plans (drainage calculations, layout of all storm lines, detention design, outlet structure design), roadway design (plan, profile and critical cross sections), layout of all sanitary sewer and water lines and any permits that may be required on the project.

Covenant A written promise of pledge placing a restriction on the use of the land. Sometimes referred to as a Restrictive Covenant or Deed Restrictions.

Culvert A transverse drain that channels water under a bridge, street, or driveway.

Day Care Center Facilities for the day care and maintenance of four or more children or adults without living accommodations for the clientele. The definition shall include day nurseries, nursery schools, kindergartens, and related facilities but shall not include facilities providing overnight care. (Cross Reference: See Babysitting Service).

Detention Basin/Pond A facility for the temporary storage of stormwater runoff, designed to slow down or retard its release.

Developer Any individual, firm, association, corporation, governmental agency, or any other legal entity commencing proceedings under these regulations to carry out the development of land as defined herein, for such entity or for another.

Development Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, excavating, grading, paving, or drilling operations. Agricultural activities such as plowing, cultivating, and gardening activities are not included in this definition.

Development Plan A development plan is a written and graphic description of a development, including any and all of the following items; location and bulk of buildings and other structures, intensity of use, density of development, streets, ways, parking facilities, signs, drainage of surface water, access points, a plan for screening or buffering, utilities, existing man-made and natural conditions, and all other conditions agreed to by the developer.

Distillery Any place or premises where distilled spirits are manufactured for sale, including all offices, storage areas, granaries, mash rooms, cooling rooms, vaults, yards, and storerooms connected with the premises; or where any part of the process of the manufacture of distilled spirits is carried on; or where any apparatus connected with the manufacture is kept or used; or where any of the products of such manufacture are stored or kept.

Drive-In Restaurant Any place or premises used for the sale, dispensing, or serving food, refreshments or beverages in automobiles, including establishments where customers may serve themselves and may eat or drink the food, refreshments, or beverages in automobiles on the premises.

Dwelling A building or part thereof used as a place of habitation under one of the following categories:

- (1) **Single-Family Detached Dwelling.** A building and accessories thereto principally used, designed, or adapted for use by a single family.
- (2) **Duplex Dwelling.** A building and accessories thereto principally used, designed, or adapted for use by two families, the living quarters of which are completely separate.
- (3) **Townhouse.** A group of three or more attached single-family dwellings each separated by a common vertical wall and each having a separate lot and entrance at street level. Townhouses may be owner-occupied or rental properties.
- (4) **Rooming and Boarding House.** A building designed or used to provide living accommodations for not more than six occupants in which there are no cooking facilities for each occupant, or in which all occupants share common cooking facilities.
- (5) **Multi-Family Dwelling.** A building or group of buildings designed or used for rental or lease as dwelling units for three or more families with separate living quarters and cooking and bathroom facilities for each family.
- (6) **Group Home.** A dwelling unit housing person unrelated by blood, adoption, or marriage, and operating as a single household. Group homes include sorority or fraternity houses, hospices, or orphanages, and half-way houses.
(also, refer to definition of Condominium above)

Easement. A right or privilege granted by the property owner to use a parcel of land for specified purposes not inconsistent with the general property rights of the owner (for example, for utilities, drainage, access, and the like).

Erected Built, constructed, altered, reconstructed, moved, or any physical operations on the premises, which are required for construction. Excavating, filling, and similar earthwork shall be included in this definition.

Establishment The place of business of any non-residential use, whether an entire building, or an area within a building which is separated by walls and designed to be used solely by the persons who own, lease, rent, or otherwise occupy the area. When more than one non-residential use occupies the same area, it shall be deemed one establishment.

Family One or more persons occupying a single dwelling unit, provided that no such family shall contain more than two persons, unless all members are related by blood, adoption, or marriage, but further provided that domestic servants employed on the premises may be housed on the premises without being counted as part of a family or families.

Statutory Reference: Residential care facility for handicapped persons allowed in residential districts and subdivisions. See KRS 100.982-100.984.

Flag Lot A panhandle-shaped lot not meeting minimum frontage requirements and where access to the public street is by a narrow right-of-way.

Flood A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of inland water; the usual and rapid accumulation of runoff or surface waters from any source and mud slides, which are caused or precipitated, by accumulation of water on the surface or underground.

Flood, 100 Year Frequency Any normally level of flooding that is likely to occur on an average of once every 100 years.

Flood Plain or Flood Prone Area Any normally dry land area that is susceptible to being inundated by water from any source.

Floodway The channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the 100 year flood without cumulatively increasing the water surface elevation more than one foot at any point.

Frontage All the property abutting on one side of the street right-of-way measured along the right-of-way line of the street between the lot lines as extended to intersect the right-of-way line of that street. In no case shall the line along an alley be considered as acceptable frontage.

Garage An accessory building or a portion of the principal building used by the occupants of the premises for the shelter or storage of vehicles owned or operated by the occupants of the principal building.

Grade A ground elevation established for the purpose of regulating the number of stories and the height of a building. The building grade shall be level with the ground adjacent to the walls of the building if the finished grade is level. If the ground is not entirely level, the grade shall be determined by averaging the elevation of the ground for each face of the building.

Gross Floor Area Total gross area on all floors of a building as measured to the outside surface of exterior walls, excluding crawl spaces, garages, carports, breeze ways, attics without floors, and open porches, balconies, and terraces.

Group Home. A dwelling unit housing persons unrelated by blood, adoption, or marriage, and operating as a single household. Group homes include sorority or fraternity houses, hospices, orphanages, and half-way houses;

Historic Overlay District An area or neighborhood designated as historic by the Richmond Board of commissioners through the creation of an overlay district.

Home Occupation An accessory use that may be permitted to be operated within a dwelling in any land use district.

Homeowner's Agreement A legal document involving agreement among property owners for certain rights and privileges for the use of land. Agreements usually involve the joint use or open space, common areas, sidewalks, recreational facilities, streets, utilities, driveways, and the like. Typically, such agreements address such items as a legal description of the land, identifying members of the agreement, explanation of rights and privileges, purpose of the agreement (for example, access), assessments, maintenance, construction materials, utility crossovers, and the like.

Hospital An institution providing health services, both for in-patients and out-patients, and medical and surgical care of the sick and injured, which includes, as an integral part, such related facilities as laboratories, training facilities, central service facilities, staff offices, and other related functions.

Hotel A building occupied as the temporary abiding place of more than six persons, for compensation, where rooms do not contain independent cooking facilities, and which is open to transient or permanent guests, or both. The term includes motel.

Improvement Plan A professionally prepared design document and specifications of the proposed construction of improvements and infrastructure (for example, streets, sidewalks, storm drainage, sanitary sewers, sewage disposal, and the like), which will be dedicated for public use and public maintenance upon completion.

Inspector An individual or group of individuals representing either the legislative body, utility, or Planning Commission, whose sole duty is to inspect the construction and installation of public improvements.

Junction Box A stormwater manhole that connects two or more drainage pipes. It is used where there is a change in direction, elevation, or size of the pipes.

Ky. Registered Engineer Engaged in the Practice of Civil Engineering A registered professional engineer in good standing with the Kentucky Board of Registration for Professional Engineers and Land Surveyors, who is proficient in the discipline of civil engineering as related to subdivision development and design of public improvements and infrastructure. The engineer responsible for designing the public and private improvements on each plat shall retained by the subdivider to insure that the improvements are made in accordance with the approved plat and drawings by the Richmond Planning Commission and these regulations.

Kentucky Registered Land Surveyor A registered land surveyor in good standing with the Kentucky Board of Registration for Professional Engineers and Land Surveyors. The land surveyor shall be responsible for meeting the survey and plat preparation requirements of these regulations.

Landmark A building, structure, historic site, or public improvement designated as historic by the Richmond Board of Commissioners. Property eligible to be designated as Landmarks may include a brick street, cemetery, fountain, and other public improvements.

Loading Space An off-street space or berth on the same lot with a building or contiguous to a group of buildings, for the temporary parking of a commercial vehicle while loading or unloading merchandise or materials, and which abuts upon a street, alley, or other appropriate means of access.

Lot A parcel of land occupied or intended for occupancy by a use permitted in these regulations, including any principal buildings together with the accessory buildings, yard areas, and parking spaces required by these regulations, and having its principal frontage upon a publicly maintained street.

Lot Lines The lines bounding a lot as defined herein:

- (1) **Front Lot Line** The common boundary line of a lot and a street right-of-way line. In the case of a corner lot or double frontage lot, the common boundary line and that street right-of-way line toward which the principal or usual entrance to the main building faces.
- (2) **Rear Lot Line** The boundary line of a lot, which is most nearly opposite the front lot line of such lot. In the case of a triangular or wedge-shaped lot, for measurement purposes only, a line ten feet in length within the lot parallel to and at the maximum distance from the front lot line.
- (3) **Side Lot Line** Any boundary line of a lot other than a front lot line or rear lot line.

Lot of Record A lot which is part of a subdivision plat recorded in the office of the Madison County Clerk, or a lot or parcel surveyed or described by metes and bounds, the description of which has been so recorded prior to adoption of these regulations.

Lot Types Lots described in this chapter are as follows:

- (1) **Corner Lot** A lot located at the intersection of two or more streets. A lot abutting on a curved street or streets shall be considered a corner lot if straight lines drawn from the foremost points of the side lot lines to the foremost point of the lot meet at one interior angle of less than 135 degrees.
- (2) **Interior Lot** A lot with only one street frontage.

Lot Width The linear width of a lot or building site as measured at the front right-of-way line.

Maintenance Acceptance Maintenance acceptance follows public dedication whereby a legislative unit accepts a public improvement such as roads or utilities for maintenance.

Manufactured Home A single-family residential dwelling constructed in accordance with the National Mfg. Housing Construction and Safety Standards Act of 1974, 42 USC 5401 through 5426, as amended, manufactured after June 15, 1976, and designed to be used as a single-family dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning, and electrical systems contained therein. The term shall include house trailers and recreational vehicles.

Manufactured Home (Qualified) A manufactured home that meets all of the following criteria; 1) manufactured on or after July 15, 2002, 2) is affixed to a permanent foundation and is connected to the appropriate facilities and installed in compliance with KRS 227.570, 3) is at least 20 feet wide at its smallest width or is 2 stories in height and oriented on the lot with its main entrance door facing the street, 4) has a minimum total living area of 900 square feet, and 5) is not located in a manufactured home land-lease community.

Manufactured home Park/Community An area of land upon which manufactured homes, manufactured home space, or both, are provided for rent or lease by the owner of the land.

Manufactured Home Subdivision An area that is subdivided into individual lots, which are offered for sale for the placement of manufactured homes.

Massage Therapist Shall be defined to mean a person who is licensed by the Kentucky Board of Licensure for Massage Therapy to administer massage or massage therapy to the public for compensation.

Microbrewery A Brewery, as that term is defined herein, which produces or manufactures not more than twenty-five thousand barrels of malt beverage in one year.

Micro-Winery A Winery, as that term is defined herein, which produces or manufactures not more than twenty-five thousand gallons of wine in one year.

Minimum Building Setback Line A line parallel to the front, side, and/or rear lot line, and set back from the lot lines a sufficient distance as specified in the Land Use Management Ordinance.

Modular Home A single-family residential dwelling constructed in accordance with the International Residential Code, without a steel chassis, and designed to be used as a permanent dwelling and placed on a permanent foundation also constructed in accordance with the International Residential Code. A modular home may consist of two or more sections constructed at a location other than its permanent location, transported in sections to be placed on the permanent foundation at its final location. Removal of the chassis and placement of a manufactured home on a permanent foundation shall not be deemed a modular home.

Monuments Permanent man-made markers used to mark corners of property boundaries or points of change in street alignment. Monuments must conform to the minimum standards of practice for land surveying in the Commonwealth of Kentucky.

Multi-Tenant Commercial Development A development containing two or more non-residential uses on the same building site such as shopping centers, shopping malls, or office complexes.

Net Floor Area The total area of all floors of a structure as measured to the outside of exterior walls, but excluding rooms designated as and used exclusively for storage, mechanical or janitorial rooms, uninhabitable areas, or rooms which when occupied would result in a vacancy elsewhere in the structure, such as restrooms, dressing rooms, locker rooms, and employee cafeterias. Areas not to be excluded are hallways, corridors, vestibules, lobbies, or other space occupied by partition walls, furniture, fixtures, appliances or machinery.

Non-Conforming Use or Structure An activity or a building, sign, sign structure or a portion thereof which lawfully existed at the time of adoption of these regulations but which does not conform to all of the regulations contained in this chapter which pertain to the district in which it is located. (Cross Reference: Non-conforming Uses or Structures, 405; Statutory Reference: Non-conforming Use, KRS 100.253).

Nursing Home, Intermediate and Care Any institution, however named, maintained for the care or treatment of four or more individuals unrelated to the owner or operator or their Skilled spouses,

which employs nursing services or procedures in the care of such residents that require treatment, judgment, technical knowledge, and skills beyond those possessed by the untrained person.

Nursing Home, Personal Care Any institution, however named, maintained for the care or treatment of four or more ambulatory individuals unrelated to the owner or operator or their spouses, who required supervision, not nursing care.

Open Space An area open to the sky, which may be one, the same lot with a building. The area may include along with the natural environmental features, swimming pools, tennis courts, and other recreational facilities that the Planning Commission deems permissive. Streets, structures for habitation, and similar structures shall not be included.

Parcel This term is synonymous with **Lot**.

Parent Tract refers to any existing parcel of land shown as a unit or continuous units in common ownership dating back to 1/5/95. The parent tract may be subdivided in accordance with the requirements of a minor subdivision and major subdivision.

Plat A professionally prepared drawing to an appropriate scale of a proposed lot(s) or parcel(s) of land as required in these regulations.

Preliminary Plat A professionally prepared drawing of proposed subdivision that is part of the major subdivision procedure containing detailed surveying and engineering information as required in these regulations.

Record Plat A professionally prepared drawing of a proposed subdivision as required in these regulations, which will be recorded in the County Clerk's office. Sometimes referred to as the **Final Plat**.

Public Dedication Public dedication involves a property voluntarily transferring land for public uses (streets, utilities, open space). Public dedication does not imply acceptance by the legislative body for public maintenance.

Public Improvement Any physical improvement that will become the responsibility of the local governing body for maintenance purposes upon completion of construction, dedication, and acceptance. This includes streets and utilities.

Public Facility Any use of land whether publicly or privately owned for transportation, utilities, or communications, for the benefit of the general public, including but not limited to libraries, schools, streets, fire or police stations, city and county buildings, recreational centers and parks, and cemeteries.

Public Utility Any person, firm, corporation, partnership, municipal or county board, department, or commission that owns, controls, operates, or manages any facility for the production, transmission, or distribution of electricity, natural or manufactured gas, steam, water, telephone or telegraph messages, cable television signals, or the treatment of sewage for disposal.

Residential Care Facility A residence operated and maintained by a sponsoring private or governmental agency to provide services in a homelike setting for persons with disabilities.

Restaurant A portion of the premises devoted to dining: (i) which includes kitchen facilities used to prepare food on premises for consumption by the public on premises; (ii) which is designed to seat and in fact does seat not less than 50 people; and (iii) from which is derived 50% or more of the gross annual income of the business.

Retention Basin A pond, pool, or basin used for the permanent storage of water runoff. Unlike detention basins, retention basins have the potential for water recreation and water-oriented landscaping since water remains in the structure.

Right-of-Way A term denoting land, property, or interest therein usually acquired by dedication, prescription, or condemnation, and intended to be used for a street, sidewalk, railroad, or some similar use. In the case of a street right-of-way, this strip of land includes the roadway itself and additional land for ditches, sidewalks, utilities, and future expansion of the roadway.

Recreational Vehicle Any of the following:

(a) a “travel trailer”, or vehicular, portable structure, built on a chassis, designed to be used as a temporary dwelling for travel, recreation, or vacation;

(b) a “pickup coach”, or structure designed to be mounted on a truck for use as a temporary dwelling for travel, recreation, or vacation;

(c) a “motor home”, or portable, temporary dwelling to be used for travel, recreation, or vacation, constructed as an integral part of a self-propelled vehicle;

(d) a “camping trailer”, or a canvas or other collapsible folding vehicle which does not have toilet, lavatory, or bathing facilities; or

(f) a “self-contained recreational vehicle”, or a recreational vehicle which can operate independent of connections to sewer, water, and electric systems containing one or more of a water-flushed toilet, lavatory, shower or bath, or kitchen sink, all of which are connected to water storage and sewage holding tanks located within the recreational vehicle.

Rooming and Boarding House. A building designed or used to provide living accommodations for not more than six occupants in which there are no cooking facilities for each occupant, or in which all occupants share common cooking facilities.

RV (Recreational Vehicle) Park A parcel of land available to the public in which two or more recreational vehicle spaces are occupied or intended for occupancy by recreational vehicles for transient dwelling purposes and including any service building, structure, enclosed, or other facility used as a part of the park.

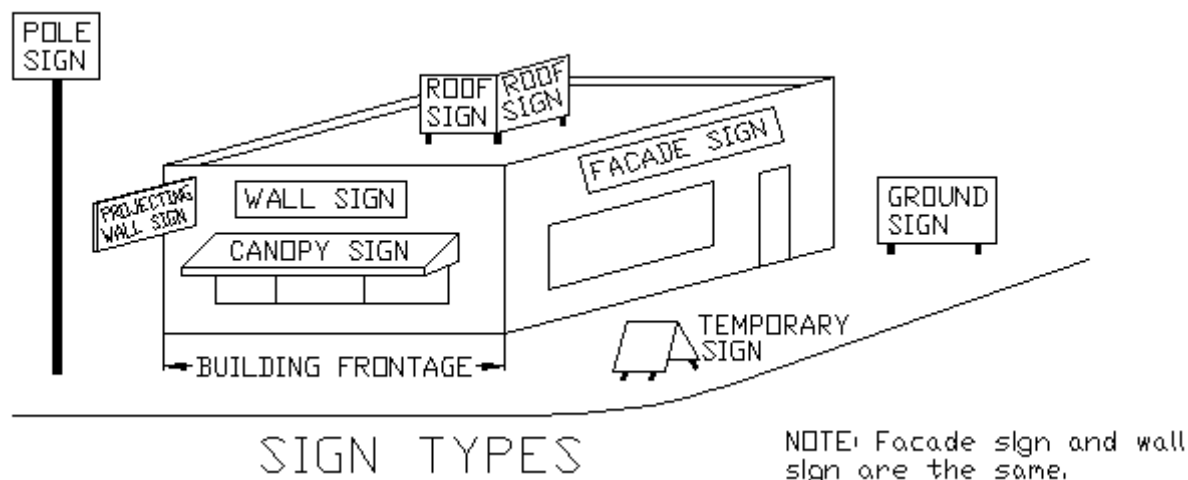
Recreational Vehicle Space A parcel of land in a recreational vehicle park for the placement of a single recreational vehicle.

Setback Line A line established by these regulations generally parallel with and measured from the lot line, defining the limits of a yard, in which no building other than an accessory building may be located.

Self-Service Storage Facilities A structure containing separate, individual, and private storage spaces of varying sizes leased or rented on individual leases for varying periods of time.

Semi-Public Uses that are quasi-public, to include churches, parochial schools, colleges, hospitals, and other facilities of an educational, religious, charitable, philanthropic, or non-profit nature.

Sign A sign is defined as any object, device, display, or structure or part thereof, situated outdoors or indoors, which is used to advertise, identify, display, direct, or attract attention to an object, person, institution, organization, business, product, service, event, or location by any means, including words, letters, figures, design, symbols, fixtures, colors, illumination, or projected images.



Sign, Animated or Moving Any sign or part of a sign that changes physical position or light intensity by any movement or rotation or that gives the visual impression of such movement or rotation.

Sign, Awning, Canopy or Marquee A sign that is mounted, painted, or attached to an awning, canopy, or marquee that is otherwise permitted by ordinance.

Sign Area The entire face of a sign, including the advertising surface and any framing, trim, or molding, but not including the supporting structure.

Sign, billboard (See Sign, Off-Premise)

Sign, Bulletin Board A sign that identifies an institution or organization on the premises of which it is located and that contains the name of the institution or organization, the names of individuals connected with it, and general announcements of events or activities occurring at the institution or similar messages.

Sign, Construction A temporary sign erected on the premises on which construction is taking place, during the period of such construction, indicating the names of the businesses/contractors that have role or interest in the project.

Sign, Directional Signs limited to directional messages, principally for pedestrian or vehicular traffic such as "one-way," "entrance," "exit," etc.

Sign, Façade/Wall A sign fastened to or painted on the wall of a building or structure in such a manner that the wall becomes the supporting structure for, or forms the background surface of, the sign and that does not project more than twelve (12) inches from such building or structure.

Sign, Face/Area The area or display surface used for the message.

Sign, Flashing Any directly or indirectly illuminated sign that exhibits changing natural or artificial light or color effects by any means whatsoever.

Sign, Freestanding Any non-movable sign not affixed to a building.

Sign, Governmental A sign erected and maintained pursuant to and in discharge of any governmental functions or required by law, ordinance, or other governmental regulation.

Sign, Ground Any sign, other than a pole sign, in which the entire bottom is in contact with or is close to the ground and is independent of any other structure.

Sign, Home Occupation A sign containing only the name and occupation of a permitted home occupation.

Sign, Identification A sign giving the nature, logo, trademark, or other identifying symbol; address; or any combination of the name, symbol, and address of a building, business, development, or establishment on the premises where it is located.

Sign Illuminated A sign lighted by or exposed to artificial lighting either by lights on or inside the sign, or directed toward the sign. Illumination must be consistent with the guidelines provided in Section 412.

Sign, Off-Premises A sign that directs attention to a business, commodity, service, or entertainment conduct, sold, or offered at a location other than the premises on which the sign is located.

Sign, Pole A sign that is mounted on a free-standing pole or other support so that the bottom edge of the sign face is six feet or more above grade.

Sign/Portable A sign that is not permanent, affixed to a building, structure, or the ground.

Sign, Projecting A sign that is wholly or partly dependent upon a building for support and that projects more than twelve inches from such building.

Sign, Roof A sign that is mounted on the roof of a building or that is wholly dependent upon a building for support and that projects above the top walk or edge of a building with a flat roof, the eave line of a building with a gambrel, gable, or hip roof, or the deck line of a building with a mansard roof.

Sign, Temporary A sign or advertising display constructed of cloth, canvas, fabric, plywood, or other light material and designed or intended to be displayed for a short period of time.

Sign Vehicle A sign on a vehicle not customarily and regularly used to transport persons or properties.

Story That portion of a building included between the surface of any floor and the surface of the floor next above it, or if there is not floor above it, the space between such floor and the ceiling next above it. A basement shall not be considered a story.

Street A street is an area of land dedicated for public use in order to provide for vehicular and pedestrian movement. The right-of-way limits for a street may provide for other uses (see Right-of-Way). Streets are classified in the Access Management and Roadway Manual.

Street Frontage The linear width of any lot or building site where it adjoins a street or public way.

Structure Anything constructed or erected, the use of which requires a fixed location on the ground, or attachment to something having a fixed location on the ground, including buildings, radio/telecommunications towers, swimming pools, signs, and includes earthen berms, excavations, or embankments.

Subdivider Any individual, firm, association, syndicate, partnership, trust, corporation, governmental agency, or other legal entity as mentioned in these regulations so as to create a subdivision of land.

Subdivision The division of land into two or more parcels for the purpose, whether immediate or future, or sale, or lease, or building development, or if a new street is involved, any division of a parcel of land, providing that a division of land for agricultural purposes into lots or parcels of five acres or more, and not involving a new street, shall not be deemed a subdivision. The term includes resubdivision and when appropriate to the context, shall relate to the process of subdivision or to the land subdivided. A division or redivision of land into parcels of less than one acre occurring within 12 months following a division of the same land shall be deemed a subdivision. For further clarification, see the definition of **Agricultural Use**, and Section 290.006C.

Technical Advisory Committee A committee appointed by the city, comprised of representatives of city agencies, utilities, and other public/private entities for the purpose of reviewing the technical aspects of subdivision plats and development plans and making recommendations to the Planning Commission.

Tenant Space The area within a multi-tenant commercial development or multi-family residential development which is separated by walls and designed to be used solely by the persons who lease, rent, or otherwise occupy the area. When two or more persons lease the same common area, it shall be deemed as one tenant space.

Tract A parcel or lot identified by letter or number of which the boundaries are shown on a recorded plat or in a deed.

Uninhabitable Areas Areas of a structure not designed or used for human occupancy, such as walk-in coolers, crawl spaces, or attic spaces.

Uniform Application An application for a certificate of convenience and necessity issued under KRS 278.020 submitted by a utility to the Public Service Commission to construct an antenna tower for cellular telecommunications services or personal communications service in a jurisdiction, that has adopted planning and land use regulations in accordance with KRS Chapter 100.

Use The purpose or activity for which a building, structure, or land is occupied or maintained.

Variance A departure from dimensional terms of the Land Use Management Ordinance pertaining to the height, width, or location of structures, and the size of yards and open spaces where such departure meets the requirements of K.R.S. 100.241 to 100.247.

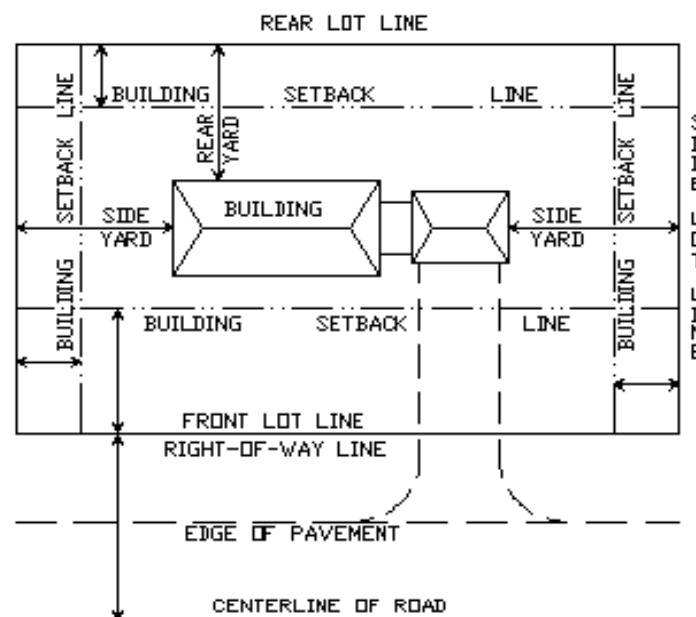
Waiver Permission granted by the Planning Commission to waive or eliminate, upon written request from a subdivider, any requirement or standard in these regulations, when the applicant has presented written justification or data that the intent of these regulations can be met while waiving the requirement.

Watercourse A natural or man-made channel through which water flows. Drainage from lots and small minor swales are not considered to be watercourses.

Winery Any place or premises where wine is manufactured for sale, including all offices, storage areas, vaults, yards, and storerooms connected with or on the premises; or where any part of the process of the manufacture, fermentation, storage and ageing of wine is carried on; or where any apparatus connected with same is kept or used; or where any of the products of fermentation are stored or kept.

Yard A required open space unoccupied and unobstructed by any structure or portion of any structure, except as otherwise permitted.

- (1) **Front Yard** An open space extending the full width of the lot, the depth of which is the minimum horizontal distance between the front lot line and the nearest line of the main building.
- (2) **Rear Yard** An open space extending the full width of the lot, the depth of which is the minimum horizontal distance between the rear lot line and the nearest line of the main building.
- (3) **Side Yard** An open space between a main building and the side lot line, extending from the front yard to the rear yard, the width of which is the horizontal distance from the nearest point of the side lot to the nearest point of the main building.



APPENDIX

APPENDIX A:

PLAT/PLAN REQUIREMENTS

The requirements for submission of Development Plans, Preliminary, Final, and Minor Plats are indicated on the Plat/Plan Requirements Checklist below. Submittal of the checklist, application, signed N.O.I., fourteen (14) copies of the plat/plan, three (3) copies of the Best Management Plan and calculations are to be submitted by agenda deadline. No exceptions. Place an [X] in the area provided at the beginning of each item to indicate that the item has been properly shown and depicted on the plat/plans. If an item does not pertain to the submitted plant/plan place [NA] in the space provided.

TYPE OF SUBMISSION: ☐ PRELIMINARY PLAT ☐ FINAL PLAT
☐ DEVELOPMENT PLAN ☐ MINOR PLAT

Name of plat/plan: _____ Date: _____

1. ☐ **P** ☐ **F** ☐ **D** ☐ **M** Name of the subdivision/development plan, date, label, type of plat, graphic scale, north arrow, acreage to be subdivided, Basis for north, and purpose of the plat.
2. ☐ **P** ☐ **F** ☐ **D** ☐ **M** Name, address, and telephone number of the property owner, subdivider (if other than the owner), and developer; deed book and page, plat book and page, and existing land use classification.
3. ☐ **P** ☐ **F** ☐ **D** ☐ **M** Name, address, telephone number, and seal of the registered professional land surveyor and/or civil engineer responsible for preparation of the plat and supplementary plans.
4. ☐ **P** ☐ **F** ☐ **D** ☐ **M** Names of adjacent property owners of record and abutting subdivisions and streets, lot numbers, deed book and page, plat book and page, and land use classification.
5. ☐ **P** ☐ **F** ☐ **D** ☐ **M** Vicinity sketch map, at a scale of two thousand (2,000) feet to one (1) inch or greater, showing the subject property and surrounding land within one-half (½) mile, and including existing roads with at least one intersection of common reference, scale, north arrow, and an outline of the subject property. Boundary lines and streets in adjacent subdivisions shall be shown, along with how they connect with streets in the proposed subdivision, to assure the most advantageous development.
6. ☐ **P** ☐ **F** ☐ **D** ☐ **M** The proposed subdivision shall be shown at a scale not greater than one inch = one hundred (50) feet alt. scales shall be approved in advance).
7. ☐ **P** ☐ **F** ☐ **D** ☐ **M** The plat will show and label physical features such as streams, ponds, wooded areas, existing structures, wetlands, springs, and sink holes.
8. ☐ **P** ☐ **F** ☐ **D** ☐ **M** Existing topographic contours at an interval not greater than two (2) feet shall be shown for the subject property. Where topographic condition warrant, a lesser contour interval of one feet may be required. Contours shall be shown on all plats, and referenced to mean sea level.

9. []P []F []D [NA]M If the property fronts on a state highway, obtain and submit with the plat, a properly signed State Highway Encroachment Permit and a copy of the approved Entrance plans by the state.
10. []P []F []D [NA]M Location, dimensions, right-of-way, pavement width of proposed and existing Streets, sidewalks, and names of existing streets, railroads, easements, municipal boundaries, or other public properties, and significant features shall be shown within and adjacent to the property, for a minimum distance of two hundred (200) feet.
11. []P []F []D [NA]M Label utilities as proposed or existing and include pipe diameters, materials, fire hydrants, sanitary manholes, storm water manholes, catch basins, junction boxes, gas lines, a power transmission lines with capacities (if applicable) and utility and drainage easements laid out according to sound planning principles.
12. []P []F []D []M Radii of curves, points of curvature, lengths of arcs, bearings, and lengths of chords for boundaries, easements and roadways.
13. []P []F []D []M Street names and addresses selected so as not to duplicate any other streets and addresses in Madison County.
14. []P []F []D []M Layout of proposed parcels of land including dimension of lot lines, lot numbers, and front, side, and rear building setback lines. Lots or parcels shall be laid out according to sound planning principles.
15. []P []F []D []M Designation and acreage of all parcels and areas to be used for non-residential purposes, including parcels reserved or dedicated for public use and utility installations. All such parcels shall be assigned parcel numbers.
16. []P []F []D []M Location of monuments and pins which shall be placed at property corners, the intersection of street center lines, changes in street direction, and the intersections and angles of the subdivision boundary. Boundaries of the tract will be drawn showing bearings and distances. With corner monumentation labeled and described as set or found with size, material, cap color, and L.S number.
17. []P []F []D []M Note indicating the lot number and area in square feet of the smallest lot in the subdivision/development.
18. []P []F []D [NA]M Written approval from the Kentucky Division of Water and the City of Richmond prior to any construction or other activity in or along a stream that could in any way obstruct flood flows. Activities include reconstruction, fill, alterations of structures, and the like. No new residential structures may be constructed in a floodway, nor shall anything be placed in a floodway that will cause any rise in base flood elevations. Fees maybe applicable for flood map amendments.
19. []P []F []D []M A copy of the appropriate completed subdivision/dev. Plan application form.

20. ☐ P ☐ F ☐ D ☐ NA ☐ M Description of physiographic characteristics to include soil types, slope, permeability rates, ground water, depth to bedrock, sinkholes, flood frequency.

21. ☐ P ☐ F ☐ NA ☐ D ☐ NA ☐ M Statement of deed restrictions and protective covenants.

22. ☐ P ☐ F ☐ D ☐ NA ☐ M Typical street cross-sections showing roadbed construction, curbs, gutters, sidewalks, and relationship of underground utilities.

23. ☐ P ☐ F ☐ D ☐ NA ☐ M Plans for providing domestic water supply and sanitary sewer service. The water system shall include a statement that there is an adequate water supply and pressure to support the proposed development. Label as proposed.

24. ☐ P ☐ F ☐ D ☐ NA ☐ M Drainage/soil erosion control plan. The developer shall indicate (on a supplemental attachment) the plan for controlling drainage and soil erosion both during and upon completion of development. The location and specifications of such controls as silt fences, detention/retention ponds, etc. shall be shown. The drainage plan shall include finished grade contours, location and size of culverts, location and specifications for detention/retention ponds and other drainage structures, and calculations of runoff estimates before and after development. The plans require certification by a local representative of the Natural Resources Conservation Services Office and the City Engineer. Plan must be sealed and stamped by a professional engineer. Erosion control measures must be put in place in conjunction with initial site preparation activities, and proposed elevations shown for all drainage easements.

- a. ☐ Construction entrance design, and location.
- b. ☐ Design of retaining walls by a professional engineer.
- c. ☐ NOI and BMP for handling runoff.
- d. ☐ Location and detail of all erosion and storm water control devices.

25. ☐ P ☐ F ☐ D ☐ NA ☐ M The following is a list of basic information required for plans/plats.

- a. ☐ Location, dimensions, and square footage of existing and proposed buildings.
- b. ☐ Parking details including number of spaces, size of spaces ,handicapped parking spaces, and pavement detail.
- c. ☐ Site statistics to include; acreage and number of lots, existing land use classification , and intended land use.
- d. ☐ Landscaping plan (and screening if applicable).
- e. ☐ Location, size, and description of proposed signs.
- f. ☐ Finished floor elevations for all buildings.
- g. ☐ Lighting plan.

26. ☐ P ☐ F ☐ D ☐ M Certification on the plat/dev. plan showing that streets and utilities have been approved by the appropriate agencies and conform to general requirements and minimum standards of design. Property fronting on a state or federal highway must receive approval from the State Highway Department for ingress and egress.

27. ☐ P ☐ F ☐ D ☐ M Certification on the plat/dev. plan showing that the applicant is the owner and a statement by the owner dedicating street rights-of-way, and any other sites for public use.

28. ☐ P ☐ F ☐ D ☐ M Certification on the plat/dev. plan by the surveyor or engineer as to the accuracy of the survey of plat/dev. plan (as per 201 KAR18.150)

29. ☐ P ☐ F ☐ D ☐ NA ☐ M Certification that all improvements have been constructed as shown on the final plat/dev. plan. Any differences from the final plat/dev. Plans shall be reflected on a final set of as-built drawings.

30. ☐ P ☐ F ☐ D ☐ NA ☐ M Certification that the sub divider/developer has complied with one of the following options:

a. ☐ All the improvements have been installed in accordance with the requirements of these regulations, or

b. ☐ A security bond, certified check, has been posted with the Planning and Zoning Director in sufficient amount to assure such completion of all required improvements. The amount sufficient for completion shall be determined by the developer's engineer.

31. ☐ P ☐ F ☐ D ☐ M Certification on the plat/dev. plan by the Chairman of the Planning Commission that the plat/dev. plan has been approved for recording in the office of the County Clerk.

32. ☐ P ☐ F ☐ D ☐ M Submittal of a digital geo-referenced copy of the plat/plans in accordance with the City of Richmond digital submittal requirements and ordinance.

*Subdivision plats being submitted for commercial or industrial development shall include additional information as requested by the Planning Commission.

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APPENDIX B:

CERTIFICATE OF LAND USE RESTRICTION

If a planning commission, fiscal court or legislative body originates a zoning map amendment for more than five (5) contiguous properties, upon approval of the map amendment, there shall be filed a single certificate setting forth the required information for all the properties, and the originating body shall pay a single filing fee for such certificate. When a land use restriction is imposed upon two (2) or more properties or lots in the same proceeding, including but not limited to the approval of an unrecorded preliminary subdivision plat or development plan for multiple lots, a single certificate shall be filed for all the properties or lots collectively and a single filing fee shall be paid there for.

100.3683. Form of certificate

The form for the certificate of land use restriction required by KRS 100.3681 shall be as follows:

CERTIFICATE OF LAND USE RESTRICTION

1. NAME AND ADDRESS OF PROPERTY OWNER(S)

2. ADDRESS OF PROPERTY

3. NAME OF SUBDIVISION OR
DEVELOPMENT (if applicable)

4. TYPE OF RESTRICTION(S)

☐ Zoning Map Amendment
To ☐ Zone
☐ Development Plan
☐ Unrecorded Subdivision Plat
☐ Variance

(Check all that apply):

☐ Conditional Use Permit
☐ Conditional Zoning Condition
☐ Other
Specify

5. NAME AND ADDRESS OF PLANNING COMMISSION, BOARD OF ADJUSTMENT,
LEGISLATIVE BODY OR FISCAL COURT WHICH MAINTAINS THE ORIGINAL RECORDS
CONTAINING THE RESTRICTION.

Signature of Completing Official

Name and Title of Completing Official
(Type or print)

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APPENDIX C: HAZARDOUS WASTE MANAGEMENT

PURPOSE:

The purpose of the regulations is to insure that any industries involved in the storage, treatment, and disposal of hazardous wastes do so in a manner that protects the environmental quality of the site and the immediate surroundings as well as the health and safety of the general public.

REQUIREMENTS AND CONDITIONS:

The use and management of hazardous wastes in the City of Richmond shall be subject to the following requirements and conditions:

1. The request to establish a new Industrial District shall follow the procedures for amending the Official Land Use Management Map as described in Sections 401.2 and 401.3. All conditional use permits for development to be located in an existing Industrial District shall be reviewed by the Richmond Board of Adjustments prior to taking effect.
2. The storage, treatment, and disposal of all hazardous wastes shall be subject to the requirements and conditions of this ordinance as well as K.R.S.224, and all other state and federal regulations relating to hazardous wastes.
3. The minimum dimensional requirements established for the Industrial District (Section 406.3) may be increased to provide adequate protection for surrounding land uses.
4. The facility shall not be established or constructed in a wetland as a defined under Section 404 of the Clean Water Act, or in the recharge zone of an aquifer, nor shall it be established in a 100 year flood plain. The potential impact of the facility on other nearby water resources (both surface and subsurface) shall be reviewed.
5. Consideration shall be given to the physiography, soil conditions, and geology of the site and surrounding area.
6. The location of such facilities shall comply with all applicable state and federal wildlife regulations.
7. Transportation to and from the site shall be addressed to include the methods by which the waste will be transported, frequency of movements, the location and condition of roads that will provide access to the site, safety, noise and traffic disruption factors, and the potential impact on land uses and population along the routes involved.
8. The proposed facility shall be compatible with surrounding land uses.

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APPENDIX D:

MOBILE/MANUFACTURED HOME PARKS/COMMUNITIES

REQUIREMENTS:

Mobile/Manufactured Home Parks/Communities shall meet all applicable requirements of this Development Ordinance in addition to state requirements as provided in K.R.S. 219.310 to 219.40, and Kentucky Administrative Regulations 902, Chapter 15.

PROCEDURES:

Applications for approval of a Mobile/Manufactured Home Park/Community shall be submitted to the Department of Codes and Planning according to the deadlines by that office. All applications shall be reviewed by the technical Advisory Committee, and the Planning Commission in both the work session and the business session. The following items shall be included as part of the application:

1. A preliminary or final plat (as applicable).
2. A development plan. In addition to the development plan requirements indicated in Section 401.3.3, the following items will be shown:
 - (a) The area within each lot intended for location of a mobile/mfg. Home and setback distances.
 - (b) A detailed drawing of the foundation for placement of the mobile home stand within the lot.
 - (c) The size and location of any playground areas.
3. A complete copy of the submittal packet as required by state regulations as set forth in 815 KAR 25:050, 815 KAR 25:060, 815 KAR 25:070, and 815 KAR 25:080.

SITE DEVELOPMENT STANDARDS:

1. Every mobile/mfg/home park/community shall be located on a well-drained site, not subject to recurring flooding, and properly graded to provide for adequate drainage.
2. Each lot shall be numbered and the number displayed in some systematic order.
3. Dimensional Requirements:

Minimum Acreage Required for Park/Community: 10 acres

Maximum Acreage Allowed for Park/Community: 20 acres

Maximum Number of Homes Allowed: 4 per acre

Minimum Lot Size: 10,000 sq. ft.

Minimum Lot Width: 100 ft.

Minimum Front Yard Setback: 25 ft.

Minimum Side Yard Setback: 10 ft.

Minimum Rear Yard Setback: 15 ft.

Maximum Building Height: 20 ft.

4. All lots shall be located at least twenty five (25) feet from any park/community boundary line abutting upon a public street or highway and at least ten (10) feet from any other park/community property line.

5. All lots shall abut upon a park/community street, which shall be constructed in accordance with the specifications listed in Section 513.17. No parking shall be allowed on the street.
6. The area of the mobile home stand shall be improved to provide an adequate foundation for the placement of the mobile home. The mobile home stand shall not heave, shift, or settle unevenly under the weight of the mobile home due to frost action, inadequate drainage, vibration or other forces acting on the superstructure.
7. The proposed lot site shall be graded to provide a maximum height for the home of forty-eight (48) inches above grade, measured from the pad grade to the underside of the chassis.
8. The design and construction of all utilities shall conform to city and state requirements.
9. Sewage disposal shall be by means of the municipal sewer system. The permit holder is responsible for the storage and disposal of solid waste in accordance with local regulations.
10. The park/community shall be maintained free of insect and rodent harborage and infestation, and no condition that is detrimental to the health and safety of residents of the park/community shall be allowed.
11. Every park/community shall provide a building that shall serve as an emergency shelter during severe weather and other disaster/emergency situations. The building shall be large enough to accommodate at least fifty (50) percent of the estimated occupants of the park (calculated at 2.5 person's per home).
12. The park/community shall provide a minimum site area of five (5) percent of the total acreage to be developed as a park/playground and green space area for residents of the park/community.

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APPENDIX E:

REGULATIONS OF CELLULAR ANTENNA TOWERS

AUTHORITY:

In accordance with the provisions of K.R.S. 100.987, the Richmond Planning Commission may plan for and regulate the sitting of cellular antenna towers in Accordance with the regulations provided in this ordinance. Every utility or a company that is engaged in the business of providing the required infrastructure to a utility that proposes to construct an antenna tower for cellular telecommunications services or personal communications services within the corporate limits of Richmond shall submit an application for approval to construct an antenna tower to the Planning Commission for their review.

APPLICATION REQUIREMENTS:

The uniform application shall include a grid map that shows the location of all exiting cellular antenna towers and that indicates the general position of proposed construction sites for new cellular antenna towers within an area that includes:

1. The incorporated area of the City of Richmond; and
2. A one-half (1/2) mile area outside of the boundaries of the city, if that area contains either existing or proposed construction sites for cellular antenna towers.

The application shall include any contract with an owner of property upon which a cellular antenna tower is to be constructed. A provision that specifies, in the case of abandonment, a method that the utility will follow in dismantling and removing a cellular antenna tower, including a timetable for removal; and shall comply with any local ordinances concerning land use, subject to the limitations imposed by 47 U.S.C. sec. 332©, KRS 278.030, 278.040, and 278.280.

All information contained in the application and any updates, except for any map or other information that specifically identifies the proposed location of the cellular antenna tower then being reviewed, shall be deemed confidential and proprietary within the meaning of KRS 61.878. The Planning Commission shall deny any public request for the inspection of this information, whether submitted under Kentucky's Open Records Act or otherwise, except when ordered to release the information by a court of competent jurisdiction. Any person violating this subsection shall be guilty of official misconduct in the second degree as provided under KRS 522.030.

In addition to the requirements above, the uniform applications shall contain the following information:

- (1) The full name and address of the applicant;
- (2) The applicant's articles of incorporation, if applicable;
- (3) A geotechnical investigation report, signed and sealed by a professional engineer registered in Kentucky, that includes boring logs and foundation design recommendations;
- (4) A written report, prepared by a professional engineer or land surveyor, of findings as to the proximity of the proposed site to flood hazard areas;
- (5) Clear directions from the county seat to proposed site, including highway numbers and street names, if applicable, with the telephone number of the person who prepared the directions;
- (6) The lease or sale agreement for the property on which the tower is proposed to be located, except that, if the agreement has been filed in abbreviated form with the county clerk, an applicant may file a copy of the agreement as recorded by the county clerk and, if applicable, the portion of the agreement demonstrating compliance with KRS 100.987(2);
- (7) The identity and qualifications of each person directly responsible for the design and construction of the proposed tower;
- (8) A site development plan or survey, signed and sealed by a professional engineer registered in Kentucky, that shows the proposed location of the tower and all easements and existing structures within five hundred (500) feet of the proposed site on the property on which the tower will be located, and all easements and existing structures within two hundred (200) feet of the access drive, including the intersection with the public street system;
- (9) A vertical profile sketch of the tower, signed and sealed by a professional engineer registered in Kentucky, indicating the height of the tower and the placement of all antennas;
- (10) The tower and foundation design plans and a description of the standard according to which the tower was designed, signed, and sealed by a professional engineer registered in Kentucky;
- (11) A map, drawn to a scale no less than one (1) inch equals two hundred (200) feet, that identifies every structure and every owner of real estate within five hundred (500) feet of the proposed tower;
- (12) A statement that every person who, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower or property contiguous to the site upon which the tower is proposed to be constructed, has been:
 - (a) Notified by certified mail, return receipt requested, of the proposed construction, which notice shall include a map of the location of the proposed construction;
 - (b) Given the telephone number and address of the local planning commission; and

(c) Informed of his or her right to participate in the planning commission's proceedings on the application;

(13) A list of the property owners who received the notice, together with the copies of the certified letters sent to the listed property owners;

(14) A statement that the chief executive officer of the affected local governments and their legislative bodies has been notified, in writing, of the proposed construction;

(15) A copy of the notice sent to the chief executive officer of the affected local governments and their legislative bodies;

(16) A statement that:

(a) A written notice, of durable material at least two (2) feet by four (4) feet in size, stating that "[Name of applicant] proposes to construct a telecommunications tower on this site" and including the addresses and telephone number of the applicant and the planning commission, has been posted and shall remain in a visible location on the proposed site until final disposition of the application; and

(b) A written notice, at least two (2) feet by four (4) feet in size, stating that "[Name of applicant] proposes to construct a telecommunications tower near this site" and including the addresses and telephone numbers of the applicant and the planning commission, has been posted on the public road nearest the site;

(17) A statement that notices of the location of the proposed construction has been published in a newspaper of general circulation in the county in which the construction is proposed;

(18) A brief description of the character of the general area in which the tower is proposed to be constructed, which includes the existing land use for the specific property involved;

(19) A statement that the applicant has considered the likely effects of the installation on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate service to the area can be provided, and that there is no reasonably available opportunity to locate its antennas and related facilities on an existing structure, including documentation of attempts to locate its antennas and related facilities on an existing structure, if any, with supporting radio frequency analysis, where applicable, and a statement indicating that the applicant attempted to locate its antennas and related facilities on a tower designed to host multiple wireless service providers' facilities or on an existing structure, such as telecommunication tower or other suitable structure capable of supporting the applicant's antennas and related facilities; and

(20) A map of the area in which the tower is proposed to be located, that is drawn to scale, and that clearly depicts the necessary search area with which and antenna tower should, pursuant to radio frequency requirements, be located.

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APPENDIX F:

REGULATIONS FOR HISTORIC DISTRICTS

ORDINANCE NO. 04-02

AN ORDINANCE OF THE CITY OF RICHMOND CREATING REGULATIONS FOR HISTORIC DISTRICTS AND CREATING A BOARD OF ARCHITECTURAL REVIEW.

WHEREAS, the City of Richmond is a participant in the Renaissance Kentucky program, and

WHEREAS, the program emphasizes the maintenance of the downtown historic district, and

WHEREAS, as part of the application process for Renaissance Kentucky, the city must adopt a Historic District Ordinance, and

WHEREAS, the City of Richmond Board of Commissioners does desire to participate fully in the Renaissance Kentucky Program by maintaining the historical architectural integrity of the downtown Historic District.

NOW, THEREFORE BE IT ORDAINED by the City of Richmond:

There are hereby established historic district regulations and the creation of an Architectural Review Board.

I. Intent

The purpose of this ordinance is to protect, perpetuate, and encourage the nondestructive use of structures and districts designated as having substantial historical, cultural, or architectural importance within the City of Richmond; to increase community pride and to enhance the identity of the City by protecting the City's heritage and prohibiting the avoidable destruction or defacement of its cultural assets; to strengthen the City's economic base by encouraging the preservation of its viable and distinctive neighborhoods; to prevent creation of environmental influences adverse to such purposes; and to assure that new structures and uses with Historic Districts will be in keeping with the character to be preserved and enhanced.

II. Application of Historic District Regulations

The Historic District classification and regulations there under shall be established in addition to existing zoning classification and regulations. Where there are conflicts between the procedures and regulations herein established for Historic Districts and other procedures and regulations, it is intended that the more stringent shall apply.

III. Definitions

"Alteration": Any construction, addition, modification, moving, or destruction, which would affect the exterior appearance of a structure, which is located in a Historic District.

"Applicant": The recorded owner of the site and/or buildings located thereon, the lessee thereof, or a person holding a bona fide contract to purchase or lease same.

"Board": The Board of Architectural Review established herein.

"Certificate of Appropriateness": A document evidencing approval of the Board of Architectural Review or by the Planning commission in situations established herein, for work proposed by an applicant.

"Commission": The Richmond Planning & Zoning Commission.

"Construction": The erection of any on-site improvements on any parcel of ground located within a Historic District, whether the site is presently improved, unimproved, or hereafter becomes unimproved by demolition, demolition by neglect, destruction of the improvements located thereon by fire, windstorm, or other casualty, or otherwise.

"Contributing Structure": A Contributing Structure is one that has a special, unique or distinctive character or a special historic, aesthetic, architectural or cultural significance or value that serves as a visible reminder of the history and heritage of the city, county, state or nation.

This is to be applied to districts, landmarks, sites, neighborhoods, places, areas, improvements, archeological and geological features and sites.

"Demolition": The complete or partial removal of a structure located within a Historic District, except partial destruction, which does not affect exterior appearance.

"Demolition by Neglect": Neglect in the maintenance of any building resulting in deterioration to the extent that the building is structurally or visually damaged or threatened with damage, or that creates or permits a hazardous or unsafe condition as determined by the City Building Inspector.

"Exterior": All outside surfaces of any building, including the kind and texture of the building material, the type and style of all roofs, windows, doors, signs, light fixtures, steps, or appurtenant elements.

"Historic District": Any area designated according to the procedures established herein, including both single and multiple-property areas.

"Structure": Anything constructed or erected above ground level which requires location on the ground or attached to something having a location on the ground but not including a tent, vehicle, vegetation, or public utility pole or line.

IV. Procedures for Establishment of Historic Districts

The regulations set forth in this ordinance shall apply to contributing structures in the Historic zone overlay.

The procedure for establishment of additional Historic Districts shall be as follows:

1. Application.

An application for the establishment of a Historic District may be filed only by the Board of Architectural review, the Planning Commission, the Richmond City Commission, the owner of the subject property, or by a person with written authorization of the owner. Said application shall be filed with the Board of Architectural Review in such form and accompanied by such information as required

by the Board of Architectural Review. Upon the filing of an application by a governmental body, the Board of Architectural Review shall promptly notify the owner(s) by certified mail.

2. Recommendation by Board of Architectural Review

Upon the filing of an application for the establishment of a Historic District, the Board of Architectural Review shall study and review the application. Before voting upon the application, the Board shall give notice of the time, place, and reason for holding a public hearing thereon in the same manner as for zoning map amendments. After notice of the public hearing and within sixty (60) days after the filing date, the Board shall hold a public hearing on the proposed application and recommend to the Planning Commission that the application be approved or disapproved. After voting to recommend that an application for the establishment of a Historic Zone be approved or disapproved, the Board shall forward its recommendation, with its reasons therefore, in writing to the Planning Commission.

3. Recommendation by Planning Commission

The procedures for notice and public hearing before the Planning Commission and the Richmond City Commission upon the recommendation regarding the establishment of a Historic District shall be the same as for zoning map amendments. After voting to recommend that an application for the establishment of a Historic District be approved or disapproved, the Commission shall forward its recommendation, with its reasons in writing to the Richmond city Commission.

4. Action of Richmond City Commission

The Richmond City Commission shall act upon a proposed application for the establishment of a Historic District within sixty (60) days after receiving the Planning Commission recommendation. It shall take a majority of the entire City Commission to override the recommendation of the Commission.

V. Board of Architectural Review

For the purposes of making effective the provisions of this ordinance, there is hereby created a board to be known as the Board of Architectural Review.

1. Membership

The Board of Architectural Review shall consist of five members to be appointed by the Mayor of Richmond with the approval of the City Commission. Two of the initial members shall be appointed for three years, two for two year, and one for one year, and, subsequently, members shall be appointed (1) for terms of three years as vacancies occur, (2) to fill the remaining term of any membership vacancy occurring during said term. A member may be reappointed at the conclusion of their term. The membership shall include at least one member of the architectural or related profession, the real estate profession, a resident or business occupant of a Historic District in Richmond, and a person who has displayed an active involvement in historic preservation. Members shall serve without pay.

2. Powers and Duties

The Board of Architectural Review shall exercise only those powers and duties granted by this ordinance and those powers and duties, which may be assigned to it at a later time by the City Commission or by, further ordinances. The Board shall not consider interior arrangement or use, but shall consider the historical and architectural qualities of the exterior of the contributing buildings concerned and the relationship of the contributing buildings concerned with all others in the District so as to avoid incongruity and promote harmony therewith. In all instances the Board shall regulate those

outside surfaces of a contributing building that can be viewed from a public right of way or street. Nothing in this ordinance shall be construed to prevent ordinary maintenance or repairs, which do not involve a change of design, material, or of the outward appearance of a building. The authority of the Board shall apply in such cases of material change as painting previously unpainted masonry, sandblasting wood or masonry, or repainting of masonry walls.

3. Organization and Meetings

The Board of Architectural review shall elect from its membership a Chairperson, a Vice-Chairperson, and a Secretary, who shall serve for terms of one year and who shall be eligible for re-election. The Chairperson shall preside over the Board and shall have the same right to vote and speak as other members. In the absence or disability of the Chairperson, the Vice-Chairperson shall perform the duties of the Chairperson. If a vacancy shall occur in the office of Chairperson, the Vice-Chairperson shall become Chairperson for the unexpired portion of the Chairperson. In the absence of both the Chairperson, and Vice-Chairperson, the Board shall by a majority vote of those present choose one of their members to perform the duties of Chairperson. The Planning Commission may provide a secretarial staff for the Board of Architectural Review. Meetings shall be held at regularly scheduled times, or at the call of the Chairperson, or in his absence, at the call of the Vice-Chairperson. A quorum shall consist of three members, but a lesser number may conduct public hearings or meetings at which the principal purpose is collection of information, provided that no action binding on the Board shall be taken at such hearings or meetings. All meetings and records of the Board of Architectural Review shall be public. Decisions by the Board shall be made by a majority vote of those members at any meeting where a quorum of members is present.

VI. Certificate of Appropriateness

A Certificate of Appropriateness shall be required before a person may undertake any exterior changes on a property or structure within a zone protected by an H-1 overlay. Ordinary maintenance may be undertaken without a Certificate of Appropriateness provided that the work involves repairs to existing features of a building or the replacement of elements of a building with identical pieces and provided that the work does not change the exterior appearance of the building. The Board of Architectural Review shall by administrative regulation define the meaning of the terminology "exterior changes" and "ordinary maintenance".

1. Where Required

A Certificate of Appropriateness shall be required prior to the initiation of any new construction on, any exterior change to, or the demolition of all or any part of any building, structure or sign on any premises in a zone protected by an H-1 overlay.

2. Procedures for Issuance of a Certificate of Appropriateness for Exterior Changes and New Construction

Certificate of Appropriateness may be issued by Board of Architectural Review or by the City Building Inspector in accordance with provisions contained herein. The Board may delegate actions to the Building Inspector, who may review applications without public hearing and action of the Board.

3. Certificate of Appropriateness Issued by the Board of Architectural Review

All applications for Certificate of Appropriateness shall be reviewed by the Board at a public hearing, except those applications for work, which have been specifically delegated to the Building Inspector. In addition, the Board shall review all applications for Certificates referred by the Building Inspector or those requested for public hearing by the applicant.

4. Filing

The Board of Architectural Review, where it deems necessary in order to review a particular application, may require the submission of any or all of the following items: architectural plans, plot plans, landscaping plans, plans for off-street parking, plans for proposed signs, elevations of all portions of proposed additions to structures, photographs, elevations, or perspective drawings showing the proposed structure and existing structures that are within one hundred (100) feet or are substantially related to it visually or by reason of function, traffic generation or other characteristics.

Should the Board of Architectural review find that the material submitted is not adequate for the proper review of the proposal, the Board of Architectural Review shall promptly notify the applicant and state the specific information that will be required. In such cases, the applicant shall not-be deemed to have made a bona fide application to the Board of Architectural Review until the specific information is submitted.

5. Notice

Notice of the time, place and reason for holding a public hearing shall be given by first class letter at least fourteen (14) days in advance of the public hearing. Further, the Board shall give notice of the time, place and reason for holding a public hearing by publication in the newspaper of highest circulation in Richmond, Kentucky, not earlier than twenty-one (21) days or later than seven (7) days before the public hearing.

6. Board of Architectural Review Public Hearing

After notice, the Board shall consider the request for a Certificate of Appropriateness at a public hearing. At the hearing, the Board shall receive the report of the staff, orally and/or in writing, and shall allow the applicant, protestors and other interested citizens to testify and rebut evidence presented by others, provided the Chairman should have the power to limit repetitive testimony and exclude irrelevant testimony and evidence. In its review of material submitted, the Board of Architectural Review shall examine the architectural design and the exterior surface treatment of the proposed construction on the site in question and its relationship to other structures within the area, the relationship of the proposed construction to the design of building, and other pertinent factors affecting the appearance and efficient functioning of the historic district or the landmark.

The Board of Architectural Review shall not consider any interior arrangement and shall make no requirements except for the purpose of preventing development incongruous in scale, design or materials to the historic or architectural aspects of the district of landmark.

In reviewing proposals, the Board of Architectural Review shall refer to the Secretary of the Interior's Standards for rehabilitation and Guidelines for Rehabilitating Historic Buildings and comply with the design guidelines and criteria adopted by the Historic Preservation Commission.

The Board of Architectural Review shall vote to approve all or part of the application or disapprove all or part of the application within ninety (90) days after the completed application is filed.

7. Certificate of Appropriateness Issuance

The Building Inspector shall promptly issue the Certificate of Appropriateness in accordance with the action of the Board of Architectural Review. Copies of the Certificate and the application materials shall be forwarded to the Building Inspector.

8. Certificates Issued by the Richmond Building Inspector

A Certificate issued by the Building Inspector is intended to expedite approval of routine applications for exterior changes without full hearing and action by the Board. The Board may review and delegate items to the responsibility of the Building Inspector for review and issuance of Certificate of Appropriateness. The delegation of these items shall be reviewed by the Board at a public hearing and recorded in the minutes of the Board.

9. Procedures for Issuance of a Certificate by the Building Inspector

A. Filing

The applicant shall file sufficient information as to accurately depict the location, design and scope of the work to be done. The staff shall review the information and promptly notify the applicant if the material is not adequate for review and advise the applicant what specific information will be required.

B. Review

The staff shall review the application for compliance with the adopted guidelines and consult with other Divisions as appropriate to ensure proper review. Upon determination that all requirements of the guidelines have been met, and that the application complies with the requirements of the guidelines have been met, and that the application complies with the requirements of the Board, the Building Inspector shall approve the application and issue the Certificate of Appropriateness. If any question arises as to compliance or if the Building Inspector or applicant feels that the application raises issues deserving review by the full Board, the request shall be referred to the Board for action.

10. Certificate of Appropriateness Issuance

Upon approval by the Building Inspector, the staff shall issue the Certificate of Appropriateness and notify the applicant. In Addition, the staff shall forward a copy of the Certificate and application materials to the Building Inspector.

11. Certificate of Appropriateness for Demolition

The Building Inspector shall issue no permit, which would result in the demolition of all or any part of a structure within a zone protected by an H-I overlay unless and until a certificate of Appropriateness has been approved by the Board of Architectural Review.

12. Procedures

The procedure for review of a Certificate of Appropriateness for demolition shall be as set forth as above. The Board shall hear evidence concerning the application at its public hearing and may approve a Certificate only if one of the following conditions is determined to exist:

* The application is for demolition of an addition, for a portion of a building or for an accessory structure, which is not, significant to the principal structure, site, landmark or district and the approval of

the application would adversely affect those parts of a building, site, landmark or the historic district which are significant.

- * The application is for the demolition or moving of a building, or portion of a building, which does not contribute to the character of and will not adversely affect the character of the property in a zone protected by an H-1 overlay.

- * No reasonable economic return can be realized from the property and the denial of the application would result in the taking of the property without just compensation.

If the owner wishes to make a claim that the denial of the permit would amount to a taking of the property without just compensation the owner shall submit to the Board of Architectural Review, not less than twenty (20) days prior to the public hearing, the following information:

For all property:

- * The amount paid for the property, the date of purchase and the party from whom purchased including a description of the relationship, of any, between the owner and the person from whom the property was purchased.

- * The assessed value of the land and improvements thereon according to the two (2) most recent assessments recorded in the office of the Property Valuation Administrator.

- * The two most recent real estate tax bills.

- * Annual debt service for the previous two (2) years by the owner in connection with his purchases, financing or ownership or the property.

- * Appraisals obtained within the previous two (2) years by the owner in connection with his purchases, financing or ownership or the property.

- * Listings of the property for sale or rent, price asked and offers received, if any.

- * Any consideration by the owner as to profitable adaptive uses for the property.

For income-producing property:

- * Annual gross income from the property for the previous two (2) years.

- * Itemized operating and maintenance expenses for the previous two (2) years.

- * Annual cash flow for the previous two (2) years.

The Board of Architectural Review may require that the property owner furnish such additional information as the Board of Architectural Review believes is relevant to its determination of taking without just compensation and may provide in appropriate instances that such additional information to be furnished under seal. In the event that any of the required information is not reasonably available to the applicant and cannot be obtained by the applicant, the applicant shall file with his affidavit a statement of the information, which cannot be obtained, and shall describe the reasons why such information cannot be obtained.

Should the board of Architectural Review find that the material submitted is not adequate for the proper review of the proposal, the Board of Architectural review shall promptly notify the applicant and state specifically the information that the Board requires.

Notwithstanding any other provision of this Article, the Board of Architectural Review, after hearing evidence at its public hearing, may vote to postpone action to approve or deny an appeal for a reasonable period of time not to exceed one (1) year from the filing date of application in order to conduct studies, surveys and/or gather information concerning the following:

- * Alternatives which may be or may become available including restoration, rehabilitation, adaptive re-use, or other alternatives to demolition; and

* Study the question of economic hardship for the applicant including whether the landmark or the property can be put to reasonable beneficial use without the approval of the demolition; and whether the applicant can obtain a reasonable return from the existing building. If economic hardship or the lack of a reasonable return is not proved, the Board of Architectural Review shall deny the demolition application, giving the facts and reasons for its decision.

If the Board of Architectural Review approves the demolition as outlined a Certificate of Appropriateness shall be given to the applicant and a copy transmitted to the Building Inspector. If the Commission votes to disapprove the application for a building permit, it shall transmit its decision to the Building Inspector. In such cases, no building permit or certificate of occupancy shall be issued by the Building Inspector on said application for a period of one (1) year from the date of the decision of the Commission. After one (1) year from the date of the decision of the Commission, the Building Inspector shall issue the building permit provided that the application meets all other requirements of law. In rebuilding a structure shall not be permitted to be set any closer to the front lot line as the original structure.

Any person or persons aggrieved by any decision of the Planning commission affecting a Historic District shall have the right to file a civil suit within thirty (30) days from the date of the decision in a court of competent jurisdiction under the usual rules of procedure governing orders and injunctive relief provided the situation warrants it.

VII. Failure of Board of Architectural Review to Act

Upon failure of the Board of Architectural Review to take final action upon any case written ninety (90) days after the application for a building permit has been filed with the Building Inspector, and unless a mutual agreement between the Board of Architectural Review and the applicant has been made for extension of said time, the application shall be deemed to be approved and the Planning Commission shall promptly issue a Certificate of Appropriateness provided that the application meets all other requirements of law.

VIII. Demolition by Neglect

In the event the Board of Architectural Review determines that a Landmark or a building in a Historic District is being "demolished by neglect", they shall notify the property owner of this preliminary finding stating the reasons therefore, and shall give the property owner thirty (30) days from the date of the notice in which to commence work rectifying the specific problems detailed by the Board. Such notice shall be accomplished in the following manner:

- (1) By certified mailing to the last known address of the property owner; or
- (2) In the event the procedure outlined in (1) above is not successful, then such notice shall be attached to the building twice within a week.

Upon the property owner's failing to commence work, the Board of Architectural Review shall notify the property owner in the manner provided above to appear at the next public hearing of the Board. A representative of the board or the Planning Commission staff shall present to the Board at said public hearing the reasons for the notice, and the property owner shall have the right to present any rebuttal thereto. If, thereafter, the Board shall determine that the building is being "demolished by neglect", and no efforts made to preserve it, the city may, through the Building Inspector or other appropriate officer of said department, bring charges against the applicant for the violation of this ordinance; and the City may cause such property to be repaired at its expense at such time as funds are appropriated; and in which event the City may file an affidavit to this effect in the office of the City Tax Assessor, which said notice shall constitute a lien and privilege against the property.

IX. Approval by Board of Architectural Review

If the Board of Architectural Review recommends approval of the application for a building permit for a Historic District, it shall forward immediately its recommendation in writing stating the reasons for such approval to the Planning Commission. The Commission shall promptly cause a Certificate of Appropriateness to be issued to the applicant, shall at the same time transmit a copy of said Certificate to the Building Inspector. Upon receipt of the Certificate of Appropriateness, the Building Inspector shall issue the building permit if it meets all other zoning and legal requirements. The Building Inspector shall inspect the construction or alteration approved by such certificate from time to time and report to the Board of Architectural Review and the Zoning Commission any work not in accordance with such certificate.

X. Disapproval by Board of Architectural Review

If the Board of Architectural Review disapproves the application for a building permit in a Historic District, it shall promptly transmit a written report stating the reasons for such disapproval to the Applicant and the Zoning Commission. In said written report the Board shall make recommendations in regard to an appropriate architectural design, exterior surface treatment, or other appropriate matters to make the application conform to the intent of the Historic District regulations. The applicant may then submit an amended proposal for further consideration by the Board of Architectural Review. The Board may work with the applicant for the year following a refusal to issue a Certificate of Appropriateness pursuant to an application that will conform to the intent of the Historic District regulations, or to seek alternative economic uses for the property.

XI. Appeal

In the event the Board of Architectural Review disapproves an applicant for a building permit in a Historic District, the applicant for said permit may appeal to the Planning Commission, which shall hold a public hearing thereon and shall vote on said appeal within ninety (90) days after the notice of appeal is filed with the commission. The Commission shall give notice of the time, place, and reason for holding a public hearing thereon by publication in a newspaper of general circulation in Richmond not earlier than twenty-one (21) days or later than seven (7) days before the public hearing. If the Commission finds that the application for a building permit conforms to the intent of the Historic District regulations and it votes to approve the application, the Commission shall issue a Certificate of Appropriateness to the applicant and transmit a copy to the Building Inspector. If the Commission votes to disapprove the application for a building permit, it shall transmit its decision to the Building Inspector. In such cases, no building permit or certificate of occupancy shall be issued by the Building Inspector on said application for a period of one (1) year from the date of the decision of the Commission. After one (1) year from the date of the decision of the Commission, the Building Inspector shall issue the building permit provided that the application meets all other requirements of law.

Any person or persons aggrieved by and decision of the Planning Commission affecting a Historic District shall have the right to file a civil suit within thirty (30) days from the date of the decision in a court of competent jurisdiction under the usual rules of procedure governing orders and injunctive relief provided the situation warrants it.

XII. Penalties

Any person, firm, or corporation who violates any of the provisions of this ordinance shall be guilty of a misdemeanor and, upon conviction thereof, shall be subject to the same penalties that apply to other violations of the Richmond Zoning Ordinance.

XIII. Administration of Scenic Easements

The Board of Architectural Review may administer scenic easements on historic properties when such powers are delegated to the Board by the City.

This ordinance shall take effect upon second reading, and enactment by the City of Richmond Board of Commissioners.

Date of Second Reading: February 3, 2004

APPENDIX G:

ORDINANCE ENFORCEMENT BOARD

ORDINANCE 04-11

AN ORDINANCE OF THE CITY OF RICHMOND, KENTUCKY, PROVIDING FOR THE ESTABLISHMENT OF AN ORDINANCE ENFORCEMENT BOARD; PROVIDING THAT THE CODES AND PLANNING ADMINISTRATOR AND THE CODE ENFORCEMENT OFFICERS AND OTHER AUTHORIZED AGENTS SHALL HAVE AUTHORITY TO ISSUE CITATIONS FOR THE VIOLATION OF CITY ORDINANCES; TO PROVIDE THAT APPEALS OF ORDERS TO ABATE NUISANCES SHALL BE TO THE ORDINANCE ENFORCEMENT BOARD; TO PROVIDE THAT APPEALS OF ORDERS DETERMINING VIOLATION OF CITY HOUSING REGULATIONS SHALL BE TO THE ORDINANCE ENFORCEMENT BOARD; APPEALS OF THE STORM WATER ILLICIT DISCHARGE ORDINANCE AND WATER USE ORDINANCE.

WHEREAS, Chapter 177 of the 1996 Kentucky Acts adopted KRS 65.8801- 65.8839, providing for a municipal Ordinance Enforcement Board to enforce local government; and

WHEREAS, the Richmond City Commission has determined that an ordinance enforcement board would promote a more efficient mechanism for code enforcement appeals and to enforce city ordinances;

NOW, THEREFORE BE IT ORDAINED by the City of Richmond Board of commissioners as follows:

SECTION ONE

Section 1. Definitions

As used in this Article, unless the context otherwise requires:

(a) "Professionally qualified," means the following"

1. Registered design professional that is a registered architect; or a builder or superintendent of building construction with at least ten-year's experience, five of which shall have been in responsible charge of work.
2. Registered design professional with structural engineering or architectural experience.
3. Registered design professional with mechanical or plumbing engineering experience; or a mechanical or plumbing contractor with at least ten-year experience, five of which shall have been in responsible charge of work.

4. Registered design professional with electrical engineering experience; or an electrical contractor with at least ten-year experience, five of which shall have been in responsible charge of work.
5. Registered design professional with fire protection engineering experience; or a fire protection contractor with at least ten-year experience, five of which shall have been in responsible charge of work.
6. Registered design professional with Civil Engineering Experience.

Section 2. Ordinance Enforcement Board.

There is hereby created the Ordinance Enforcement Board for the City of Richmond Kentucky, pursuant to KRS 65.8801 et seq. The Ordinance Enforcement Board shall consist of five members, appointed by the Mayor, subject to approval of the City Commission. At least two of the five members shall be professionally qualified as defined in Section 1 and the remaining members may be citizen members. Each member shall also have the qualifications specified in KRS 65.8811. The Mayor may, pursuant to KRS 65.8818, appoint 2 alternate members to serve on the Ordinance Enforcement Board in the absence of regular members.

Section 3. Term

The members of the Ordinance Enforcement Board shall serve terms of three (3) years, except that the initial appointments shall be as follows: one (1) member appointed for a term of one (1) year; two (2) members appointed for a term of two (2) years each; and two (2) members appointed for a term of three (3) years each.

Section 4. Compensation

Members of the Ordinance Enforcement Board shall receive as compensation the sum of \$50.00 for each board meeting actually attended.

Section 5 Duties and Authority of Ordinance Enforcement Board:

Administration

(a) Hear and decide all appeals from the action or inaction of Office of Ordinance Enforcement or other authorized departments or otherwise from the enforcement of the applicable building code, the property maintenance code, or the fire prevention code, storm water ordinance, or sewer use ordinance.

(b) Enforce city ordinances pursuant to the provision of KRS 65.8821.

(c) All enforcement proceedings shall proceed pursuant to the provisions of KRS 65.8801-8838. Review of enforcement proceedings shall be as specified in KRS 65.8831. All appeals to the Ordinance Enforcement Board shall proceed pursuant to Section 5.

(d) The City Clerk shall be the records custodian and administrator of all enforcement proceedings of the Ordinance Enforcement Board.

Section 6 Appeals to Ordinance Enforcement Board

(a) Any person affected by a decision, notice, or order, of the Office of Code Enforcement, except for zoning matters, or any person affected by a decision, notice, or order, of a city official or agent who is acting under the applicable building code (except appeals under the Kentucky Building Code, KRS 198B.070), property maintenance code, or fire prevention code, and storm water ordinance shall have the right to appeal to the Ordinance Enforcement Board by filing a written notice of appeal with the City Clerk within fourteen (14) days after the decision, notice, or order was served or made effective. The filing fees for a Notice of Appeal shall be \$25.00, and shall be paid upon filing the Notice of Appeal. The City Clerk shall be the records custodian and administrator of all appeals to the Ordinance Enforcement Board.

(b) Upon receipt of a Notice of Appeal, the Ordinance Enforcement Board shall convene a hearing to consider the appeal within fourteen (14) days of receipt. All parties to the appeal shall be notified of the time and place of the hearing by letter sent by certified mail, by personal service, or by leaving the notice at the person's usual place of residence with any individual residing therein who is 18 years of age or older and who is informed of the contents of the notice, no later than seven (7) days prior to the date of the hearing. The Ordinance Enforcement Board shall issue its decision on the appeal within ten (10) working days after the hearing.

(c) All appellate decisions of the Ordinance Enforcement Board may be appealed to the Madison District Court within 30 days of the Ordinance Enforcement Board's final decision.

(d) Appeals from action or inaction of the enforcement of the Kentucky Building Code shall be made to the Kentucky Board of Housing, Buildings, and Construction, pursuant to KRS 198B.070.

Section 7 Ordinance Fine Schedule

Violations of ordinances that are enforced by the city ordinance enforcement board shall be subject to the following schedule of civil fines: or as indicated by ordinance.

(a) If a citation for a violation of an ordinance is not contested by the person charged with the violation, the penalties set forth in this subsection shall apply; however, the board may waive all or any portion of a penalty for an uncontested violation, if in its discretion, the board determines that such waiver will promote compliance with the ordinance in issue.

<u>Violation</u>	<u>1st Offense</u>	<u>2nd Offense</u>	<u>All Others</u>
Animals	\$100.00	\$200.00	\$400.00
Unsafe & Unfit Structure	\$100.00	\$200.00	\$400.00
Garbage	\$100.00	\$200.00	\$400.00
Weeds	\$100.00	\$200.00	\$400.00
Sign Violation	\$100.00	\$200.00	\$400.00
Violation of Zoning Ordinance	\$100.00	\$200.00	\$400.00
Violations of Subdivision Ordinance	\$100.00	\$200.00	\$500.00
Occupying without C/O	\$100.00	\$200.00	\$500.00
Paving of Parking Lot Violation	\$100.00	\$200.00	\$400.00
Nuisance Violation	\$100.00	\$200.00	\$400.00

Storm Water Ordinance/ as outlined in the storm water ordinance plus \$100.00 for each offense.

Sewer Use Ordinance/ as outlined in the sewer use ordinance plus \$100.00 for each offense

Water Use Ordinance/ as outlined in the water use ordinance plus \$100.00 for each offense.

(b) If the citation is contested and a hearing before the board is required, the following maximum penalties may be imposed at the discretion of the board:

<u>Violation</u>	<u>1st Offense</u>	<u>2nd Offense</u>	<u>All Others</u>
Animals	\$200.00	\$400.00	\$800.00
Unsafe & unfit structure	\$250.00	\$500.00	\$1,000.00
Garbage	\$200.00	\$400.00	\$800.00
Weeds	\$200.00	\$400.00	\$800.00
Sign Violation	\$200.00	\$400.00	\$800.00
Violation of Zoning Ordinance	\$200.00	\$400.00	\$800.00
Violations of Subdivision Ordinance	\$250.00	\$500.00	\$1,000.00
Occupying without C/O	\$250.00	\$500.00	\$1,000.00
Paving of Parking Lot Violation	\$200.00	\$400.00	\$800.00
Nuisance Violation	\$200.00	\$400.00	\$800.00

Storm Water Ordinance/ as outlined in the storm water ordinance plus \$200.00 for each offense.

Sewer Use Ordinance/ as outlined in the sewer use ordinance plus \$200.00 for each offense.

Water Use Ordinance/ as outlined in the water use ordinance plus \$200.00 for each offense.

(c) Each day of non-compliance shall constitute a separate violation.

SECTION TWO

The Codes and Planning Administrator, the Ordinance Enforcement Officers, and other authorized agents shall each be a "code enforcement officer" as defined in KRS 65.8805 (3), and shall have the power and authority to issue citations for the violation of city ordinances and codes.

SECTION THREE

(1) The person upon whom a notice to abate a nuisance is served, the property owner, tenant, or other affected person may appeal the determination of a nuisance, in writing. The written appeal must be made within the time period in which to abate the nuisance is given in the notice. The codes enforcement officer or his/her designee shall meet with the appellant within five (5) working days of the receipt of the written appeal. The codes enforcement officer or his/her designee may extend the time in which the nuisance must be abated, determine that a nuisance does not or no longer exists, or that the nuisance must be abated within the time period set out in the notice or immediately if the period has run. Provided, however, that if the nuisance was determined to be an emergency and that the opportunity for an appeal was not available due to the short period of time to abate the nuisance, an appeal may be heard after the abatement of the nuisance by the city. In that event, Ordinance Enforcement Board may determine that the appellant is liable for the costs, or that, upon good cause shown, that the appellant is not liable for the costs and that a lien shall not be filed by the City upon the property. The notice to abate shall contain a statement as to the right of appeal.

SECTION FOUR

ADMINISTRATIVE PROCEDURES

(A) The Agent of the City shall, for each inspection made, make an inspection report noting any violations of this ordinance which indicate that a dwelling is unfit for human habitation or that any other building is unsafe. He shall give a copy to the owner or occupant, or both, as the case may require, and shall retain on (1) copy. Except where a complaint as provided in subsection (B) is served at the time of inspection, the report shall serve as notice to the affected persons that there is a violation of this chapter and may contain a time limit for compliance.

(B) The Agent of the City may issue and cause to be served, a complaint charging that a dwelling is unfit or that any building is unsafe; if his inspection discloses a basis for so charging the complaint shall state: that a hearing will be held before the building official (o his designated agent) Ordinances Enforcement Board pursuant to Section 6 of this Ordinance at a place therein fixed not less than ten (10) days nor more than thirty (30) days after the serving of the complaint; that the owner and parties in interest may file an answer to the complaint and to appear in person, or otherwise and give testimony at the hearing before the Ordinance Enforcement Board place and time fixed in the complaint; and that the hearing shall be held pursuant to the rules and regulations of the Ordinance Enforcement Board rules of evidence prevailing in the course of law or equity shall not be controlling in hearings before the Agent of the City.

(C) If after such notice and hearing, the Ordinance Enforcement Board determines that the dwelling or dwelling unit under consideration is unfit for human habitation or the building is dangerous, they shall state in writing, their finding of fact in support of the determination, and shall issue and cause to be served upon the owner thereof an order. To the intent and within the time specified in the order, to repair, alter or improve the dwelling or other building to render it fit and safe; or if the repair, alteration or improvement can be made at a cost that is not more than fifty (50%) percent of the value of the building, at the option of the owner, to vacate and close the building; or if the repair cannot be made at a cost that is not more than fifty (50%) percent of the value of the building, within the time specified in the order, to remove or demolish the dwelling or other building.

SECTION FIVE

All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed.

This Ordinance shall be in full force and effect upon second reading, adoption and publication according to law.

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APPENDIX H:

CONDOMINIUMS

DEFINITIONS (as used in KRS 381.805 to 381.910, unless the context otherwise requires):

- (1) "Unit" means an enclosed space consisting of one or more rooms occupying all or part of a floor in a building of one or more floors or stories regardless of whether it be designed for residence, for office, for the operation of any industry or business, or for any other type of independent use, provided it has a direct exit to a thoroughfare or to a given common space leading to a thoroughfare;
- (2) "Condominium" means the ownership of single units in a multiple unit structure with common elements;
- (3) "Condominium project" means a real estate condominium project; a plan or project whereby four (4) or more apartments, rooms, office spaces, or other units in existing or proposed buildings or structures are offered or proposed to be offered for sale;
- (4) "Co-owner" means a person, firm, corporation, partnership, association, trust or other legal entity, or any combination thereof who owns and apartment within the building;
- (5) "Council of co-owners" means all the co-owners as defined in subsection (4) of this section;
- (6) "Developer" means a person who undertakes to develop a real estate condominium project;
- (7) "General common elements" means and includes:
 - (a) The land whether leased or in fee simple, on which the building stands;
 - (b) The foundations, main walls, roofs, halls, lobbies, stairways, and entrances and exits or communication ways;
 - (c) The basements, flat roofs, yards and gardens, except as otherwise provided or stipulated;
 - (d) The premises for the lodging of janitors or persons in charge of the building, except as otherwise provided or stipulated;
 - (e) The compartments or installations of central services such as power, light, gas, cold and hot water, refrigeration, reservoirs, water tanks and pumps, and the like;
 - (f) The elevators, garbage incinerators, and, in general, all devices or installations existing for common use; and
 - (g) All other elements of the building rationally of common use or necessary to its existence, upkeep, and safety;
- (8) "Limited common elements" means and includes those common elements which are agreed upon by all of the co-owners to be reserved for the use of a certain number of apartments to the exclusion of the other apartments, such as special corridors, stairways and elevators, sanitary services common to the apartments of a particular floor, and the like;
- (9) "Majority of co-owners" means fifty-one percent (51% of the co-owners;

- (10) "Master deed" or "master lease" means the deed or lease recording the property of the horizontal property regime;
- (11) "Person" means an individual, firm, corporation, partnership, association, trust or other legal entity;
- (12) "Property" means and includes the land whether leasehold or in fee simple and the building, all improvements and structures thereon, and all easements, right, and appurtenances belonging thereto;
- (13) "To record" means to record in accordance with KRS Chapter 382, or other recording statutes;
- (14) All pronouns used in KRS 381.805 to 381.910 include the male, female, and neuter genders and include the singular or plural numbers, as the case may be. (KRS 381.810).

CONDOMINIUM PROJECT APPLICATION PROCEDURES

A developer, owner, or co-owners of a proposed condominium project shall make application for project approval to the City of Richmond Codes Enforcement Officer. Since a condominium involves ownership of single units in a multiple unit structure, the applicant shall adhere to the appropriate sections of the zoning regulations dealing with the zone in which the condominium project is being developed. The application shall be accompanied by the following supplementary information:

- (1) The description of the land, whether leased or in fee simple, and the building, expressing their respective areas;
- (2) The general description and the number of each apartment, expressing its area, location, and any other data necessary for its identification;
- (3) The description of the general common elements of the building; and
- (4) The common elements, both general and limited, shall remain undivided and shall not be the object of any action for partition or division of the co-ownership. Any covenant to the contrary shall be void.
- (5) A set of floor plans of the building or buildings, showing the layout, location, apartment numbers and dimensions of the units, stating the name of the property or that it has no name, and bearing the verified statement of a registered architect or professional engineer certifying the accuracy of the plans. (KRS 381.835).

The owner of a unit designed for office, industrial, or business use may divide his unit into two (2) or more smaller units. No interest in the unit shall be conveyed until the master deed and floor plans have been modified as provided in this section.

Prior to subdividing his unit, the owner shall prepare a set of floor plans, which shall show the changes being made in the unit involved. The plans shall bear the verified statement of registered architect or professional engineer that they accurately portray the unit involved and the changes being made, and the unit owner shall attach to the plans a verified statement, which shall contain:

- (1) The name by which the property is known;

- (2) A reference to the book and page of the recorded master deed and floor plans of the property and any amendments thereto in the office of the county clerk of the county in which the land described in the master deed is situated;
- (3) The original unit number of each unit involved in the division, a description or designation of the building in which the unit is located, and the new unit number of each unit being formed;
- (4) A statement of the location, approximate area, number of rooms, and the structural changes in the perimeter and interior walls, floors, ceilings, windows, and doors of the unit being formed and the immediate common element or limited common element to which the unit has access, and any other data necessary for the proper identification of the units being formed by changes to the original unit;
- (5) A description of the percentage of interest of the original unit in the common elements, and a description of the new percentage or percentages of interest in the common elements of the units being formed. The percentage of interest in the common elements of the units being formed shall be in proportion to the floor area of the original unit and shall, when taken cumulatively, total the same percentage of interest in the common elements as that of the original unit;
- (6) Any further provisions that would serve to clarify the changes being made.

The floor plans and verified statement shall be approved in writing by a majority, unless otherwise provided by the master deed, or the council of co-owners, and by any person holding alien on such units, and shall be filed for record with the county clerk in the county in which the land described in the master deed is situated as provided in KRS 381.835. The floor plans and verified statement shall be considered as an amendment to the original master deed and floor plans for the sole purpose of dividing a unit and the corresponding percentage of interest in the common elements. (KRS 381.827).

The City of Richmond Codes Enforcement Officer shall complete his review within thirty (30) days of receipt of the application. If the project is disapproved, the ground for disapproval shall be given in writing. The City of Richmond Codes Enforcement Officer shall provide the Planning Commission with information on condominiums for planning purposes. Following approval, the applicant: expressly declares, through the recordation of a master deed or lease (enumerating the particulars stated above, (1) through (5), the desire to submit the property in question to the regime established by (KRS 381.815).

Once the property is submitted to the condominium property regime, an apartment in the building(s) may be individually conveyed and encumbered and may be the subject of ownership, possession or sale and of all types of juridical acts inter vivo or mortis causa, as if it were sole and entirely independent of the other units in the building(s) of which they form a part, and the corresponding individual titles and interest shall be recordable. (KRS 381.820).

Any unit may be jointly or commonly owned by more than one person. (KRS 381.825).

A unit owner shall have the exclusive ownership to his unit and shall have a common right to a share, with other co-owners, in the common elements of the property, equivalent to the percentage representing the value of the individual unit, with relation to the value of the whole property. This percentage shall be computed by taking as a basis the floor area of the individual unit in relation to the floor area of the property as a whole.

The percentage shall be expressed at the time the condominium property regime is constituted, shall have permanent character, and shall not be altered without the acquiescence of the co-owners

representing all the units of the building(s), except as may be otherwise provided in KRS 381.810 to 381.910. The master deed may, however, contain provisions relating to the appropriation, taking or condemnation by eminent domain by the federal, state, or local government, or an instrumentality thereof, including, but not limited to, reapportionment or other change of the common interest appurtenant to each unit, or part thereof remaining after a partial appropriation, taking or condemnation. The master deed of a regime under construction may further provide that by later amendment thereto and upon completion of all units, percentage of common interest shall be redistributed on an as-built basis; provided, however, that the number of units originally constituted in the regime may not be increased during construction.

Each co-owner may use the general common elements in accordance with the purpose for which they are intended, without hindering or encroaching upon the lawful rights of the other co-owners. (KRS 381.830).

If a condominium does not contain any unit which is designed for occupancy by only one (1) family or household, or if the floor area of all those units which are designed for occupancy by only one (1) family or household does not in the aggregate exceed ten percent (10%) of the floor area of all units in the condominium, then the following provisions shall be applicable notwithstanding any other provisions of this chapter.

The master deed may provide:

- (1) That to any extent specified in the master deed, the common profits shall be distributed among, and the common expenses shall be charged to, the unit owners in proportions other than according to their respective percentages of the undivided interest in the common areas and facilities;
- (2) That to any extent specified in the master deed, the unit owners shall not be personally liable for sums assessed for their share of common expenses, but such provisions shall not adversely affect any lien for said share;
- (3) That the priority provided in KRS 381.883 (2) shall not prohibit subordination of a mortgage lien to the lien for commons expenses;
- (4) A procedure for submitting the disputes arising from the administration of the condominium to arbitration or other impartial determination;
- (5) Provisions giving a particular unit owner or owners voting rights with respect to election of directors, trustees, or members of a managing board less than, or in excess of, the voting rights which such owner or owners would otherwise have had, and provisions requiring or permitting approval of any matter, or any specified category or categories of matters, by a proportion greater than a majority, which proportion may be as great as one hundred percent (100%);
- (6) Terms and conditions differing from those set forth in KRS 381.830 to 381.890 regarding rebuilding made necessary by fire or other casualty loss, the making of improvements and allocation of the costs of such rebuilding or improvements, and the removal of the condominium or portion thereof from the

provisions of this chapter; and in such case the terms and conditions of the master deed shall take precedence over the provisions of KRS 381.830 or 381.890 to the extent they are inconsistent. (KRS 381.837).

The deed of each individual unit shall describe such unit by making reference to the applicable master deed and floor plans required under KRS 381.835, designating the letter or number or other appropriate designation of the unit, followed by the words "a condominium unit." Any conveyance of an individual unit shall be deemed to also convey the undivided interest of the owner in the common elements, general and limited, appertaining to say unit without specifically or particularly referring to same. (KRS 381.840)

All of the co-owner or the sole owner of a building constituted into a horizontal property regime may waive this regime and request the county clerk to regroup or merge the records of the filial estates with the principal property; provided, that the filial estates are unencumbered, or if encumbered, that the creditors in whose behalf the encumbrances are recorded agree to accept as security the undivided portions of the property owned by the debtors. (KRS 381.850).

The merger provided for in KRS 381.850 shall in no way bar the subsequent constitution of the property into another horizontal property regime whenever so desired and upon observance of the provisions of KRS 381.805 to 381.910 (KRS 381.855).

The administration of every building constituted into a condominium property regime shall be governed by bylaws approved and adopted by the council of co-owners. The council may amend the bylaws from time to time. (KRS 381.860).

Other legal requirements pertaining to bookkeeping, maintenance, liens, foreclosures, insurance and related business matters can be found by referring to KRS 381.865 through 381.900.

The provisions of KRS 381.805 to 381.910 shall be in addition to a supplemental to all other provisions of the Kentucky Revised Statutes; provided that wherever the application of the provisions of KRS 381.805 to 381.910 conflicts with the application of such other provisions, KRS 381.805 to 381.910 shall prevail. (KRS 381.905).

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APPENDIX I: PUD REGULATIONS

PLANNED UNIT DEVELOPMENTS REGULATIONS

1.0 - PURPOSE

The purpose of Planned Unit Development zone district is to encourage and allow more creative and imaginative design of land developments than is possible under the other district zoning regulations. Planned Unit Development zone districts are intended to allow substantial flexibility in planning and designing a proposal. This flexibility often accrues in the form of relief from compliance with conventional zoning ordinance site and design requirements. Ideally, this flexibility results in a development that is better planned, that contains more amenities, and ultimately a development that is more desirable to live in than one produced in accordance with typical zoning ordinance and subdivision controls. An intrinsic, and often neglected, premise upon which the approval of a Planned Unit Development (PUD) must be conditioned, is that while greater density or more lenient requirements may be granted, the Planned Unit Development should contain features not normally required of traditional developments. Hence, to enable thorough analysis of a Planned Unit Development, more information is demanded about the proposal than would be required if development were being pursued under conventional zoning requirements.

1.1 - OBJECTIVES

Through proper planning and design, each Planned Unit Development should include features which further, and are in compliance with, the following objectives:

1. - To allow for the design of developments that are architecturally and environmentally innovative, and that achieve better utilization of land than is possible through strict application of standard zoning and subdivision controls.
2. - To encourage land development that, to the greatest extent possible, preserves natural vegetation, respects natural topographic and geologic conditions, and refrains from adversely affecting flooding, soil, drainage, and other natural ecologic conditions.
3. - To combine and coordinate architectural styles, building forms, and structural/visual relationships within an environment that allows mixing of different land uses in an innovative and functionally efficient manner.
4. - To provide for abundant, accessible, and properly located public open and recreation space, private open and recreation space, schools, and other public and private facilities.
5. - To promote the efficient use of land resulting in networks of utilities, streets and other infrastructure features that maximize the allocation of fiscal and natural resources.
6. - To enable land developments to be completely compatible and congruous with adjacent and nearby land developments.

7. - To ensure that development occurs at proper locations, away from environmentally sensitive areas, and on land physically suited to construction.
8. - To allow unique and unusual land uses to be planned for and located in a manner that ensures harmony with the surrounding community.
9. - To create a method for the permanent preservation of historic buildings and/or landmarks.

1.2 - STANDARDS FOR PLANNED UNIT DEVELOPMENTS

The Planned Unit Development must meet the following standards:

1. - **COMPREHENSIVE PLANA** Planned Unit Development must conform to the objectives of the Comprehensive Plan of Richmond.

2. - SITE AND OWNERSHIP

The site of the Planned Unit Development must be under single ownership and/or unified control.

3. - COMPATIBILITY

The uses permitted in a Planned Unit Development must be of a type and so located as to exercise no undue detrimental influence upon surrounding properties.

In addition, the Planned Unit Development shall not endanger the public health, welfare, or safety, nor shall it substantially diminish or impair property values in the neighborhood in which it is to be located.

4. - NEED

The Planned Unit Development must be of a character and contain such uses that are needed in the area of the proposed project.

5. - DENSITY

The net density of a Planned Unit Development (either in dwelling units - for residential uses, or in floor area - for all other uses) shall generally correspond to the gross density regulations imposed by the underlying land uses. The gross density of the Planned Unit Development is not necessarily required to precisely correspond with the normal net density of the underlying land uses, but instead should reflect that district's character through complementary building types and architectural design. **The gross overall density of dwelling units in a PUD shall not exceed 8 units per acre.**

6. - SPACE BETWEEN BUILDINGS

The minimum horizontal distance between the buildings shall be:

- a. – Ten (10) feet between clustered or "zero lot line" single-family detached buildings.
- b. - Ten (10) feet between single-family detached dwellings.
- c. - Twenty (20) feet between buildings, other than single family-detached dwellings, of one (1), or two and one-half (2 1/2) stories in elevation.
- d. - Equal to the height of the taller building in the case of free-standing buildings greater than two and one-half (2 1/2) stories in elevation.

7. - YARDS

The required yards along the periphery of the Planned Unit Development shall be at least equal in width or depth to that of the adjacent zoning district.

- a. - Buildings of more than twelve (12) feet in height shall provide a setback from any property line of not less than equal to the height of such buildings.

8. - PARKING REQUIREMENTS

The parking requirements shall be the same in the PUD ZONES as they are in the underlying underlying land uses. See section 411 of the development ordinance.

9. – TRAFFIC

Adequate provision shall be made to provide ingress and egress so designed as to minimize both internal and external traffic hazards and congestion.

10. - DESIGN STANDARDS

The provisions of the City of Richmond Development Ordinance, as amended, shall be adhered to, unless the Planning Commission grants a waiver.

11. - PERFORMANCE STANDARDS

The performance standards for the underlying land uses of the Planned Unit Development shall, in all instances, be complied with.

1.3 - PROCEDURE FOR PLANNED UNIT DEVELOPMENTS

The unique character of Planned Unit Development requires their administrative processing as a special use in this Ordinance. Planned Unit Developments are more complex and of a significantly difference character than other zoning districts, therefore requiring the establishment herein of specific procedures different than those used to process other zoning districts. The procedure, standards, objectives and purpose set forth in this Article, when in conflict with other provisions of this Ordinance, as they may pertain to Planned Unit Development, and only Planned Unit Developments, shall be superseding.

1. - STEP 1 - PRE-APPLICATION PROCEDURE

- a. - Intent - The intent of the Pre-Application process is to obtain a general awareness of the city's adopted planning rationale, the compatibility of the proposed Planned Unit Development with existing and anticipated land uses in the vicinity, and a familiarity with the city's Planned Unit Development procedures. This procedure allows the developer to determine the suitability of proposed Planned Unit Development procedures. This procedure allows the developer concerning the approval or construction of the proposed Planned Unit Development.
- b. - Pre-Application Conference - Prior to the filing of an application for approval of a Planned Unit Development, the prospective applicant must request of the Plan Commission one (1) informal meeting to discuss the development of the proposed Planned Unit Development site in conjunction with the city's adopted planning rationale and its compatibility with existing and anticipated land uses in the vicinity. Said meeting may be a part of a regularly scheduled meeting, shall be open to the public, and included on their agenda in advance of the meeting.

The Pre-Application conference is mandatory but does not require formal application fee, or filing of a Planned Unit Development plat. However, the expenses incurred by the City as a result of any additional conferences in excess of the one (1) entitled conference with the Planning Commission to discuss the development of the proposed Planned Unit Development site, within a period of one (1) year from the date of the initial Plan Commission conference on the said proposed Planned Unit Development site, shall be paid for by the prospective applicant.

- c. - Pre-Application Document Review - Prior to the filing of an application for approval of a Planned Unit Development, either before, after, or in lieu of the Pre-Application Conference, all prospective applicants shall review copies of the Richmond Land Use Plan, the Zoning Map, and the Planned Unit Development Sections of this Ordinance, which are available in the city's development ordinance. The Zoning Map shall be reviewed to ascertain whether or not the proposal is likely to be compatible with existing and anticipated land uses in the vicinity of the proposal. The Planned Unit Development sections of this Ordinance shall be reviewed to insure familiarity with the city's Planned Unit Development procedures.

The applicant is required to sign a statement to the effect that the applicant has reviewed copies of the City's Land Use Map, the Zoning Map, and the Planned Unit Development Sections of this Ordinance at the time the Planned Unit Development zone change application is submitted for approval.

2. - STEP 2 - CONCEPTUAL PLAN PROCEDURE

a. - Intent - The intent of the Conceptual Plan Submission is to obtain approval of the city for the development of a parcel of land in accord with the plans, programs, and schedule submitted as this part of the Planned Unit Development application.

b. - Procedure - A request for approval of a Conceptual Plan, as a step in the Planned Unit Development procedure, shall be submitted to the Office of the Zoning Administrator and subsequently shall be referred to the Planning Commission for public hearing, review, and recommendation. The required procedure for review of the Plan shall be:

(1) - Submission of the items required of a Conceptual Plan petitioner as identified under the "Submission Requirements" sections of this Article. Said submission requirements fall into two general categories:

(a) - Submission of data required at the time application is made for Conceptual Plan Approval;

(b) - Submission of data required at the time of the first public hearing pertaining to the specific Conceptual Plan.

(2) - The Planning Commission shall hold a public hearing on the application for a Planned Unit Development Conceptual Plan in accord with the procedures established for special uses in this Ordinance.

(3) - Following the public hearing and review of the Conceptual Plan submission, the Plan Commission shall within thirty (30) days, unless an extension is requested by the petitioner, recommend approval, modification, or disapproval of the Conceptual Plan, and the reasons therefore, or indicate why a report and recommendation cannot be rendered to the City Commission.

In its communication to the City Commission, the Planning Commission shall set forth "findings of fact," in accordance with the "findings of fact" section of this Article, on which the recommendation is based and describing how the Conceptual Plan meets the standards and objectives stated in this Article.

(4) - The City Commission, after receipt of the Conceptual Plan from the Planning Commission, shall approve, modify, or disapprove the Plan within sixty (60) days, unless an extension is requested by the petitioner. In the case of approval, or approval with modification, the City Commission shall pass a resolution approving the Conceptual Plan. Said ordinance shall provide for a change in the official City Zoning Map indicating that the subject site is approved for a Planned Unit Development for further allowing for any approved zoning amendments, variations, and/or special uses. However, once these map changes are made, the petitioner must submit subsequent Preliminary Plat data in accordance with the schedule set forth in the "Revocation and Extension" section of this Article. If it is not done, all map changes authorized by the City Commission shall revert back to the original zoning designation affixed to the subject property in accordance with the same "Revocation and Extension" section of this Article. The City Commission may require such special conditions, as it may deem necessary to insure conformance with the objectives and standards established in this Article.

It is emphasized that no building or construction whatsoever may take place within the proposed Planned Unit Development and no permits may be issued, until the Final Plat and accompanying data has been submitted, approved, and recorded. Approval of the Conceptual Plan shall constitute an interim-zoning acceptance of the land use and density concepts specified therein, and shall indicate the general acceptance of the Planning Commission to approve a "Preliminary Plat" that carries out, refines, and implements the concepts expressed in the Conceptual Plan.

3. - STEP 3 - PRELIMINARY PLAT PROCEDURE

a. - Intent - It is the intent of the Preliminary Plat submission to obtain tentative approval from the Planning Commission for the plans, design, and program that the petitioner contemplates compliance with. If the Preliminary Plat is approved, the petitioner can proceed to the Construction plans, Final Plat stage with reasonable assurance that the Final Plat will be approved if substantially in compliance with the Preliminary Plat

Any parcel of property may be eligible for consideration as a Planned Unit Development using the Preliminary Plat procedure. However, each petitioner for Preliminary Plat approval should be aware that the objectives and standards for Planned Unit Developments, as expressed in this Article, must be clearly integrated into the Planned Unit Development submission. Failure to do so will result in disapproval.

b. - Procedure - A request for approval of a Preliminary Plat, as a step in the Planned Unit Development procedure, shall be submitted to the Office of the Director of Planning and Zoning, which shall refer same to the Planning Commission for public hearing, review and recommendation. The required procedure for review of the Preliminary Plat shall be:

(1) - Submission of the items required of a Preliminary Plat petitioner as identified under the "Submission Requirements" Section of this Article. Said submission requirements fall into two general categories:

(a) - Submission of data required at the time application is made for Preliminary Plat approval;

(b) - Submission of data required at the time of the first public hearing pertaining to the specific Preliminary plat.

(2) - The Planning Commission shall hold a public hearing on the application for a Planned Unit Development Preliminary Plat in accord with the procedures established for special uses in this Ordinance.

(3) - Following the public hearing and review of the Preliminary Plat submission, the Planning Commission shall within sixty (60) days, unless an extension is requested by the petitioner, recommend approval, modification, or disapproval of the Preliminary Plat.

It is emphasized that no building or construction, excluding public improvements, may take place within the proposed Planned Unit Development, and no permits may be issued, until the Preliminary Plat and Construction Plans and accompanying data has been submitted, approved. Several projects or stages may compose the overall Planned Unit Development. If this is the case, the Final Plat may be submitted and approved in several states in accordance with the agreed to development schedule processed with Preliminary Plat data. Permits shall be issued pursuant to the processing, approval, and recording of each separate stage of the overall Final Plat. Approval of a Preliminary Planned Unit Development Plat shall not constitute approval of the Final Plat. Rather, it shall be deemed an expression of approval to the layout submitted on the Preliminary Plat and as a guide to the preparation of the Final Plat, which will be submitted for approval of the city and subsequent recording, upon the fulfillment of the requirements of these regulations and conditions of the preliminary approval, if any. The Final Plat shall be approved if it conforms to the Preliminary Plat and Construction Plans.

4. - STEP 4 – CONSTRUCTION PLAN PROCEDURE

All final plats, which contain a lot or lots requiring installation of improvements shall have Eight (8) copies of construction plans submitted to the Planning and Zoning office for approval 10 days prior by 12:00p.m. to the Technical Advisory Committee meeting. Upon review and approval of the construction plans per method and procedure adopted by the planning commission, one (1) set shall signed approved by the Planning and Zoning Director/ Planning and Zoning Engineer and returned to the applicant. Said construction plans shall be submitted and approval at minimum 30 days prior to approval of the final plat.

Please refer to section 502.5 in the Development Ordinance for all construction plan requirements and procedures.

5. - STEP 5 - FINAL PLAT PROCEDURE

The final plat serves as a plat of record for public recording and transfer of land, and as a check to assure that subdivision requirements (including any conditions stipulated in the preliminary plat) have been met. The final plat shall conform substantially to the preliminary plat and construction plans as approved, and it may constitute only a portion of the preliminary plat, which the developer proposes to develop and record. No final plat shall be approved until at least thirty (30) days following the approval of the construction plans. The Planning Commission at the business meeting will review no final plat until either all improvements on the preliminary plat/construction plans have been made or all unfinished items have been guaranteed by a bond or an irrevocable letter of credit.

Please refer to section 502.5 in the Development Ordinance for all final plat requirements and procedures.

1.4 - SUBMISSION REQUIREMENTS

1. - CONCEPTUAL PLAN STAGE

a. - At the time application is made for zoning map amendment the Conceptual Plan must also be submitted which shall include the following:

(1) - Application - A written application for a Planned Unit Development on forms supplied by the Office of the Planning and Zoning Administrator.

(2) - Fee - that is suitable to cover costs incurred by the city for review of the specific proposal. If special planning, engineering, architectural or other consultants must be retained by the city for review of the proposed Planned Unit Development, the petitioner shall be so notified, and all costs for said consultants expended by the city - not covered by the filing fee - shall be reimbursed by the petitioner.

(3) – Amending the official map-Please refers to section 401.2 in development ordinance for all requirements for amending the official zoning map.

(4) - At the time of the public hearing, fifteen (15) copies of all subsequent listed information shall be submitted (with the exception of non-reproducible exhibits). The Conceptual Plan submission shall include the following:

(1) - Concept Plan - A drawing of the Planned Unit Development shall be prepared at a scale that provides for a clear understanding of the way in which the property is intended to be developed. The Plan shall indicate the concept of the development with refinements to indicate the overall land use pattern, general circulation system, open space or park system, and major features of the development. This Section does not require a detailed site plan of buildings, walks, etc. The Plan should include:

- (a) - Boundary lines and dimensions of the subject site.
- (b) - Existing and proposed easements--general location and purpose.
- (c) - Streets on, adjacent, or proposed for the tract, including all rights-of-way and pavement widths.
- (d) - Land use patterns proposed for the subject site.
- (e) - Map data--name of development, name of site planner, north point, scale, date of preparation.
- (2) - Site Data - A list of pertinent site data, including:
 - (a) - Description and quantity of land uses.
 - (b) - Acreage of site.
 - (c) - Number of dwelling units proposed and anticipated population.
 - (d) - Area of commercial, institutional, recreational, and circulation land uses proposed.
 - (e) - Densities of residential areas.
- (3) - Objectives - A statement indicating how the proposed Planned Unit Development corresponds to and complies with objectives for Planned Unit Developments as previously stated in this Article.
- (4) - Approximate Schedule - Development schedule indicating:
 - (a) - States in which project will be built with emphasis on area, density, use, and public facilities such as open space to be developed with each stage.
- (5) - Environmental Information - Data identifying existing natural and environmental site conditions, including:
 - (a) - Topography - A topographic map, if possible underlying the concept plan, at a minimum of two (2) foot contour intervals.
 - (b) - Flood Plain - Information from the most current source specified by the City indicating the location and extent of the regulatory flood plain.
 - (c) - A depiction of existing surface drainage patterns and proposed retention and detention areas.
- (6) - Utilities - Statement indicating that sanitary sewer, storm sewer, and water are directly available to the site.
- (7) - Traffic Analysis - A preliminary study providing information on the existing road network, and adjunct vehicle volumes, and the effect the proposed Planned Unit Development will have on the existing (or improved) road network. If traffic or roadway improvements external to the subject site are anticipated as a result of the proposed development, the petitioner shall submit a statement indicating the nature and extent of those contemplated improvements. Included in said statement shall be information pertaining to what proportion of the external traffic and roadway improvements made necessary as a result of the Planned Unit Development, if any, the developer will pay for. All internal traffic and roadway improvements associated with the Planned Unit Development shall be paid for by the developer.
- (8) Percentage of Usable Green Space :(minimum of 20 percent of green space)

2. - PRELIMINARY PLAT STAGE

A. - At the time application is made for Preliminary Plat approval, the following items must be submitted to the Office of the Director of Planning and Zoning:

- (1) - If a Zone Map amendment and a Conceptual Plan approval has been granted:
 - (1a) - Fee - A Preliminary Plat filing fee, established by the City to cover costs incurred by the City for review of the specific proposal. If special planning, engineering, architectural, or other consultants must be retained by the City for review of the proposed Planned Unit Development, the petitioner shall be so

notified, and all costs for said consultants expended by City - not covered by the filing fee - shall be reimbursed by the petitioner.

(1b) - Notification List - the responsible fire protection district, affected school districts, and the affected sanitary and/or drainage district shall appear on this list of notification. The County Highway Department will also be notified if the said development will have a direct effect on their system.

B. - At the time of the TAC submittal on the Preliminary Plat, fifteen (15) copies of all subsequent listed information shall be submitted (with the exception of non-reproducible exhibits). Failure to submit any of the required information, without a specific written waiver from the Planning Commission, shall constitute grounds for dismissal of the Planned Unit development petition. For that particular month. The Preliminary Plat submission shall include the following:

(1) - All ten (10) items listed in Section 1.4.1b.

(2) - Detailed Plan - A drawing of the Planned Unit Development shall be prepared at a scale of not less than 1" = 50' unless approved at another scale by the Director of Planning and Zoning and shall show such designations as proposed streets (public and private), all buildings and their use, common open space, recreation facilities, parking areas, service areas, and other facilities to indicate the character of the proposed development. The submission may be composed of one (1) or more sheets and drawing, and must include:

(a) - Boundary lines and dimensions of the subject site.

(b) - Existing and proposed easements - general purpose and width.

(c) - Streets on, adjacent, or proposed for the tract.

(d) - Utility extensions of water lines, sanitary sewers, and storm sewers.

(e) - Land use designations for the subject site.

(f) - Retention and detention areas.

(g) - Residential lots (average lot size and minimum lot size shall be specified).

(h) - Map Data - name of development, name of site planner, north point, scale, date of preparation.

(3) - Adjacent Property Information - Topography of property within one hundred (100) feet of the subject site, at a minimum of two foot (2') contour intervals, with natural drainage patterns indicated and with the subject site's topography and drainage patterns depicted. The location, size, and invert elevation of adjacent, or the closest sanitary sewer, storm sewer, and watermain, as well as documentation of these facilities' points of origin.

(4) - Community Benefit Statement - A written statement comparing the relative benefits that will accrue to the community as a result of this site being developed under Planned Unit Development provisions as opposed to conventional zoning. Specific mention should be made of open space, natural features, and architectural design. This statement supplements the "Objectives" statement that may be required with the submission of the Conceptual Plan or the Preliminary Plat. The "Objectives" statement differs from this statement, in that each of the objectives listed in Section 1.1 of this Article must be specifically addressed. In contrast, the "Community Benefit Statement," which accompanies a detailed site plan, provides a developer the opportunity to define with particularity why his proposal merits approval and how it will serve the community better than a conventional development.

3. CONSTRUCTION PLAN STAGE

All final plats, which contain a lot or lots requiring installation of improvements shall have Eight (8) copies of construction plans submitted to the Planning and Zoning office for approval 10 days prior to the TAC meeting by 12:00p.m. Upon review and approval of the construction plans per method and

procedure adopted by the planning commission, one (1) set shall signed approved by the Planning and Zoning Director/ Planning and Zoning Engineer and returned to the applicant. Said construction plans shall be submitted and approval at minimum 30 days prior to approval of the final plat.

Please refer to section 502.5 in the Development Ordinance for all construction plan requirements and procedures.

4. - FINAL PLAT STAGE

The final plat serves as a plat of record for public recording and transfer of land, and as a check to assure that subdivision requirements (including any conditions stipulated in the preliminary plat) have been met. The final plat shall conform substantially to the preliminary plat and construction plans as approved, and it may constitute only a portion of the preliminary plat, which the developer proposes to develop and record. No final plat shall be approved until at least thirty (30) days following the approval of the construction plans. The Planning Commission at the business meeting will review no final plat until either all improvements on the preliminary plat/construction plans have been completed or all unfinished items have been guaranteed by a bond or an irrevocable letter of credit.

Please refer to section 502.5 in the Development Ordinance for all Final Plat requirements and procedures.

5. – DEVELOPMENT PLAN STAGE

Upon completion of the final plat stage the development will be required to go through the Development plan process for each area of the total development in which has a underlying zoning district that would normally call for a development plan.

Please refer to section 502 in the Development Ordinance for all Development Plan requirements and procedures.

1.5 - CHANGES IN THE PLANNED UNIT DEVELOPMENT

The Planned Unit Development shall be developed only according to the approved and recorded Final Plat and all supporting data. The recorded Final Plat and supporting data together with all recorded amendments shall be binding on the applicants, their successors, grantees, and assigns and shall limit and control the use of premises and location of structures in the Planned Unit Development project as set forth therein.

Changes to the recorded Planned Unit Development may be made as follows:

1. - MAJOR CHANGES

Changes which alter the concept or intent of the Planned Unit Development including increases in density, reductions of proposed open space, changes in total bedroom counts of more than five (5) percent, changes in bedroom mixes of more than five (5) percent, changes in road standards, or changes in the final governing agreements, provisions, or covenants, may be approved only by submission and reconsideration of a new Preliminary and/or Final Planned Unit Development Plat, or relevant portion thereof, and supporting data and following the Preliminary or Final Plat procedure.

If the major change alters data or evidence submitted during the Conceptual Plan or Preliminary Plan or Preliminary Plat stage, then the resubmission must begin at the Preliminary Plat stage. If only Final Plat evidence or data is altered as a result of the major change, then the resubmission shall begin at the Final Plat stage.

If major changes are proposed, a new public hearing shall be required during resubmission of the Preliminary or Final Plat.

All changes to the "original" Final Plat shall be recorded with the County Clerk as amendments to the Final Plat or reflected in the recording of a new "amended" Final Plat.

2. - MINOR CHANGES

The Planning Commission may, in accordance with procedures established in their rules, approve minor changes in the Planned Unit Development, which do not change the concept or intent of the development. Minor changes shall be any change not defined as a major change.

1.6 - REVOCATION AND EXTENSION

A Planned Unit Development special use shall become null and void and the subject property shall thereupon be rezoned to its most appropriate district classification, as deemed suitable by the City Commission acting upon the recommendation of the Planning and Zoning Commission, in any case where said Planned Unit Development has:

1. - Received Preliminary Plat approval and where the Final Plat of said Planned Unit Development, or the first phase of the Final Plat if construction is to take place in phases, has not been submitted for approval within two (2) years after the date of approval of said Preliminary Plat; or
2. - Received Final Plat approval and where the construction of said Planned Unit Development, as authorized by the issuance of a building permit, has not begun within (1) year after the date of approval of said Final Plat dealing with such construction.

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APPENDIX J:

AGRIBUSINESS REQUIRMENTS

Agricultural Products Retail Outlet

1. Definition: A location for the retail sale or display of agricultural or nursery products, a majority of which are not grown on site, and are intended for direct human or animal consumption or use. If the total site the development (building, parking, required grading, landscaping, fencing, etc.) is going to be one acre or greater it shall fall under all development plan regulations. If the total area of the development is less than one acre it shall be required to have supplementary development plan submitted to the City's Planning and Zoning office for approval.
2. Permitted Zones: Conditional use in B1, B2, and Permitted use in B3 and Agricultural.
3. All proposed Agribusiness site plans under one acre shall be submitted to Richmond Planning and Zoning staff for approval. These plans should include but not limited to:
 - a. A copy of the appropriate completed subdivision/dev. plan application form.
 - b. Names of adjacent property owners of record and abutting subdivisions and streets, lot numbers, deed book and page, plat book and page, and land use classification.
 - c. If the property fronts on a state highway and requires a new entrance directly off the state highway the applicant is required to obtain a properly signed State Highway Encroachment Permit.
 - d. If the site is going to require domestic water supply and sanitary sewer service. It shall have in written approval from Richmond Utilities.
 - e. Location, dimensions, and square footage of existing and proposed buildings.
 - f. Parking details including number of spaces, size of spaces, handicapped parking spaces, and pavement detail.
 - a. Landscaping plan and screening if applicable. Please check with the office of Planning and Zoning to see if applicable.
 - h. Location, size, and description of proposed signs.
 - i. Lighting plan if applicable. These plans do not have to be prepared by a licensed engineer.
4. Parking Requirements: One space per 200 square feet of floor area all parking areas must be paved.
5. Loading Requirements: One loading space for 10,000 or more square feet of floor area

6. Additional Provisions:

- a. Sales of non-plant or animal products may comprise no more than 10% of total sales.

B. Commercial Nursery

1. Definition: A use, which may be wholly or partially contained within one or more greenhouses, where trees, shrubs, flowers, or vegetable plants are grown and sold either wholesale or retail. If the total site the development (building, parking, etc.) is going to be over one acre or greater it shall fall under all development plan regulations. If the total area of the development is less than one acre it shall be required to have supplementary development plan submitted to the City's Planning and Zoning office for approval. The supplementary plan requirements are listed above under Agricultural Products Retail Outlet.
2. Permitted Zones: Conditional use in B3, and Permitted use in Agricultural.
3. Parking Requirements: One space per 1,000 square feet of floor area all parking areas must be paved.
4. Loading Requirements: One space per 10,000 square feet of floor area.
5. Additional Provisions:
 - a. Sales of non-plant or animal products may comprise no more than 10% of total sales.

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APPENDIX K:

ADULT ESTABLISHMENT

The term “Adult Establishment” as used in ARTICLE VI shall be defined to include any commercial establishment, business, or service which:

- (a) Designates all or a portion of its premises as for adults only or has a policy of excluding minors from its premises or from a portion of its premises; and (ii) displays or offers to display for viewing by its patrons or customers, or sells or rents or offers for sale or for rent, sexually-oriented material, devices, or paraphernalia or specified sexual activities or any combination or form thereof; or
- (b) Displays or offers to display for viewing by its patrons or customers, whether in private or semi-private viewing areas or otherwise, sexually-oriented material or specified sexual activities or any combination or form thereof; or
- (c) Devotes greater than 15 square feet of its wall, counter, shelf, or other display space to sexually-oriented material, devices, paraphernalia, or specified sexual activities or any combination thereof; or
- (d) Derives greater than 5% of its gross revenue from the sale or rent of sexually-oriented material, devices, paraphernalia, or specified sexual activities or any combination thereof; or
- (e) Advertises (i) in a manner visible from the outside of its business premises; or (ii) in the media, including the internet; or (iii) in the “Yellow Pages” or a similar format, the availability from it of “adult,” “x-rated,” or “xxx” material, devices, or paraphernalia, of sexually-oriented material, devices, or paraphernalia or of specified sexual activities or any combination thereof; or
- (f) Devotes greater than 15 square feet of its floor space to the sale or display of sexually-oriented material, devices, or paraphernalia or specified sexual activities or any combination thereof.

SECTION II

A commercial establishment, business, or service which is or becomes an Adult Establishment under the terms of this Ordinance for any period of time shall at all times thenceforth be deemed to be an Adult Establishment which must be located only within an I-2 zoning district and within the other parameters herein set forth.

Attached is a copy of City Ordinance 01-30 dealing with Adult Establishments:

ORDINANCE NO. 01-30
AN ORDINANCE OF THE CITY OF RICHMOND, KENTUCKY
AMENDING THE DEVELOPMENT ORDINANCE OF THE CITY
OF RICHMOND, KENTUCKY

WHEREAS, the City of Richmond, Kentucky (hereinafter, the “City”) has adopted a Development Ordinance (hereinafter, the “Ordinance”) regulating and providing for development within the City; and

WHEREAS, the Ordinance provides for the division of the City into zoning districts in order that the integrity of neighborhoods within City boundaries, whether such neighborhoods be residential, business, commercial, or industrial, be maintained; that the City’s retail trade be protected; that property values be maintained; and that the quality of its neighborhoods, commercial districts, and urban life be preserved; and

WHEREAS, the Commonwealth of Kentucky, acting by and through its legislature, has heretofore enacted legislation, codified as KRS 82.088, making findings concerning and addressing the secondary effects of adult establishments upon local communities; and

WHEREAS, the Board of Commissioners for the City (hereinafter, the “Board”) has heretofore enacted Ordinance 01-12, an ordinance which amends the Development Ordinance and which takes legislative notice of KRS 82.088, the experience of other cities, and that of the City itself, in an effort to address the negative secondary effects of Adult Establishments such as are enumerated in Ordinance 01-12; and

WHEREAS, the City Manager for the City has studied the effects which certain Adult Establishments, as that term is hereinafter defined, exert upon neighborhood integrity, retail trade, property values, and the quality of neighborhoods, commercial districts, and urban life, and has made report concerning same to the Board, such study by the City Manager having included his examination of the findings incorporated in studies of this issue conducted in and by other communities, including Minneapolis, Minnesota; St. Paul, Minnesota; Indianapolis, Indiana; Garden Grove, California; Austin, Texas; Beaumont, Texas; Newport News, Virginia; Bellevue, Washington; St. Croix County, Wisconsin; Dallas, Texas; Manatee County, Florida; Outagamie County, Wisconsin; New Hanover City, North Carolina; Phoenix, Arizona; Whittier, California, together with summaries of similar studies conducted by numerous other municipalities, counties, or communities; and

WHEREAS, in light of the report of the City Manager, the findings of the Kentucky legislature, the experiences of other communities, and the experiences of the City itself, the Board has determined, and does hereby find, that the Development Ordinance and Ordinance 01-12 should be amended in the particulars hereinafter set forth;

NOW, THEREFORE, be it ordained as follows:

SECTION I

The Board finds that unless the sitting of Adult Establishments, as that term is hereinafter defined, is properly regulated:

1. Such Adult Establishments have a deleterious effect on existing businesses and retail trade around them; and
2. Such Adult Establishments result in the lowering of the values of surrounding properties; and
3. Such Adult Establishments are frequently used by their patrons for unlawful purposes and frequently generate an increase in crime and criminal activities both on their premises and in their immediate vicinity, all with a corresponding devaluation of surrounding property values, of neighborhood integrity, and of the quality of urban life; and
4. Such Adult Establishments contribute to neighborhood blight, particularly when they are concentrated in close proximity to one another.

The Board finds, further, that such secondary effects of Adult Establishments can best be minimized by requiring that (i) such establishments be dispersed from one another and from schools, churches, parks, and residential areas, and (ii) such establishments be located only within the I-2 Zoning Districts of the City.

SECTION II

Section 402.33 of the Ordinance is hereby amended by adding to the uses permitted in industrial zoning districts within the City the following:

	I-1	I-2
Adult Establishments		P
Massage Parlors other than Professional		C
Relaxation Therapy and Related Services		C

SECTION III

Section 402 of the Ordinance is hereby amended by adding to it a new Section, to be codified as Section 402.34 and to read as follows:

Section 402.34. Definitions.

1. The term “Adult Establishments” as used in Section 402.33 shall be defined to include any commercial establishment, business, or service which offers, as its principal or predominant stock or trade, sexually oriented material, devices, or paraphernalia or specified sexual activities, or any combination or form thereof, whether printed, filmed, recorded, or live, or which commercial establishment, business, or service is distinguished or characterized by an emphasis on matter depicting, describing, or relating to sex.
2. The term “sexually oriented material” as used in subsection 1, above, shall be defined to include any book, article, magazine, publication or written matter of any kind, drawing, etching, painting, photograph, motion picture in any format, film, or sound recording which depicts sexual activity, actual or simulated, involving human beings or which exhibits specified anatomical areas.
3. The term “specified sexual activities” as used in subsection 1, above, shall be defined to include the exhibition of human genitals in a state of sexual stimulation or arousal; acts of human masturbation, sexual intercourse, or sodomy; fondling or other erotic touching of human genitals, pubic region, buttock or female breast.
4. The term “specified anatomical areas” as used in subsection 2, above, shall be defined to include less than completely and opaquely covered human genitals, pubic region, buttock, anus or anal cleft, female breast below a point immediately above the top of the areola, and human male genitals in a discernibly turgid state, even if completely and opaquely covered.

SECTION IV

Section 402 of the Ordinance is hereby amended by adding to it a new Section to be codified as 402.35 and to read as follows:

402.35. Permissible Locations of Adult Establishments within I-2 Zoning District.

1. No Adult Establishment shall be located (i) within 500 feet of any other Adult Establishment; or (ii) within 1,000 feet of a public or private educational facility including child day care facilities, nursery schools, preschools, kindergartens, elementary schools, intermediate schools, junior schools, high schools, special education schools, junior colleges, colleges, and universities, all including the school grounds but not including facilities used primarily for another purpose and only incidentally as a school; a public park; or the boundary line of a residential zoning district.
2. Measurements made in accordance with subsection 1, above, shall be in a straight line as the crow flies and made in the following fashion:
 - a. In the case of a building, from the ingress or egress door(s) of the Adult Establishment to the point on the building closest in proximity to the said ingress or egress door(s);
 - b. In the case of a public park or of school grounds, from the ingress or egress door(s) of the Adult Establishment to the point on the boundary line of the public park or school grounds closest in proximity to the said ingress or egress door(s);
 - c. In the case of a residential zoning district, from the ingress or egress door(s) of the Adult Establishment to the point on the boundary line of the residential zoning district closest in proximity to the said ingress or egress door(s); and
 - d. In the case of another Adult Establishment, from the ingress or egress door(s) of one Adult Establishment to the ingress or egress door(s) of another Adult Establishment.

SECTION V

The Development Ordinance and Ordinance 01-12 are hereby amended in accordance with the foregoing provisions.

SECTION VI

This ordinance shall be effective immediately upon passage by the City of Richmond Board of Commissioners.

ORDINANCE NO. 04-20

AN ORDINANCE OF THE CITY OF RICHMOND, KENTUCKY REGULATING VIEWING AREAS WITHIN, AND HOURS OF OPERATION OF, ADULT ESTABLISHMENTS

WHEREAS, many adult establishments exist wherein enclosed rooms, including booths, stalls, or cubicles, are provided to persons for a fee for the purpose of viewing adult entertainment; and

WHEREAS, studies performed in a substantial number of communities around the country indicate that such enclosed rooms have been used by patrons and customers of such adult establishments for the purpose of engaging, anonymously or otherwise, in sexual acts which cause blood, semen, urine, or excrement to be deposited on the floors and/or walls of such enclosed rooms; and

WHEREAS, these studies also found that closed booth activities are likely to foster a pattern of conduct inimical to public health and that such enclosed rooms encourage unsanitary sexual activity and per se present a health risk; and

WHEREAS, the health risks associated with such activity include the possible spread of the AIDS virus, hepatitis-B virus, and other sexually transmitted diseases because tracking of potentially infected parties is not possible given the often anonymous nature of the sexual encounter; and

WHEREAS, adult establishments have been shown to have deleterious secondary effects on the surrounding neighborhood and the public at large, causing, among other adverse secondary effects, increased crime, diminution of surrounding property values, urban blight, the spread of sexually transmitted and communicable diseases, and unlawful or dangerous sexual activities including prostitution, indecent exposure, and public or indiscriminate sexual conduct; and

WHEREAS, the Board of Commissioners for the City of Richmond, Kentucky does find that the regulation of enclosed rooms within adult establishments as hereinafter set forth and the restriction of the hours of operation of adult establishments will function to ameliorate these deleterious secondary effects; and

WHEREAS, the Board of Commissioners for the City of Richmond, Kentucky does further find that the regulation of the hours of operation of adult establishments will function to assist in the deterrence of criminal or unlawful activities in the neighborhood at night and, hence, in the lessening of the deleterious secondary effects associated with adult establishments;

NOW, THEREFORE, be it ordained as follows:

SECTION I

DEFINITIONS

1. The term “adult establishment” shall be defined to include any commercial establishment, business, or service which: (i) offers, as a principal stock or trade, sexually oriented material, devices, or paraphernalia or specified sexual activities, or any combination or form thereof, whether printed, filmed, recorded, or live, or (ii) is distinguished or characterized by an emphasis on matter depicting, describing, or relating to sex.
2. A commercial establishment, business, or service shall be deemed to “offer, as a principal stock or trade, sexually oriented material, devices, or paraphernalia or specified sexual activities or any combination or form thereof” or to be “distinguished or characterized by an emphasis on matter depicting, describing, or relating to sex” if at any time:
 - (a) The commercial establishment, business, or service (i) designates all or a portion of its premises as for adults only, or has a policy of excluding minors from its premises or from a portion of its premises, and (ii) offers for sale or rent sexually oriented material, devices, or paraphernalia or specified sexual activities, or any combination or form thereof; or
 - (b) The commercial establishment, business, or service devotes greater than 15% of its wall, counter, shelf, or other display space in actual use and which is open to its customers to sexually oriented material, devices, paraphernalia, or specified sexual activities or any combination thereof; or
 - (c) The commercial establishment, business, or service derives greater than 15% of its gross revenue from the sale or rental of sexually oriented material, devices, paraphernalia, or specified sexual activities or any combination thereof; or
 - (d) The commercial establishment, business, or service advertises (i) in a manner visible from the outside of the business premises, or (ii) in the media, including the internet, or (iii) in the “Yellow Pages” or a similar format, the availability of sexually oriented material, devices, or paraphernalia or specified sexual activities or any combination thereof; or
 - (e) The commercial establishment, business, or service devotes more than 150 square feet or more than 15% of its floor space, excluding hallways, walkways between display areas, restrooms, storage area, check-out area, and areas not open to its patrons or customers, to the sale or display of sexually oriented material, devices, or paraphernalia or specified sexual activities or any combination thereof; or
 - (f) The commercial establishment, business, or service devotes more than 150 square feet of display space to sexually oriented material, devices, or paraphernalia or specified sexual activities or any combination thereof.
3. The term “sexually oriented material” shall be defined to include any book, article, magazine, publication or written matter of any kind, drawing, etching, painting, photograph, motion picture in any format, film, or sound recording which depicts sexual activity, actual or simulated, involving human beings or which exhibits specified anatomical areas.

4. The term “sexually oriented devices or paraphernalia” shall be defined to include any item designed as, packaged as, or sold as an item for use in connection with sexual activity, actual or simulated, involving human beings, but excluding birth control devices and massage or aromatherapy ointments or lotions.
5. The term “specified sexual activities” shall be defined to include the exhibition of human genitals in a state of sexual stimulation or arousal; acts of human masturbation, sexual intercourse, or sodomy, fondling or other erotic touching of human genitals, pubic region, buttock or female breast.
6. The term “specified anatomical areas” shall be defined to include less than completely and opaquely covered human genitals, pubic region, buttock, anus or anal cleft, female breast below a point immediately above the top of the areola, and human male genitals in a discernibly turgid state, even if completely and opaquely covered.

SECTION II

REGULATION OF VIEWING AREAS

An adult establishment, except as otherwise provided by laws more restrictive, shall meet the requirements set forth in this section:

1. All walls or partitions within an adult establishment which are situated so as to create a viewing area in which or from which live entertainment may be viewed or in which any amusement device or viewing screen, including, without limitation, television screens, movie screens, or monitors (hereinafter, a “Viewing Area”) is located shall be constructed of not less than one hour fire-restrictive material and shall contain no holes, openings, or other perforations except those intended for use as, and actually in use as, openings for electric switches and outlets or ventilation. Ventilation openings may be located only one foot from the bottom of walls and shall be covered by a permanently affixed ventilation cover. Under no circumstances shall any wall or partition have an opening of any kind between viewing booths, rooms, or areas.
2. Any adult establishment which contains any Viewing Area in which or from which live entertainment may be viewed or in which any amusement device or viewing screen, including, without limitation, television screens, movie screens, or monitors, is located shall comply with the following requirements:
 - (a) The interior of the adult establishment shall be configured such that all such Viewing Areas shall be open to public view at all times from the common areas of the establishment, and there shall not be any doors, curtains, blinds, walls, merchandise, display racks, or other structures, materials, or devices or any kind or description that at any time obstruct observation of the interior of such Viewing Areas from the common areas of the establishment;
 - (b) The width of the entryway into each such Viewing Area shall be equal to the width of the viewing area. If additional load-bearing capacity shall be necessitated given such width, support

columns or pillars, of a width not to exceed the minimum width necessary to provide the needed level of structural support, shall be utilized in lieu of solid walls;

- (c) Seating within a Viewing Area shall be of a stool-type construction without seat backs or sides;
- (d) No more than one patron or customer shall at any time occupy any Viewing Area 150 square feet or less;
- (d) No restroom shall contain any video reproduction equipment, screen, or monitor of any kind;
- (e) The premises shall be equipped with overhead lighting fixtures of sufficient intensity to illuminate every place to which patrons are permitted access at an illumination level of not less than five footcandles measured at the floor level, and the premises shall be so illuminated at all times any patron is present in the premises.

SECTION III

HOURS OF OPERATION

No adult establishment shall be open to the public between the hours of (i) midnight and 8:00 a.m. Monday through Saturday; or (ii) midnight Saturday and 8:00 a.m. Monday.

SECTION IV

COMPLIANCE DEADLINE

Any adult establishment which shall require a reconfiguration of its interior in order to come into compliance with the provisions of this ordinance shall have 90 days from the date of the adoption of this ordinance within which to do so.

SECTION V

INSPECTION

The Office of Codes Enforcement shall have the right, exercisable during business hours, to inspect the interior of all adult establishments to determine whether the adult establishment has brought itself into, and remains, in compliance with the provisions of this ordinance.

SECTION VI

VIOLATIONS

1. Any violation of the provisions of Section II of this ordinance shall be a Class A misdemeanor punishable by a fine of not less than \$250.00 nor more than \$500.00, or imprisonment for not less than 30 nor more than 365 days, or both fine and imprisonment,

and each day the violation shall exist shall be considered to be a separate offense. Any agent, servant, or employee on the premises at the time of the discovery of a violation of Section II of this ordinance, together with the owner(s) of the adult establishment, shall have responsibility for such violation. The term “owner” for purposes of this provision shall be defined to include, in the case of a proprietorship, the proprietor(s), in the case of a partnership, the partners, in the case of a limited liability company, the members, and in the case of a corporation, the officers, directors, and shareholders.

2. Any violation of the provisions of Section III of this ordinance shall be a Class A misdemeanor punishable by a fine of not less than \$250.00 nor more than \$500.00, or imprisonment for not less than 30 nor more than 365 days, or both fine and imprisonment, for each offense. Any agent, servant, or employee on the premises at the time of a violation of Section III of this ordinance shall have responsibility for such violation.

SECTION VII

SEVERABILITY

Each section and provision of this ordinance is hereby declared to be independent of each other section and provision. If any section or provision, or the application thereof to any person, entity, or circumstance, is held to be invalid, the remaining sections or provisions and the application of such sections or provisions to any person, entity, or circumstance other than that to which it is held invalid shall not be affected thereby.

This Ordinance shall be in full force and effect upon second reading, adoption and publication according to law.

The City Clerk shall cause this Ordinance to be published in accordance with the appropriate Kentucky Revised Statutes.

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**City of Richmond
Planning and Zoning**

(859) 623-1000
239 West Main Street
Richmond, KY 40475

Appendix L

Storm Water Calculation Worksheet

Project/Applicant name: _____

Pre-Development Area

Total area of lot/parcel _____ acres

One (1) acre contains 43,560 sq/ft

Total area of lot/parcel _____ sq/ft

Land-Disturbing Activity is any activity that results in movement of earth, or a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling, excavation, and compaction associated with stabilization of structures and road construction.

LAND DISTURBING ACTIVITY, STABILIZATION, VOLUME OF CUT/FILL

Impervious surface is a hard surface that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, packed earthen materials, or other surfaces which similarly impede the natural infiltration of storm water.

STORM WATER CALCULATIONS – IMPERVIOUS SURFACE

NEW/PROPOSED

**Total New/
Proposed** _____ sq/ft

Percentage
Impervious Area _____ %

EXISTING

**Total
Existing** _____ sq/ft

Percentage
Impervious Area _____ %

Calculate the total area to be cleared, graded, filled, excavated, and/or compacted for proposed development project. Include in this calculation the area to be cleared for:

Indicate Total Volumes of Proposed:

Cut _____ (cu/yd) **Fill** _____ (cu/yd)

Storm Water Detention/Retention Design

(Attach separate sheets to show cross-sections and details)

Ref. Attachments: YES NO

Total Storage Required: _____ cu.ft.

Dimensions: _____

Material: _____ Type: _____

Comments: _____

Outlet Structure Design

(Attach separate sheet to show outlet structure detail)

Ref. Attachments: YES NO

Material: _____

2 Yr Inlet: _____ (size) _____ (elev.) Storage: _____ cu.ft.

25 Yr Inlet: _____ (size) _____ (elev.) Storage: _____ cu.ft.

100 Yr Inlet: _____ (size) _____ (elev.) Storage: _____ cu.ft.

Outlet: _____ (size) _____ (elev.) _____ (material)

* Attach plat/plan sheet showing entire site development with storm sewer system improvements to be installed on development with catch basins, man holes, junction boxes, outlet structures, proposed contours, existing contours, easements, structure details, and etc. that pertain to the installation and maintenance of the completed storm sewer system.

ENGINEER & APPLICANT SIGNATURE

By signing the Storm Water Calculation Worksheet, I as the engineer attest that the information provided herein was calculated by me and is true and correct to the best of my knowledge.

(FIRM NAME)
(WET STAMP)

(ENGINEER SIGNATURE)

(DATE)



By signing the Storm Water Calculation Worksheet, I as the applicant/owner attest that the information provided herein is true and correct to the best of my knowledge. I also certify that this application is being made with the full knowledge and consent of all owners to install the aforementioned improvements to the affected property as stated in this application.

(LANDOWNER OR AUTHORIZED SIGNATURE)

(DATE)

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Appendix M

Corrugated Plastic Storm Sewer Pipe and Culverts

General

Corrugated Plastic Pipe and Fittings shall be made of High Density Polyethylene (HDPE) and conforming to ASTM F2306, current edition. It shall have a smooth interior waterway with exterior corrugations. Recycled resin shall not be allowed unless specific prior approval is given. All acceptable pipe manufacturers and diameters are listed by the National Transportation Product Evaluation Program (NTPEP) and can be found at www.ntpep.org.

Application

In general, HDPE pipe and fittings are used for storm water, gravity-flow drainage and storage.

Joint Options

1. Plain-end or non-gasket joint shall include an internal or external coupler or seal that meets the design criteria of a soil-tight or water-tight system, whichever is applicable.
2. Integral bells and spigots shall include a gasket that conforms to ASTM F477.

Installation

Corrugated Plastic Pipe and Fittings installed under pavement shall be bedded and backfilled with crushed stone. The bedding and backfill shall be installed per local city standards or those defined in the KYTC standard drawings and specifications, latest edition. Additional resources and guidance should be attained from the manufacturer's recommendation, or ASTM D2321.

Material shall be worked in such a way as to insure proper installation and compaction in the haunch areas. Material shall be free of larger cobblestone, shot rock, frozen lumps, or other objectionable material.

Backfill shall be placed in lifts as indicated by city standards, KYTC specifications, manufacturer's recommendation or ASTM D2321; and compacted accordingly. The minimum backfill shall cover the pipe to a depth of one foot unless otherwise directed by the engineer.

Corrugated Plastic Pipe installed outside of pavement or traffic areas may be backfilled up to the top of the pipe with crushed stone and appropriately compacted. The remainder of the backfill must be free of large cobblestone, shot rock, frozen lumps, or other objectionable material that may come into contact with the pipe. Refer to ASTM D2321 or pipe manufacturer's installation recommendations.

Final depth of cover over HDPE pipe and fittings shall be a minimum of one-foot for pipe sizes 15 to 48-inches in diameter. Two-feet of final cover shall be required for larger pipe sizes. During construction activities with heavy machinery, two-feet of cover shall be maintained over the pipe and fittings.

Trench width shall comply with city standards, KYTC Standard Drawing Details, manufacturer's recommendations, or ASTM D2321. As a minimum, the trench should be wide enough so that proper bedding, backfilling, and compaction are achievable and that there is enough room for the appropriate compaction equipment to fit between the pipe and the trench wall.

In general, the minimum trench shall be Pipe O.D. + 24 inches for pipe sizes 15 to 36-inches, and 1.25 x pipe O.D. + 24 inches for pipe sizes 42 to 60-inches.

Minimal storm sewer pipe and culvert diameter is 15 inches.

The City of Richmond will require mandatory camera testing of 50% of all installed pipe regardless of material type. This will require the inclusion of a Bid Item/Bond Amount for "Pipeline Video Inspection" on all storm system the City will maintain. A digital copy of the pipeline inspection as well as a plat noting areas of the storm lines that were cameral will be a required submittal to the Planning and Zoning Office before any bonds or letters of credits will be reviewed. All high traffic areas are mandatory for video inspection.

The "Pipeline Video Inspection" will be required on previous, current, existing and future developments with storm sewer system that the City will maintain.

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Appendix N

Minimum Requirements Applicable to Recreational Vehicle (RV) Parks

Any Recreational Vehicle (RV) Park, as that term is defined in this ordinance, shall:

- (a) Be a minimum size of five (5) acres;
- (b) Include a buffer not less than fifty (50) feet in width with protective screening or fencing on all sides of the property which abut any residential or public/semi-public zoning district or any public right-of-way;
- (c) Include a buffer not less than twenty-five (25) feet in width with protective screening or fencing on all sides of the property which abut an business, industrial, or agricultural zoning district;
- (d) Have direct access to an arterial highway with no portion of any entrance or exit traversing or entering within a residential or public/semi-public zoning district;
- (e) Not include any permanent housing units, including manufactured or mobile homes; and
- (f) Comply with all Kentucky administrative regulations and statutory provisions relating to Recreational Vehicle Parks including, without limitation, those set forth in Kentucky Revised Statutes 219.310 to 210.410.

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Appendix O

FLOOD DAMAGE PREVENTION ORDINANCE

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ARTICLE 1. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

SECTION A. STATUTORY AUTHORIZATION

The Legislature of the Commonwealth of Kentucky has in Kentucky Revised Statutes delegated to local government units the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City of Richmond of Madison County, Kentucky, hereby adopts the following floodplain management ordinance, as follows:

SECTION B. FINDINGS OF FACT

- 1) The flood hazard areas of the City of Richmond are subject to periodic inundation which result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all which adversely affect the public health, safety, and general welfare.
- 2) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increased flood height and velocity, and by the location in flood hazard areas of uses vulnerable to floods or hazardous to other lands which are inadequately elevated, flood-proofed, or otherwise protected from flood damage.

SECTION C. STATEMENT OF PURPOSE

It is the purpose of this ordinance to promote the public health, safety, and general welfare and to minimize public and private loss due to flooding by provisions designed to:

- 1) Restrict or prohibit uses which are dangerous to health, safety, and property due to water erosion hazards, or which result in damaging increases in erosion or in flood height or velocity;
- 2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- 3) Control the alteration of natural floodplains, stream channels, and natural protective barriers which accommodate or channel flood waters;
- 4) Control filling, grading, dredging, and other development which may increase erosion or flood damage, and;
- 5) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other areas.

SECTION D. OBJECTIVES

The objectives of this ordinance are to:

- 1) Protect human life and health;
- 2) Minimize expenditure of public money for costly flood control projects;
- 3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- 4) Minimize prolonged business interruptions;
- 5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines; streets and bridges located in areas of special flood hazard;
- 6) Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard or other flood-prone areas in such a manner as to minimize future flood blighted areas caused by flooding; and,
- 7) Ensure that potential homebuyers are on notice that property is in a Special Flood Hazard Area.
- 8) Ensure that those who occupy a Special Flood Hazard Area assume responsibility for their actions.

ARTICLE 2. DEFINITIONS

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

A Zone - Portions of the special flood hazard area (SFHA) in which the principle source of flooding is runoff from rainfall, snowmelt, or a combination of both. In A zones, floodwaters may move slowly or rapidly, but waves are usually not a significant threat to structures. Areas of 100-year flood, base flood elevations and flood hazard factors are not determined.

Abatement - When there is reason to believe that the violation poses a serious threat to the public health, safety or welfare; or in situations where damage resulting from continuation of the violation would be irreparable or irreversible; or if the violation represents a continuing public nuisance, the government may, without further notice, proceed to abate the conditions. In the case of a continuing public nuisance, abatement involving the removal of structures or materials shall only take place after a civil citation has been issued and has not been appealed to the Ordinance Enforcement Board, or after an appealed civil citation has been upheld by the Ordinance Enforcement Board. The government may, in addition to any fine imposed herein, charge the responsible person, persons or entities with the cost of abatement, including equipment expense; disposal fee, if any; and an administrative fee of one thousand dollars (\$1000.00). The City of Richmond may file a lien for such abatement, in accordance with this ordinance and KRS 65.8835. Citations, if issued, shall not preclude the government from abating the conditions and billing the responsible person, persons or entities for the cost of abatement.

Accessory structure (Appurtenant structure) - A structure located on the same parcel of property as the principle structure, the use of which is incidental to the use of the principle structure. Accessory structures should constitute a minimal initial investment, may not be used for human habitation, and should be designed to have minimal flood damage potential. Examples of accessory structures are detached garages, carports, storage sheds, pole barns, and hay sheds.

Accessory use - A use which is incidental and subordinate to the principal use of the parcel of land on which it is located.

Addition (to an existing structure) - Any walled and roofed expansion to the perimeter of a structure in which the addition is connected by a common load-bearing wall other than a firewall. Any walled and roofed addition, which is connected by a firewall or is separated by independent perimeter load-bearing walls, is new construction.

A1-30 and AE zones - Special Flood Hazard Areas inundated by the 1% annual chance flood (100-year flood). Base flood elevations (BFEs) are determined.

AH zone - An area of 100-year shallow flooding where depths are between 1 and 3 feet (usually shallow ponding). Base flood elevations are shown.

AO zone - An area of 100-year shallow flooding where water depth is between one and three feet (usually sheet flow on sloping terrain) Flood depths are shown.

Appeal - A request for a review of the Floodplain Administrator's interpretation of any provision of this ordinance or from the floodplain administrator's ruling on a request for a variance.

AR/A1 – A30, AR/AE, AR/AH, AR/AO, and AR/A zones - Special Flood Hazard Areas (SFHAs) that result from the de-certification of a previously accredited flood protection system that is in the process of being restored to provide a 100-year or greater level of flood protection. After restoration is complete these areas will still experience residual flooding from other flooding sources.

A99 zone - That part of the SFHA inundated by the 100-year flood which is to be protected from the 100-year flood by a Federal flood protection system under construction. No base flood elevations are determined.

Area of shallow flooding - A designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) where the base flood depths range from one to three feet, there is no clearly defined channel, the path of flooding is unpredictable and indeterminate; and velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

B and X zones (shaded) - Areas of the 0.2% annual chance (500-year) flood, areas subject to the 100-year flood with average depths of less than one foot or with contributing drainage area less than 1 square mile, and areas protected by levees from the base flood.

Base flood - A flood which has a one percent chance of being equaled or exceeded in any given year (also called the "100-year flood"). Base flood is the term used throughout this ordinance.

Base Flood Elevation (BFE) - The elevation shown on the Flood Insurance Rate Map (FIRM) for Zones AE, AH, A1-30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO that indicates the water surface elevation resulting from a flood that has a 1-percent or greater chance of being equaled or exceeded in any given year.

Basement - That portion of a structure having its floor subgrade (below ground level) on all four sides.

Building - A walled and roofed structure that is principally aboveground; including a manufactured home, gas or liquid storage tank, or other man-made facility or infrastructure. See definition for structure.

C and X (unshaded) zones - Areas determined to be outside the 500-year floodplain.

Community - A political entity having the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.

Community Rating System (CRS) - A program developed by the Federal Insurance Administration to provide incentives to those communities in the Regular Program to go beyond the minimum floodplain management requirements to develop extra measures for protection from flooding.

Community Flood Hazard Area (CFHA) - An area that has been determined by the Floodplain Administrator (or other delegated, designated, or qualified community official) from available technical studies, historical information, and other available and reliable sources, which may be subject to periodic inundation by floodwaters that can adversely affect the public health, safety and general welfare. Included are areas downstream from dams.

Critical Development – Critical development is that which is critical to the community's public health and safety; is essential to the orderly functioning of a community; store or produce highly volatile, toxic or water-reactive materials; or house occupants that may be insufficiently mobile to avoid loss of life or injury. Examples of critical development include jails, hospitals, schools, daycare facilities, public and private utilities, fire stations, emergency operation centers, police facilities, nursing homes, wastewater treatment facilities, water plants, gas/oil/propane storage facilities, hazardous waste handling and storage facilities and other public equipment storage facilities.

Critical facility - Any property that, if flooded, would result in severe consequences to public health and safety or a facility which, if unusable or unreachable because of flooding, would seriously and adversely affect the health and safety of the public. Critical facilities include, but are not limited to: housing likely to contain occupants not sufficiently mobile to avoid injury or death unaided during a flood; schools, nursing homes, hospitals, police, fire and emergency response installations, vehicle and equipment storage facilities, emergency operations centers likely to be called upon before, during and after a flood, public and private utility facilities important to maintaining or restoring normal services before, during and after a flood, and those facilities or installations which produce, use or store volatile, flammable, explosive, toxic and/or water-reactive materials, hazardous materials or hazardous waste.

D zone - An area in which the flood hazard is undetermined.

Development - Any manmade change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of materials or equipment.

Elevated structure - A non-basement structure built to have the lowest floor elevated above ground level by means of fill, solid foundation perimeter walls, piling, columns (post and piers), shear walls, or breakaway walls. (See freeboard requirements for residential and non-residential structures.)

Elevation Certificate - A statement certified by a registered professional engineer or surveyor on the FEMA-approved form in effect at the time of certification that verifies a structure's elevation and other related information to verify compliance with this ordinance.

Emergency Program - The initial phase under which a community participates in the NFIP, intended to provide a first layer amount of insurance at subsidized rates on all insurable structures in that community before the effective date of the initial FIRM.

Enclosure - That portion of a structure below the Base Flood Elevation (BFE) used solely for parking of vehicles, limited storage, or access to the structure.

Encroachment - The physical advance or infringement of uses, plant growth, fill, excavation, structures, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

Existing construction - Any structure for which the “start of construction” commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. “Existing construction” may also be referred to as “Existing structures”.

Existing Manufactured Home Park or Subdivision - A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the first floodplain management ordinance adopted by the City of Richmond based on specific technical base flood elevation data which established the area of special flood hazards.

Expansion to an existing Manufactured Home Park or Subdivision - The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

Five-Hundred Year Flood - The flood that has a 0.2 percent chance of being equaled or exceeded in any year. Areas subject to the 500-year flood have a moderate to low risk of flooding.

Flood, Flooding, or Flood Water:

- 1) A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source; and/or mudslides (i.e. mudflows). See Mudslides.
- 2) The condition resulting from flood-related erosion. See flood-related erosion.

Flood Boundary and Floodway Map (FBFM) -A map on which the Federal Emergency Management Agency (FEMA) or Federal Insurance Administration (FIA) has delineated the areas of flood hazards and the regulatory floodway.

Flood Hazard Boundary Map (FHBM) -A map on which the boundaries of the flood, mudslide (i.e. mudflow), and flood-related erosion areas having special hazards have been designated as Zones A, M, and/or E by the Federal Emergency Management Agency (FEMA) or Federal Insurance Administration (FIA).

Flood Insurance Rate Map (FIRM) - A map on which the Federal Emergency Management Agency (FEMA) or Federal Insurance Administration (FIA) has delineated special flood hazard areas and risk premium zones.

Flood Insurance Study - The report provided by the Federal Emergency Management Agency (FEMA) or Federal Insurance Administration (FIA) containing flood profiles, the Flood Insurance Rate Map (FIRM), and/or the Flood Boundary Floodway Map (FBFM), and the water surface elevation of the base flood.

Floodplain or flood-prone area - Any land area susceptible to being inundated by flood waters from any source.

Floodplain Administrator - The individual appointed by a NFIP participating community to administer and enforce the floodplain management ordinances.

Floodplain Management - The operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing natural resources in the floodplain, including but not limited to emergency preparedness plans, flood control works, floodplain management ordinances, and open space plans.

Floodplain Management Regulations - This ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as grading and erosion control), and other applications of police power, which control development in flood-prone areas. This term describes federal, state and/or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

Floodproofing - Any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

Floodproofing Certificate - A certification by a registered professional engineer or architect, on a FEMA-approved form in effect at the time of certification stating that a non-residential structure, together with attendant utilities and sanitary facilities is watertight to a specified design elevation with walls that are substantially impermeable to the passage of water and all structural components are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy and anticipated debris impact forces.

Floodway - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. Also referred to as the “regulatory floodway”.

Floodway fringe - That area of the floodplain on either side of the regulatory floodway where encroachment may be permitted without additional hydraulic and/or hydrologic analysis.

Freeboard - A factor of safety, usually expressed in feet above the BFE, which is applied for the purposes of floodplain management. It is used to compensate for the many unknown factors that could contribute to flood heights greater than those calculated for the base flood. Freeboard must be applied not just to the elevation of the lowest floor or floodproofing level, but also to the level of protection provided to all components of the structure, such as building utilities, HVAC components, etc.

Fraud and victimization - As related in Article 6, **Appeals and Variance Procedures**, of this ordinance, means that the variance granted must not cause fraud on or victimization of the public. In examining this requirement, the City of Richmond will consider the fact that every newly constructed structure adds to government responsibilities and remains a part of the community for fifty to one hundred years. Structures that are permitted to be constructed below the base flood elevation are subject during all those years to increased risk of damage from floods, while future owners of the property and the community as a whole are subject to all the costs, inconvenience, danger, and suffering that those increased flood damages may incur. In addition, future owners may purchase the property, unaware that it is subject to potential flood damage, and can be insured only at very high flood insurance rates.

Functionally dependent use facility - A facility, structure, or other development, which cannot be used for its intended purpose unless it is located or carried out in close proximity to water. The term includes only a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, ship repair, or seafood processing facilities. The term does not include long-term storage, manufacture, sales, or service facilities.

Governing body - The local governing unit, i.e. county or municipality that is empowered to adopt and implement ordinances to provide for the public health, safety and general welfare of its citizenry.

Hazard potential - The possible adverse incremental consequences that result from the release of water or stored contents due to failure of a dam or misoperation of a dam or appurtenances. The hazard potential classification of a dam does not reflect in any way the current condition of a dam and its appurtenant structures (e.g., safety, structural integrity, flood routing capacity).

Highest adjacent grade - The highest natural elevation of the ground surface, prior to construction, next to the proposed walls of a structure.

Historic Structure - Any structure that is:

- 1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- 2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district.
- 3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- 4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a) By an approved state program as determined by the Secretary of the Interior, or
 - b) Directly by the Secretary of the Interior in states without approved programs.

Increased Cost of Compliance (ICC) – Increased cost of compliance coverage provides for the payment of a claim for the cost to comply with State or community floodplain management laws or ordinances after a direct physical loss by flood. When a building covered by a Standard Flood Insurance Policy under the NFIP sustains a loss and the state or community declares the building to be substantially or repetitively damaged, ICC will help pay up to \$30,000 for the cost to elevate, floodproof, demolish, or remove the building.

ICC coverage is available on residential and non-residential buildings (this category includes public or government buildings, such as schools, libraries, and municipal buildings) insured under the NFIP.

Kentucky Revised Statute 151.250 - Plans for dams, levees, etc. to be approved and permit issued by cabinet – (Environmental and Public Protection Cabinet)

(1) Notwithstanding any other provision of law, no person and no city, county, or other political subdivision of the state, including levee districts, drainage districts, flood control districts or systems, or similar bodies, shall commence the construction, reconstruction, relocation or improvement of any dam, embankment, levee, dike, bridge, fill or other obstruction (except those constructed by the Department of

Highways) across or along any stream, or in the floodway of any stream, unless the plans and specifications for such work have been submitted by the person or political subdivision responsible for the construction, reconstruction or improvement and such plans and specifications have been approved in writing by the cabinet and a permit issued. However, the cabinet by regulation may exempt those dams, embankments or other obstructions which are not of such size or type as to require approval by the cabinet in the interest of safety or retention of water supply.

(2) No person, city, county or other political subdivision of the state shall commence the filling of any area with earth, debris, or any other material, or raise the level of any area in any manner, or place a building, barrier or obstruction of any sort on any area located adjacent to a river or stream or in the floodway of the stream so that such filling, raising or obstruction will in any way affect the flow of water in the channel or in the floodway of the stream unless plans and specifications for such work have been submitted to and approved by the cabinet and a permit issued as required in subsection (1) above.

(3) Nothing in this section is intended to give the cabinet any jurisdiction or control over the construction, reconstruction, improvement, enlargement, maintenance or operation of any drainage district, ditch, or system established for agricultural purposes, or to require approval of the same except where such obstruction of the stream or floodway is determined by the cabinet to be a detriment or hindrance to the beneficial use of water resources in the area, and the person or political subdivision in control thereof so notified. The Kentucky Bureau of Surface Mining through KRS Chapter 350 shall have exclusive jurisdiction over KRS Chapter 151 concerning the regulation of dams, levees, embankments, dikes, bridges, fills, or other obstructions across or along any stream or in the floodway of any stream

which structures are permitted under KRS Chapter 350 for surface coal mining operations.

Kentucky Revised Statute 151.320 - Officers required to enforce law.

(1) The mayor or chief executive officer of each city and the county judge/executive of each county, shall have the concurrent duty of enforcing with the cabinet, within their respective cities and counties, the provisions of KRS 151.250, 151.280 and 151.310 and rules and regulations issued thereunder.

(2) When a violation of KRS 151.250, 151.280 or 151.310 within their jurisdiction is brought to the attention of a mayor or chief executive officer of a city or a county judge/executive, he shall immediately notify the cabinet of the location and details of such violation.

Letter of Map Change (LOMC) – Is an official FEMA determination, by letter, to amend or revise effective Flood Insurance Rate Maps, Flood Boundary and Floodway Maps, and Flood Insurance Studies. LOMC's include the following categories:

- 1) **Letter of Map Amendment (LOMA)** – A revision based on technical data showing that a property was incorrectly included in a designated SFHA. A LOMA amends the current effective FIRM and establishes that a specific property is not located in a SFHA.
- 2) **Letter of Map Revision (LOMR)** - A revision based on technical data that, usually due to manmade changes, shows changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features.
- 3) **Letter of Map Revision – Fill (LOMR F)** – A determination that a structure or parcel has been elevated by properly placed engineered fill above the BFE and is, therefore, excluded from the SHFA.

Levee - A man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

Levee System - A flood protection system that consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

For a levee system to be recognized, the following criteria must be met:

- 1) All closure devices or mechanical systems for internal drainage, whether manual or automatic, must be operated in accordance with an officially adopted operation manual (a copy of which must be provided to FEMA by the operator when levee or drainage system recognition is being sought or revised).
- 2) All operations must be under the jurisdiction of a Federal or State agency, an agency created by Federal or State law, or an agency of a community participating in the NFIP.

Limited storage - An area used for storage and intended to be limited to incidental items which can withstand exposure to the elements and have low flood damage potential. Such an area must be of flood resistant material, void of utilities except for essential lighting, and cannot be temperature controlled.

Lowest adjacent grade - The elevation of the sidewalk, patio, deck support, or basement entryway immediately next to the structure and after the completion of construction. It does not include earth that is emplaced for aesthetic or landscape reasons around a foundation wall. It does include natural ground or properly compacted fill that comprises a component of a structure's foundation system.

Lowest Floor - The lowest floor of the lowest enclosed area including basement. An unfinished or flood resistant enclosure, usable solely for parking of vehicles, structure access, or storage in an area other than a basement area is not considered a structure's lowest floor, **provided** that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

Manufactured Home - A structure, transportable in one or more sections, which is built on a permanent chassis and is designed to be used with or without a permanent foundation when connected or attached to the required utilities. The term also includes park trailers, travel trailers, and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property. The term "manufactured home" does not include a "recreational vehicle" (see Recreational Vehicle).

Manufactured home park or subdivision - A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Map - The Flood Hazard Boundary Map (FHBM) or the Flood Insurance Rate Map (FIRM) for a community issued by the Federal Emergency Management Agency (FEMA).

Map Panel Number - The four-digit number on a flood map, followed by a letter suffix, assigned by FEMA. The first four digits represent the map panel. The letter suffix represents the number of times the map panel has been revised. (The letter "A" is not used by FEMA, the letter "B" is the first revision.)

Market value - The structure value, excluding the land (as agreed between a willing buyer and seller), as established by what the local real estate market will bear. Market value can be established by independent certified appraisal, replacement cost depreciated by age of structure (Actual Cash Value) or adjusted assessed values.

Mean Sea Level (MSL) - The average height of the sea for all stages of the tide. For the purposes of the National Flood Insurance Program, the MSL is used as a reference for establishing various elevations within the floodplain as shown on a community's FIRM. For purposes of this ordinance, the term is synonymous with either National Geodetic Vertical Datum (NGVD) 1929 or North American Vertical Datum (NAVD) 1988.

Mitigation - Sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects. The purpose of mitigation is twofold: to protect people and structures, and to minimize the costs of disaster response and recovery.

Mudslide (i.e. mudflow) - Describes a condition where there is a river, flow, or inundation of liquid mud down a hillside, usually as a result of a dual condition of loss of brush cover and the subsequent accumulation of water on the ground, preceded by a period of unusually heavy or sustained rain. A mudslide (i.e. mudflow) may occur as a distinct phenomenon while a landslide is in progress, and will be recognized as such by the Floodplain Administrator only if the mudflow, and not the landslide, is the proximate cause of damage that occurs.

Mudslide (i.e. mudflow) area management - The operation of and overall program of corrective and preventative measures for reducing mudslide (i.e. mudflow) damage, including but not limited to emergency preparedness plans, mudslide control works, and floodplain management regulations.

Mudslide (i.e. mudflow) prone area - An area with land surfaces and slopes of unconsolidated material where the history, geology, and climate indicate a potential for mudflow.

National Flood Insurance Program (NFIP) - The federal program that makes flood insurance available to owners of property in participating communities nationwide through the cooperative efforts of the federal government and the private insurance industry.

National Geodetic Vertical Datum (NGVD) - As corrected in 1929, a vertical control used as a reference for establishing varying elevations within the floodplain. (Generally used as the vertical datum on the older FIRM's. Refer to FIRM legend panel for correct datum.)

New Construction - Structures for which the start of construction commenced on or after the effective date of the City of Richmond's floodplain management regulations and includes any subsequent improvements to such structures.

New manufactured home park or subdivision - A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the City of Richmond's adopted floodplain management ordinances.

Non-Residential – Structures that are not designed for human habitation, including but is not limited to: small business concerns, churches, schools, farm structures (including grain bins and silos), pool houses, clubhouses, recreational structures, mercantile structures, agricultural and industrial structures, warehouses, and hotels or motels with normal room rentals for less than 6 months duration.

North American Vertical Datum (NAVD) – As corrected in 1988, a vertical control used as a reference for establishing varying elevations within the floodplain. (Generally used on the newer FIRM's and Digitally Referenced FIRM's (DFIRM's). (Refer to FIRM or DFIRM legend panel for correct datum.)

Obstruction - Includes but is not limited to any dam, wall, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, structure, wire, fence, rock, gravel, refuse, fill, structure, vegetation or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water, due to its location, its propensity to snare or collect debris carried by the flow of water, or its likelihood of being carried downstream.

One-Hundred Year Flood (100-Year Flood) (see Base Flood) - The flood that has a 1-percent or greater chance of being equaled or exceeded in any given year. Any flood zone that begins with the letter A is subject to the 100-year flood. Over the life of a 30-year loan, there is a 26-percent chance of experiencing such a flood with the SFHA.

Participating Community - A community that voluntarily elects to participate in the NFIP by adopting and enforcing floodplain management regulations that are consistent with the standards of the NFIP.

Pre-FIRM Construction - Construction or substantial improvement, which started on or before December 31, 1974, or before the effective date of the initial FIRM of the community, whichever is later.

Post-FIRM Construction - Construction or substantial improvement that started on or after the effective date of the initial FIRM of the community or after December 31, 1974, whichever is later.

Probation - A means of formally notifying participating NFIP communities of violations and deficiencies in the administration and enforcement of the local floodplain management regulations. During periods of probation, each insurance policy is subject to a \$50 surcharge.

Program Deficiency - A defect in a community's floodplain management regulations or administrative procedures that impairs effective implementation of those floodplain management standards or of the standards of 44 CFR 60.3, 60.4, 60.5, and/or 60.6.

Public Safety and Nuisance - Anything which is injurious to safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

Recreational Vehicle - A vehicle that is:

- 1) Built on a single chassis;
- 2) 400 square feet or less when measured at the largest horizontal projection;
- 3) Designed to be self-propelled or permanently towable to a light duty truck; and
- 4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Regular Program - The phase of a community's participation in the NFIP where more comprehensive floodplain management requirements are imposed and higher amounts of insurance are available based upon risk zones and elevations determined in a FIS.

Regulatory floodway - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. See Base Flood.

Remedy a violation - The process by which a community brings a structure or other development into compliance with State or local floodplain management regulations, or, if this is not possible, to reduce the impact of non-compliance. Reduced impact may include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing state or federal financing exposure with regard to the structure or other development.

Repair - The reconstruction or renewal of any part of an existing structure.

Repetitive Loss - Flood-related damages sustained by a structure on two or more separate occasions during a 10-year period where the value of damages equals or exceeds an average of 50% of the current value of the structure, beginning on the date when the damage first occurred, or, four or more flood losses of \$1000.00 or more over the life of the structure, or, three or more flood losses over the life of the structure that are equal to or greater than the current value of the structure.

Riverine - Relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

Section 1316 - That section of the National Flood Insurance Act of 1968, as amended, which states that no new or renewal flood insurance coverage shall be provided for any property that the Administrator finds has been declared by a duly constituted state or local zoning authority or other authorized public body to be in violation of state or local laws, regulations, or ordinances that are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas.

Sheet flow area - see "Area of shallow flooding".

Special flood hazard area (SFHA) - That portion of the floodplain subject to inundation by the base flood and/or flood-related erosion hazards as shown on a FHBM or FIRM as Zone A, AE, A1 – A30, AH, AO, or AR. Any area outside the FEMA studied areas lying along streams as shown on the United States Department of the Interior Geological Survey (hereafter referred to as "USGS") quadrants of which City of Richmond is contained and/or areas with poorly draining or hydric soils which are contiguous to blue line streams as shown on the City of Richmond Flood Prone Area Map or Soil Survey shall also be considered special flood hazard areas.

Start of Construction (includes substantial improvement and other proposed new development) - The date a building permit is issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement or other improvement is within 180 days of the permit date. The actual start means the first placement of permanent construction of a structure (including manufactured home) on a site, such as the pouring of slabs or footings, the installation of piles, construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; the installation on the property of accessory structures, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the structure.

Structure - A walled and roofed building that is principally above ground; including manufactured homes, gas or liquid storage tanks, or other man-made facilities or infrastructures. See Building.

Subdivision - Any division, for the purposes of sale, lease, or development, either on the installment plan or upon any and all other plans, terms and conditions, of any tract or parcel of land into two (2) or more lots or parcels.

Subrogation - An action brought by FEMA to recover insurance money paid out where all or part of the damage can be attributed to acts or omissions by a community or other third party.

Substantial Damage - Means any damage to a building for which the cost of repairs equals or exceeds fifty percent of the market value of the building prior to the damage occurring. This term includes structures that are categorized as repetitive loss. Substantial damage also means flood related damage sustained by a structure on two (2) separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

For the purposes of this definition, “repair” is considered to occur when the first repair or reconstruction of any wall, ceiling, floor, or other structural part of the building commences.

The term does not apply to:

- a.) Any project for improvement of a building required to comply with existing health, sanitary, or safety code specifications which have been identified by the Code Enforcement Official and which are solely necessary to assure safe living conditions, or
- b.) Any alteration of a “historic structure” provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.

Substantial Improvement - Means any combination of reconstruction, alteration, or improvement to a building, taking place during a 5-year period, in which the cumulative percentage of improvement equals or exceeds fifty percent of the current market value of the building. For the purposes of this definition, an improvement occurs when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building.

The term does not apply to:

- a.) Any project for improvement of a building required to comply with existing health, sanitary, or safety code specifications which have been identified by the Code Enforcement Official and which are solely necessary to assure safe living conditions, or
- b.) Any alteration of a “historic structure” provided that the alteration will not preclude the structure’s continued designation as a “historic structure.” Or
- c.) Any building that has been damaged from any source or is categorized as repetitive loss.

Substantially improved existing manufactured home parks or subdivisions - Repair, reconstruction, rehabilitation, or improvement of the streets, utilities, and pads equaling or exceeding 50 percent of the value of the streets, utilities, and pads before the repair, reconstruction, or improvement commenced.

Suspension - Removal of a participating community from the NFIP for failure to enact and/or enforce floodplain management regulations required for participation in the NFIP. New or renewal flood insurance policies are no longer available in suspended communities.

Utilities - Includes electrical, heating, ventilation, plumbing, and air conditioning equipment.

Variance - Relief from some or all of the requirements of this ordinance.

Violation - Failure of a structure or other development to fully comply with this ordinance. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

Watercourse - A lake, river, creek, stream, wash, channel or other topographic feature on or over which water flows at least periodically.

Water surface elevation - The height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, (or other datum, where specified) of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

Watershed - All the area within a geographic boundary from which water, sediments, dissolved materials, and other transportable materials drain or are carried by water to a common outlet, such as a point on a larger stream, lake, or underlying aquifer.

X zone - The area where the flood hazard is less than that in the SFHA. Shaded X zones shown on recent FIRMs (B zones on older FIRMs) designate areas subject to inundation by the flood with a 0.2-percent probability of being equaled or exceeded (the 500-year flood) in any year. Unshaded X zones (C zones on older FIRMS) designate areas where the annual exceedance probability of flooding is less than 0.2 percent.

Zone - A geographical area shown on a Flood Hazard Boundary Map or a Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

ARTICLE 3. GENERAL PROVISIONS

SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES

This ordinance shall apply to all Special Flood Hazard Areas (SFHA), and, as determined by the Floodplain Administrator or other delegated, designated, or qualified community official as determined by the City of Richmond of Madison County from available technical studies, historical information, and other available and reliable sources, areas within the jurisdiction of the City of Richmond of Madison County which may be subject to periodic inundation by floodwaters that can adversely affect the public health, safety, and general welfare of the citizens of the City of Richmond.

SECTION B. BASIS FOR ESTABLISHING THE SPECIAL FLOOD HAZARD AREAS

The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in the Flood Insurance Study (FIS) for Madison County dated December 21, 2017 with the accompanying Flood Insurance Rate Maps (FIRMS), other supporting data and any subsequent amendments thereto, are hereby adopted by reference and declared to be a part of these regulations by the City of Richmond and for those land areas acquired by the City of Richmond through annexation. This FIS and attendant mapping is the minimum area of applicability of this ordinance and may be supplemented by studies for other areas which allow implementation of this ordinance and which are recommended to the City Council by the Floodplain Administrator and are enacted by City Council pursuant to statutes governing land use management regulations. The FIS and/or FIRM are permanent records of the City of Richmond and are on file and available for review by the public during regular business hours at the City of Richmond Planning and Zoning Office at 239 West Main Street, Richmond Kentucky.

In areas upstream of the Limit of Detail Study, as delineated on the community FIRM, where base flood elevation data is not available, a floodplain study must be performed by a Professional Engineer (PE) establishing the base flood elevation (BFE) and the floodplain and floodway boundaries, as well as future conditions flood hazard areas, prior to issuing a development permit.

SECTION C. ESTABLISHMENT OF DEVELOPMENT/LAND DISTURBANCE PERMIT

A Development/Land Disturbance Permit shall be required in conformance with the provision of this ordinance prior to the commencement of any development activities in the special flood hazard areas (SFHA). See Article 4, Section B for instructions and explanation.

Application for a Development/Land Disturbance permit shall be made on forms furnished by the Floodplain Administrator or authorized City personnel.

SECTION D. COMPLIANCE

No structure or land shall hereafter be constructed, located, extended, converted or structurally altered without full compliance with the terms of this ordinance and other applicable state regulations. Violation of the requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Nothing herein shall prevent the City of Richmond from taking such lawful action as is necessary to prevent or remedy any violation.

SECTION E. ABROGATION AND GREATER RESTRICTIONS

This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

SECTION F. INTERPRETATION

In the interpretation and application of this ordinance, all provisions shall be:

- 1) Considered minimum requirements;
- 2) Liberally construed in favor of the governing body; and,
- 3) Deemed neither to limit nor repeal any other powers granted under state statutes.

SECTION G. WARNING AND DISCLAIMER OF LIABILITY

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damage. This ordinance shall not create liability on the part of the City of Richmond or Madison County any officer or employee, the Commonwealth of Kentucky, the Federal Insurance Administration, or the Federal Emergency Management Agency, thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

SECTION H. ENFORCEMENT, VIOLATION NOTICE AND PENALTIES

- 1) Civil Offense: If, at any time, development occurs which is not in accordance with the provisions of this ordinance including obtaining or complying with the terms and conditions of a floodplain construction permit and any approved modifications, such development shall constitute a civil offense.
- 2) Notice of Violation: If, at any time, a duly authorized employee or agent of the Floodplain Administrator has reasonable cause to believe that a person has caused development to occur which is not in accordance with the provisions of this ordinance including obtaining or complying with the terms and conditions of a floodplain construction permit and any approved

modifications thereof, a duly authorized employee of the Floodplain Administrator shall issue a notice to the person responsible for the violation and/or the property owner, stating the facts of the offense or violation, the section of this ordinance and/or of the permit violated, when it occurred, how the violation is to be remedied to bring the development into conformity with this ordinance or with the approved permit, and within what period of time the remedy is to occur, which period of time shall be reasonable and shall be determined by the nature of the violation and whether or not it creates a nuisance or hazard. The remedy may include an order to stop work on the development. The notice shall also state that a citation may be forthcoming in the event that the requested remedies and corrective actions are not taken, which citation will request a civil monetary fine and shall state the maximum fine which could be imposed. See below.

- 3) Notice of Citation: Notice of Violation: If, at any time, a duly authorized employee or agent of the Floodplain Administrator has reasonable cause to believe that a person has caused development to occur which is not in accordance with the provisions of this ordinance including obtaining or complying with the terms and conditions of a floodplain construction permit and any approved modifications thereof, a duly authorized employee of the Floodplain Administrator may issue a citation to the offender stating the violation, prior notices of violation issued, how the violation is to be remedied to bring the development into conformity with this ordinance or with the approved permit, and within what period of time the remedy is to occur, and what penalty or penalties are recommended. When a citation is issued, the person to whom the citation is issued shall respond to the citation within seven (7) days of the date the citation is issued by either carrying out the remedies and corrections set forth in the citation, paying the civil fine set forth in the citation or requesting a hearing before the governing body. If the person to whom the citation is issued does not respond to the citation within seven (7) days, that person shall be deemed to have waived the right to a hearing and the determination that a violation occurred shall be considered final.
- 4) Penalties: Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with granting of a variance or special exceptions, shall constitute a misdemeanor civil offense. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be fined no less than \$5000.00 or imprisoned for not more than 30 days, or both, and in addition, shall pay all costs and expenses involved in the case, including the cost of abatement and fees. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent the Floodplain Administrator from taking such other lawful action as is necessary to prevent or remedy any violation.

ARTICLE 4. ADMINISTRATION

SECTION A. DESIGNATION OF LOCAL ADMINISTRATOR

The City of Richmond of Madison County hereby appoints the Director of Planning and Zoning, or their designee to administer, implement, and enforce the provisions of this ordinance by granting or denying development permits in accordance with its provisions, and is herein referred to as the Floodplain Administrator.

SECTION B. ESTABLISHMENT OF LAND DISTURBANCE PERMIT

A Development/Land Disturbance permit shall be obtained before any construction or other development begins within any special flood hazard area established in Article 3, Section B. Application for a Development/Land Disturbance Permit shall be made on forms furnished by Floodplain Administrator, or their designee prior to any development activities, and may include, but not be limited to, the following: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Endorsement of local administrator is required before a state floodplain construction permit can be processed. Specifically, the following information is required.

1) Application Stage

- a) Proposed elevation in relation to Mean Sea Level (MSL) of the proposed lowest floor (including basement) of all structures in Zone A and elevation of highest adjacent grade; or
- b) Proposed elevation in relation to Mean Sea Level to which any non-residential structure will be flood-proofed;
- c) All appropriate certifications from a registered professional engineer or architect that the non-residential flood-proofed structure will meet the flood-proofing criteria in Article 5, Section B (2) and Section D (2);
- d) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

2) Construction Stage

Upon placement of the lowest floor, **and before construction continues**, or flood proofing by whatever construction means, it shall be the duty of the permit holder to submit to the Floodplain Administrator and to the State a certification of the elevation of the lowest floor or flood-proofed elevation, as built, in relation to Mean Sea Level. In AE, A1-30, AH, and A zones where the Community has adopted a regulatory Base Flood Elevation, said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same.

When flood proofing is utilized for a particular structure, said certification shall be prepared by or under the direct supervision of a certified professional engineer or architect. Any continued work undertaken prior to the submission of the certification shall be at the permit holder's risk. The Floodplain Administrator shall review the lowest floor and flood proofing elevation survey data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

SECTION C. DUTIES AND RESPONSIBILITIES OF THE LOCAL ADMINISTRATOR

The Floodplain Administrator and/or staff is hereby appointed, authorized and directed to administer, implement and enforce the provisions of this ordinance. The Floodplain Administrator is further authorized to render interpretations of this ordinance, which are consistent with its spirit and purpose by granting or denying development permits in accordance with its provisions.

The duties and responsibilities of the Floodplain Administrator shall include, but not be limited to the following:

- 1) **Permit Review:** Review all Development/Land Disturbance permits to ensure that:
 - a) Permit requirements of this ordinance have been satisfied;
 - b) All other required state and federal permits have been obtained: Advise permittee that additional federal or state permits may be required, and if specific federal or state permit requirements are known, require that copies of such permits be provided and maintained on file with the development permit;
 - c) Flood damages will be reduced in the best possible manner;
 - d) The proposed development does not adversely affect the carrying capacity of affected watercourses. For purposes of this ordinance, "adversely affects" means that the cumulative effect of the proposed development when combined with all other existing and anticipated development will increase the water surface elevation of the base flood more than one foot at any point.
- 2) **Review and Use of Any Other Base Flood Data.** When base flood elevation data has not been provided in accordance with Article 3, Section B, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal or state agency, or other source, in order to administer Article 5. Any such information shall be submitted to the City of Richmond for adoption.
- 3) **Notification of Other Agencies:**

- a) Notify adjacent communities, the Kentucky Division of Water, and any other federal and/or state agencies with statutory or regulatory authority prior to any alteration or relocation of the watercourse, and
 - b) Submit evidence of such notification to the Federal Insurance Administration, Federal Emergency Management Agency (FEMA); and
 - c) Assure that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained.
- 4) **Documentation of Floodplain Development.** Obtain and maintain for public inspection and make available as needed the following:
- a) Certification required by Article 5, Section B (1) (lowest floor elevations) as shown on a completed and certified **Elevation Certificate**. Verify and record the actual elevation (in relation to Mean Sea Level) of the lowest floor (including basement) of all new or substantially improved structures, in accordance with Article 4, Section B (2);
 - b) Certification required by Article 5, Section B (2) (elevation or floodproofing of nonresidential structures) as shown on a completed and certified floodproofing certificate. Verify and record the actual elevation (in relation to Mean Sea Level) to which the new or substantially improved structures have been flood-proofed, in accordance with Article 4, Section B (2);
 - c) Certification required by Article 5, Section B (3) (elevated structures),
 - d) Certification of elevation required by Article 5, Section E (1) (subdivision standards),
 - e) Certification required by Article 5, Section B (5) (floodway encroachments),
 - f) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished;
 - g) Review certified plans and specifications for compliance;
 - h) Remedial Action. Take action to remedy violations of this ordinance as specified in Article 3, Section H.
- 5) **Map Determinations.** Make interpretations where needed, as to the exact location of the boundaries of the special flood hazard areas, for example, where there appears to be a conflict between a mapped boundary and actual field conditions.
- a) Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make the necessary

interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Article 6, Section (3) b;

- b) When base flood elevation data or floodway data have not been provided in accordance with Article 3, Section B, then the Floodplain Administrator shall obtain, review, and reasonable utilize any base flood elevation and floodway data available from a federal, state, or other source, in order to administer the provisions of Article 5;
- c) When flood-proofing is utilized for a particular structure, the Floodplain Administrator shall obtain certification from a registered professional engineer or architect, in accordance with Article 5, Section B (2) a floodproofing certificate;
- d) All records pertaining to the provisions of this ordinance shall be maintained in the office of the Floodplain Administrator and shall be open for public inspection.

6) **Right of Entry.**

- a) Whenever necessary to make an inspection to enforce any of the provisions of this ordinance, or whenever the administrator has reasonable cause to believe that there exists in any structure or upon any premises any condition or ordinance violation which makes such building, structure or premises unsafe, dangerous or hazardous, the administrator, or their designee, may enter such building, structure or premises at all reasonable times to inspect the same or perform any duty imposed upon the administrator by this ordinance.
- b) If such structure or premises are occupied, he/she shall first present proper credentials and request entry. If such building, structure, or premises are unoccupied, he shall first make a reasonable effort to locate the owner or other persons having charge or control of such request entry.
- c) If entry is refused, the administrator shall have recourse to every remedy provided by law to secure entry.
- d) When the administrator shall have first obtained a proper inspection warrant or other remedy provided by law to secure entry, no owner or occupant or any other persons having charge, care or control of any building, structure, or premises shall fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the administrator for the purpose of inspection and examination pursuant to this ordinance.

7) **Stop Work Orders**

- a) Upon notice from the administrator, work on any building, structure or premises that is being done contrary to the provisions of this ordinance shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to their agent, or to the person doing the work, and shall state the conditions under which work may be resumed.

8) **Revocation of Permits**

- a) The administrator may revoke a permit or approval, issued under the provisions of this ordinance, in case there has been any false statement or misrepresentation as to the material fact in the application or plans on which the permit or approval was based.
- b) The administrator may revoke a permit upon determination by the administrator that the construction, erection, alteration, repair, moving, demolition, installation, or replacement of the structure for which the permit was issued is in violation of, or not in conformity with, the provisions of this ordinance.

9) **Liability**

- a) Any officer, employee, or member of the floodplain administrator's staff, charged with the enforcement of this ordinance, acting for the applicable governing authority in the discharge of their duties, shall not thereby render himself personally liable, and is hereby relieved from all personal liability, for any damage that may accrue to persons or property as a result of any act required or permitted in the discharge of their duties. Any suit brought against any officer, employee, or member because of such act performed by him or her in the enforcement of any provision of this ordinance shall be defended by the department of law until the final termination of the proceedings.

10) **Expiration of Floodplain Construction Permit**

- a) A floodplain construction permit, and all provisions contained therein, shall expire if the holder of a floodplain construction permit has not commenced construction within one hundred and eighty (180) calendar days from the date of its issuance by the Floodplain Administrator.

ARTICLE 5. PROVISIONS FOR FLOOD HAZARD REDUCTION

SECTION A. GENERAL CONSTRUCTION STANDARDS

In all **Special Flood Hazard Areas** the following provisions are required:

- 1) All new construction and substantial improvements shall be adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- 2) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state requirements for resisting wind forces.
- 3) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
- 4) New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;
- 5) Electrical, heating, ventilation, plumbing, air condition equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding; and if
- 6) Within Zones AH or AO, so that there are adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures.
- 7) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- 8) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;
- 9) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding; and,
- 10) Any alteration, repair, reconstruction, or improvements to a structure, which is not in compliance with the provisions of this ordinance shall meet the requirements of “new construction” as contained in this ordinance;
- 11) Any alteration, repair, reconstruction, or improvements to a structure, which is not in compliance with the provisions of this ordinance, shall be undertaken only if said non-conformity is not furthered, extended, or replaced.
- 12) Prohibited Uses:

- a. Storage or processing of materials that are hazardous, flammable, or explosive in the identified special flood hazard area.
- b. Storage of material or equipment that, in time of flooding, could become buoyant and pose an obstruction to flow in identified floodway areas.
- c. Storage of material or equipment not otherwise prohibited shall be firmly anchored to prevent flotation.

SECTION B. SPECIFIC STANDARDS

In all special flood hazard areas where base flood elevation data have been provided, as set forth in Article 3, Section B, the following provisions are required:

- 1) **Residential Construction.** New construction or substantial improvement of any residential structure (or manufactured home) shall have the lowest floor, including basement, mechanical equipment, and ductwork elevated no lower than three (3) feet above the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of Article 5, Section B (3).
 - a) In an AO zone, elevated above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FIRM, or elevated at least two feet above the highest adjacent grade if no depth number is specified.
 - b) In an A zone, where no technical data has been produced by the Federal Emergency Management Agency, structures and mechanicals shall be elevated three (3) feet above the base flood elevation, as determined by this community. The Floodplain Administrator will determine the method by which base flood elevations are determined. Methods include but are not limited to detailed hydrologic and hydraulic analyses, use of existing data available from other sources, use of historical data, best supportable and reasonable judgement in the event no data can be produced. Title 401 KAR (Kentucky Administrative Regulations) Chapter 4, Regulation 060, Section 5(5)a, states as a part of the technical requirements for a State Floodplain Permit: The applicant shall provide cross sections for determining floodway boundaries (and thereby Base Flood Elevations) at any proposed construction site where FEMA maps are not available. All cross sections shall be referenced to mean sea level and shall have vertical error tolerances of no more than + five-tenths (0.5) foot. Cross sections elevations shall be taken at those points which represent significant breaks in slope and at points where hydraulic characteristics of the base floodplain change. Each cross section shall extend across the entire base floodplain and shall be in the number and at the locations specified by the cabinet. If necessary to ensure that significant flood damage will not occur, the cabinet may require additional cross sections or specific site elevations which extend beyond those needed for making routine regulatory floodway boundary calculations.

- c) In any area that has been removed from the floodplain via a Letter of Map Revision Based on Fill, any existing or new structure, addition, or substantial improvement must meet the required elevation freeboard requirements of the underlying flood hazard elevation.
- d) In all other Zones, elevated three (3) feet above the base flood elevation.

Upon the completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspection department to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

Freeboard requirements add height above the base flood elevation to account for future flood fringe development, uncertainties inherent with the methodologies, lack of data, debris that accompanies the base flood, and flood levels higher than that of the base flood. A freeboard requirement means that new construction and substantial improvements of existing structures will be protected to a level higher than the base flood elevation.

Freeboard may be applied not just to the elevation of the lowest floor or floodproofing level, but also to the level of protection provided to all components of the structure. All structure utilities, including ductwork, must be elevated or protected to the freeboard level and all portions of the structure below the freeboard level must be constructed using materials resistant to flood damage. If the lowest floor of garages or accessory structures is below the freeboard level, the structure must meet the opening requirements of Article 5, Section B (3).

Two references on these requirements are Protecting Building Utilities from Flood Damage, FEMA-348, and Flood Resistant Materials Requirements, FIA-TB-2.

- 2) **Non-residential Construction.** New construction or substantial improvement of any commercial, industrial, or non-residential structure (including manufactured homes used for non-residential purposes) shall be elevated to conform with Article 5, Section B (1) or together with attendant utility and sanitary facilities:
 - a) Be floodproofed below an elevation three (3) feet above the level of the base flood elevation so that the structure is watertight with walls substantially impermeable to the passage of water;
 - b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
 - c) Have the lowest floor, including basement, three (3) feet above the level of the base flood elevation, or;

- d) A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the official as set forth in Article 4, Section B (1) c.
 - d) Manufactured homes shall meet the standards in Article 5, Section B (4).
 - e) In any area that has been removed from the floodplain via a Letter of Map Revision Based on Fill, any existing or new structure, addition, or substantial improvement must meet the required elevation freeboard requirements of the underlying flood hazard elevation.
 - f) All new construction and substantial improvement with fully enclosed areas below the lowest floor (excluding basements) that are usable solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be constructed of flood resistant materials below an elevation three (3) feet above the base flood elevation, and, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Opening sizes (FEMA Technical Bulletin 1-93) for meeting this requirement must meet or exceed the following minimum criteria:
 - (i) Be certified by a registered professional engineer or architect; and
 - (ii) Have a minimum of two openings with a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. **The bottom of all openings shall be no higher than one foot above grade.** Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwater.
- 3) **Elevated Structures.** New construction or substantial improvements of elevated structures on columns, posts, or pilings (e.g.) that include fully enclosed areas formed by foundation and other exterior walls below the base flood elevation shall be designed to preclude finished living space and designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls.
- a) Opening sizes for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
 - (i) Provide a minimum of two (2) openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
 - (ii) The bottom of all openings shall be no higher than one foot above foundation interior grade (which must be equal to in elevation or higher than the exterior foundation grade); and,

- (iii) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.
- b) Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator); and,
- c) The interior portion of such enclosed areas shall not be partitioned or finished into separate rooms.

4) **Standards for Manufactured Homes and Recreational Vehicles.**

- a) All new or substantially improved manufactured homes placed on sites located within A, A1-30, AO, AH, and AE on the community's Flood Insurance Rate Map (FIRM) must meet all the requirements for new construction, including elevation and anchoring.

Locations include:

- On individual lots or parcels,
- In expansions to existing manufactured home parks or subdivisions,
- In new manufactured home parks or subdivisions or
- In substantially improved manufactured home parks or subdivisions, or
- Outside of a manufactured home park or subdivision,
- In an existing manufactured home park or subdivision on a site upon which a manufactured home has incurred "substantial damage" as the result of a flood,

All Manufactured homes must be:

- (i) Elevated on a permanent foundation, and
 - (ii) Have its lowest floor elevated no lower than three (3) feet above the level of the base flood elevation, and
 - (iii) Be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.
- b) Excepting manufactured homes that have incurred substantial damage as a result of a flood, all manufactured homes placed or substantially improved in an existing manufactured home park or subdivision must be elevated so that:

- (i) The manufactured home is securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement, so that either the:
 - The lowest floor of the manufactured home is elevated no lower than three (3) feet above the level of the base flood elevation, or
 - The manufactured home chassis is supported by reinforced piers or other foundation elements of at least an equivalent strength, of no less than 36 inches in height above the highest adjacent grade.
- c) All recreational vehicles placed on sites located within A, A1-30, AO, AH, and AE on the community's Flood Insurance Rate Map (FIRM) must either:
 - (i) Be on the site for fewer than 180 consecutive days,
 - (ii) Be fully licensed and ready for highway use, or
 - (iii) Meet the permit requirements for new construction of this ordinance, including anchoring and elevation requirements for "manufactured homes".

A recreational vehicle is ready for highway use if it is licensed and insured in accordance with the State of Kentucky motor vehicle regulations, is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

- 5) **Floodways.** Located within areas of special flood hazard established in Article 3, Section B, are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and has erosion potential, the following provisions shall apply:

Prohibit encroachments, including fill, new construction, substantial improvements, and other developments unless certification (with supporting technical data) by a registered professional engineer is provided demonstrating that encroachments shall not result in any increase in the base flood elevation levels during occurrence of base flood discharge;

- If Article 5, Section B (5) is satisfied, all new construction and substantial improvements and other proposed new development shall comply with all applicable flood hazard reduction provisions of Article 5.

6) **Standards for Utilities.**

- a) All new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate:
 - (i) Infiltration of flood waters into the systems, and

- (ii) Discharge from the systems into flood waters.
 - b) On-site waste disposal systems shall be located to avoid impairment to them, or contamination from them during flooding.
- 7) **Structures Elevated on Fill.** A residential or non-residential structure may be constructed on permanent fill in accordance with the following:
- a) The lowest floor (including basement) of the structure or addition shall be no lower than three (3) feet above the base flood elevation;
 - b) The fill shall be placed in layers no greater than one foot deep before compacting and should extend at least ten feet beyond the foundation of the structure before sloping below the base flood elevation, said slope being no greater than a 2:1 ratio unless a stability analysis is provided by a registered professional engineer;
 - c) The top of the fill shall be no lower than three (3) feet above the base flood elevation. However, the ten-foot minimum may be waived if a structural engineer certifies an alternative method to protect the structure from damage due to erosion, scour, and other hydrodynamic forces;
 - d) The fill shall not adversely affect the flow or surface drainage from or onto neighboring properties;
 - e) All new structures built on fill must be constructed on properly designed and compacted fill (ASTM D-698 or equivalent) that extends beyond the building walls before dropping below the base flood elevation and has appropriate protection from erosion and scour. The design of the fill or the fill standard must be approved by a licensed professional engineer; or
 - f) The City of Richmond has adopted and enforces the soil testing and compaction requirements set forth by the Kentucky Residential Code.
 - g) A CLOMR-F shall be submitted and approved by FEMA prior to any land disturbance. A copy of the approval letter shall be submitted to the City of Richmond Planning and Zoning and Codes Enforcement Departments.
 - h) A Kentucky Division of Water (KYDOW) Flood Plain permit shall be submitted and approved by KYDOW prior to any land disturbance. A copy of the approval letter shall be submitted to the City of Richmond Planning and Zoning and Codes Enforcement Departments.
 - i) Prior to structural framing or as required by City Inspector the owner/contractor shall submit a verification of compliance for the finish floor elevation prepared by a Kentucky licensed surveyor or civil engineer.

- j) Prior to issuance of a Certificate of Occupancy or Development Plan Completion an Elevation Certificate shall be filed with the City in compliance with this ordinance.
- 8) **Vegetative Buffer Strips (Riparian Zones).** For all activities involving construction within 25 feet of the channel, the following criteria shall be met:
- a) A natural vegetative buffer strip shall be preserved on average at least 25 feet with a minimum distance of ten (10) feet of the mean high water level of the channel.
 - b) Where it is impossible to protect this buffer strip during the construction of an appropriate use, a vegetated buffer strip shall be established upon completion of construction.
 - f) The use of native riparian vegetation is preferred in the buffer strip. Access through this buffer strip shall be provided for stream maintenance purposes.
- 6) **Fill** - The following standards apply to all fill activities in special flood hazard areas:
- a) Fill sites, upon which structures will be constructed or placed, must be compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test method or an acceptable equivalent method;
 - b) Fill slopes shall not be steeper than one foot vertical to two feet horizontal;
 - c) Adequate protection against erosion and scour is provided for fill slopes. When expected velocities during the occurrence of the base flood are greater than five feet per second armoring with stone or rock protection shall be provided. When expected velocities during the base flood are five feet per second or less protection shall be provided by covering them with vegetative cover;
 - d) Fill shall be composed of clean granular or earthen material.

SECTION C. STANDARDS FOR STREAMS WITHOUT ESTABLISHED BASE FLOOD ELEVATION (UNNUMBERED A ZONES) AND/OR FLOODWAYS

Located within the special flood hazard areas established in Article 3, Section B, where streams exist but where no base flood data has been provided or where base flood data has been provided without floodways, the following provisions apply:

- 1) No encroachments, including fill material or structures shall be located within special flood hazard areas, unless certification by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood more than one foot at any point within the community. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principles.

- 2) New construction or substantial improvements of structures shall be elevated or flood proofed to elevations established in accordance with Article 3, Section B.

SECTION D. STANDARDS FOR SHALLOW FLOODING ZONES

Located within the special flood hazard areas established in Article 3, Section B, are areas designated as shallow flooding areas. These areas have flood hazards associated with base flood depths of one to three feet (1 – 3’), where a clearly defined channel does not exist and the water path of flooding is unpredictable and indeterminate; therefore, the following provisions apply:

- 1) All new construction and substantial improvements of residential structures shall:
 - a) Have the lowest floor, including basement, elevated to or above either the base flood elevation or in Zone AO the flood depth specified on the Flood Insurance Rate Map above the highest adjacent grade. In Zone AO, if no flood depth is specified, the lowest floor, including basement, shall be elevated no less than two (2) feet above the highest adjacent grade.
- 2) All new construction and substantial improvements of non-residential structures shall:
 - a) Have the lowest floor, including basement, elevated to or above either the base flood elevation or in Zone AO the flood depth specified on the Flood Insurance Rate Map, above the highest adjacent grade. In Zone AO, if no flood depth is specified, the lowest floor, including basement, shall be elevated no less than two (2) feet above the highest adjacent grade.
 - b) Together with attendant utility and sanitary facilities be completely floodproofed either to the base flood elevation or above or, in Zone AO, to or above the specified flood depth plus a minimum of one foot so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required as stated in Article 5, Section B (2).

SECTION E. STANDARDS FOR SUBDIVISION PROPOSALS

- 1) All preliminary subdivision proposals shall identify the flood hazard area and the elevation of the base flood and be consistent with the need to minimize flood damage;
- 2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;
- 3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards; all final subdivision plats will provide the boundary of the special flood hazard area, the floodway boundary, and base flood elevations as well as future conditions flood elevations; and,

- 4) In areas where base flood elevation and floodway data is not available (Zone A or unmapped streams), base flood elevation and floodway data for subdivision proposals and other proposed development (including manufactured home parks and subdivisions) shall be provided.
- 5) All subdivision plans will include the elevation of proposed structure(s) and lowest adjacent grade. If the site is filled above the base flood elevation, the lowest floor and lowest adjacent grade elevations shall be certified by a registered professional engineer or surveyor and provided to the Floodplain Administrator.
- 6) Approval shall not be given for streets within a subdivision, which would be subject to flooding in the base flood. All street surfaces must be located at or above the base flood elevation. Refer to City of Richmond Stormwater Manual Chapter 6.
- 7) In platted subdivisions, all proposed lots or parcels that will be future building sites shall have a minimum buildable area outside the natural (non-filled) 1% chance annual floodplain. The buildable area shall be large enough to accommodate any primary structure and associated structures such as sheds, barns, swimming pools, detached garages, on-site sewage disposal systems, and water supply wells, if applicable.

SECTION F. STANDARDS FOR ACCESSORY STRUCTURES IN ALL ZONES BEGINNING WITH THE LETTER ‘A’

For all accessory structures in special flood hazard areas designated ‘A’ the following provisions shall apply:

- 1) Structure must be non-habitable;
- 2) Must be anchored to resist floatation forces;
- 3) Will require flood openings/vents no more than one foot above grade, total openings are to be one square inch per one square foot of floor area, at least two openings required on opposite walls;
- 4) Built of flood resistant materials below a level three (3) feet above the base flood elevation;
- 5) Must elevate utilities above the base flood elevation;
- 6) Can only be used for storage or parking;
- 7) Cannot be modified for a different use after permitting.

SECTION G. CRITICAL FACILITIES

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the SFHA (100-year floodplain). Construction of new critical facilities shall not be permissible within the floodway; however, they may be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated one foot or more above the level of the base flood elevation at the site. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Critical facilities shall be constructed on properly compacted fill and have the lowest floor (including basement) elevated at least one foot above the elevation of the 500-year flood. A critical facility shall have at least one access road connected to land outside the 500-year floodplain that is capable of supporting a 12,500 pound vehicle. The top of the road must be no lower than six inches (6") below the elevation of the 500-year floodplain.

ARTICLE 6. APPEALS AND VARIANCE PROCEDURES

1) Nature Of Variances

The variance criteria set forth in this section of the ordinance are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A variance may be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this ordinance would create an exceptional hardship to the applicant or the surrounding property owners. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

It is the duty of the City of Richmond to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below flood level is so serious that variances from the flood elevation or from other requirements in the flood ordinance are quite rare. The long-term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this ordinance are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate.

2) Designation of variance and appeal board

- a) The City of Richmond of Madison County has established a Board of Adjustments which shall hear all variances and appeals. See City of Richmond Development Ordinance section 404.

3) Duties of variance and appeals board

- a) The Board of Adjustments shall hear and decide requests for variances from the requirements of this ordinance and appeals of decisions or determinations made by the Floodplain Administrator in the enforcement or administration of this ordinance.
- b) Any person aggrieved by the decision of the Board of Adjustments or any taxpayer may appeal such decision to the circuit court as provided in Kentucky Revised Statutes. See also section 405.8 of the City of Richmond Development ordinance.

4) Appeals/Variance Procedures

In passing upon such applications, the Board of Adjustments shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and the:

- a) Danger that materials may be swept onto other lands to the injury of others;
- b) Danger to life and property due to flooding or erosion damage;

- c) Susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the existing individual owner and future owners of the property;
- d) Importance to the community of the services provided by the proposed facility;
- e) Necessity that the facility be located on a waterfront, in the case of functionally dependent facility;
- f) Availability of alternative locations which are not subject to flooding or erosion damage;
- g) Compatibility of the proposed use with existing and anticipated development;
- h) Relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- i) Safety of access to the property in times of flood for ordinary and emergency vehicles;
- j) Expected height, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and,
- k) Costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, water systems, streets, and bridges.

5) **Conditions for Variances**

Upon consideration of the factors listed above and the purposes of this ordinance, the Board of Adjustments may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

- a) Variances shall not be issued for new construction, substantial improvement, and other proposed new development to be erected below the BFE.
- b) Variances shall not be issued within any mapped regulatory floodway if any increase in flood levels during the base flood discharge would result.
- c) Variances shall only be issued upon a determination that the variance is the "minimum necessary" to afford relief considering the flood hazard. "Minimum necessary" means to afford relief with a minimum of deviation from the requirements of this ordinance. For example, in the case of variances to an elevation requirement, this means the City of Richmond need not grant permission for the applicant to build at grade, or even to whatever elevation the applicant proposes, but only to that elevation which the City of Richmond believes will both provide relief and preserve the integrity of the local ordinance.

- d) Variances shall only be issued upon a determination that the variance is the “minimum necessary” to afford relief considering the flood hazard. In the instance of an historical structure, a determination shall be made that the variance is the minimum necessary to afford relief and not destroy the historic character and design of the structure.
- e) Variances shall only be issued upon:
 - (i) A showing of good and sufficient cause;
 - (ii) A determination that failure to grant the variance would result in exceptional hardship to the applicant (as defined in this ordinance); and
 - (iii) A determination that the granting of a variance will not result in increased flood height, additional threats to public safety, cause extraordinary public expense, create nuisance (as defined in the definition section under "Public safety and nuisance"), cause fraud or victimization of the public (as defined in the definition section) or conflict with existing local laws or ordinances.
- f) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation to which the structure is to be built and stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- g) The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency (FEMA) and the Federal Insurance Administration (FIA) upon request.
- h) Variances may be issued for new construction, substantial improvement, and other proposed new development necessary for the conduct of a functionally dependent use provided that the provisions of Sections 6.3 A through 6.3 E are satisfied and that the structure or other development is protected by methods that minimize flood damages during the base flood and does not result in additional threats to public safety and does not create a public nuisance.

6) **Variance Notification**

Any applicant to whom a variance is granted shall be given written notice over the signature of a community official that:

- a) The issuance of a variance to construct a structure below the base flood elevation will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage, and;
- b) Such construction below the base flood level increases risks to life and property. A copy of the notice shall be recorded by the Floodplain Administrator in the Office of the

Madison County Clerk and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.

- c) The Floodplain Administrator shall maintain a record of all variance actions, including justification for their issuance, and report such variances issued in the community's biennial report submission to the Federal Emergency Management Agency.

7) Historic Structures

Variances may be issued for the repair or rehabilitation of "historic structures" (see definition) upon determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as an historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

8) No Impact Certification within the Floodway

Variances shall not be issued within any mapped or designated floodway if any increase in flood levels during the base flood discharge would result.

ARTICLE 7. SEVERABILITY

This ordinance and the various parts thereof are hereby declared to be severable. Should any section of this ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid.

If any section, clause, sentence, or phrase of the Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall not affect the validity of the ordinance as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid.

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RECREATION AND LANDSCAPE MANUAL

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CHAPTER ONE | INTRODUCTION

1.00 OVERVIEW

This manual is designed to guide land use management together with land division and development decisions in the City of Richmond, Kentucky as a means of implementing the city's Comprehensive Plan. It is the desire of the City of Richmond and the Richmond Planning Commission that the use of this document will facilitate the orderly development of the city in the future.

The sequence of development in the city usually begins with a determination of how the land is to be used. Following this decision, the land may need to be divided into additional tracts or parcels (subdivided) prior to the final step involving the physical development of the land. This manual consists of two primary elements: (1) The Determination of Required Landscaping and Buffers and 2) The Development of Land with the Recreational & Common Space Requirements.

The manual has been written in such a way as to provide a degree of flexibility in the use and development of land while being careful to protect the health, safety, and general welfare of citizens. The goal of this manual is to preserve and recognize the particular qualities of Richmond that are distinctive and need to be recognized in the overall development process.

This manual is to be used in conjunction with the City of Richmond's Development Ordinance.

1.20 SUSTAINABILITY

A park is a place to play, relax, explore, and socialize. Parks act as a connection between our human environment and the natural environment. Parks can also educate through sustainable design and construction methods. Park design and construction should build connections with the natural environment. Design and construction of parks should incorporate such sustainable techniques as detailed below:

- a. Preserve and incorporate existing natural areas into park site planning;
- b. Reduce impervious cover;
- c. Integrate habitat and active space;
- d. Preserve or enhance soil permeability;
- e. Utilize appropriate BMPs for effective storm water treatment;
- f. Use native drought-tolerant plants;
- g. Use organic mulch to retain water and suppress weeds;
- h. Use recycled materials and certified wood;
- i. Pervious pavers or pervious pavement; and
- j. Use of Rain Gardens.

1.30 REVIEW PROCESS

The recreation and common open space plan shall be reviewed and approved in conjunction with the associated preliminary subdivision, site development plan, or land development application. The Planning and Zoning Commission shall review the recreational space plan for final approval. Any changes or additions to the approved recreational space plan shall be submitted to the Planning and Zoning Commission for approval with all meeting fees being applicable.

The Planning & Zoning Commission reserves the right to have local emergency first responders review and provide comments to Pedestrian and Bikeway facilities.

CHAPTER TWO | RECREATIONAL SPACE REQUIREMENTS

2.00 PURPOSE

The purpose of the recreation and common space requirements is to provide standards for the creation and maintenance of recreational and common space areas and trails in conjunction with new development that will protect the health, safety, and general welfare of the public, enhance property values, improve quality of life and the appearance of the community, facilitate pedestrian and bicycle mobility, and preserve natural areas. The requirements will be applied to all new development containing a residential land use classification and designations component of five (5) or more units.

All development applications containing a residential component of five (5) or more units and/or lots, including, but not limited to, single-family/two family, multiple-family, binding site plans, mixed-use building and site plans, or other development which includes residential units, shall provide recreational space as set forth in this chapter.

2.10 GENERAL REQUIREMENTS

1. Regulations for recreation and common space in single-family/two family and multi-family.
 - a. The front, side, and rear yard setback area required by the applicable zoning district shall not qualify as recreational space;
 - b. No more than fifty (50) percent of the recreational space requirement may be located on slopes greater than three (3) horizontal units to one (1) vertical unit (3:1) slope;
 - c. No required recreational space shall be less than one-eighth (0.125) of an acre in size;
 - d. Developments with recreational space required that is less than one-eighth (0.125) of an acre in size shall meet requirements with the installation of walking and/or bike lanes and trails;
 - e. The recreational space shall not be used as a material or construction staging area during development;
 - f. Minimum feature requirements include; benches, picnic areas, picnic tables, bicycle racks, and gazebos;
 - g. Additional features are at the discretion of the home owners association and/or landowners;
 - h. Signage for features is the responsibility of the home owners association and/or landowners; and
 - i. Lighting is not required; however any proposed lighting shall be at a neighborhood scale and energy efficient. Street lighting and security lighting may be placed in a way to provide lighting.

2.20 SINGLE FAMILY/TWO FAMILY

1. Single-Family/Two Family residential recreation space shall be provided as follows:
 - a. The total net area of any proposed single-family/two family residential subdivision, which includes single-family residential units/lots shall provide for active recreational space, passive recreational space, and/or trails by means of on-site recreational space. Critical areas and their buffers shall not be included in the required calculations, unless utilized in conjunction with a trail system, do not interfere with environmental protection as set in the City of Richmond's Development Ordinance, and as approved by the Planning and Zoning Board.
 - b. An applicant may choose to satisfy all or a portion of the required recreation and common space requirements for a development in a single phase of the overall plan or divide the requirements over the project for greater accessibility throughout the development. The required recreational space may be dispersed in multiple locations throughout the development, but no required recreational space shall be less than one-eighth (0.125) of an acre in size with a minimum street frontage of 40 feet including zone setbacks;

- c. All single-family/two family residential recreational space shall be located adjacent to a public street or proposed public street.
- d. It will be the responsibility of the Home Owners Association to maintain recreational space. When the development is not deeded or conveyed to a Home Owners Association, the recreational space tract shall remain maintenance responsibility of the developer and/or owner of the development.
- e. Landscape buffer, sidewalk or walking trail, or fencing/screening shall be provided along adjoining residential lots.

2. Size and Ratio Requirements

- a. For each single-family/two family residential subdivision or other development application containing less than four (4) acres or less than 20 units the applicant shall provide and construct a minimum of walking trails and/or bike lanes.

ZONE	R-1A	R-1B	R-1C	R-2	RE	MP
Ratio per Gross Acre	1.5%	2%	2.5%	3.0%	N/A Bike or Trail feature	4%
Note: PUD requirements will be based on a percentage of each use.						

2.30 EQUATION

Gross Acres (X) Percent Recreation requirement (=) Required Recreation area

Gross Acres (-) Required Recreation area (=) Net Acres

Net Acres (÷) Density (=) Allowable Units

DIMENSIONAL REQUIREMENTS

Dimensions shall be square or rectangular in nature with a minimum width of forty feet. The Planning & Zoning Board may grant a waiver to dimensional requirements based on land topography.

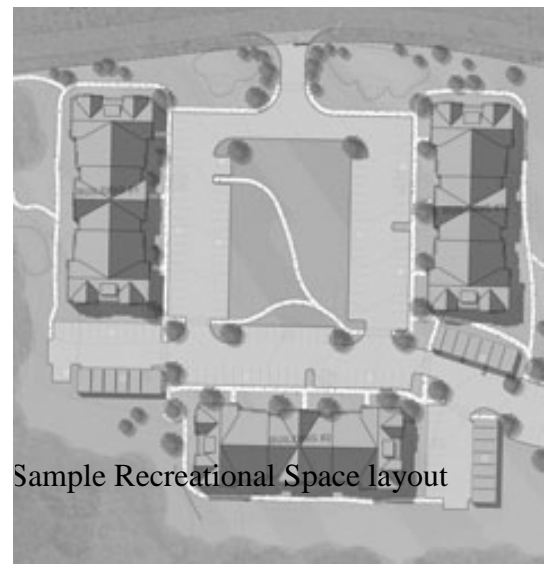
2.40 R-3, MULTIPLE FAMILY DEVELOPMENTS

Any proposed multi-family structure, complex, developments, or lots consisting of five (5) or more bedrooms shall provide recreational space on site for the use of the occupants, subject to the following requirements:

1. R-3, Multi-Family residential recreation space shall be provided as follows:
 - a. No required recreational space shall be less than twelve-hundred (1200) square feet in size;
 - b. Indoor recreational space or covered space such as gyms, fitness centers, indoor swimming pools, or similar facilities cannot be calculated as a percentage of the recreational space requirements;
 - c. No more than fifty (50) percent of the total required recreational space may be used for any single purpose such as outdoor swimming pools, tennis courts, or similar facilities; and
 - d. To the extent feasible, all multi-family residential recreational space shall be centrally located within the development.

2. Size and Ratio Requirements

- a. Any proposed multi-family structure, complex, developments, or lots consisting of three (3) or more units consisting of ten (10) bedrooms shall provide a minimum of twelve-hundred (1200) square feet of recreational space and shall provide a minimum of one-hundred (100) square feet per each additional bedroom
- b. Typical recreational space for a multi-family development illustrated at right.



DIMENSIONAL REQUIREMENTS

Dimensions shall be square or rectangular in nature with a minimum of thirty feet by forty feet and for each fraction thereof above the minimum requirement shall increase dimensionally. The Planning & Zoning Board may grant a waiver to dimensional requirements based on land topography.

CHAPTER THREE PEDESTRIAN & BICYCLE FACILITIES

3.00 PEDESTRIAN WALKWAYS

3.01 Purpose- Pedestrian walkways (sidewalks) are designed to provide for pedestrian safety and circulation. They also serve as important elements in the recreational system by providing space for walkers, hikers, and joggers.

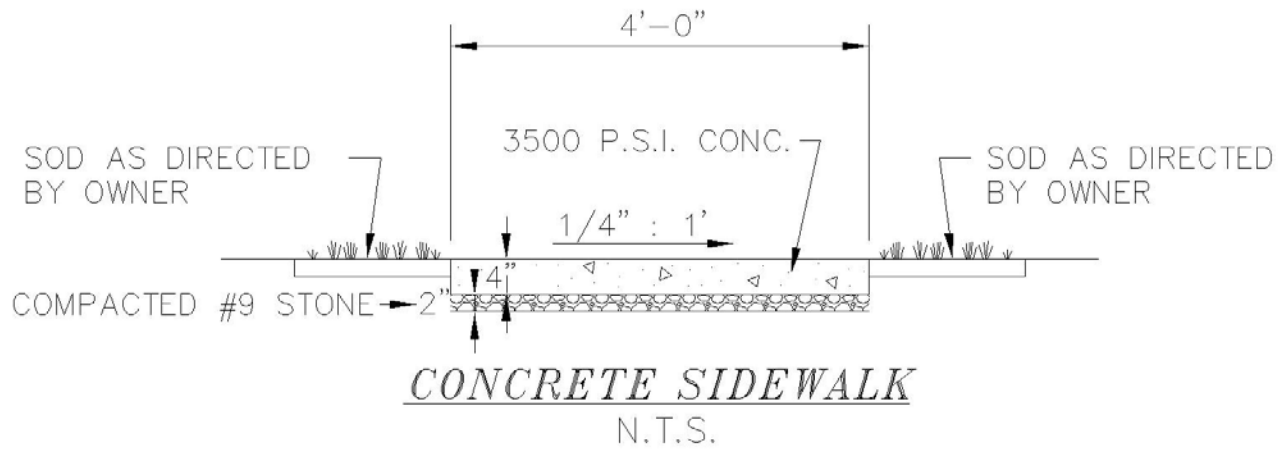
3.02 Responsibility- Sidewalks are the responsibility of the developer and are to be provided in all residential subdivisions and commercial developments on both sides of the street. Pedestrian walkways for industrial development shall be required as determined by the Planning Commission. Sidewalks shall be installed during the development of lots and before a construction guarantee is released for vacant lots. Repair and maintenance is the responsibility of the property owner for which the pedestrian access is located or adjoins.

3.03 Standards- Sidewalks shall be constructed of concrete at least four (4) inches thick (3,500 psi), poured over a compacted two (2) inches of # nine (9) gravel sub-base, and shall be a minimum of four (4) feet in width. Sidewalks shall meet the requirements of the American Disabilities Act as follows:

- (3) Curb ramps with tactile warnings shall be provided wherever an accessible route crosses a curb. Transitions from ramps to walks, gutters, or streets shall be flush and free from abrupt changes.
- (4) If a curb ramp is located where pedestrians must walk across the ramp or where it is not protected by handrails or guardrails, then it shall have flared sides.
- (5) Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes. Curb ramps shall be located or protected so as to prevent their obstruction by parked vehicles.
- (6) Interior sidewalks of a commercial or multifamily development shall be connected to perimeter pedestrian access by a minimum of one accessible point per street frontage.

DETAIL OF SIDEWALK STANDARD

NOTE: SIDEWALK IS TO BE
SLOPED TOWARD THE
STREET.



3.10 TRAILS

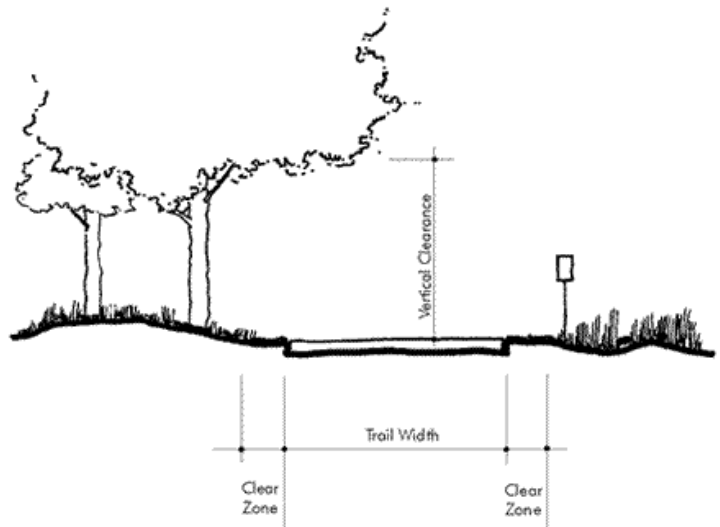
Trail requirements apply to all development applications containing a residential component of five (5) or more units and/or lots, including, but not limited to, single-family, multiple-family, binding site plans, mixed-use building and site plans, or other development which includes residential units.

3.04 Walking Trail Features

Walking trails are considered to be areas that are not adjacent to any public right-of-way.

A. Walking Trail Construction Standards

- 1) The trail shall be a minimum of four (4) feet in width and shall be provided with a corridor a minimum of twelve (12) feet in width and maintained clear of brush, debris, or other visual obstructions; with the exceptions of significant trees and other existing obstructions per the discretion of the community and Planning and Zoning Board.
- 2) The trail surface shall be constructed of crushed stone at a minimum of four (4) inches in depth. Soft surface materials may be utilized in place of crushed stone depending on the site, trail characteristics and anticipated usage as approved by the community and Planning and Zoning Board. Hard surfaces such as concrete, asphalt, pavers, or pervious pavement may be utilized. Trails with slopes that have erosion or deemed to have the possibility of erosion may be required to be paved at the discretion of the developer and Planning and Zoning Board.
- 3) Any trails constructed within critical areas or their buffers shall be constructed in a way to not interfere with the integrity of the buffer or critical area requirement.



3.05 BIKEWAYS

A bikeway may be used in conjunction with a sidewalk in areas where schools, parks, or other public facilities exist and may cause a high volume of bicycle traffic, in order to insure the safety of cyclists and encourage greater use of the bicycle as an alternate means of transportation.

3. There are three different types of bikeway facilities:

- a. **Bicycle Paths-** Shall include only those bicycle facilities whereby a separate right-of-way is set aside for the specific use of cyclists to the exclusion of motor vehicles and pedestrians. One-way bike paths shall be at least four (4) feet wide and paved with concrete or bituminous paving material. Two-way bike Paths shall be at least eight (8) feet wide.
- b. **Bicycle Lanes-** Shall include those bicycle facilities where a portion of a street is designated by a raised curb or painted lane stripe, for the exclusive use of cyclists. Bike lanes shall be prominently marked as such and shall be one-way in direction on each side of the street. Bike lanes shall be a minimum of four (4) feet in width.
- c. **Bicycle Routes-** Shall include those existing or proposed streets that are determined by specific analysis to be suitable for the safe operation of bicycles. Bike routes do not provide for the exclusive use of bicycles but require sharing the street with other vehicles, and are designated by an official "Bike Route" sign.

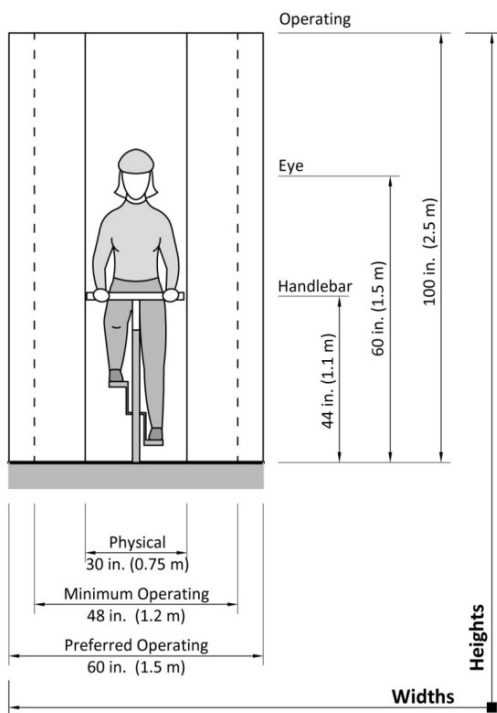


3.06 BICYCLE LANES AND TRAILS FEATURES

A bicycle lane is a portion of the roadway that has been designated by striping, signing, and pavement makings for the preferential and exclusive use of bicyclists. Bicycle trails can be used in conjunction with walking trails.

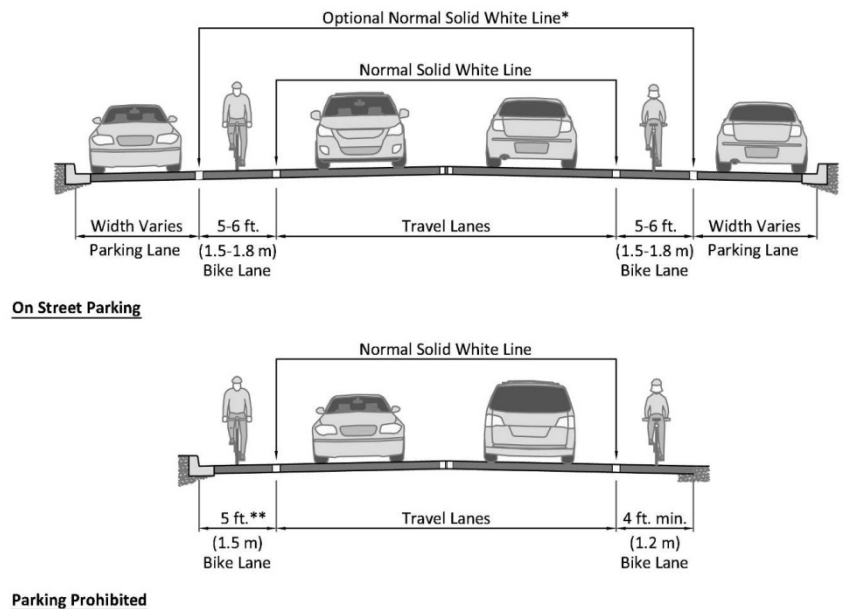
3.07 Bicycle Lane Construction Standards

- Lanes shall be part of the street/road design.
- Lanes shall be installed on both sides of the street/road a minimum of four (4) feet in width and striped according to current city or state roadway standards.
- No utility feature that may contain a grate, lid, or access panel can be installed in a bicycle lane.
- Required sidewalks may be modified to six (6) feet in width, striped, and have required signage.
- Roadway curb and gutter cannot be counted as bike lane width.
- Bike Lanes shall conform to AASHTO Bicycle Facilities Guideline, 2012 edition or current version, if newer.



3.08 Bicycle Trail construction standards

- The trail shall be a minimum of eight (8) feet in width and shall be provided with a corridor a minimum of twelve (12) feet in width and maintained clear of brush, debris, or other visual



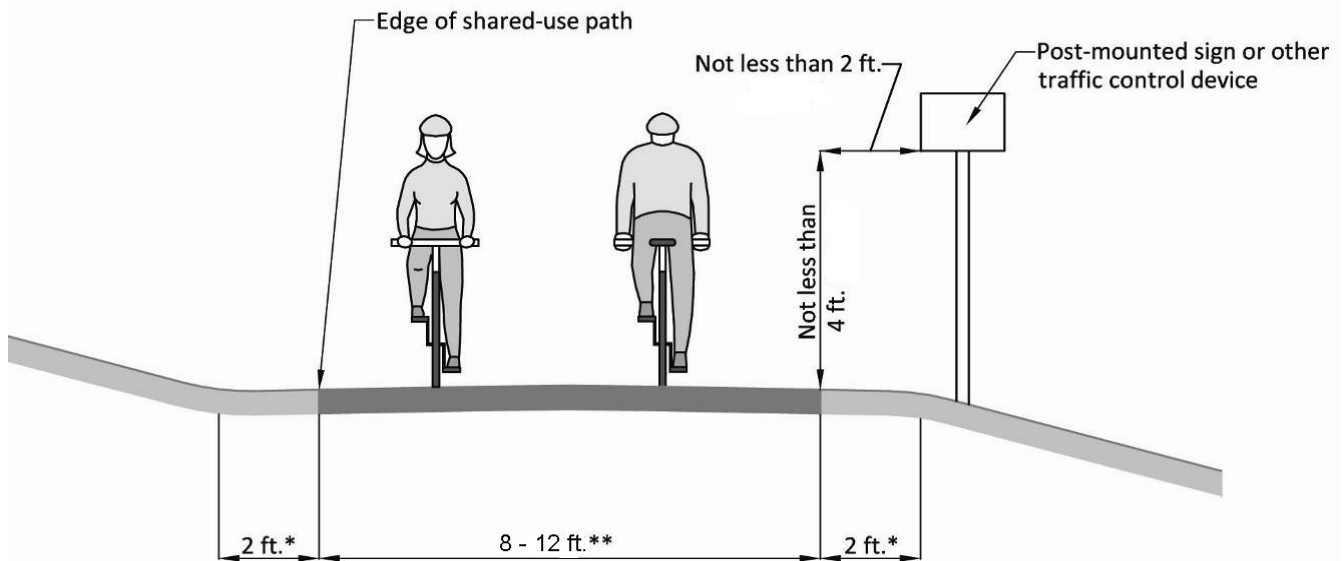
Parking Prohibited

* The optional normal (4 in–6 in/100–150 mm) solid white line may be helpful even when no stalls are marked (because parking is light), to make the presence of a bicycle lane more evident. Parking stall markings may also be used.

** On extremely constrained, low-speed roadways with curbs but no gutter (e.g. in locations with stone curbs), where the preferred bike lane width cannot be achieved despite narrowing all other travel lanes to their minimum widths, a 4-foot (1.2 m) wide bike lane can be used.

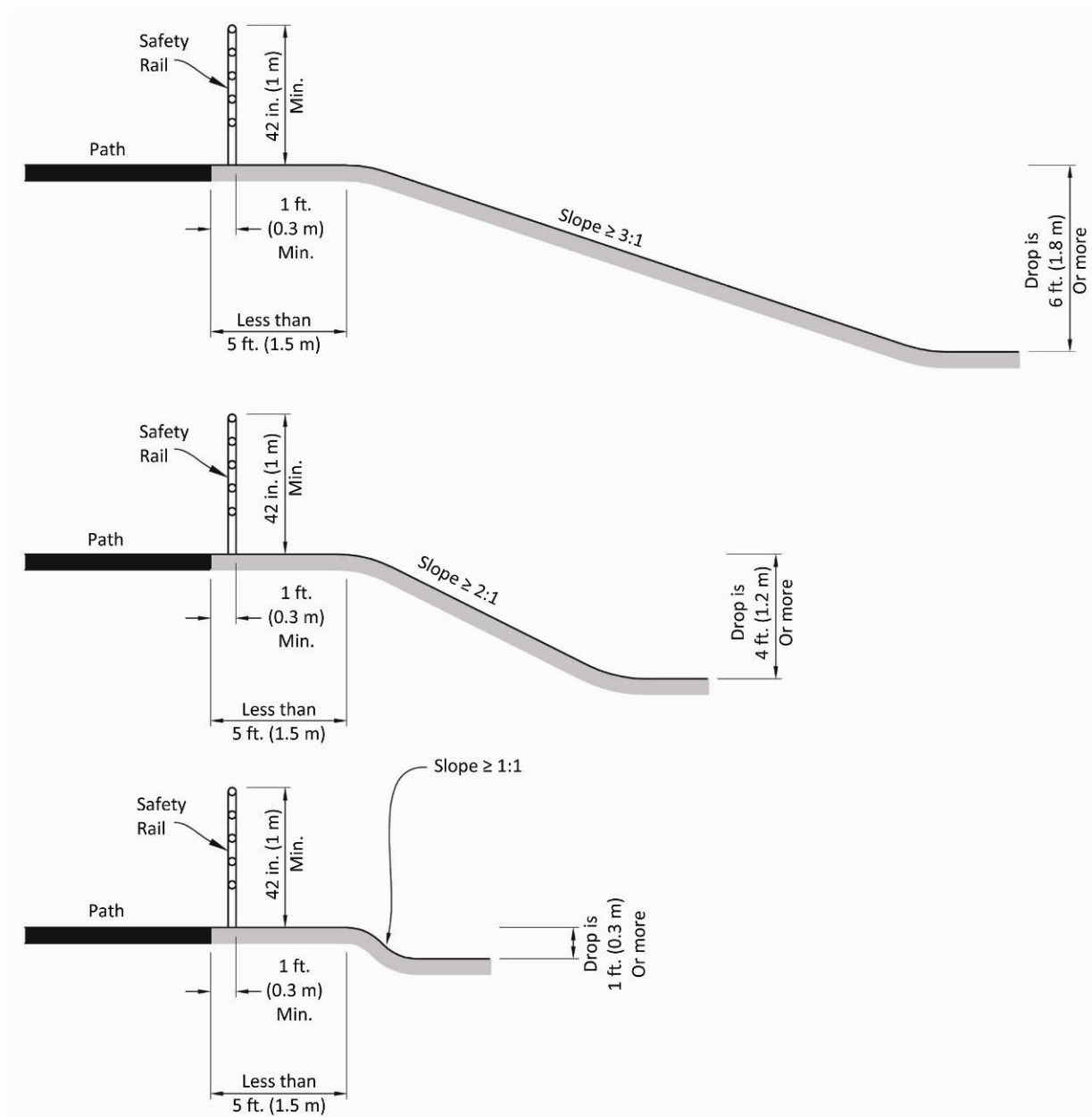
obstructions; with the exceptions of significant trees and other existing obstructions per the discretion of the community and Planning and Zoning Board.

- b. The trail surface shall be constructed of pervious pavement, concrete, or pavers. Other surface materials may be utilized depending on the site, trail characteristics and anticipated usage as approved by the community and Planning and Zoning Board.
- c. Any trails constructed within critical areas or their buffers shall be constructed in a way to not interfere with the integrity of the buffer or critical area requirement.
- d. No utility feature that may contain a grate, lid, or access panel can be installed in a bicycle trail or corridor.
- e. Additional information concerning Bike Trails can be found in the AASHTO Bicycle Facilities Guideline, 2012 edition or current version, if newer.



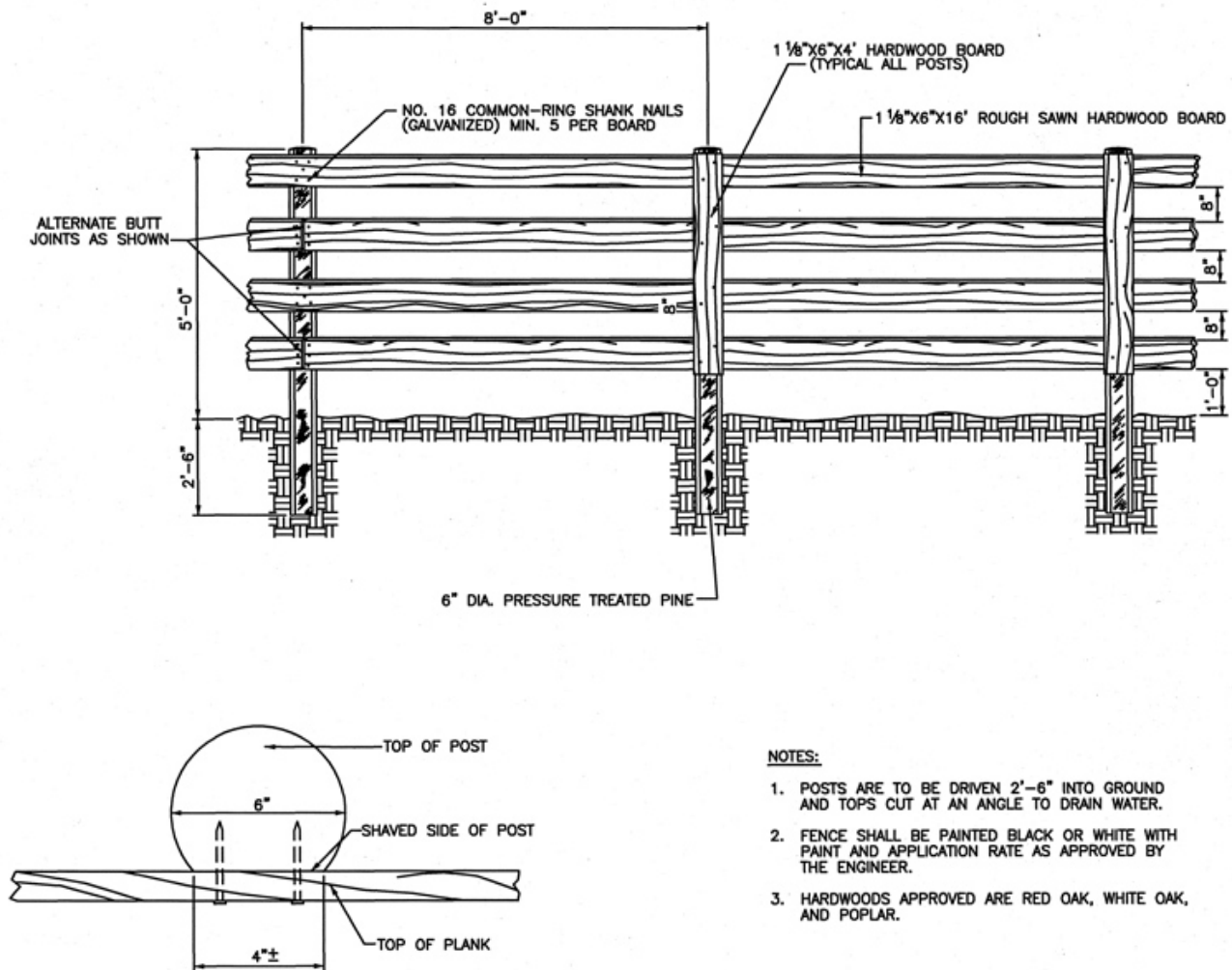
*6:1 Maximum Slope (typ.)

** More if necessary to meet anticipated volumes and mix of users



Safety Rail between Path and Adjacent Slope

Safety Rail shall be constructed as a 4-board fence and painted black or white.



CHAPTER FOUR | LANDSCAPE MANUAL

4.00 LANDSCAPING

In the City of Richmond, a separate landscape plan shall be submitted with subdivision plats or development plans or the building permit applications (as appropriate), for review and approval by the Landscape Committee.

4.01 Purpose

The purpose of these landscape requirements is to enhance the aesthetic qualities of development and to minimize the friction that might occur between different land uses. In addition, the planting of trees, shrubs, and ground cover, and use of fences, walls, and earthen mounds help to retard erosion, channel vehicular and pedestrian circulation, protect surrounding property values, reduce the effects of air, odor, visual, and noise pollution, and reduce glare from outdoor lighting.

4.02 Developer's Responsibility

The landscape requirements set forth in this section shall be provided as a condition of development by the developer or owner of the property being developed. An owner securing a change in land use classification which creates a different situation shall be the one deemed responsible for creating the different situation, and shall provide the required landscape buffer as a condition of such land use change. If the different situation already exists or is created by a general land use change not sponsored by the property owner, the landscape buffer shall be provided as a condition of the approval of any subdivision of the affected land.

4.03 Compliance

The Planning and Zoning Director shall be responsible for insuring compliance with this section of the ordinance as part of the subdivision plat or development plan review. The Planning and Zoning Director shall inspect the premises prior to the issuance of a certificate of occupancy to insure that the landscape buffer is in place. If, due to seasonal variance, planting is not practical at the time required for the issuance of the certificate of occupancy, the developer shall post a bond to cover cost of the landscape buffer, shall plant the landscape buffer as soon as reasonably possible, and shall notify the Planning and Zoning Director who will inspect the landscape buffer to insure that it is in compliance with these regulations.

4.04 Exceptions

In a situation where by reason of exceptional topographic, dimensional, shape, or other special conditions, the enforcement of this section would create an undue hardship on the applicant, the applicant may request a variance or waiver of such requirements.

4.05 Relationship to Yard Requirements

The landscape buffer areas set forth in this section shall be included in the minimum yard required by the land use district in which the development is taking place. If the buffer area is greater than the yard requirement, the yard requirement shall be extended to accommodate the buffer.

- 1) **Buffer Area Conflicts:** Where landscape buffers are required in the same location as utility easements, the two may be combined providing that the total width and screening requirements are met and it is not in violation of any required utility easements.
- 2) **Provisions of Planting Materials and Barriers:** Such trees, shrubs, ground covers, and barriers as required shall be provided by the developer by the developer or owner and considered as any other site improvement.
- 3) **Inclusion on Subdivision Plats and Development Plans:** Areas to be set aside for landscape buffer areas shall be shown on the subdivision plat or development plan. A landscape legend to include the name, scientific name, plant size when mature, and plant form. Landscape plans shall make reference to acceptable seasonal plantings, care and maintenance.
- 4) **Maintenance of Landscape Buffer:** Landscape buffers and trees shall be maintained by the property owner.
- 5) **Minimum Landscape Buffer Requirements:** The landscape buffers as described below shall apply to all common boundaries between different "land uses". The buffer effect may be accomplished by trees or shrubs and barriers in any combination that accomplishes the objectives of these requirements. In addition, ground cover shall be provided in the form of grass, low shrubs, or mulch. Plants shall be those that are acclimated to the local environment.

4.06 Buffer Requirements.

Landscape buffers are required parallel to the rights-of-way on properties within the Transportation Corridor. Buffers shall be a minimum of 20 feet in width. In determining the need for additional buffer widths, the Planning Commission shall consider the topography of the area, the existing and proposed land uses, the size of adjacent parcels, the traffic volumes of the corridor, and any additional factors the Commission deems reasonable in carrying out the purpose of this ordinance. District buffer requirements are described in Section 409 J, 10. Landscape buffers shall be free and clear of utility easements and infrastructure. Existing landscaping or shrubbery located in a fence or on a property line cannot be considered as part of the landscape buffer requirement.

4.07 Setbacks

The location of off-street parking facilities and access drives for more than five (5) vehicles, excluding single and two household dwellings, may be located in the required yards unless otherwise specified elsewhere in this ordinance. In no case however, shall the parking area or access drives be located

closer than five (5) feet from any right-of-way, five (5) feet from any non-residential property line and fifteen (15) feet from any residential property line.

4.08 Landscaping and Screening

In addition to the setback requirements specified in this chapter for off-street parking for more than five (5) vehicles, screening shall be provided on each side of the parking area that abuts any residential district or use

4.09 Fences, Walls, and Hedges

Fences, walls, and hedges serve to enclose similar land uses and to separate different land uses. They also serve as buffers to screen activities that might be inharmonious. There are two types of these devices; 1) those that do not impede visibility by more than twenty (20) percent and 2) those that do impede visibility by more than twenty (20) percent. Type 1) includes but is not limited to chain link, woven wire, split rail, and other similar fences, and low density vegetative screens. These devices shall be permitted in any rear or side yard in any district, in the front yard of an agricultural district, and in the front yard of a residential district provided they do not exceed four (4) feet in height, and do not interfere with visibility for vehicular movement. Type 2) includes but is not limited to masonry walls, board and stockade fences, and chain link fences with inserts. These devices shall be permitted in the rear yard in any district provided it shall not exceed six feet in height.

* No improvements shall be placed on the drainage or utility easements unless approved by the planning and zoning office.

Barbed wire, electrified fences or other similar protection devices shall not be permitted in any residential district or adjacent to any residential use in the City of Richmond. These devices shall be permitted in agricultural districts, in conjunction with agricultural uses.

4.10 Visibility at Intersections.

On a corner lot, nothing shall be placed, erected, planted, or allowed to grow in such a manner as to materially impede vision in the area bounded by the street lines of such corner and a line joining points along said street lines fifty (50) feet from the center point of the intersection. Corner lots shall be graded to proper elevations in order to comply with this provision. The clear zone shall be a minimum of six feet from ground level. Trees shall be planted outside of the utility stripe and behind the sidewalk.

4.11 LANDSCAPE BUFFER REQUIREMENTS

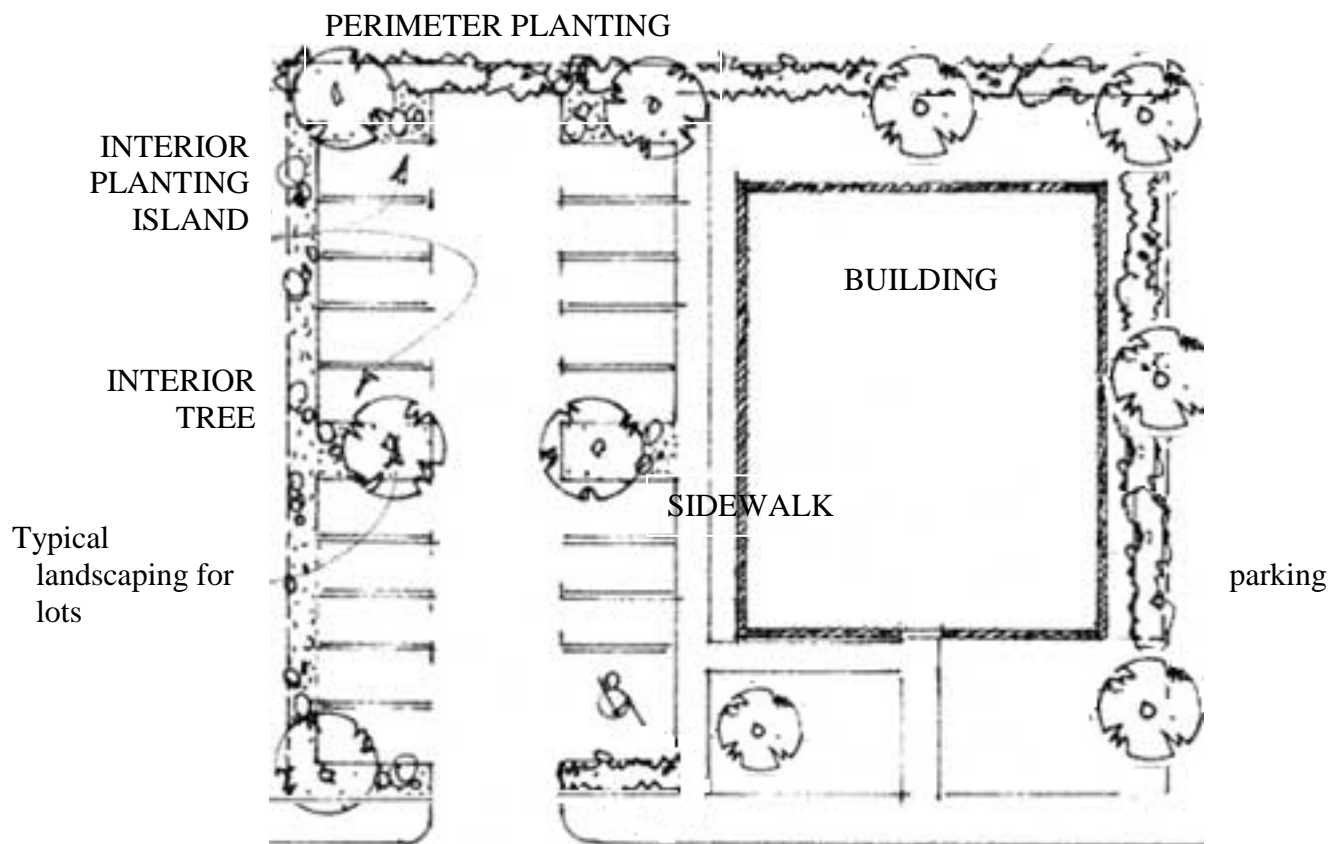
Adjoining Land Uses	Buffer Width	Trees	Shrubs or Barriers
Single and Two-family Residential	10 feet	1 small or medium tree @ 25 foot intervals	6 foot continuous hedge or 4 foot wall/fence
Single-Two-family and Multi-family/Mfg. Home Park/Community	10 feet	1 small or medium tree @ 25 foot intervals	6 foot continuous hedge or 4 foot wall/fence
Multi-family and Mfg. Home Park/Community	10 feet	1 medium or large tree @ 25 foot intervals	continuous hedge or at 10 intervals with wall/fence
Single/Two family and Commercial/Industrial	15 feet	1 medium or large tree @ 25 foot intervals	6 foot continuous hedge or intermittent planting w/wall
Multi-family/ Mfg. Home Park/Community and Commercial/Industrial	10 feet	1 medium or large tree @ 30 foot intervals	6 foot continuous hedge or intermittent planting w/wall
Commercial and Industrial	10 feet	1 medium or large tree @ 40 foot intervals	4 foot continuous hedge or trees at 10 foot intervals
All Land Uses and Freeways/Principle Arterial/Roads with 45MPH or higher /RRs	20 feet outside of utilities	1 medium or large tree @ 30 foot intervals	6 foot hedge with 6 foot continuous soil berm or 6 foot hedge with sound deadening wall
All Land Uses and Utility stations, landfills, salvage yards, etc	15 feet	1 medium or large tree @ 30 foot intervals	6 foot continuous hedge or 6 foot wall/fence
All Land Uses and Agricultural district	10 feet	1 medium or large tree @ 30 foot intervals	6 foot continuous hedge or 6 foot wall/fence

4.12 Screening Fence or Wall

If a fence or wall is used to provide screening, it shall be constructed such that visibility through any portion of the fence or wall is not greater than 80%. The fence or wall shall be of sufficient height to accomplish the purpose for which it is designed but shall not be greater than eight feet, nor less than four feet in height. The fence or wall may be constructed of wood, masonry, metal provided it is aesthetically pleasing.

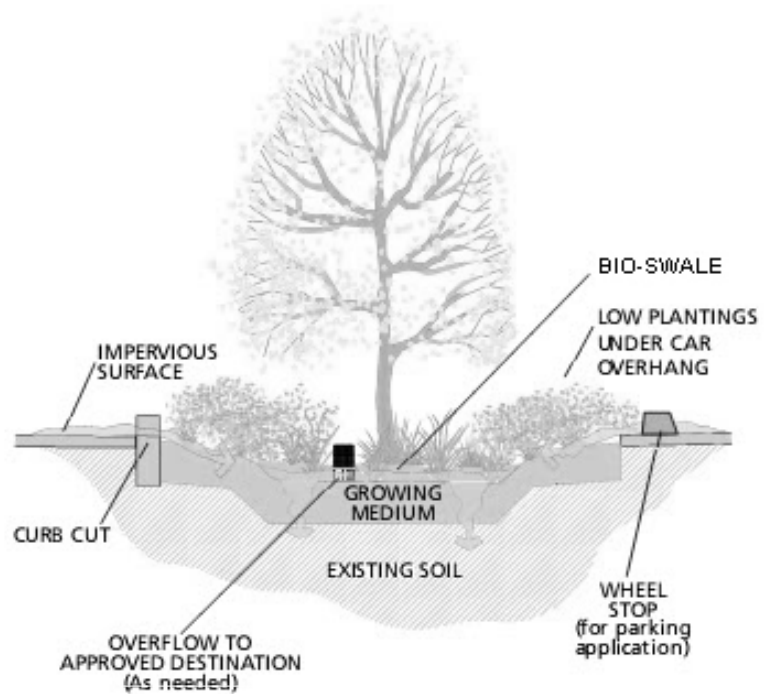
4.13 Landscaping or Screen Planting

If trees or shrubs are to be used to provide screening, a species shall be used such that visibility through the screening is blocked by at least 80% throughout the year. The effective screening height of the trees or shrubs shall be at least four feet in height at the time of planting.



4.14 Landscaping in Parking Lots

A landscape plan is required for all commercial, industrial, and multi-family residential development. For every one hundred (100) square feet of vehicular use area (or fraction thereof), five (5) square feet of landscaped area shall be provided, in addition to landscaping around the perimeter of adjacent buildings or parking areas. For every two hundred fifty (250) square feet of landscaping required one (1) tree shall be provided. The minimum size for a landscaped area shall be one hundred and eighty (180) square feet, with at least a dimension of eight (8) feet. The spacing of landscape areas shall be in such a manner as to provide coverage throughout the extent of the area in question. Interior planting islands shall be spaced at minimum of 1 per every 25 spaces in row. Planting shall include a combination of trees, shrubs, and ground cover as determined appropriate by the landscape review committee.



Typical Interior Landscape Island Detail

4.15 Landscape Review

Landscape review shall be performed by Planning and Zoning staff and by an appointed Planning and Zoning Board Member that has landscape or horticultural training. The landscape official shall review the proposed landscape plan and submit its recommendations to the Planning Commission. Planning and Zoning shall inspect the landscape planting prior to issuance of a certificate of occupancy.

4.16 Landscaping Required for Residential Lots

Residential lots are required to have a minimum of two (2) trees per lot in R1-B and R1-C zones and a minimum of three (3) trees per lot in R1-A zones with a minimum diameter of two and a half (2 ½) inches.

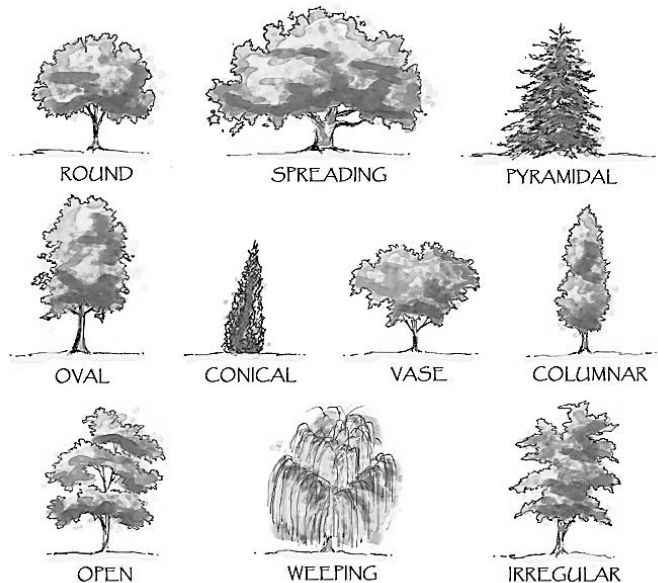
4.17

PLANT CHARACTERISTICS

1. **PLANT TYPE:** Each acceptable plant material is designated as either deciduous (D) or evergreen (E). This is essential since only specific plant types can meet ordinance requirements such as winter opacity or triangle visibility.
2. **HEIGHT:** Height of plant materials is given in ranges because dimensions vary depending on site conditions, climate, temperature, and how well plants adapt to these conditions. For example, under ideal conditions, a plant may reach a height of up to 20 feet, but because of conditions at a specific site, the same tree may be limited to a height of just 10 feet. Limited room for root growth also restricts maximum height. Such areas include raised planters, parking lots, streets or areas where there is considerable competition between plants. Plants that tolerate pruning may be kept to a smaller size.
3. **SPREAD:** Spread refers to the width of a tree's mature crown. Plants with wide, spreading crowns emphasize horizontal features. In contrast, plants with narrow crowns emphasize the vertical lines. Spread partially determines the suitability of a plant for a particular site. Plants with wide- spreading forms require a large area to develop. Upright forms are used effectively where space is limited. All plants shall be allowed ample room to develop. Spread shall be measured in feet, with the average mature spread of the plant indicated. Spread is normally listed as a range because of its variability.

4. **FORM:** Form is generally referred to as the outline of the crown, but includes much more. Form shall be determined by the line, direction, and arrangement of branches and twigs. Form has mass and volume since trees project in all direction: upward, downward, and sideways. The form of a plant shall be typical of the species at the time of installation, but may be altered to create a desired effect as long as the plant still meets ordinance requirements.

TREE FORMS



5. **URBAN TOLERANCE:** A plant tolerant of urban conditions must be able to withstand a variety of adverse conditions, including air pollution, poor and infertile soils, compacted soils, heat and drought, and other similar conditions. Plants that have relatively few problems shall be considered to be urban tolerant.

6. **DISEASE AND INSECT TOLERANCE:** Disease and insect problems affect all trees to some extent. Some problems are barely noticeable and exert little effect on a tree's health. Disorders can restrict the tree's growth, cause gradual decline in health, and eventually lead to the tree's death. The severity of a problem depends on the type of tree, condition of the tree, type of disorder, time of year, immediate weather conditions, along with many other factors. Disorders that are frequent, widespread, or highly destructive should greatly limit the use of a particularly susceptible tree species, i.e. tip blight on Austrian pines.
7. **DENSITY:** Density refers to quantity of foliage and branching and is measured by comparing positive space to negative space. Positive space includes all tree characteristics perceived when the tree is viewed as two-dimensional silhouette with dense branching and foliage. Negative space is space that appears between branching and foliage. It is the open area through which the sky and background can be seen. The greater the amount of negative space, the less the apparent density.

4.18 PLANTING SPECIFICATIONS

1. **PLANT SELECTION:** Choose species that provide desirable benefits and thrive in an urban environment. There are many conditions which dictate the plant's ability to survive and care should be taken in making sure the right tree is planted in the right place. Environmental conditions play a big part in the ability of a plant to grow. Some examples of the conditions to assess include whether the site has sun or shade, north facing or south facing aspect, shallow or deep soils, wet areas or is well drained, pH of soil, soil texture and structure, high salt, compacted soil, etc. It is not enough to simply plant a tree anywhere, care must be taken to ensure that conditions are right for that species if long term viability of the plant is to occur. If habitat is a consideration, species may be targeted to accentuate the desired habitat attempted. Consult appropriate professional assistance before attempting any species selection
2. **PLANT QUALITY:** All plant materials shall conform to the standards set forth in the current edition of American Standards for Nursery Stock. Plants shall be typical of their species and variety and have normal, well-developed branching structure and a vigorous fibrous root system. Branches shall diverge from the trunk at a wide angle except in varieties that normally grow upright (columnar forms). Plants shall be healthy, vigorous and free from insects and diseases. Trunk and stems shall be firm with no indication of fungal cankers, galls, insect borers, die back, frost cracks, sun scald, or other defects.

All plants shall be commercially grown and no plants from the wild shall be acceptable except for open space plantings with the approval of Planning and Zoning. Plants shall be grown under climatic conditions similar to those of Madison County, Kentucky (Hardiness Zones 5-6).

Trees shall not be acceptable if their central leader has been cut. Hedges shall not be pruned prior to installation. Any necessary pruning to form a hedge shall begin immediately after installation. Trees to be planted shall not have any recent pruning cuts over $\frac{3}{4}$ inch in diameter. Multiple branches, one over the top of another, shall not have been removed within the same growing season.

3. **PLANT SIZE:** All plants shall equal or exceed the minimum acceptable size as required. Plant height shall be measured before pruning with branches in a normal position. No plant shall be pruned back to such an extent that it no longer meets the required size specifications. All measurements shall be taken at the time of planting.

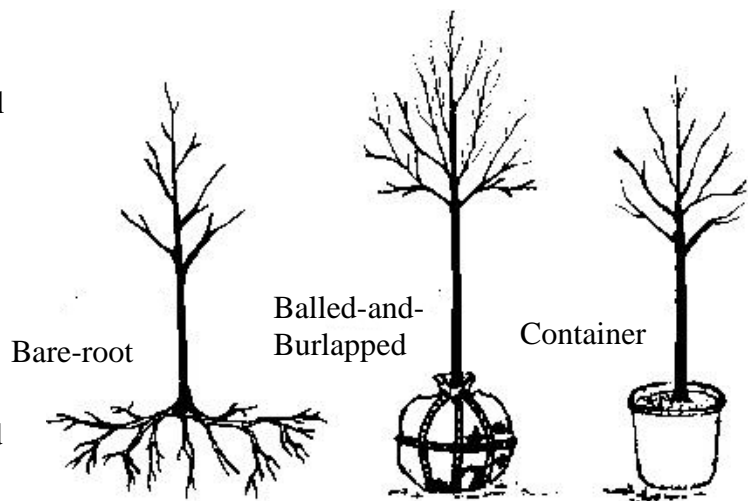
All deciduous trees shall have a minimum height of 10 feet and a minimum caliper of 1-3/4 inches as measured 6 inches above the root ball. They shall have a minimum clearance of 5 feet from the ground to the first branch. Evergreen conifers shall be a minimum of 5 feet in height with a minimum caliper of 1-1/2 inches as measured 6 inches above the root ball. All shrubs shall have a minimum height of 24 inches with other height requirements for specific ordinance uses. All vines shall be a minimum of 12 inches in length. Groundcovers have no minimum height requirement, but all plants shall be at least 1 year old and of sufficient size to have 75% complete coverage after two complete growing seasons.

4. **ROOT SYSTEM:** All deciduous and evergreen trees shall be balled and burlapped (B&B) or container grown. No bare root trees shall be acceptable with the exception of certain open space plantings and with the approval of Planning and Zoning. Each root ball shall be firm and compact and wrapped with natural burlap and bound securely with non-synthetic twine, or cord, or wire mesh. Wire baskets are acceptable but baskets must be removed from all rootballs 24 inches in diameter or less. Larger rootballs must have the upper two rows of wire removed after being placed in the planting hole.

Evergreen and deciduous shrubs shall be balled and burlapped or container grown for smaller shrubs, no bare rooted shrubs shall be acceptable.

Ground covers and vines shall be container grown and shall be well balanced, well established plants. Bare root groundcovers shall be acceptable, but only with specific approval of the landscape examiner.

The minimum sizes of balls, ball depths, and ball diameter shall be in accordance with recommended balling and burlapping specifications as set forth in the current edition of American Standards of Nursery Stock. All containers shall meet the standards set forth in the same publication, and shall be sufficiently rigid to hold the ball shape protecting the rooting mass.



5. **ROOTING SYSTEMS SHALL MEET NURSERY STANDARDS:** All balled and burlapped plants which cannot be planted immediately shall be upright and heeled in and protected with mulch or other accepted material. All container grown plants and bare-root

ground covers shall be protected from drying winds and sun. All plants shall be properly watered and maintained as necessary until time of installation. No plants shall be bound or tied with wire or rope unless necessary to facilitate handling. Any plants damaged prior to installation for any reason shall be rejected.

4.19 Time of Planting

The most satisfactory time for transplanting is from October 1 to December 15 for fall planting, and from March 1 to May 15 for spring planting. Deciduous trees generally need to be in their dormant season (either after leaf fall or just before leaf flush) for successful transplanting. Exact dates vary according to location and environmental conditions and change from one year to the next.

Fall planting should be done after leaf drop but early enough to allow the roots to regenerate so they can support the plant during winter. Planting must be done before the soil freezes, and while warm enough to permit new root growth. Fall planting has the advantage of favorable soil temperature, normally adequate moisture, and time for some root regeneration before the following spring. Planting in areas with excessive winds should be delayed until spring to avoid critical winter damage. Some trees do not adapt well to fall planting. These include: oak, poplar, blackgum, and magnolia. The appropriate planting season for a specific plant species depends on the growth stage of the plant, hardiness, the inherent nature of the species, and the microclimate of a site.

TREE TRANSPLANTING

The following is a list of approved plantings for landscape requirements.

Spring	Fall
Bald-Cypress	Arborvitae
Beech	Basswood
Birch	Black Locust
Blackgum	Buckeye
Catalpa	Corktree
Cherry	Crabapple
Dogwood	Elm
Fir	Ginkgo
Golden Raintree	Hackberry
Hawthorn	Honey Locust
Hemlock	Japanese Pagoda Tree
Hickory	Juniper
Hophornbeam	Katsura
Hornbeam	Kentucky Coffeetree
Larch	Linden
Magnolia	Maple
Oak	Mulberry
Planetree	Osage Orange
Poplar	Pine
Sassafras	Redbud
Sourwood	Serviceberry
Sweetgum	Spruce
Walnut	
Yellowwood	
Zelkova	

UNACCEPTABLE TREES

The following list is not recommended for local planting.

SCIENTIFIC NAME	COMMON NAME 'CULTIVAR'
Acer saccharinum	Silver Maple
Aesculus hippocastanum	Horse Chestnut
Betula papyrifera	Paper Birch
Betula pendula	European White Birch
Castanea dentata	American Chestnut
Castanea mollissima	Chinese Chestnut
Ginkgo biloba (female)	Ginkgo
Fraxinus americana	White Ash
Fraxinus pennsylvanica	Green Ash
Fraxinus quadrangulata	Blue Ash
Gleditsia triacanthos	Common Honey Locust
Kalopanax pictus	Castor Aralia
Morus alba	Common Mulberry
Morus rubra	Red Mulberry
Pinus nigra	Austrian Pine
Pinus sylvestris	Scotch Pine
Populus (all)	Poplars (all) 'White Poplar' 'Easton Lombards'
Pseudotsuga menziesii	Douglas Fir
Quercus palustris	Pin Oak
Ulmus americana	American Elm Smoothleaf Elm Red Elm
Ulmus carpiniflora	Siberian Elm
Albizzia julibrissin	Mimosa Tree
Catalpa bignonioides	Southern Catalpa
Malus pumila	Common Apple
Paulownia tomentosa	Royal Paulownia
Pyrus calleryana (cultivars)	Callery Pear (cultivar)
Pyrus calleryana	Callery Pear 'Bradford'
Pyrus communis	Common Pear
Salix babylonica	Weeping Willow
Sorbus (species)	Mountain Ash (species)

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City of Richmond, Kentucky

Access Management and Roadway Manual



January 2015

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Introduction

The continuing growth and development in the City of Richmond has generated the need to expand and update many of the city's regulations over the past few years. The Comprehensive Plan outlined many of the near-term and long-term goals to provide better services to the citizens of Richmond. This manual expands and updates the City of Richmond transportation regulations, both for new development as well as a tool to guide government-funded infrastructure improvements.

The layout of this document is predicated on development of a procedure for planning, layout, design and construction of a transportation system that includes the pedestrian, bicyclist, trail enthusiasts, and motor vehicle uses. The City of Richmond must work with the Kentucky Transportation Cabinet, the Eastern Kentucky University, Madison County, railroads, utility companies and others to develop a transportation system that will meet the increasing demands of an expanding city. The City of Richmond has included links to various websites for further information about access management topics.

Primary documents used in development of this report include the Lexington-Fayette Urban County Government (LFUCG) Subdivision Regulations; the LFUCG Engineering Manuals; the Access Management Manual from the Transportation Research Board; A Policy on Geometric Design of Highways and Streets, "The Green Book", and the Guide for the Development of Bicycle Facilities all from the American Association of State Highway and Transportation Officials (AASHTO). These are all regional or national standard design guidelines and practices for access management, design and construction of roadways. Additional references are located in Appendix B.

This manual is broken into two distinct segments, plus Appendices. The first segment includes the development of an Access Management manual that provides guidance on driveway and intersection spacing, including development of a transportation plan and a bike/trail plan that will help guide future development as well as provide the framework to develop a complete plan throughout the existing community.

Access Management Manual

Access management is a set of techniques that the City of Richmond can use to control access to highways, major and minor arterials, collector and other roadways. These techniques are designed to increase the capacity of roads, manage congestion and reduce crashes.

Access management relies on the use of a hierarchy of road types to provide varying levels of transportation access to adjacent land uses, and maximizes the efficiencies of the transportation system. Some techniques used include management of driveway access to all highways, spacing of signalized intersections, use of medians to control left turns, deceleration lanes on major highways, interconnectivity of collector and arterial roads to reduce unnecessary trips. Creation of land use policies to restrict access is also critical to the success of access management.

The transportation plan and bikeway/trail plan included within the Access Management Manual will

guide future growth and development in Richmond. The development of these two plans was accomplished by means of town hall meetings to get public comments and development of alternative plans that were evaluated to gain consensus of a final document. These plans are dynamic and will require updating every five years, or whenever a significant roadway milestone has been accomplished.

Roadway Design Manual

The Roadway Design Manual was developed to ensure that all public roads and trails are constructed to a uniform standard, which will ensure all public works facilities have been constructed so that they meet a 20-year design life that is commensurate with their function and need. The consistency of design and construction will also improve management of maintenance costs in the future, hopefully reducing the potential for premature failures of roadway or trail pavements.

This manual is based upon design practices that have been used in many cities in the United States, and are endorsed by numerous public agencies and national design and construction organizations.

Section A - Access Management Manual

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Chapter 1

Overview

- 1.1 Access management is a set of techniques that the City of Richmond can use to control access to highways, major and minor arterials, collector and other roadways. Access management includes several techniques that are designed to increase the capacity of these roads, manage congestion and reduce crashes.

Techniques used to improve the capacity of roads are grouped into the following categories:

- Provide a specialized roadway system hierarchy – Functional Classification
- Control driveway location, spacing and design, including joint access points
- Increase and manage distance between signalized intersections
- Preserve the functional areas around intersections and interchanges
- Limit the number and location of traffic conflicts
- Use of exclusive turning lanes or frontage roads
- Use of median control of access
- Land use policies that limit right of way access to highways.
- Improve the connectivity of the transportation system

The purpose of access management is to provide vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system.

1.2 Benefits of Access Management

Roads are an important public resource. It is not wise or practical to allow the function of major arterial roadways to deteriorate by permitting full access without restrictions. Upgrading and improving these roads is becoming more expensive to construct and consumes valuable land reserves.

Access management is good business. Businesses, motorists, individuals, government and the community receive significant benefits from access management.

- Businesses benefit from a predictable traffic pattern, reduced delivery delays, lower transportation costs, stable property values
- Motorists face fewer traffic conflicts, fewer delays, and an increase in safety
- Pedestrians and cyclists benefit from a more predictable motorist travel pattern, and alternative routes
- Government benefits from lower investment costs, higher efficiency of traffic movement, less construction inconvenience
- Communities benefit from a safer transportation system, reduced right of way acquisition, preserve the roadway investment cost

Access management programs can stop the cycle of functional obsolescence of transportation facilities. However, the transportation and land use cycle can only be managed by addressing both the transportation system and the adjacent land development.

1.3 How is Access Management Accomplished?

Access management is accomplished by designating an appropriate level of access control for each of a variety of facilities in a transportation system. Local residential roads are allowed full access, while major highways and freeways allow very little. In between are a series of road types that require standards to help ensure the free flow of traffic and minimize crashes, while still allowing access to major businesses and other land uses along a road.

Access management practices must also be coordinated through the City of Richmond Comprehensive Plan, the Development Ordinance and coordination with the Kentucky Transportation Cabinet on state-maintained roadways.

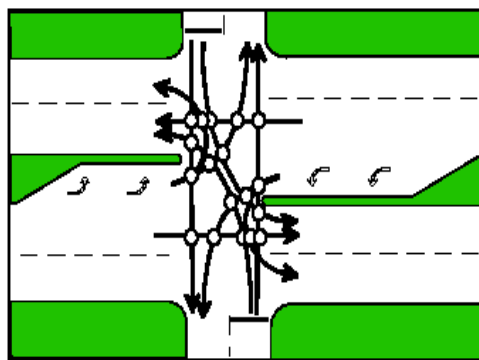
1.4 Access Spacing

Each new access point brings a significant number of conflict points into the traffic stream. Access management programs should establish minimum requirements for access spacing.

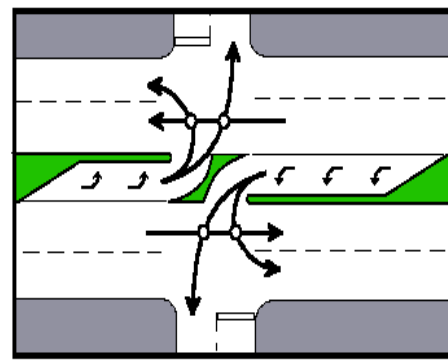
Figure 1.1 - Conflict Points

Full Median Access

Directional Median Opening



18
MAJOR
Conflicts



4
MAJOR
Conflicts

Spacing criteria must be developed for the following items:

- signalized access connections and street spacing
- unsignalized access connections
- corner clearance
- access to crossroads at interchanges
- spacing between highway interchanges

1.5 Signalized Access Connections and Street Spacing

Closely spaced or irregularly spaced traffic signals on arterial roadways result in frequent stops, unnecessary delay, increased fuel consumption, excessive vehicular emissions and high crash rates.

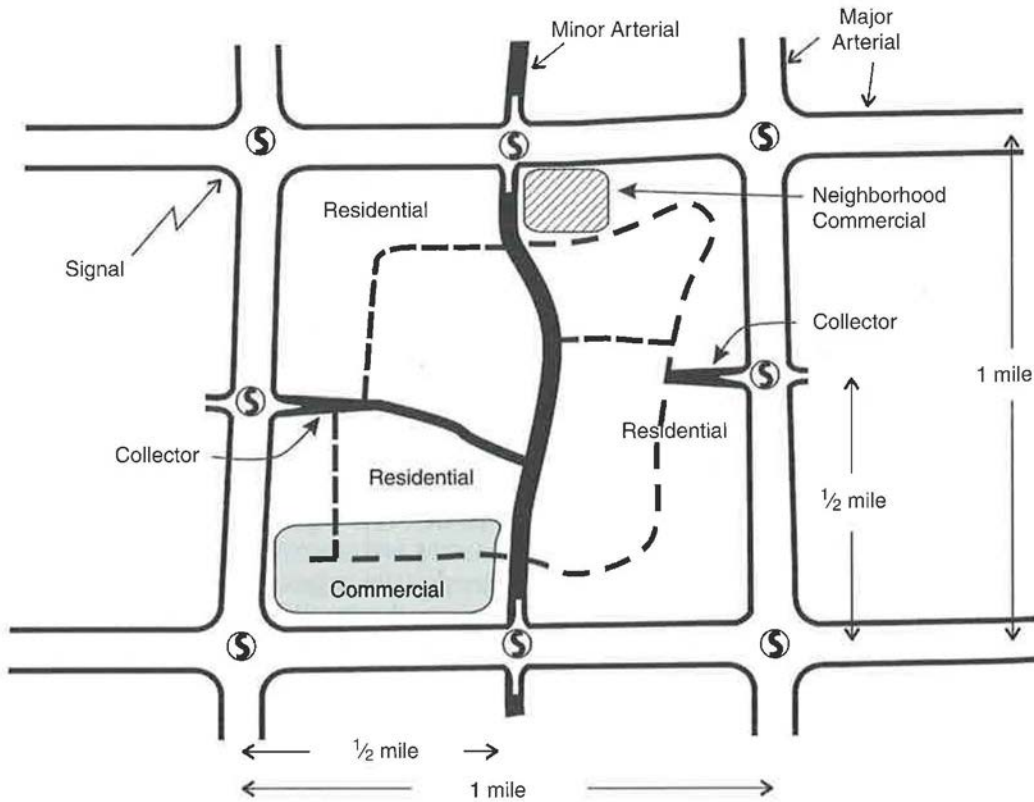
Signalized access connections should be spaced as far apart as practical along arterials. A series of signals along one or more arterials should also be interconnected and working in a coordinated fashion.

New signalized access points will require a traffic study to consider the effects of the signal on the roadway operation, including increased delay, crash rates, spacing and adverse effects on the green band width of the signal progression aspects of the arterial.

Most signals will be installed on the state highway system and will require approval of the KYTC for installation.

1.6 Street Spacing

Capacity at the intersection of two major urban arterials ultimately can become a problem as an area develops and traffic volumes increase. Spacing major arterials at multiples of the adopted signal spacing facilitate operation of the major arterial-to-major arterial intersections by maximizing traffic flow and minimizing delay. For example with a ½ mile spacing interval, major arterials would be spaced 1 mile apart, allowing continuous minor arterial or collector streets to be located between the arterials. Alignment of the collector streets depends on subdivision layout. Ideally, the pattern of local and collector streets within residential areas would discourage through traffic from using the residential streets as an alternative to the arterials. Figure 1.2 illustrates the relationship between the various functional classifications of roadways.

Figure 1.2 - Corridor Land Use and Transportation Concept

1.7 Access Management Corridor Plans

The Transportation Plan in the Richmond Comprehensive Plan recommended implementation of access management plans for several roadways, including the Robert Martin Bypass and the Eastern Bypass, and several other roadways.

An access management corridor plan for specific roads can be beneficial to guide future development and lay the groundwork for the transportation circulation plan for the entire corridor.

Regional examples of such plans include Richmond Road and Man o War Boulevard, in Lexington. Both facilities had access management plans approved by the Urban County Council to manage access before development was completed along both roadways.

Access management plans have also been completed for existing roadways that have congestion problems. Examples of plans that have been completed for already existing problem locations include the US 31W Memorandum of Understanding in the Louisville area, and a draft for the Nicholasville Road US 27 Access Management Plan that has been completed but not

formally approved, in the Lexington area.

This manual will provide the basic principles of access management, but a specific plan for any of the existing or proposed roads in Richmond will be more effective and control future development of the corridors. Such plans are usually welcomed by development because they know before they even start a development what the ground rules are for access to their developments.

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Chapter 2

Functional Classification

2.1 Overview of Standards by Street Classifications

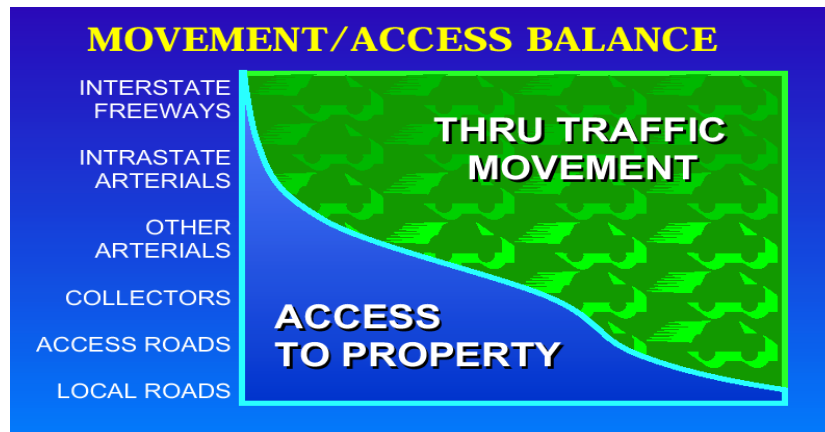
Proposed streets must conform to adopted City of Richmond's standards and policies for design and construction. The only exception to these requirements is when the City deems it necessary to apply different standards in an effort to:

- Preserve trees or other natural features
- Minimize grading or impervious surfacing
- Accommodate utilities, landscaping, or other street side facilities
- Increase the suitability of the design or construction to the terrain, soil, surface drainage, groundwater, or anticipated traffic load or speed
- Achieve specific community goals deemed beneficial to the City of Richmond

Streets shall be related to topography and shall generally provide for the continuation of existing or dedicated streets in adjoining or nearby tracts, and provide for connection to adjoining unsubdivided tracts, especially those which would otherwise be land-locked. Expressways and arterials shall not penetrate or bisect existing or proposed neighborhoods, but rather, shall be located as appropriate boundaries for such. Collectors shall carry traffic from arterials into neighborhoods. Locals shall carry traffic from collectors into the neighborhood for the primary purpose of access to individual properties.

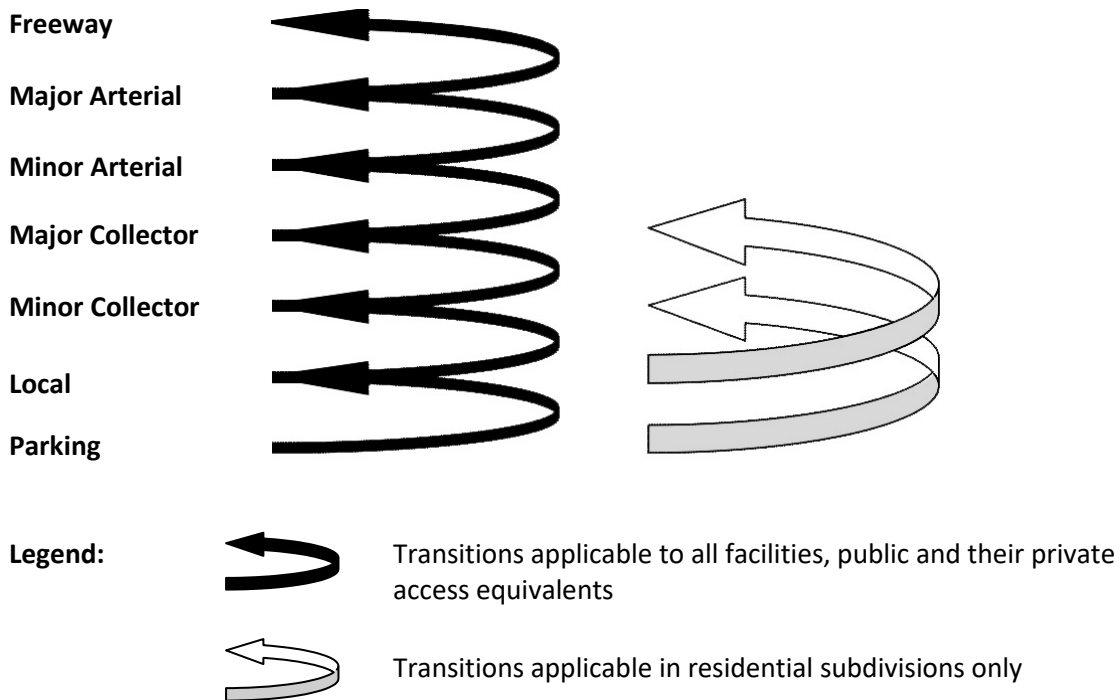
2.2 Roadway Classification

It is important to classify the roadways within the City to effectively manage the traffic on those roads. Within any community there are different types of streets, which are planned and constructed to serve different purposes. On one end of the scale, the multi-lane freeway is designed to carry high volumes of traffic at high speeds over relatively long distances. No direct access between these freeways and the land, which abuts them, is permitted. On the other end of the scale is the local residential cul-de-sac, whose function is to provide access to and from the property abutting it and to provide the first link between that property and the entire roadway network. The bulk of the streets in a community, however, do not fit neatly into either of these two categories. Most streets provide, in varying degrees, for both the through movement of traffic and access to the property abutting those streets but, unfortunately, these two functions often conflict with one another. New developments need adequate access to the property in order to be viable but each additional access point lessens the capacity of the roadway to carry traffic volumes. This compromise can be accomplished through the application of a comprehensive policy based on the principles of access management. Figure 2.1 shows the correlation between access and functional class.

Figure 2.1 – Functional Hierarchy

As shown, local/residential roads can function with the highest number of access connections. However, a freeway should have the greatest control of access, limiting the connections to major crossroads. The actual roadway structure is also important in the success of a roadway network. Local roads should feed to collectors, which should feed into arterials, etc. This is shown in Figure 2.2 below. This street hierarchy is important for various reasons. One principal reason is to keep high volume through traffic on major arterials and keep them from using local roads in neighborhoods.

The following sections describe how Richmond streets will be identified in the various categories. Maps will show the roadways in various colors, and a table of classification of all Richmond streets is included in the Appendix section of this report.

Figure 2.2 – Access Relationship between Functional Classes

2.3 Street Classifications

Streets are defined as a vehicular way, a general term used to describe a right-of-way that provides a channel for vehicular, bicycle and pedestrian movement between certain properties and/or locations in the community. A street may also provide space for the location of underground or aboveground utilities.

For transportation purposes, streets provide two primary functions: *movement* between various origins and destinations at reasonable volumes and speeds, and access to individual parcels of land (specifically driveways connecting streets and private property). These two functions are often in conflict with each other; thus street classifications must be used to balance these needs.

In planning a street network for the City of Richmond, the following street classifications, by function, are utilized:

- **Expressways**

Expressways are used only for movement of vehicles, providing for no vehicular or pedestrian access to adjoining properties; interchange of traffic between an expressway and other streets is accomplished by grade separated interchanges with merging deceleration and acceleration lanes, and no at-grade intersections are permitted. Expressways generally carry higher volumes, require greater right-of-way width, and permit higher speed limits than any other class of street, and should be depressed in urban or urbanizing areas. Arterials are the only class of street that generally should be connected with expressways at interchange points. Expressways will not be addressed in this guidance manual; the Engineer is referred to AASHTO's *A Policy on Geometric Design of Highways and Streets*, and/or KDOH's *Design Manual* for background and information with regards to expressways.

- **Arterials**

Arterials are used only for the movement of vehicles, and should not provide for direct vehicular access to adjacent properties. Bicycle usage of arterials should be limited to designated bicycle/multi-use paths or bicycle lanes. Pedestrian use of arterials should be limited to designated bicycle/multi-use paths or sidewalks. Interruption of traffic flow should be permitted only at street intersections that should contain medians, deceleration lanes, and left turn storage lanes. Arterials are the link between expressways and collectors, and rank next to expressways in traffic volumes, speed limit, and right-of-way width.

Arterials may be further divided into two classes, "Major" and "Minor".

- **Major Arterials** - carry the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass the central city. In addition, significant inter-area travel such as between the downtown and outlying residential areas, between major inner city communities or between major suburban centers is to be served by this class of facilities.
- **Minor Arterials** - interconnect with and augment the principal arterial and provide service for trips of moderate length at a somewhat lower level of travel mobility.

- **Collectors**

Collectors are used both for vehicles and to provide access to adjacent properties. Access to adjoining properties should be planned and controlled so that minimum disturbance is made to the traffic moving efficiency of the Collector. Bicycle usage of Collectors should be limited to designated bicycle/multi-use paths, bicycle lanes, or streets designated as bicycle routes that provide a widened outside land or a paved shoulder that can be utilized by

bicyclists. Pedestrian use of Collectors should be limited to designated bicycle/multi-use paths or sidewalks.

Collectors are streets that are designed to interconnect the city as a whole, as well as to provide a link between arterials and local streets. Collectors generally rank next to arterials in traffic volumes, speed limits, and right-of-way width.

- **Locals**

Locals are used primarily to provide access to adjacent properties. Vehicles moving on these streets should have an origin or destination in the immediate vicinity, and all types of through traffic should be eliminated through initial design of its connections with other streets. Local streets are the primary link between trip generation points (homes, offices, stores, work) and collector streets. Locals have the least right-of-way, the lowest speed limit, and the least amount of vehicular traffic. Local streets can be subdivided further into five sub-classes, listed below.

- **Continuing:** Are local streets having two open ends; each end generally connects with different streets; one or more other streets may intersect it between its two open ends; and property fronts on both sides of the streets.
- **Service Roads:** Are local streets that run parallel to a street with a higher classification on one side and run parallel to properties requiring access on the other side. A service road generally has two or more open ends, connecting at street intersections that run perpendicular to the service road and its adjacent street of higher classification. In this way, a service road provides an access route to properties adjacent to higher classification streets while at the same time reducing the number of access points from these properties onto the higher classification streets. Generally, in a given block, one or no access points are provided directly to the higher classification streets, but multiple access points are provided onto the adjacent properties.
- **Loop:** Are local streets forming a “U” shape and having two open ends; each end generally connects with the same street; no other streets generally intersect between its two ends, and property fronts on both sides of the street.
- **Cul-de-sac:** Are local streets having only one open end providing access to another street; the closed end provides a turn-around circle for vehicles, no other street generally intersects between the two ends, and property fronts on both sides of the street.
- **Stubs:** Are local, closed end streets that are only acceptable as temporary street conditions. Stubs are similar to cul-de-sacs except that they provide no turnaround circle at their closed end. Stub streets shall only be used when a future street

continuation to an adjacent undeveloped property is planned.

- **Alleys**

Alleys generally have two open ends, each end connects with different streets, and property generally backs onto both sides of the alley.

2.4 Functional Classification of Existing Streets for the City of Richmond

The City of Richmond has assigned a functional classification of all existing roads within the city based on traffic data, existing land use and zoning and current access conditions. This map is an updated version of that shown in the 2011 Comprehensive Plan. It is identified as Figure 2.3 – Functional Classification of Existing Streets in Richmond.

2.5 Functional Classification of Existing and Future Streets for the City of Richmond

In order to plan for future growth of Richmond and to prepare the transportation system for future growth and development, the city held several Town Hall meetings to solicit public input for improvements that it felt necessary to ensure that Richmond was prepared for future traffic and roadway capacity needs. Issues that were discussed at the meetings included connectivity of subdivisions for circulation and safety, roadway capacity, problem locations or intersections, bike lanes, shared-use trails, and other issues that the public was concerned about.

The study area for the future plan included the entire city limits of Richmond plus any sewerable land immediately adjacent to the existing city limits. In some locations potential roadway connections were made outside of these areas in order to complete a comprehensive traffic circulation system for the future. These would be the most important locations to plan for an enhanced access management roadway system.

The issue of bike routes, bike lanes and shared-use trails was an important component of the proposed roadway system also. There were several recommendations for enhanced bike lanes and trails that came from the town hall meetings. The bike needs of Richmond range from recreational, commuter, student driven destinations, and intercity routes that would link Richmond with surrounding tourist destinations and other cities in the region. A long term goal would be to develop a system of bike trails that would link with cities in all directions of Richmond and provide an important tourism component of the economy that is currently nonexistent.

The proposed roadways on the maps are general alignments only. No alignment or corridor studies have been completed on any of the roadways. The refinement of actual roadway locations and alignment will be completed by the City of Richmond, at a time when future development is imminent.

It is recognized that some of the proposed roadways will be constructed within the next five years. Other major roadways may not be constructed within the next 20 years, but it is important to plan current development with the entire proposed roadway structure in mind. This will reduce the potential for short-sighted development and provide the framework for an overall transportation system that meets the needs of Richmond. The proposed functional classification system for the City of Richmond is shown in Figure 2.4 – Proposed Functional Classification of Existing and Proposed Streets in Richmond, Including Bike Lanes and Shared Use Trails.

Figure 2.3 – Functional Classification of Existing Streets in Richmond (Map is for illustrative purposes only. Go to online map for more detail)

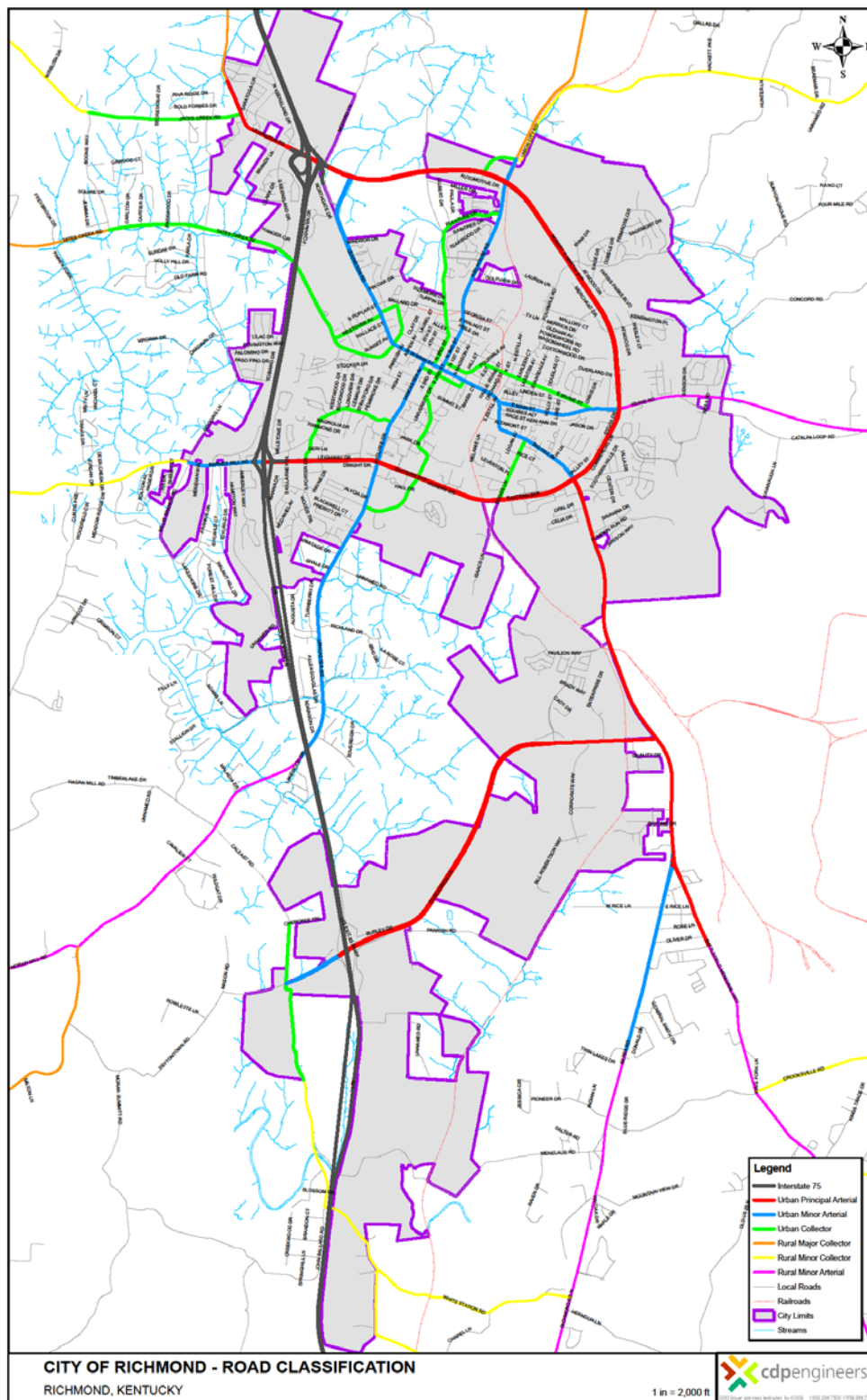
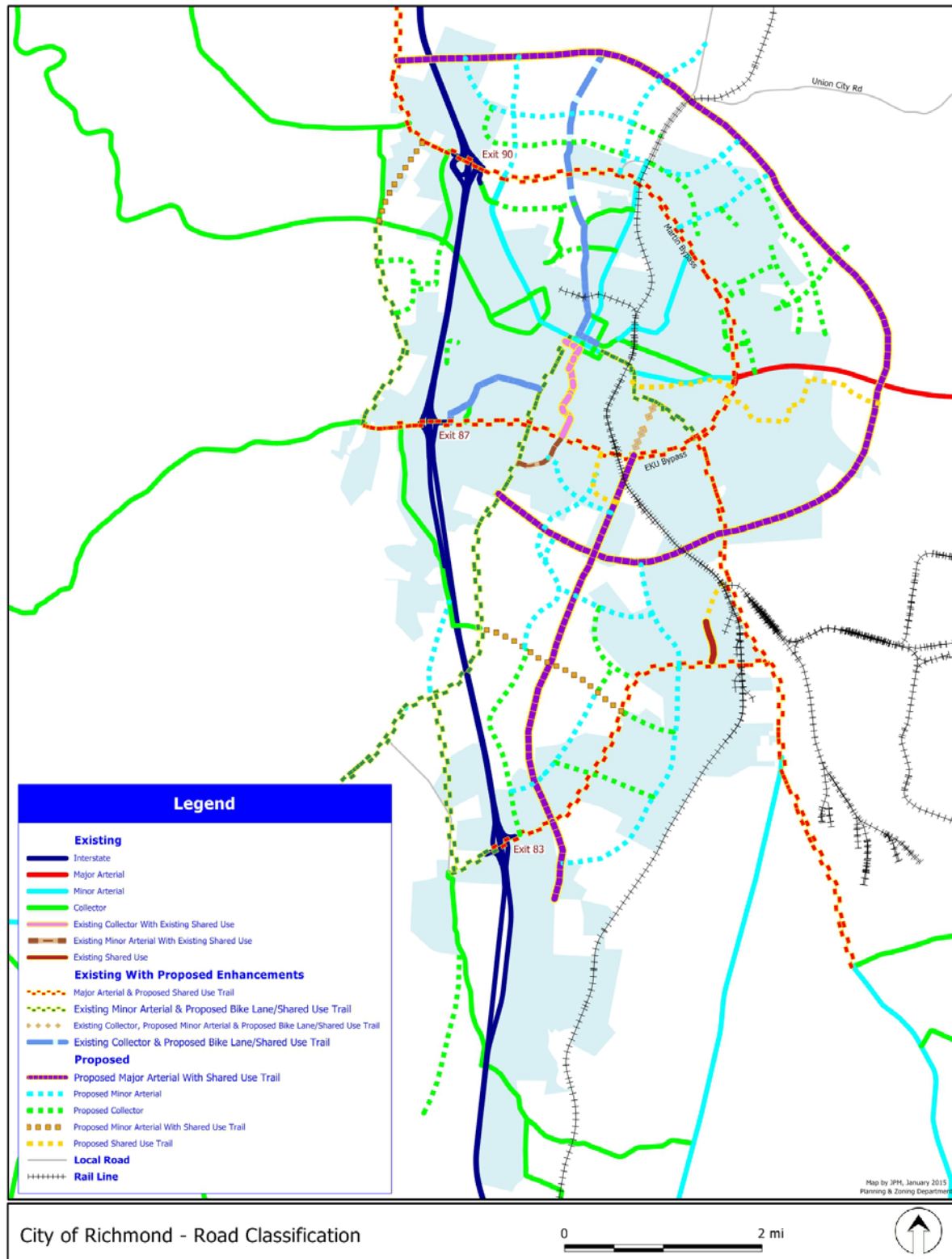


Figure 2.4 – Proposed Functional Classification of Existing and Proposed Streets in Richmond, Including Bike Lanes and Shared Use Trails (Map is for illustrative purposes only. Go to online map for more detail)



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Chapter 3

Street and Driveway Access, Site Layout and Land Use

3.1 Introduction

The appropriate location of access points is critical to roadway efficiency, driver and pedestrian and cyclist safety. Critical factors that must be considered include provision of adequate sight distance, avoiding conflicts in the functional area of intersections and interchanges, and observing the hierarchy of roadways and intersections. Further information about street and driveway spacing is provided in subsequent chapters.

3.2 Coordination between Land Use Policies and Access Management

Land use and access management policies must be coordinated to achieve the proper and effective control of intersections, driveways and other traffic control practices. This manual provides the technical guidelines for location of these facilities and provides Planning and Zoning with the tools to direct local residential and commercial development to meet those guidelines. The Development Ordinance and the Comprehensive Plan must also be coordinated to enforce the policies and guidelines set forth in the manual.

3.3 Roadway Characteristics

Intersections and driveways share common access characteristics. The major differences between them are that intersections serve public or public streets and driveways serve private property parcels. They are both considered access connections. Operational characteristics that influence the location and design of access connections are as follows:

- Speed:
Stopping distance, intersection sight distance, decision sight distance, maneuvering distance all increase rapidly as speed increases.
- Volume and traffic flow:
Traffic volumes on major roadways in urbanized areas are commonly higher than in rural areas. Urban streets commonly experience higher traffic volumes and slower speeds in peak periods than off peak periods. In addition, traffic flow is affected by traffic signals, which result in large numbers of vehicles moving in platoons with a much smaller number of vehicles distributed between the platoons.

3.4 Site Characteristics

Good site design should have a circulation pattern that does not conflict with the building or parking lot layout, should fit the terrain and conform to the overall site plan. Landscaping and

parking requirements, space desired for future expansion, buffers and other development requirements must also be properly considered.

Flexibility in the location of access points, building site, circulation and other considerations, increases as the size of the property increases; thus, it is easier to develop a comprehensive access management plan for large sites. For small parcels on major roads, joint access, inter-parcel circulation and service roads can be used to provide a site access and circulation plan that serves as an alternative to direct roadway access.

3.5 Sight Distance

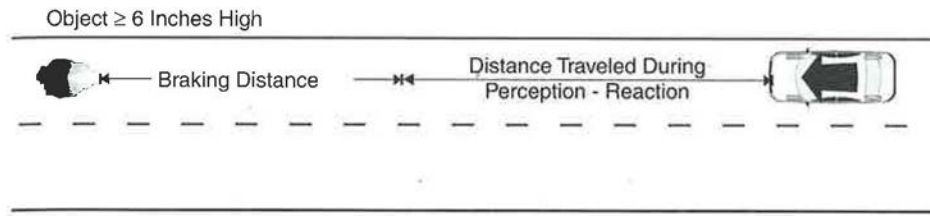
Each access point contains several potential vehicle conflicts. Providing adequate intersection sight distance at access connections ensures that drivers can enter or cross a roadway safely. Adequate sight distance also allows drivers approaching an access connection to see a vehicle waiting at the connection or entering the roadway and safely take evasive action if necessary. Access points should be planned and located to provide as much sight distance as possible.

Three types of sight distances are involved in the location and design of access connections:

- Stopping sight distance: the sight distance required for a driver to perceive and react to a discernible hazard (an object equal to or greater than 6 inches high) and then brake to a stop before reaching the hazard.
- Intersection sight distance: the sight distance required for drivers to safely make a left or right turn from an access connection, or to cross a roadway, or for a driver to safely make a left turn from a roadway into an access connection.
- Decision sight distance: the distance required by a driver to ascertain and safely respond to an unexpected, difficult, or unfamiliar situation. Decision sight distance addresses the need to provide drivers, especially unfamiliar drivers, with enough distance to safely turn into the desired location and is an integral part of the access location and design of large traffic generators. A common approach to providing decision sight distance is with advance signing (i.e., “Lancaster Road, Next Signal”).

The operator of a vehicle approaching an intersection at-grade should have an unobstructed view of the entire intersection and sufficient lengths of the intersecting road to permit control of the vehicle to avoid collisions. A basic requirement is that drivers must be able to see traffic control devices well in advance of performing required actions.

The minimum stopping sight distance at any point within an intersection shall be consistent with the design speed at that point. Listed below are the minimum stopping distances. Higher values should be used whenever possible. Refer to Chapter IX, AASHTO’s *A Policy on Geometric Design of Highways and Streets* for additional information on sight distance.

Figure 3.1 – Stopping Sight Distance**Table 3. 1 – Minimum Safe Stopping Distance**

Design Speed (MPH)	10	15	20	25	30	35	40	45	50	60
Safe Stopping Distance (Feet)	45	75	125	150	200	250	325	400	475	650

Reference: Adapted from ITE and AASHTO standards.

There are four types of controls that apply to at-grade intersections. These types are:

- **Yield Control** (vehicles on the minor intersecting road must yield to vehicles on the major intersecting road)
- **Stop Control** (traffic on the minor road must stop prior to entering the major road)
- **Traffic Calming Control** (traffic must yield and follow established patterns of particular traffic calming device in use at the given intersection)
- **Signal Control** (all legs of the intersecting roads, at specific interval times, required to stop based on signal control)

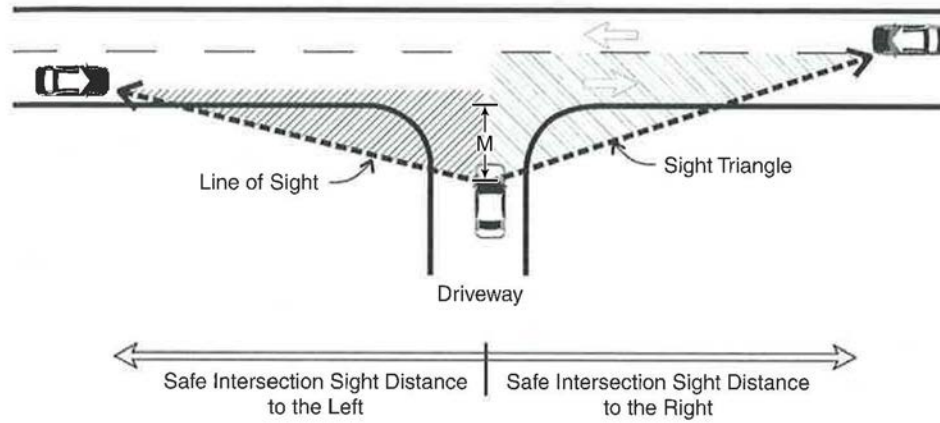
At intersections where cross traffic is controlled by a stop sign, additional stopping sight distance must be provided for the vehicles on the major road because of the conflicts between vehicles on the through road and the cross road.

Intersection sight distance is a function of (1) the type of control, (2) the length of the design vehicle, (3) the acceleration rate of the design vehicle, (4) perception and reaction time, (5) the width of pavement and in cases of divided roadways/highways the width of the median, (6) design speeds, and (7) skew angle of intersection and gradient of roadways. AASHTO's *A Policy on Geometric Design of Highways and Streets* contains a thorough discussion of intersection sight distance with accompanying tables and charts. This publication should be consulted for guidance.

Table 3.2 – Sight Triangles at Intersections

Sight Triangles At Intersections*			
Minor Approach			
Major Approach		Street	Driveway
	Major Arterial	L=325'	L=325'
		R=150'	R=150'
		M=15'	M=15'
	Minor Arterial	L=325'	L=325'
		R=150'	R=150'
		M=15'	M=15'
	Nonresidential	L=200'	L=200'
	Collector	R=150'	R=150'
		M=15'	M=15'
	Residential	L=200'	L=150'
	Collector	R=150'	R=120'
		M=15'	M=15'
	Local Street	L=175'	L=75'
		R=130'	R=55'
		M=15'	M=10'

* NOTE: The table assumes right angle intersections and driveways with the road. The figures shown are minimum distances; L=Left; R=Right; M= distance from curb line or edge of pavement to driver's eye location. Other angles may require additional sight distances. At signalized intersections in business zones, the City of Richmond may modify the distances; wire or chain-link fences may be approved by the city if visibility would not be impaired.

Figure 3.2 – Intersection Sight Distance to Enter or Cross a Roadway from a Driveway

Sight distance is measured from the centerline of the driveway/street to the left and right of the intersection (L and R), and M is measured from the extended edge of curb to the driver's eye.

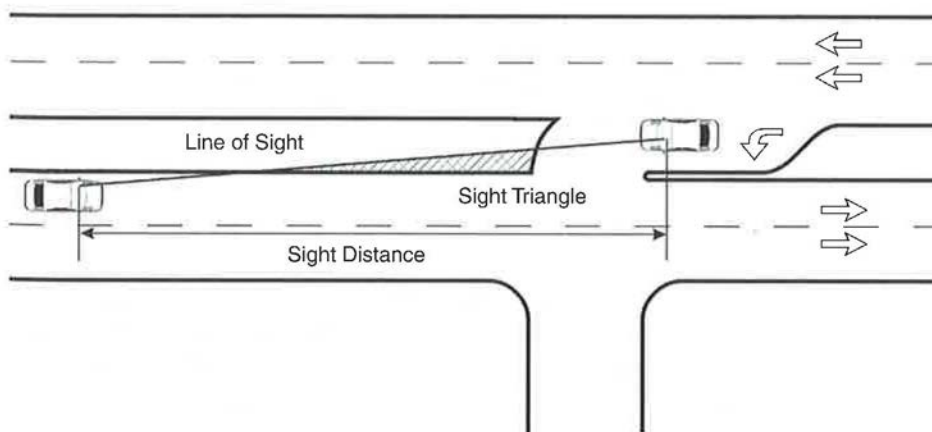
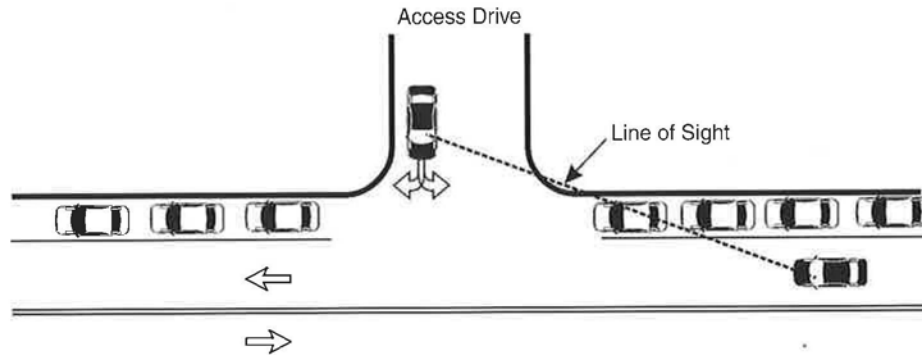
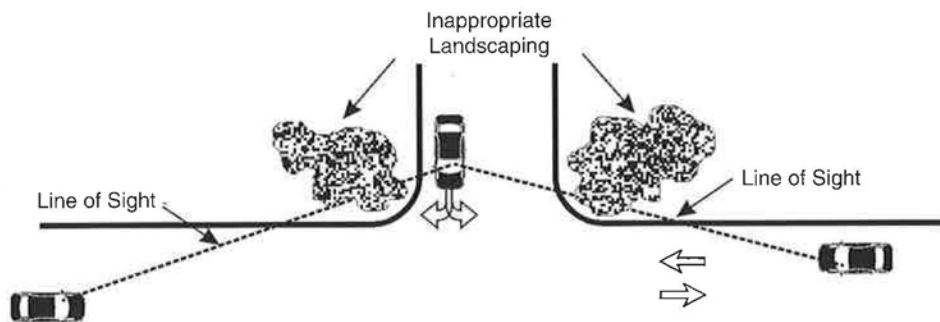
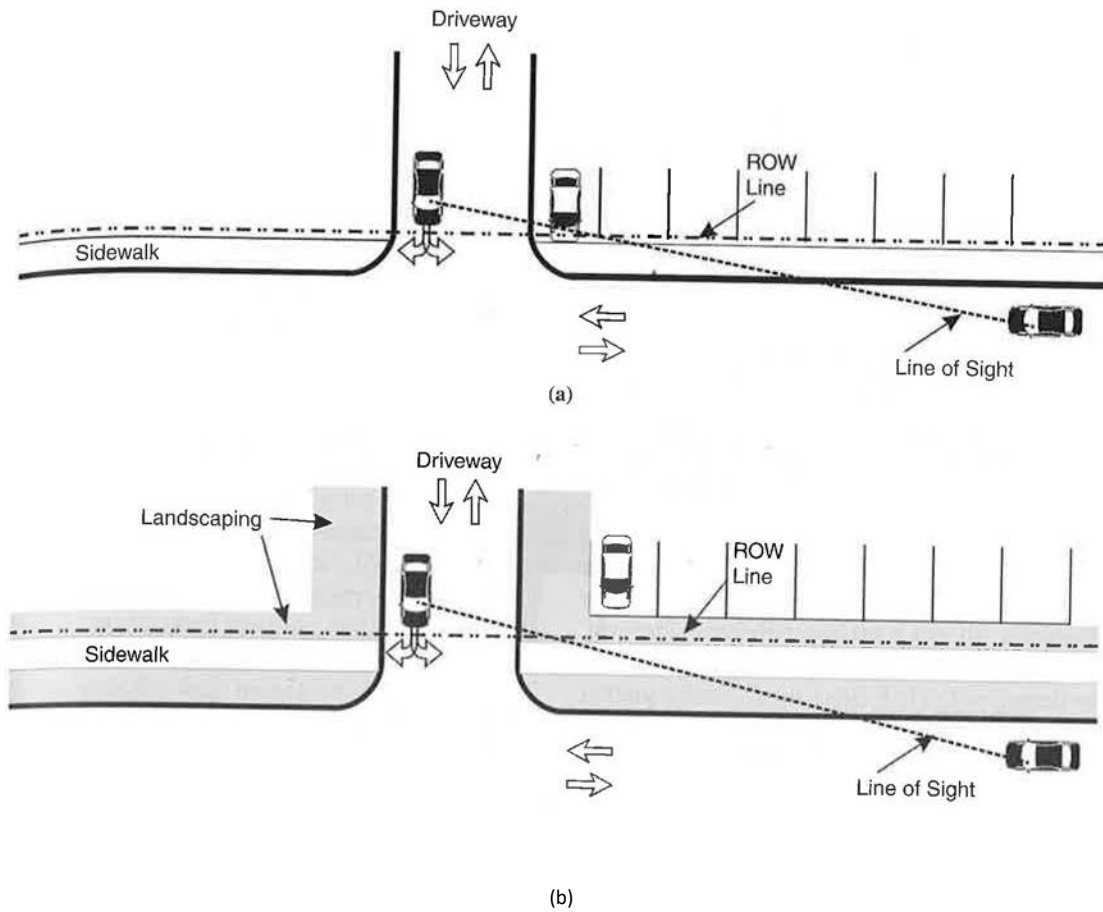
Figure 3.3 – Intersection Sight Distance to Make a left Turn from a Roadway into an Access Connection

Figure 3.4 – On-street Parking Frequently Obstructs Sight Distance

Problem: parked cars obstruct sight distance; solution: prohibit parking within the sight triangle.

Figure 3.5 – Landscaping Obstructs Sight Distance

Problem: inappropriate landscaping or inadequate landscape maintenance obstructs sight distance; solution: restrict landscaping within the sight triangle as part of the access connection permit. Allow landscaping in compliance with an approved landscaping plan and use specified planting materials. Maintain periodic inspection.

Figure 3.6 – Parking in Close Proximity to an Access Connection

Problem: (a) parking areas are located immediately adjacent to the driveway and extending to the right-of-way (ROW) line, thereby allowing parked vehicles to obstruct the sight distance of an exiting vehicle. The problem is more severe where a van, pickup, truck or SUV is parked adjacent to the driveway.

Solution: (b) establish a landscaped buffer between the right-of-way line and a landscaped border along the access connection to eliminate parking within the sight triangle.

Figure 3.7 – Schematic of Problems Arising from Closely Spaced Access Connections on Opposite Sides of a Roadway

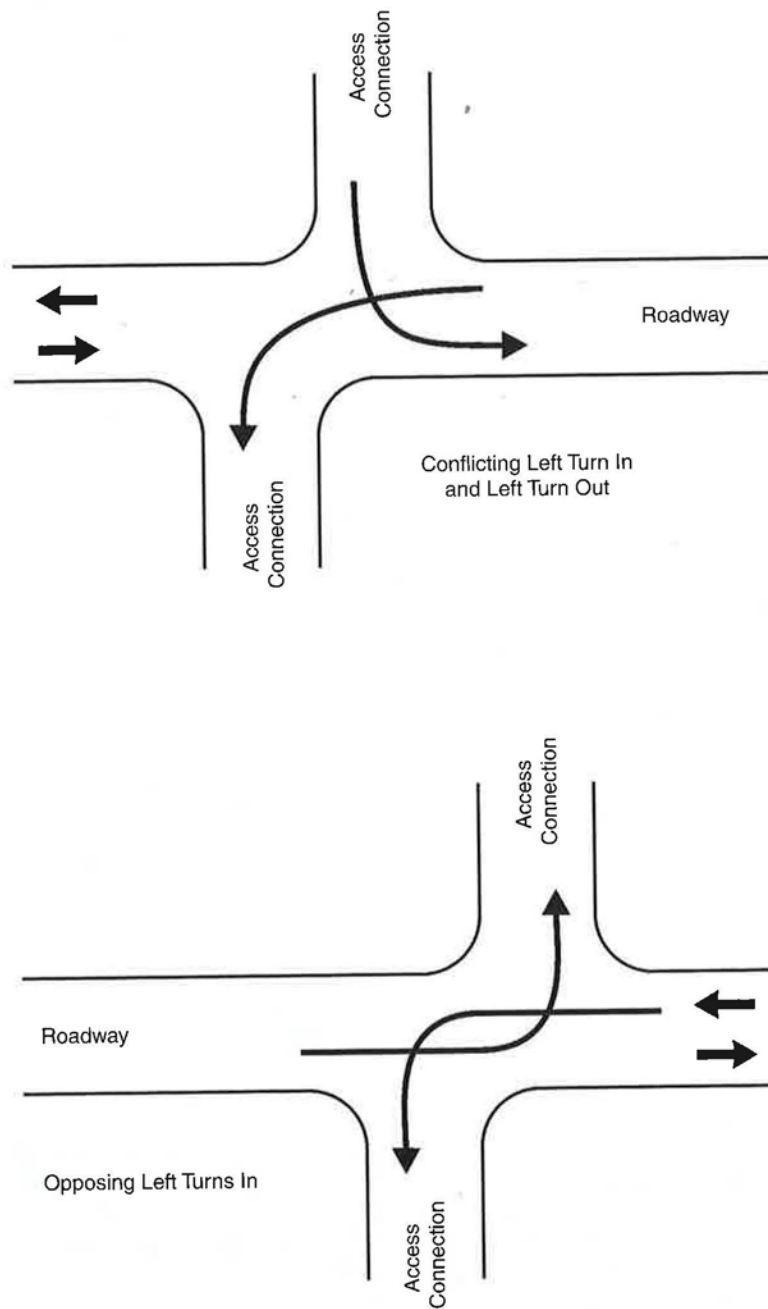


Figure 3.8 – Schematic of Access Locations that Commonly Result in Overlapping Left-turn Movements

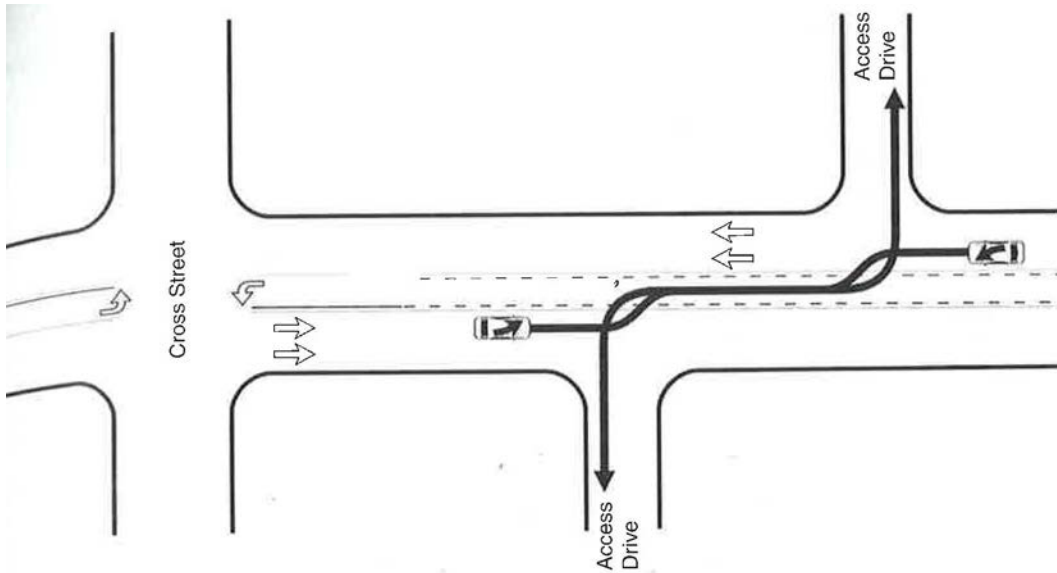
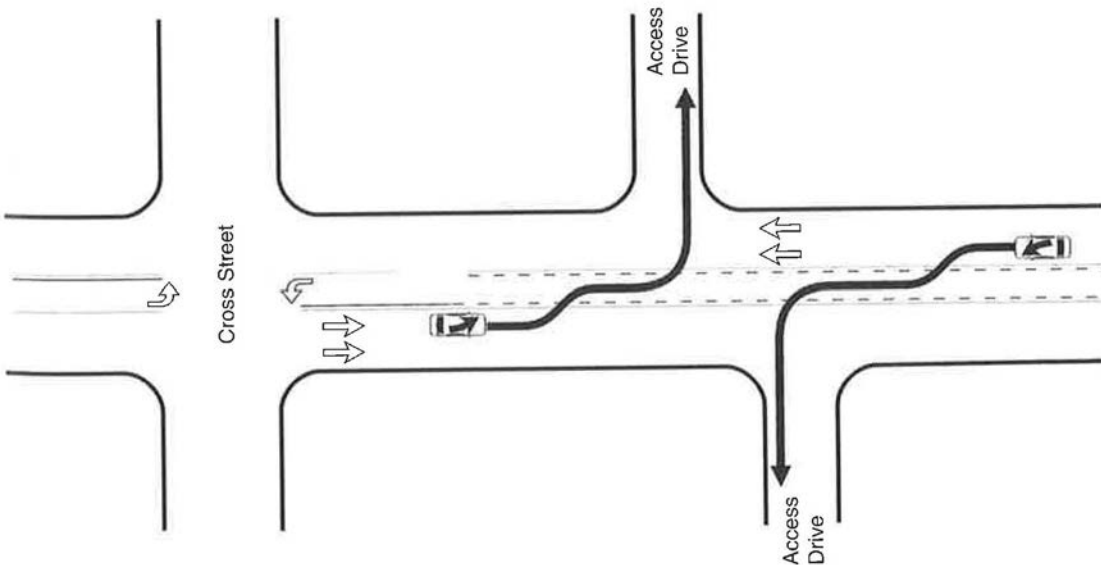


Figure 3-9 – Schematic of Access Locations that do not Result in Overlapping Left-turn Movements



3.6 Functional Intersection Area

AASHTO Policy on Geometric Design states: “The functional area extends both upstream and downstream for the physical intersection area and includes the longitudinal limits of auxiliary lanes. The influence area associated with a driveway includes: 1) the impact length (the distance back from a driveway in which cars begin to be affected), 2) the perception-reaction distance, and 3) the car length” (2001, p. 733; 1994, p. 793; 1990, p. 841; 1984, p. 888).

Logic and analysis indicated that (a) the functional intersection area is longer than the physical intersection and (b) the upstream dimension is longer than the downstream dimension. Thus, identifying the desirable location of site access involves assessing the functional distance upstream and downstream of an intersection and ascertaining the window in which the driveway may be located.

For more detailed explanation refer to the AASHTO Policy on Geometric Design, latest edition, and the TRB Access Management Manual 2003, pp 131-135.

Figure 3.10 – Physical and Functional Areas of an Intersection

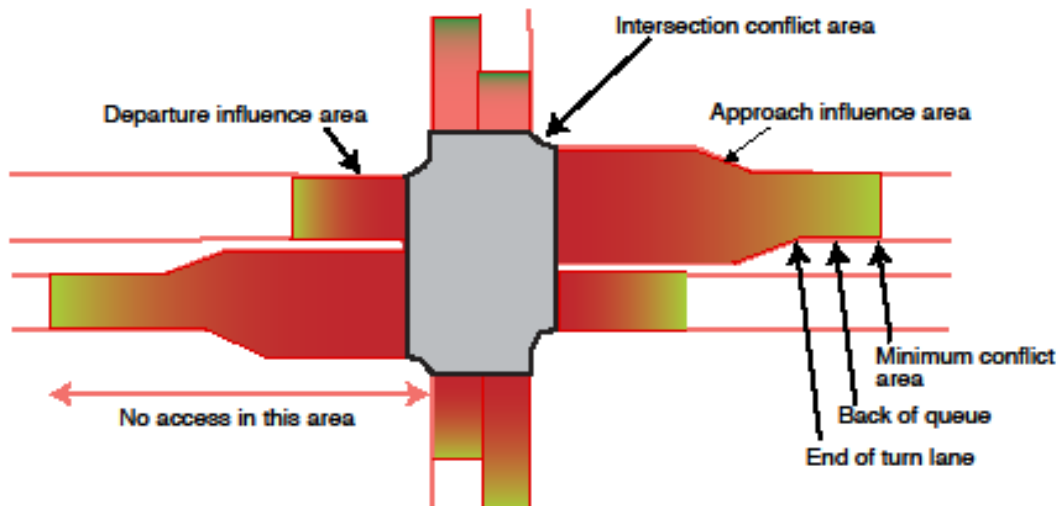
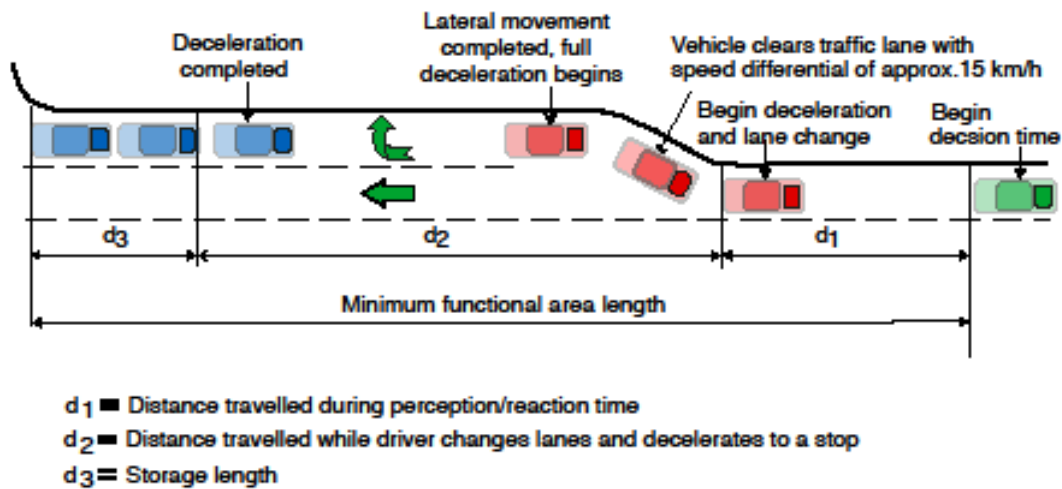


Figure 3.11 – Minimum Functional Area Length**Table 3.3 – Representative Examples of Upstream Functional Intersection Distances**

	Speed (mph)	Distance travelled in perception/reaction time, d_1 (ft)	Maneuver distance, d_2 (ft)	Perception-reaction time, plus maneuver distances, d_1+d_2	Queue storage length b d_3 (ft)	Note ^a	Upstream functional distance $d_1+d_2+d_3$ (ft)
Rural	50	185	425	610	50	b	660
	55	200	515	715	50	b	765
	60	220	605	825	50	b	875
Suburban	30	110	160	270	375	c	645
	35	130	220	350	375	c	725
	40	145	275	420	250	d	670
	45	165	325	490	250	d	740
	50	185	425	610	125	e	735
Urban	20	45	70	115	500	f,g	615
	30	65	160	225	500	f,g	725

Source: Adapted from the TRB Access Management Manual

^a Queue storage needs to be determined for each approach to each intersections using methods such as those discussed in the TRB Access Management Manual, chapter 10^b minimum storage of two automobiles or one truck^c Example of storage for 15 automobiles^d Example of storage for 10 automobiles^e Example of storage for 5 automobiles^f Example of storage for 20 automobiles^g Dual left-turn lanes can reduce the queue storage length

The intersection functional area includes the area within which traffic operations are affected by the operation of the intersection including:

- All acceleration (downstream) and deceleration (upstream) lanes
- The back of the longest queue or turn lane
- Distance travelled during perception/reaction time, and stopping distance at the back of queue
- The length of any dropped lanes on the downstream side of an intersection
- Not less than the stopping sight distance to the next intersection beyond any dropped or merged lanes if present

Application

The designer must clearly show that the proposed access points do not fall within the intersection functional area of any intersection, including access points to adjacent property.

If conflicts with adjacent access points occur, the designer must show how these may be eliminated by:

- Providing alternative access
- Consolidating access to adjacent properties (with reciprocal access agreements)
- Providing turn restrictions on the access
- Eliminating or relocating the access

In the case of a corner lot, the access point(s) must be limited to one on each roadway, and must be located at the lot line furthest from the adjacent intersection. The access may be restricted to right-in and/or right-out only unless the designer can show that use by other movements will not cause operational or safety concerns. Left turns to/from an access across or from an intersection left turn lane on the street will not be permitted.

If the adjacent lot has a similarly located driveway, then the driveways must be consolidated as a single shared driveway. Provision for alternative access to a corner lot must be made. If this would require access through adjacent property, this must be identified and protected.

3.7 Access Standards by Functional Classification

The following table describes the spacing standards between functional classes of streets in Richmond.

Table 3.4 - Local Street and Driveway Spacing

	Spacing (ft)				
Road Classification	Expressways	Major Arterial*	Minor Arterial**	Collector	Local Street
Expressways	NA***	1600	1600	No	No
Major Arterial	1600	1600	1600	1600	No
Minor Arterial	1600	1600	1400	1200	No
Collector	No	1600	1200	800	400
Local	No	No	1000	400	250
* No new driveways permitted; right and left turn lanes at all intersections					
** No new residential driveway permitted, Commercial or industrial driveways shall be treated according to the non-residential spacing formula; adequate right and left turn lanes shall be determined by the City of Richmond and the KYTC					
*** Controlled by KYTC					

3.8 Spacing Measurement Definition

Distance shall be defined as the distance between the centerlines of intersecting streets and roads. However, in the case of an interchange, distances shall be measured from the centerline of any intersecting road to the closest near edge (projected) of the ramp road or in the case of a free flow ramp terminal to the gore of the nearest ramp.

3.9 At-Grade Intersection and Access Spacing Requirements

The guidelines in this manual shall be the basis for the determination of proper spacing for street intersections and driveway access. Existing development may alter conditions that will make strict adherence unfeasible. The City of Richmond shall attempt in all cases, however, to apply these guidelines to the greatest extent feasible in order to create safe and efficient traffic movement systems.

- **Types of At-Grade Intersections**

The basic types of at-grade intersections are:

- **T-intersections:** A point where two roads intersect, with one of these two roads terminating at this point
- **Four-leg intersections:** The most commonly found intersections, where two roads intersect, usually at 90-degree angles, and then both roads continue after the crossing

- **Multi-leg intersection:** An intersection where more than two roads intersect, usually at unusual angles. This type of intersection is greatly discouraged.

In each particular case, the type is determined primarily by the number of intersecting legs, classification of the intersecting streets, the topography, the traffic patterns, and the desired type of operation.

- **Capacity Analysis**

The capacity analysis is one of the most important considerations in the design of intersections. Refer to the most recent edition of AASHTO's *A Policy on Geometric Design of Highways and Streets* and the *Highway Capacity Manual* for complete coverage of capacity of intersections, including procedures for making capacity computations.

3.10 Access Management Components

The primary components of Access Management include: access points (including both intersections and driveways), medians, auxiliary lanes and connectivity.

Access points, including driveways allow for ingress and egress from a roadway to abutting properties. The control of the spacing and design of driveways help to create a smooth flow of traffic and have been proven to reduce crash rates.

Medians physically separate different directions of traffic flow. The proper design of medians controls the movements to and from the through road to a side street or driveway. The management of median openings facilitates a smoother flow of traffic, a separation of opposing traffic and channelizes traffic to traffic signals. Properly designed and spaced medians have also been proven to reduce crash rates, especially the more serious head on and angle crashes.

Auxiliary lanes are incorporated into access management designs to facilitate the flow of traffic near and at driveways and median openings. Auxiliary lanes, including left and right deceleration lanes, allow traffic exiting the through lanes an area to decelerate and be safely stored with minimal effects to the through traffic. Acceleration lanes allow traffic entering the through traffic to merge with minimal disruption to the through traffic.

Connectivity allows traffic to progress from local roads up the functional class hierarchy, to arterials and freeway roads. This progression reduces the “cut through” traffic on local roads and provides the proper balance of access. Connectivity between abutting properties reduces the trips on the through road thus eliminating additional conflict points and congestion.

Chapter 4

Access Points, Driveways

4.1 Introduction

Access point and driveway design, location and spacing are fundamental to the success of access management. The term access point and driveway will be used interchangeably in this document, but the terms are referring to both features.

The benefits of access management provide safer and more efficient use of the roadways and access to private developments, even though regulating driveway spacing and design may restrict direct driveway access to some properties. Proper design practices will reduce the number of conflict points encountered by all motorists, thus enhancing the safety of the roadway for all users. In addition, driveways and turning lanes must be designed so that they are capable of handling the amount of traffic expected to use them. The proper design of driveways encourages a smooth flow of traffic to and from connecting properties. If a driveway is not designed properly, traffic on the through road may have to slow down considerably, stop, or swerve into another lane to avoid a turning vehicle. This greatly reduces capacity and causes safety concerns.

4.2 Access Point Characteristics

Access points can be roadways or driveways. The principles of access management are similar to both public and private streets and access points. The following practices and principles apply to both types.

4.3 Residential and Commercial Driveways

There are two major types of driveways, residential and commercial.

Residential driveways serve low volume single family or duplex parcels. Residential parcels with three or more units, apartment complexes, condominium developments, as well as all other developments that are accessed through a common private drive or street system, shall be treated as Minor/Major Commercial Driveways depending on the size of the development.

- Residential Driveways
 - All single-family residential structures shall be allowed one access per lot. An additional point of access may be permitted for corner lots, loop driveways, or other instances where public safety will not be impaired by utilizing a second point of access. Duplexes may be permitted two accesses if the city deems it necessary. Residential subdivisions

shall be designed such that these uses have no direct driveway to either principal or minor arterials.

- All residential accesses shall be at least 25 feet away from the right of way line of any public or private local street intersection, and at least 50' away from the right of way line of any public or private collector street intersection. High density private driveways should not intersect local streets.
- Driveways shall not be constructed within the curb return of a street intersection.

- **Commercial Driveways**

- All new commercial driveways shall have access to major arterial streets via service roads only. Commercial driveways may have access to minor arterials and collector streets. Commercial driveways shall generally not have access to residential local streets.
- Commercial driveways can be subdivided into three categories,
 - major commercial - A major commercial driveway is any driveway in which the actual or anticipated traffic volume is 500 or more vehicles entering and leaving during a 24-hour period. Typical major commercial drives serve large shopping malls, big box stores, strip shopping centers, restaurants, etc.
 - minor commercial - Minor commercial driveways are driveways that carry actual or anticipated traffic volumes less than those for a major commercial driveway. These driveways typically serve small professional office buildings, small medical offices, small commercial shopping centers, individual commercial lots and small or individual apartment buildings.
 - industrial - Industrial driveways should be reviewed as a commercial drive with emphasis on the heavy truck traffic associated with the site. Larger radii, lane width, throat length and storage queues may be necessary.
- The spacing of these accesses shall be measured from the right-of-way line of the nearest intersecting street or the centerline of the nearest intersecting non-residential access point (i.e., driveway).
- The minimum spacing on commercial access points shall be based upon the maximum potential trip generation of the contiguous area which has been zoned and/or planned for commercial land use that abuts the subject road facility and encompasses the area which has been proposed for development by the developer. Access to a minor arterial via a service road shall be allowed only in accordance with the spacing standards based upon the trip generation of the total area immediately served by the service road. The determination of potential trip generation shall be made using sources and methods

consistent with the Institute of Transportation Engineers and approved by the City of Richmond. The spacing of access points shall be determined as follows: $D = 1400 - (1000 (1 - TE/3000))$

Where:

- D = the required distance between access points (in feet).
 - TE = the maximum potential trip ends of the area in which the development will take place.
 - If D exceeds 1,400 feet, then the minimum standard of 1,400 feet shall apply to all access points of that development. D shall be rounded to the nearest 50 feet. For properties fronting along street facilities where the required spacing would not allow an individual access to properties adjacent to the property currently being developed, an arrangement shall be made for the joint use of entrances or the construction of service roads by developers.
- Head-in, back-out parking is prohibited for all commercial driveways on all streets
 - Driveways shall not be constructed within the curb return of a street intersection.

4.4 Criteria to Review Driveway Location

The primary information needed to begin review of a new driveway connection is

- The development type,
- The type of road the driveway is connecting to,
- The trip generation,
- The type of vehicles entering and the adjacent property use.

It is essential that the reviewer have information regarding the existing conditions of the roadway such as the presence of curb, gutter, sidewalk, etc. For single-family residential access onto a residential street, a typical 12-foot drop curb driveway is a sufficient design. If sidewalk is present, a concrete drive entrance that meets the City's standards shall be used. An industrial site generating 1,500 trips a day with 15% truck traffic on an arterial road will require a review of acceleration/deceleration lanes, a wider driveway for the truck turning radius among other safety and efficiency considerations.

4.5 Shared Use Driveways

Shared use driveways should be encouraged where possible to reduce the number of existing driveways. If shared use access is not feasible under existing conditions, a stub out should be

included in permits for possible future cross access agreements between adjacent parcels of property. Shared access should only be considered for similar land uses. If adjacent land uses promote the success of a shared use driveway they should be incorporated. Success of shared access driveways partially depends upon sufficient throat depth for drivers to access their choice of destination after entering the drive and site plans should be laid out to encourage these drives. Such elements of site design can be determined with a thorough traffic impact study.

Shared use driveways may be approved provided that a permanent written access easement is obtained. The developer must include a plat note and provide dedication documents indicating that maintenance of the shared use driveway shall be the responsibility of the lot owners served by the shared use driveway. If more than three (3) residences are to be served by a single shared use driveway, the following requirements apply:

- The developer must post fiscal surety for the construction of the shared use driveway prior to plat approval and must construct the driveway during the construction of the streets within the same subdivision, or within the term of the fiscal instrument if no public or private streets are to be constructed within the subdivision. The driveway construction shall be subject to City inspection and obtain City approval before fiscal surety will be released. See section 516 of the Development Ordinance (DO) for surety requirements.
- The developer must construct a driveway, designed by a professional engineer, to have an all-weather surface and a pavement structure meeting at least private street standards.

4.6 Divided Drives That Permit One Way Traffic, Signs and/or Landscaping.

Divided driveways should be designed in a manner that does not promote wrong way movements, hinder sight distance or divert attention away from driving. Driveway medians shall be located a sufficient distance from the main roadway to allow for all turning movements anticipated into and out of the site. In addition, lanes should be sufficiently wide to prevent damage to curbs and shoulders at these access points.

One-way driveways shall be prohibited on two-way undivided streets unless approved by Planning and Zoning. One-way driveways are limited to developments where two-way access is unfeasible because of special design considerations, such as severe site constraints, the need for circular drop-offs or other circumstances where one-way circulation may be preferred to two-way access. Examples of such developments include public and private schools, day care uses, car wash facilities and existing developments or small sites where two-way circulation is impractical.

Developments shall be designed to promote one-way, on-site circulation in support of the one-way drives. Circular drop-offs and one-way driveways shall be designed to prevent conflicts with traffic access, parking and on-site circulation. All one-way driveways separated by more than 15 feet (measured from edge to edge) must be signed for one-way operation.

4.7 Access Points Per Parcel of Land

Each existing tract of land is entitled to one direct or indirect access point to the public roadway network provided that its location and design fulfill, as a minimum,

- The requirements of minimum corner clearance,
- Minimum sight distance, and
- Alternative shared access agreements could not be coordinated.

Vehicular access to or from property adjoining a public street shall be provided to the general street system, unless a public authority has acquired such access. The provisions of this document shall not be deemed to deny reasonable access to the general street system.

4.8 Driveway Application Map Requirements

A site plan/plot plan showing all existing right of way, easements, curbs, storms drain inlets, flumes, underground and overhead utilities, median cuts, adjacent driveways, sidewalks, or other potential obstructions shall be required for each non-residential driveway permit applications.

If the subject property is along a road with a raised median and there is no median opening servicing the property, i.e., within 150 feet of the property lines, the driveways and roadway characteristics on the opposite side of the median shall not be required to be shown on the permit request.

4.9 Maneuvering Into or Out of Driveway

All vehicle maneuvers on large apartment complexes, commercial and industrial properties into a parking space or up to a loading dock or into any other area shall be accomplished by off street maneuvering areas and internal driveways. Back-in or back-out vehicle maneuvering is permitted from residential drives on local and collector streets only.

4.10 All Driveway Components Shall Stay on Parcel Frontage

For any driveway, the point of radius return tangency with the street curb shall not extend within five (5) feet of the property line (projected perpendicular to the street centerline), except as provided in shared driveway agreements and as approved by the City of Richmond.

4.11 Distance of Driveway from Obstruction

Driveways shall not be located closer than four feet (4') to any fire hydrant, electrical pole, any other surface public utility or other obstruction.

Applicant may have the surface utility moved if the public utility agency, or other private entity, involved determines that the move will not detrimentally affect the service. Such relocation will be at the developer's expense.

4.12 Distance of Driveway from Drainage Inlet

The driveway curb return shall be designed so as to not interfere with or affect the nearby drainage inlets. Driveways shall be located 5 to 10 feet away from any drainage inlet, depending on the type of traffic using the driveway, to eliminate damage to the structure from turning vehicles overrunning the edge of the driveway.

4.13 Location of driveways on Opposite Sides of Streets

Major access points on opposite sides of collector and arterial roadways shall be located opposite each other. Turning movement or driveway location restrictions may be imposed as determined necessary by Planning and Zoning if such orientation is not possible.

Commercial driveways on undivided minor arterial streets shall be designed to align with opposing streets or driveways or be offset by a minimum of 200 feet (measured from edge to edge). All commercial driveways on undivided collector streets shall be designed to align with opposing streets or driveways or be offset by a minimum of 150 feet (measured from edge to edge). All commercial driveways on divided streets shall be designed to align with median breaks or be offset by a minimum of 125 feet (measured from the nose of the median to the nearest edge of the driveway). Alignment of driveways with opposing streets is discouraged for signalized intersections. If such alignment is appropriate, the driveway approach may be constructed without an apron and the maximum driveway widths may be increased to match the cross-section of the opposing street if such design is approved by the City of Richmond. The developer shall be required to pay for any modifications to the driveway entrance and signal installation to accommodate the new driveway.

It is desirable to minimize the number of driveways on an arterial street in order to reduce the number of conflict points and facilitate traffic flow. The dimension for spacing between driveways should be increased whenever possible so that the number of driveways can be reduced. It is recognized, however, that certain existing tracts may not be able to fully comply with these standards due to limited frontage or other constraints. When compliance with this

manual is precluded due to the location of driveways on adjoining properties, attempts should be made to obtain alternative access where feasible, including shared access driveways, access easements to adjoining properties or access to intersecting streets.

4.14 Temporary Access Points

Any access point that does not comply with this manual may be designated as “Temporary” upon approval by the City of Richmond.

In all cases where said access points are classified as “temporary”, such designation shall be duly noted on the plot plan or site plan submitted for approval. When a property served by a temporary access point is provided an alternative means of access, such as a connection to a frontage road, on an intersecting street, or a shared use driveway, the City of Richmond will require that the temporary access be eliminated, altered, or limited to certain turning movements.

4.15 Non Conformance Driveway

When an application for building permit or change in property use results in changes in the type of driveway operation and the driveway is not in conformance with this manual, the reconstruction, relocation or conformance of the access to this manual will be required, at the owner’s expense.

The City of Richmond may require driveway revisions if one or both of the following access change conditions have occurred:

- The existing use of the driveway is projected to increase in actual or proposed daily vehicular volume on the driveway by twenty percent (20%) or more. This determination shall be made by Planning and Zoning using generally accepted transportation engineering standards.
- The change in the use of the property or modifications to the property restricts the flow of vehicles entering the property in a manner, which is anticipated to disrupt normal traffic flow on the public street, thereby creating a hazard.

“Change in property use” may include but is not necessarily limited to: change in type of business; expansion in existing business; change in zoning; combining parcels of land; and the subdividing of land, which creates new parcels. It does not include modifications such as advertising, landscaping, minor remodeling, general maintenance or aesthetics that do not affect internal or external traffic flow or safety.

4.16 Traffic Impact Study

The city of Richmond shall require the developer to provide a Traffic Impact Study if it deems that any of the following conditions are met. The study shall also identify any improvements to existing infrastructure that must be made to accommodate the development:

- During review of proposed development plans that future traffic generated from such development will adversely affect the capacity of the roadway
- Residential developments of 50 or more units and multifamily developments of 40 or more units
- Proposed development is located along existing roadways that are not compliant with the current standards
- Proposed development along a road where location, size and number of driveways, restriction or channelization of turning movements, or other improvements related to access affect the capacity of the adjacent roadway
- All county roads that are not compliant with this manual when an application is filed to annex or develop the property accessed by such county road.

4.17 Proposed Driveways within Queuing Lanes

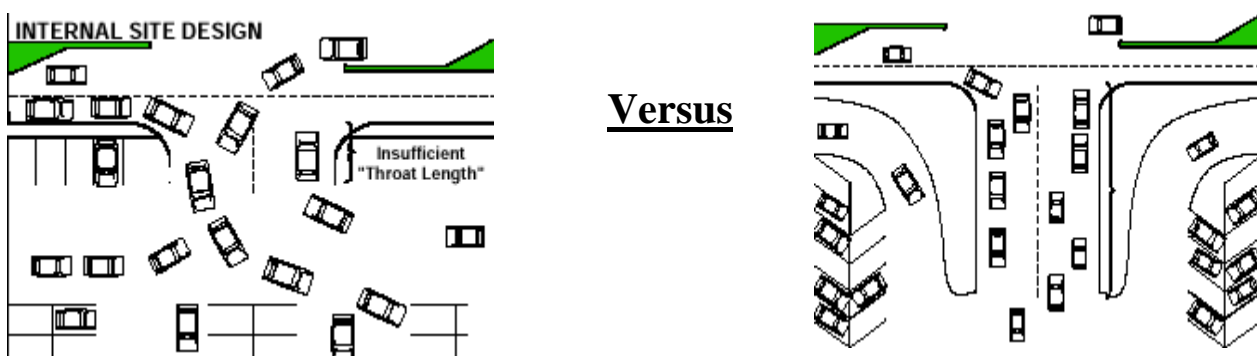
Any proposed driveway within a queuing lane on adjacent roadways will be prohibited.

4.18 Driveway Design Elements

- The angle of a driveway is measured between the highway centerline and the driveway centerline measured in a clockwise direction. In all cases the angle of driveway intersection to the right of way line shall be 90%. The City of Richmond may alter the angle in cases of one way driveways, sight or building obstructions, other site constraints or other conditions that do not affect the safety of the driveway with respect to bicycles or pedestrian movements across the driveway.
- Driveway grade is another important driveway design element. The driveway grade is the slope of the driveway (positive or negative). Along with the slope of the driveway, the differential between the grade of the roadway shoulder or sidewalk portion of the roadway corridor and the grade of the driveway should be reviewed. This differential should be minimized to help traffic ingress and egress from the site.

- Driveway throat length is the distance between the street and the parking lot served by a driveway. As shown in the figure, insufficient throat length can create confusion and cause vehicles to become “stuck” in unsafe areas. This is shown in Figure 4.1. An adequate throat length helps to keep traffic conflicts within a parking lot to an acceptable level and provides space on the driveway for incoming and outbound traffic. The following throat length guidelines are suggested:
 - For low traffic volume commercial and industrial driveways (below 100 peak hour vehicles in both directions), the shortest desirable driveway throat length is 25 ft.
 - For medium traffic volume commercial and industrial driveways (150 – 400 peak hour vehicles in both directions), the shortest desirable driveway throat length is 80 ft.
 - For high-volume driveways (over 400 peak hour vehicles in both directions) such as a shopping center entrance, the adequate throat length is to be determined by the results of a traffic study.

Figure 4.1 – Throat Length



The throat lengths above may be adjusted, if Planning and Zoning determines that one of the following conditions requires an increased distance. The developer can also be required to perform a traffic impact study for Planning and Zoning to review for a determination of the proper distance. The factors to be considered include:

1. Physical constraints on the site, such as existing structures;
2. The impact upon on-site circulation;

3. Shallow lot depths or unusual lot configurations;
 4. Existing or potential traffic movements that have an adverse effect on operations;
 5. Traffic volumes and classification on the driveway and the intersecting street;
 6. For existing sites, the extent of redevelopment proposed.
- Gated entrances should have sufficient throat depth that during the peak hour traffic will not back out into the road while they wait for the gate to open.
 - One of the fundamental design elements of a driveway is to include a radius return or a drop curb/flare. A radius return describes a situation in which the curb and gutter or shoulder follows a radius to ingress and egress the site. A drop curb/flare is defined as a typical urban driveway where the sidewalk, if present, and curb and gutter are dropped to meet the roadway and then transitioned back to the normal height. A radius return requires more right of way but it guides the driver and also provides a smoother transition. A drop curb requires little right of way and is easier to construct; however, since drivers must reduce their speed to turn, through traffic is slowed down.
 - The City of Richmond has standard driveway widths to help create a safe, smooth transition between roadways and private property. Wider driveways may introduce conflicting movements and/or hinder sight distance. In addition, wider driveways increase the distance a pedestrian has to travel to cross the entrance thus creating a riskier crossing situation. Also, if the wide drive has a very wide landscaped median, drivers may think that each drive is a two-way access point, which introduces the potential for head on collisions.
 - Minimum driveway spacing is critical to minimize the potential for accidents and delay to through vehicles. All adjacent driveways must be separated by the minimum driveway spacing of 10 feet, measured from near edge to near edge of adjacent driveways.
 - The location of driveways adjacent to intersecting streets shall conform to the minimum corner clearances. Corner clearance is the distance from an intersection to the first intersection or driveway, measured from near edge to near edge. This helps to ensure the major intersections' functional areas are not degraded by the introduction of additional conflict points. Corner clearance values are dependent upon the roadway classification. Should two streets with differing classifications intersect; the minimum corner clearance for the higher classified street will apply along each leg of the intersection.
 - All driveways and intersecting roadways shall be designed and located so that the minimum sight distances are met. Driveways may be prohibited where adequate sight distance is not available for the established speed limit or the design speed of a future street improvement, if higher. If an inspection by the City of Richmond indicates that driveway sight distance may be insufficient, the applicant will be required to submit vertical and horizontal information

to the City that verifies adequate sight distance is available for the proposed driveway location. The city may deny access or a specific driveway location to any abutting public street if said access cannot be provided in a reasonable and safe manner.

4.19 Driveway Grades

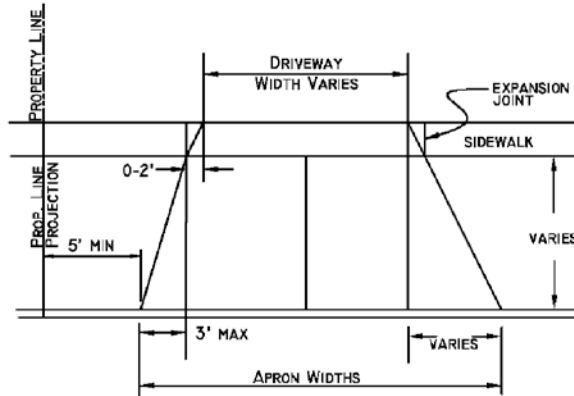
- **Sidewalk Slopes** - Sidewalks shall slope down at a (running) grade not more than 12:1, and shall comply with all Americans with Disabilities Act (ADA), as amended, requirements, to meet the elevation of the driveway unless the City approves a method that will provide acceptable use by handicapped users.

In addition, the cross slope of the sidewalk shall not exceed 2% (1/4" per foot) through the entire width of the drive entrance.

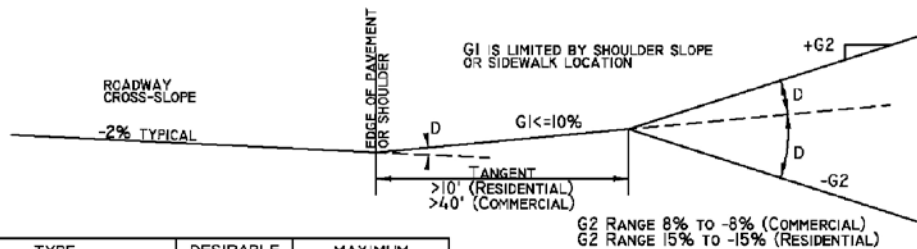
- **Positive Grade** - Any driveway approach shall have an initial positive grade when curb, gutter, and sidewalk are present.

The initial approach shall extend onto private property if necessary, but driveways shall not be constructed at locations or in such manner that water is diverted from the street onto private property.

- **Maximum grades for driveway entrances are necessary to ensure vehicles' ease of access to and from roadways** - Average drive slope shall not exceed a twelve percent (12%) up slope or five percent (5%) down slope within 10 feet of back of sidewalk when present. The average drive slope shall not exceed a ten percent (10%) up slope or twelve percent (12%) down slope within 15 feet of back of curb or edge of pavement when no sidewalk is present or required. Any sidewalk affected by driveway approach construction shall be modified to adequately address handicap (ADA) issues and transition at no greater than 12:1 down to the driveway. Driveway grades and other design standards are shown in the drive entrance detail in Figure 4.2 – Driveway Apron Geometry.
- **Driveway Grade Breaks** - Where a driveway crosses or adjoins a sidewalk, walkway, or an accessible path of travel (as defined by the Americans With Disabilities Act of 1990) the driveway grade shall be a maximum of two (2) percent, over a minimum throat length of three (3) feet contiguous with the sidewalk, thereby effectively matching the cross slope of the sidewalk or accessible path of travel across the full width of the driveway.

Figure 4.2 – Driveway Apron Geometry**APRON GEOMETRY**SEE DIVISION OF ENGINEERING, ENTRANCE DETAILS (STANDARD DRAWINGS-ATTACHED)

CLASSIFICATION	DRIVEWAY	STANDARD APRON	ALTERNATE APRON
SINGLE RESIDENTIAL	12'	3' STRAIGHT FLARE = 18' CURB CUT	—
DOUBLE OR JOINT RESIDENTIAL	20'	3' STRAIGHT FLARE = 26' CURB CUT	—
NONRESIDENTIAL	30'	5' STRAIGHT FLARE = 40' CURB CUT	10' RADIAL FLARE = 50' CURB CUT
COMMERCIAL LOADING	30'	15' STRAIGHT FLARE = 60' CURB CUT	20' RADIAL FLARE = 70' CURB CUT
INDUSTRIAL	40'	20' STRAIGHT FLARE = 80' CURB CUT	25' RADIAL FLARE = 90' CURB CUT

VERTICAL ALIGNMENT

TYPE	DESIRABLE (D)	MAXIMUM (D)
HIGH VOLUME DRIVEWAY	0%	+/- 3%
LOW VOLUME DRIVEWAY ON MAJOR OR COLLECTOR STREETS	+/- 3%	+/- 6%
LOW VOLUME DRIVEWAY ON LOCAL STREETS	+/- 6%	+/- 15% CONTROLLED BY VEHICLE CLEARANCE

*IF A GRADE CHANGE GREATER THAN 15% IS NECESSARY, AT LEAST A 10' VERTICAL CURVE MUST BE USED TO TRANSITION BETWEEN SLOPES.

EXAMPLE:

$$G1 = +3\%$$

$$G2 = -10\%$$

$$D = (G1) - (G2)$$

$$= (3) - (-10) = 13\% < 15\% \text{ OK}$$

ENTRANCES AND ACCESS CONSIDERATIONS

Chapter 5

Medians

5.0 Median Treatments

5.1 Introduction

Left turns generate more than two-thirds of all access-related collisions. Where left turns are made from a through lane, virtually all through vehicles in the shared lane are blocked by the left-turning vehicles.

The presence or absence of a median has a substantial impact on roadway operations and safety, and on the provision of left-turn access to abutting properties.

Medians should be included on all arterial roads where there is adequate right of way. On major collector roads, medians should be seriously considered for inclusion for future projects. For minor collector and local roads, medians should be included where their benefits are greater than their costs or for aesthetic purposes.

5.2 Median Types

Median types can be grouped as follows;

- **Traversable median** - a median that by its design does not physically discourage or prevent vehicles from entering upon or crossing over it, including painted medians;
 - A traversable median does not provide positive control over left turns. Because it is not effective as an access management tool, it is not discussed further.
- **Continuous two-way left –turn lane (CTWLTL)** – a continuous lane located between opposing traffic streams that provides a refuge area for vehicles to complete left turns form both directions;
 - Reduced crash rates compared to undivided roadways
 - Increases capacity compared to undivided roadways
 - Reduces delay compared to undivided roadways
 - No safety benefits compared to nontraversable medians
 - No pedestrian refuge areas, increasing pedestrian conflicts
 - Overlapping left-turn movements that cause safety issues
 - Accommodates strip development, but does not discourage it

- **Nontraversable median** – a physical barrier in the roadway that separates traffic traveling in opposite directions, such as a concrete barrier or landscaped island.
 - Physically separates vehicles traveling in opposite directions, reducing head-on collisions
 - Clearly define left turn opportunities
 - Provides a space for vehicle decelerations lanes
 - Provides a refuge for drivers crossing the major roadway
 - Number of conflicts with pedestrian and bicycles is reduced
 - A refuge for pedestrians can be provided
 - Less delay to through vehicles compared with TWLTL
 - Nontraversable medians are safer than roads with a TWLTL for both vehicles and pedestrians

5.3 Selecting a Median Type

The basic choices for median type and design are:

- Install a TWLTL on a new or existing undivided roadway
- Install a nontraversable median on a new or existing undivided roadway
- Replace a TWLTL with a nontraversable median

Factors to consider include:

- Functional classification of road
- Projected traffic volume
- Presence of pedestrians crossing the roadway
- Desired or existing development pattern of abutting properties
- Existing or proposed supporting roadway system
- Visual quality of the roadway corridor
- Crash experience
- Ability to accommodate left turns by providing opportunities for u-turns or rerouting traffic over a supporting circulation system
- Availability of funds for reconstructed and, if needed, additional right of way
- Community support

Use of a TWLTL

TWLTL may be appropriate for the following roadways:

- Roadways in urban and suburban areas with a projected average daily traffic (ADT) of less than 24,000 vehicles per day
- Collector streets in developing residential areas where residences front on local streets that

- intersect with the collector street
- Collector streets in developing suburban areas where direct access is to be provided to small abutting properties
- Collector streets in developed urban and suburban areas where there is no crash pattern that is correctable by a raised median.

Use of a Nontraversable Median

A nontraversable median is more desirable than a TWLTL for the following situations:

- all new multilane urban arterial roadways
- existing multilane urban arterials roadways with ADT greater than 24,000
- rural multilane roadways
- bypass of an urban area
- roadways where aesthetic considerations are a high priority
- multilane roadways with a high level of pedestrian activity
- high crash locations or areas where it is desirable to limit left turns to improve safety

5.4 Existing Median Treatment Guidelines

Existing medians that do not meet current recommended practices should be retrofitted to comply. If private development projects are proposed, their proposed plans shall comply with the standards to the maximum extent practicable.

Improving existing median conditions may include removal of median openings, reducing the length of wide median openings, redesign to permit only specific movements, adding left turn lanes, widening a narrow median to provide safe vehicle storage or pedestrian safety, reviewing the operation of a Two Way Left Turn Lane or adding auxiliary lanes. Left turn lanes will greatly increase the safety associated with any median retrofit project. By adding a safe area for cars to decelerate, stop and safely be stored before making a left turn, the probability of rear end accidents is greatly reduced. These lanes also help the through traffic to maintain a free flow speed.

5.5 Signalized Access Point Median Treatment

Access points shall be designed such that those which will warrant signalization shall be spaced according to street access standards. The location and design of the signalized access points shall be determined by a traffic engineering study prepared by a qualified traffic engineer at the developer's expense. This study shall be subject to the approval of the City of Richmond (if on a state highway, with additional approval of the KYTC) and shall account for at least the following variables:

- Traffic signal phasing as determined by analysis of projected turning movements;

- Traffic signal cycle length as determined by analysis of projected traffic volumes;
- Relationship to adjacent signals (existing or proposed) for purposed of signal interconnection and coordination;
- Roadway geometrics and sight distance considerations; and
- Accident experience.

If the installation or modification of a traffic signal is approved, the developer will be required to pay for all costs to design, purchase, and install the signal equipment. The City of Richmond will operate the equipment upon dedication to the city.

5.6 Median Width

Median width is dependent on a variety of conditions, including right of way available, pedestrian presence, or the volume of turning movements expected, or an aesthetic treatment of the surrounding area. The following figure shows a comparison of width that might be used for medians; however, use of wider medians for aesthetic purposes can result in median widths much greater than what is shown.

Figure 5.1 - Median Widths

Median Function	Median Widths	
	Minimum Width (ft)	Desirable Width (ft)
Separation of opposing traffic streams	4	10
Pedestrian refuge and room for signs and appurtenances	6	14
Storage of left-turning vehicles		
Single left-turn bay	14	18
Dual left-turn bay	25	30
Protection for passenger vehicles crossing or turning left onto the mainline	25	30
Design directional openings for selected ingress or egress movements only	18	30

5.7 U-Turns

A nontraversable median limits left turns and crossing maneuvers to those locations where a median opening is provided. Additionally, unsignalized median openings may permit only particular movements, such as u-turns. Florida, Colorado and Michigan utilize this tool frequently on major arterials. The provision of exclusive u-turn lanes in medians can increase the distance between signalized intersections, increasing efficiency in the traffic stream.

The use of unsignalized median opening spacing to provide for left-turn/U-turn maneuvers between signalized intersections is another tool that can be used to improve capacity at the signalized intersection. They provide convenient access to abutting properties and reduce U-turns and left turns at the signalized intersections. A more detailed explanation of the use of unsignalized median openings is found in the TRB Access Management Manual, chapter 11.

5.8 Directional Median Openings

Directional median openings allow for left turns from the major road but preclude left turns from the intersecting road or driveway. Other directional median openings allow for left turns into an intersecting road or driveway and/or out of the driveway.

Overlapping noses on directional median openings can help discourage wrong way movements. Other design elements to be considered with medians are proper sign placement and sight distance. A minimum of 25 feet of separator overlap is recommended. Figures 5.2 and 5.3 depict examples of a properly designed directional median opening.

Figure 5.2 – Schematic of a Directional Median Opening

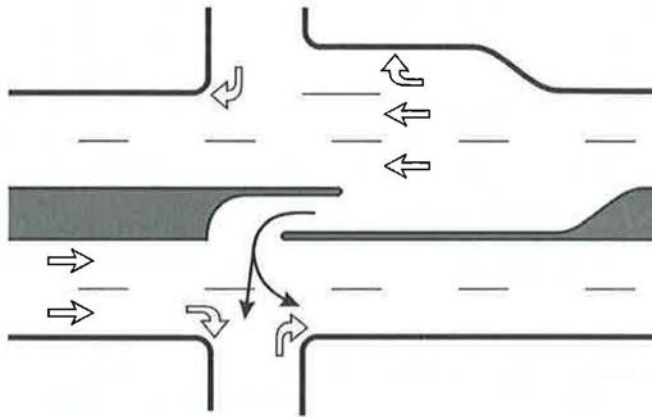


Figure 5.3 – Separator Overlap at an Unsignalized median Opening for Left-turns/U-turns

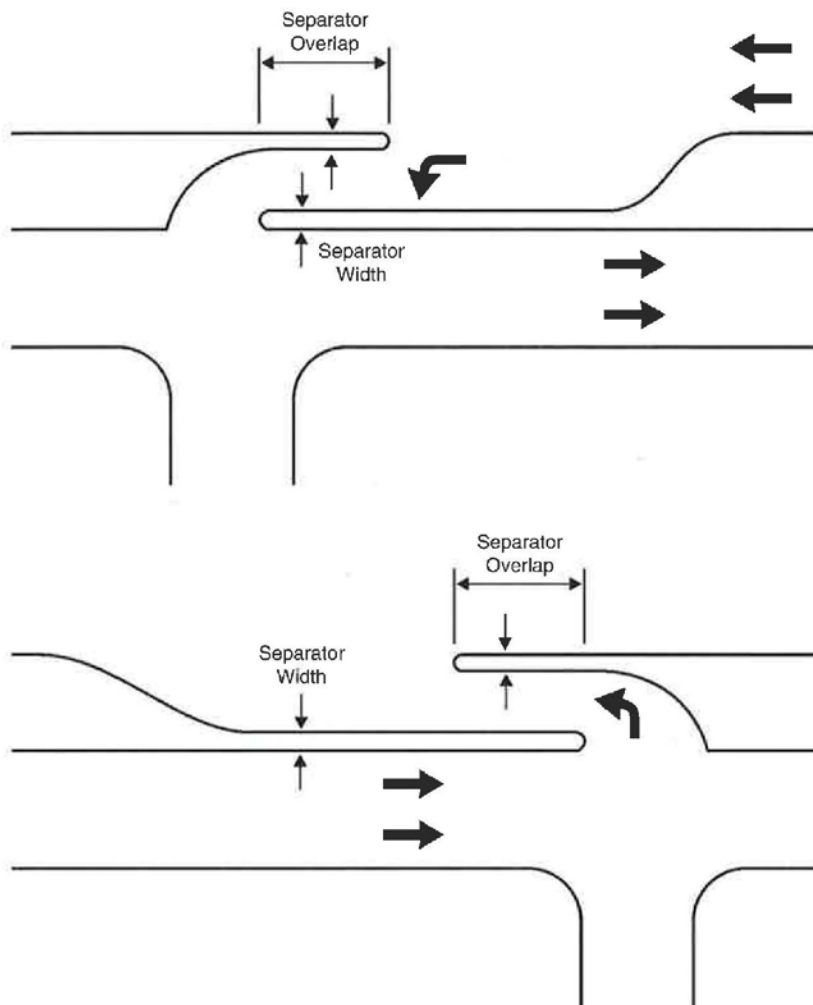
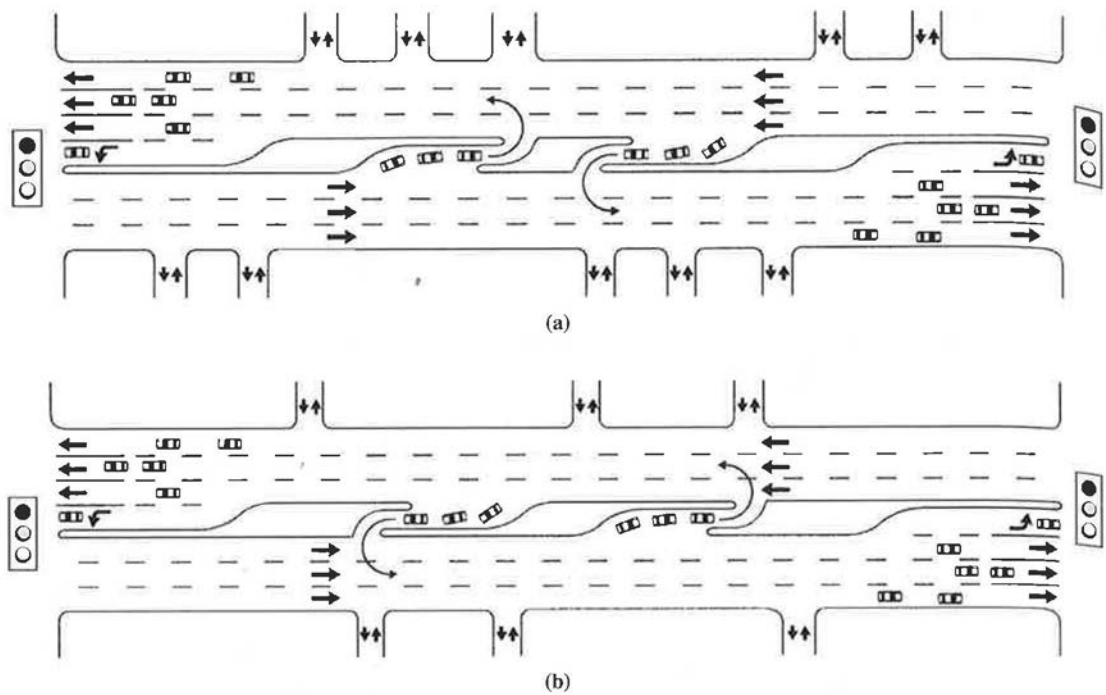


Figure 5.4 – Unsignalized Directional Median Openings



(a) Downstream from the signalized intersections and (b) upstream from the signalized intersections

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Chapter 6

Auxiliary Lanes

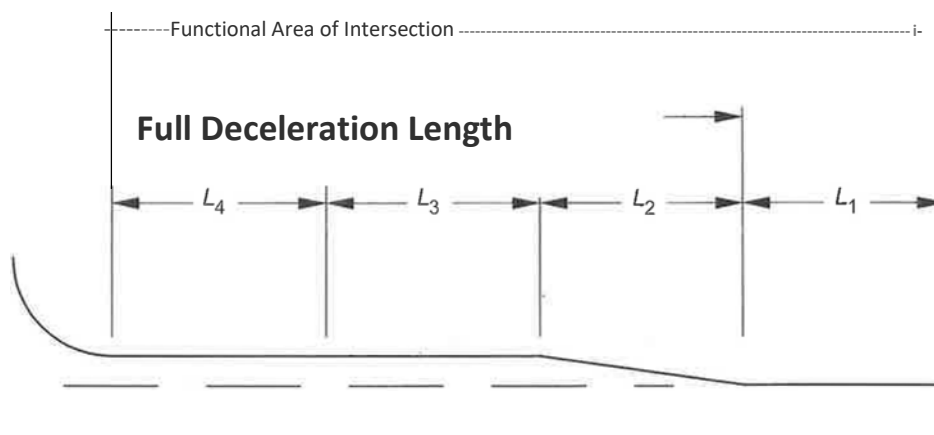
6.1 Auxiliary Lane Guidelines

Auxiliary lanes are any separate lanes used for left and right turning vehicles decelerating or accelerating. Left turn deceleration and storage lanes should be provided at all median openings that allow left and/or u-turns. Right turn deceleration lanes should be included when a right turning vehicle will cause the through traffic to slow or create congestion in the outside lane.

6.2 Auxiliary Lane Storage Length

The minimum physical length of a right-turn or left-turn bay, including the taper, consists of the maneuver distance plus the queue storage. The distance to maneuver laterally and decelerate to a stop is the same for left-turn bay as for right-turn bays, because the initial speed and the speed at which the turning vehicle clears the through-traffic lane are the same. Additional details on the design of left-turn and right-turn bays are provided in Transportation and Land Development, and the AASHTO “Green Book”, latest edition. See the figure below.

Figure 6-1 - Functional Area Upstream of an Intersection



Notes: L_1 = Distance traveled during perception-reaction time
 L_2 = Taper distance to begin deceleration and complete lateral movement
 L_3 = Distance traveled to complete deceleration to a stop
 L_4 = Storage length

6.3 Deceleration Length

Provision for deceleration clear of the through-traffic lanes is a desirable objective on arterial roads and streets and should be incorporated into design, whenever practical. Table 6-1 presents the estimated distances needed by drivers to maneuver from the through lane into a turn bay and brake to a stop.

Table 6.1 - Desirable Maneuver Distances

$L_2 + L_3$ in Figure 6.1

Speed (mph)	Distance (ft)
20	70
30	160
40	275
50	425
60	605

NOTE:

1. Assumes a turning vehicle has “cleared the through lane” when it has moved laterally approximately 9 feet so that a following through vehicle can pass without encroaching upon the adjacent traffic lane.
2. The speed differential between the turning vehicle and following through vehicles is 10 mph when the turning vehicle “clears the through traffic lane.”
3. 5.8 ft/s² deceleration while moving from the through lane into the turn lane; 6.5 ft/s² average deceleration after completing lateral shift into the turn lane.
4. Rounded to 5 ft.

The turn lane must be of adequate length to store vehicles waiting to complete the turn. The turn bay length at a signalized intersection will be affected by the signal timing, the percentage of large vehicles, and the turn rate for the design hour. The length may also be controlled by either off-peak or peak period conditions, so both must be calculated, with the longer of the two being the more desirable design length.

Dual left-turn lanes may be considered when the turning volume reaches 200 vehicles per hour. The length of a dual turn lane can be estimated by dividing the storage length by 1.8. The value of 1.8 provides some allowance for an unequal distribution of vehicles in the turn lanes.

Chapter 7

Connectivity

7.1 Connectivity

Providing a strong connected network of roads and pedestrian facilities can help distribute traffic, reduce travel distances and times, improve routing for transit and reduce walking distances. Good connectivity also provides better routing opportunities for emergency and delivery (solid waste, recycling, mail) vehicles. All of these effects can play a positive role in reducing congestion on the street network.

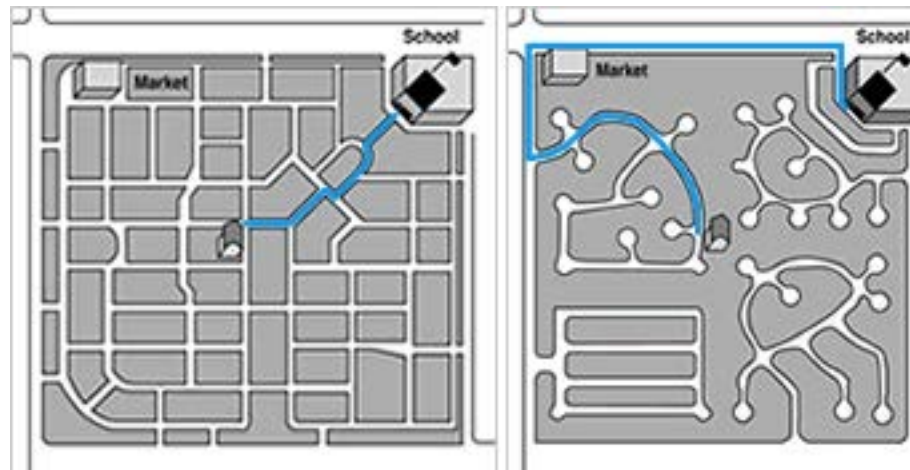
Connectivity is achieved by providing connections within individual developments, between developments and by having a well-planned collector road network to compliment the arterial highway network.

Connectivity is an integral component of access management. All of the previously discussed components of access management, i.e., spacing of access points, medians, auxiliary lanes, etc., can be utilized, but if the roadway system will still be ineffective if it is not cohesive. By following the functional classification of the roadways, a cohesive system of travel throughout the city can be achieved.

Emergency response is enhanced with greater connectivity and will improve citizen safety and peace of mind. If the only access point to a subdivision is blocked due to a traffic accident, or flooded by heavy rains, emergency personnel may be hampered, delayed or cannot reach the emergency in time to prevent a disaster. With more than one alternate way to gain access to a site, subdivision or other facility, the emergency response is enhanced for all who need the service.

An example of neighborhood connectivity is shown in Figure 7.1. Comparison of the two maps shows that the trip from home to school in the “Desirable” figure does not have to use the arterial streets to be completed (keeping the trip local in nature), versus the “Undesirable” figure where all trips to school must use the major arterial street. The trip length in the “Undesirable” figure is five times longer than the trip length in the “Desirable” figure, resulting in increased fuel consumption, additional congestion on the major arterial and additional travel time.

The Transportation Plan presented in this Manual provides uninterrupted collector connectivity to developing neighborhoods, intra-city minor arterial, and inter-city major arterial, travel destinations. Major benefits of connectivity include emergency response and higher roadway efficiencies that improve travel time and reduce congestion and costs to build larger roads.

Figure 7.1 – Roadway Connectivity Example

Desirable

Undesirable

7.2 Parcel Level

Connectivity can also be thought of as having more than one access to a side road for a large development, having cross access, i.e., connecting more than one driveway by a frontage road or connecting more than one development to one driveway. Connectivity allows trips to be distributed between the internal systems and the hierarchy of the roadway structure. A variety of street types should be included in development plans to help interconnectivity and reduce unnecessary trips on major roadways. A common access management tool used to promote connectivity within developments is the use of frontage roads. These roads allow the traffic that would normally use the main road to access a business to use an alternate parallel road, the frontage road, to make their turns. Connectivity also allows for pedestrian routes, which encourage walking between destinations, and removes internal trips from the adjacent road network.

The City may require the use of frontage roads to provide access to property adjacent to Arterial roadways or as shown on the Transportation Map. The landowner/developer may be required to construct the frontage road to the side and/or rear property lines or reserve sufficient right of way to allow future construction. As adjacent property develops landowner/developers shall be required to interconnect the individual portions of frontage roads as appropriate. Access to the roadway via an intersecting street or a shared driveway may be required if the use of a frontage road is not feasible.

7.3 Subdivision Level

The ability to travel between subdivisions reduces fuel consumption, reduces exhaust emissions, saves time, improves safety, and reduces vehicle miles traveled. Subdivisions must be designed to move traffic from local streets to collectors that will provide access to higher level roads. Local trips from one subdivision should use collectors to go to the next neighborhood. If traffic is forced to go out of the neighborhood to use an adjacent arterial road to access the next subdivision, the number and length of trips increases on arterials and causes congestion, reducing the effectiveness of the entire transportation system. The arterial roadway must be preserved for moving vehicles and people from one part of the city to another.

The interconnectivity of neighborhoods must be reflected in the original layout of subdivisions through the Planning and Zoning process and the Comprehensive Plan process. Individual properties that come in for rezoning must consider connections to future development on adjacent tracts of property. Collector roads must be constructed at the time of development so that the future development will have adequate access to the higher classification of streets and not force excessive traffic on local streets.

All subdivisions shall extend stub streets to the end of the tract boundary and dedicate public right of way for the future extension of the street into the next tract of land.

7.4 City level

Major and minor arterials must be planned so that through traffic has proper facilities to move from one portion of the city to another while not sending overflow traffic through neighborhoods. Access management must be employed to ensure as much capacity as necessary is available to provide safe and efficient roads for the community.

Connectivity of the arterial system also is beneficial because it gives more alternative routes to bypass portions of the city. If the only minor arterials all went through the center of the city, anyone wanting to travel from the north side to the south side of town, would be forced to go through downtown, causing congestion and gridlock. By providing alternative routes around downtown, traffic in that area of the city would be reduced, balancing traffic flow and improving efficiency.

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Chapter 8

Traffic Signs, Markings, Signalization and Neighborhood Traffic Management

8.1 Introduction

Effective access management for future proposed roadways will provide benefits for not only the new development areas, but also may be effective in controlling traffic issues in existing neighborhoods. The use of traffic signs, markings, signalization and neighborhood traffic management is also an effective way to manage access issues.

The purpose of this chapter is to define standards for traffic control devices based upon the recommendations of The Manual on Uniform Traffic Control Devices (MUTCD), current edition, published by the Federal Highway Administration. This chapter also provides some techniques for traffic calming techniques in existing neighborhoods.

8.2 Traffic Signs, Markings and Signalization Requirements

All development projects undertaken in Richmond shall follow and use the MUTCD standards. All traffic studies shall use the MUTCD for design of traffic signs, markings, and signalization. All plans must be approved through the City of Richmond and/or Kentucky Department of Highways (KDOH) with regards to traffic signage, markings, and signalization.

8.3 Neighborhood Traffic Management (NTM)

- **Goals**

It is the goal of the City of Richmond to establish procedures and techniques that will promote neighborhood livability by mitigating the negative impacts of automobile traffic on residential neighborhoods.

- **Objectives**

The objectives for Neighborhood Traffic Management are to promote safe and pleasant conditions for residents, pedestrians, bicyclists, and motorists on local neighborhood streets as follows:

- To encourage the designed use of the total street system, including the reduction of cut through vehicular traffic on local neighborhood streets.
- To reduce the speed of traffic on local neighborhood streets.
- To preserve and enhance pedestrian and bicycle travel within neighborhoods.
- To encourage citizen involvement in neighborhood traffic management process.
- To achieve efficient and safe movement of traffic within neighborhoods (including

- emergency vehicles) consistent with the intended function of the neighborhood streets.
- To maintain acceptable levels of service on the city's arterials so as to avoid intrusion/diversion onto local neighborhood streets.

- **Techniques**

There are a number of techniques that may be needed to address differing traffic conditions in neighborhoods. Traffic calming techniques generally fall under two categories - physical and psychological. Some traffic calming techniques are designed to physically change the width or surface of the street. Traffic calming may also be achieved by changing the psychological feel of the street. These changes may give motorists cues that they are no longer on a major roadway but are in a different environment that is shared with people.

All traffic calming techniques have a limited range of effectiveness. To achieve traffic calming objectives, some techniques need to be placed every 250 - 400 feet. Some techniques include speed humps, narrowing of pavement, installing landscape areas, corner bump-outs, roundabouts, etc. If traffic calming techniques are used too sparsely, traffic may slow close to the installation, but the overall speed will probably not decrease. One technique may be used multiple times or multiple techniques may be used in conjunction with one another. Most techniques will affect noise, air quality, congestion, fuel consumption, and many other factors. Some can improve these conditions; others may cause these problems to increase.

Emergency vehicle access and response time must be considered when designing and installing traffic calming devices. Emergency vehicles, particularly ambulances, have more difficulty with "vertical" devices such as speed humps than with "horizontal" devices such as neckdowns.

Likewise, bicyclists and pedestrians must be kept in mind when developing a traffic calming strategy, as some devices can obstruct their movements. Many devices can be modified to allow bicyclists and pedestrians to by-pass them. For instance, a diverter can be fitted with a bicycle / pedestrian link to allow for their through movement.

Section B - Roadway Manual

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Chapter 9

Introduction

9.1 Purpose

The proper design and construction of roads and streets is of utmost importance to any community that wants to maintain a structurally sound infrastructure. This infrastructure is used to provide mobility to the public, including businesses, residents, tourists, motorists, bicyclists, pedestrians and any other use of the public right of way. The purpose of this manual is for use in the design and maintenance of roadways in the City of Richmond. This manual draws upon nationally accepted standards for roadway planning and design. The manual is intended for use by:

- The City of Richmond
- Engineers designing local roadways
- Commercial, Industrial and residential developers

9.2 Terms and Definitions

To ensure easier use and interpretation of this manual, certain words, terms, and phrases are interpreted and defined within this section. The terms and definitions used in this manual are drawn from definitions in common use by: the City of Richmond, the Kentucky Transportation Cabinet (KYTC), the American Association of State Highway and Transportation Officials (AASHTO), the Transportation Research Board (TRB), and the Institute of Transportation Engineers (ITE). If a word is not specifically defined within this section, but is used within the context of this manual, it is assumed that the word is defined by its common English definition. When standards referenced within this manual change, the most current standards will apply.

It is further assumed in the context of this manual that words used in the present tense include the future tenses; words in the singular number include the plural; and words in the plural include the singular. The word "person" includes a firm, partnership, or corporation, as well as an individual. The word "street" and the word "road" are used interchangeably within the context of this manual; the word "lot" includes the word "plot" or "parcel"; and the word "building" includes the word "structure." The terms "shall" and "will" are always mandatory and not directory, and the word "may" is permissive.

Terms and Definitions are located in Appendix A.

9.3 Federal, State, and Local Permits/Laws

This roadway manual is to be used in conjunction with federal, state, and local permit requirements and laws. The manual in no way supersedes federal, state, and local permitting or design requirements dealt with in other laws and ordinances. When referenced standards change, the most up-to-date standards and requirements will apply.

9.4 Standard Drawings and Specifications

References to “standard drawings and specifications” within this manual are in reference to the standardized drawings utilized by the City of Richmond, or those used by the Kentucky Department of Highways.

9.5 Referenced Documents and Manuals

Numerous technical documents were used as references materials in the development of this document. These documents are included in Appendix B, Reference Documents.

9.6 Submission Requirements for Roadway Construction

All projects presented for development plan approval shall submit all documents, soils or geotechnical testing, any other tests required, all required approved permits from state, federal, local, or other jurisdictions, and all other documentation required in this manual before final plan approval is issued to begin construction.

9.7 Design and Construction Activities

Design requirements shall be based on the specifications in this manual. Construction activities shall be based on KYTC Standard Specifications for Road and Bridge Construction. Items not covered by the KYTC specifications shall require a special design by the Engineer and shall be approved by the City of Richmond.

9.8 Street Names

Street names shall be selected which will not duplicate, nor be confused with, names of other existing streets in Madison County. Proposed streets which are clearly in alignment with existing streets shall bear the name of that street. Generally, no street should change direction by ninety (90) degrees without a name change.

9.9 Street Signs

The developer shall be responsible to purchase, provide and install all temporary and permanent street signs for any subdivision or street construction activity related to the development, according to city standards.

9.10 Street Lights

The developer will provide for the installation of street lighting systems within the city limits. Street lights shall be placed on standard fixtures installed by the appropriate utility agency. Ornamental/decorative lighting is permitted as an alternative to the standard fixture. All property owners on the street where ornamental/decorative lighting is installed shall be assessed on an annual basis (Ord. 92-44). If applicable the alternative street assessment shall be noted on the final plat.

9.11 Right of Way Dedication

For any development fronting on an existing street or roadway, being constructed on lots that have not been platted (i.e. metes and bounds deed descriptions that extend to the centerline of the roadway), the developer shall be required to dedicate all required right of way to the City of Richmond, commensurate with the type of street being constructed. As an example, a local street shall require a dedication of 25 feet from the centerline; a collector shall require a dedication of 30 feet from the centerline.

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Chapter 10

Roadway Specifications and Typical Sections

10.1 Introduction

Roadways constructed for the City of Richmond will serve a variety of transportation needs. Each one of these types of roads will require a different pavement design and typical section. Arterial roadways will typically be constructed for the purpose of moving traffic from one side of town to the other and will probably be designed by the city or the KYTC. Higher state and national guidelines will be used to design these higher classes of roads than that shown in this manual.

10.2 Street Standards

Collector and local streets will be designed and constructed according to the guidelines in this manual. The following table is a compilation of design parameters that are to be used in the design of these roadways.

Table 10.1 - Required Roadway Dimensions and Characteristics

	COLLECTOR STREETS		LOCAL STREETS			
	RESIDENTIAL	NON-RESIDENTIAL	CONTINUING	LOOP/ CUL-DE-SAC	SERVICE ROAD	NON- RESIDENTIAL
<u>STREET DIMENSIONS</u>						
Right-of-Way Width	60'	70'	50'	50'	40' – 50'	60'
Roadway Width (face to face)	40'	40'	30'	30' (*3)	30'	40'
Curbs and Gutters	Yes	Yes	Yes	Yes	Yes	Yes
Sidewalk (width and sides)(*5)	4' (both)	4' (both)	4' (both)	4' (both)	4' (*1)	4' (both)
Driveway Access	(*1) Yes	(*1) Yes	Yes	Yes	Yes	Yes
Double-Frontage Lots	(*1) No	(*1) No	No	No	No	No
Street Grade (Maximum)	8%	8%	10%	10%	10%	6%
Street Grade (Minimum)	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Pavement Cross Slope	¼" / ft.	¼" / ft.	¼" / ft.	¼" / ft.	¼" / ft.	¼" / ft.
Cut Slopes (Minimum)	2:1	2:1	2:1	2:1	2:1	2:1
Fill Slopes (Minimum)	2:1	2:1	2:1	2:1	2:1	2:1
<u>STREET ALIGNMENT</u>						
Horizontal Curve Radius	500'	500'	250'	100'	150'	300'
Stopping Sight Distance	250'	250'	200'	200'	200'	200'
Crest Vertical Curve Formula	(*4)	(*4)	(*4)	(*4)	(*4)	(*4)
Crest Vertical Curve (Minimum)	100'	100'	100'	100'	100'	100'
Sag Vertical Curve Formula	(*4)	(*4)	(*4)	(*4)	(*4)	(*4)
Sag Vertical Curve (Min)	100'	100'	100'	100'	100'	100'
<u>STREET INTERSECTION</u>						
Maximum Street Legs	4	4	4	4	4	4
Intersection Angle (Preferred and Minimum)	90° - 80°	90° - 80°	90° - 80°	90° - 80°	90° - 80°	90° - 80°
Intersection Spacing	(*2)	(*2)	(*2)	(*2)	(*2)	(*2)
Curb Radius Along Street	(*1)	(*1)	20'	20'	20'	20' – 40'
Max. Grade within 50' of Intersecting Gutter	3%	3%	3%	3%	3%	3%
Max. Tangent Offset within 100' of Intersecting Gutter	8.3'	8.3'	11.3'	11.3	11.3'	11.3'

(*1) As approved by the Planning Commission

(*2) Intersection spacing shall apply as described this manual

(*3) Alternate dimensions of 23' or 27' (face-to-face roadway width may be utilized as described in Typical Sections for local streets).

(*4) Refer to AASHTO's "A Policy on Geometric Design of Highways and Streets."

(*5) Installation of all sidewalk and ramps shall be compliant with current ADA guidelines.

NOTE: See Section 10.6, **Approved Streets**, for private street regulations.

10.3 Typical Sections

The following cross-sections shall be considered typical for the situations listed. Other cross-sections may be required by the Planning Commission upon advice from the Planning and Zoning staff, based upon the design of the actual situation encountered. Some existing stub streets were constructed using cross-sections that are now obsolete. These streets should be completed using the obsolete cross-section to an appropriate stopping point, which is customarily the next street intersection. Cross-sections for arterial streets or other roadways, larger than those shown in this exhibit, shall be designed by the City of Richmond and/or the Kentucky Department of Transportation, as appropriate. Figures 10.1 through 10.5 depict typical sections for representative roadway types.

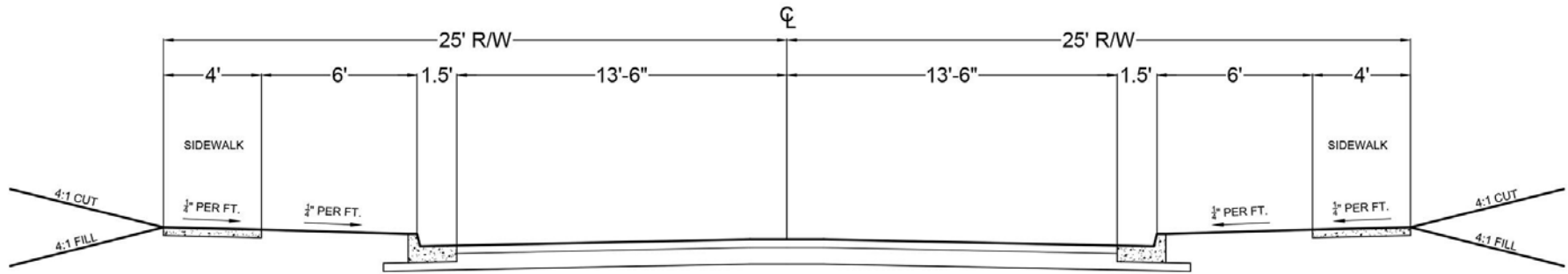
10.4 Complete Streets

The concept of complete streets has changed the perception of what a transportation project should be to improve community mobility. Instead of focusing on the movement of motorized vehicular traffic, which sometimes create barriers to community interaction, complete street design focuses on retaining community character and sense of place while improving public safety for all forms of transportation including: pedestrian, non-motorized, mass transit and motorized vehicular traffic. Communities that embrace the complete streets concept find numerous physical and social benefits for their community.

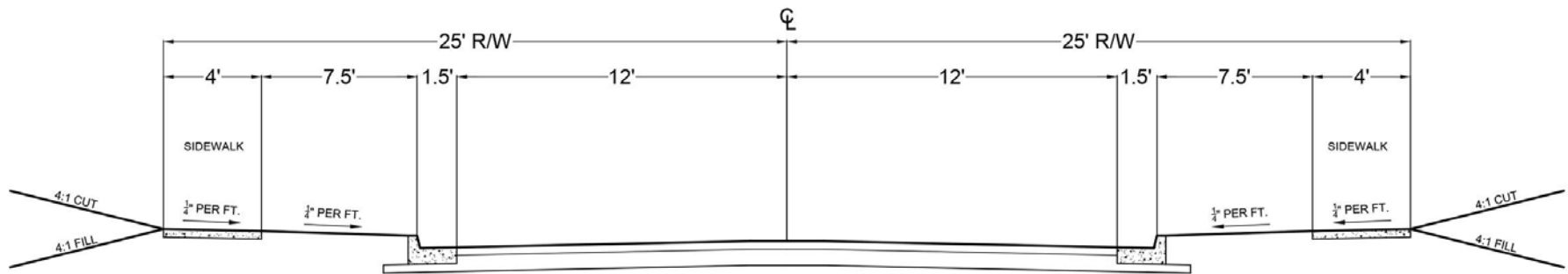
Complete streets function for all users regardless of age or ability in a safe and efficient environment including pedestrians, bicyclists, motorists and transit riders. Incorporating complete streets into the community means a fundamental shift in transportation planning and design. This shift yields a safer and more connected transportation network for all users ultimately creating a better place to live.

There is no singular design prescription for Complete Streets; each one is unique & responds to its community contextual setting. A complete street may include some if not all of the following: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable & accessible public transportation stops, frequent & safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions (bump-outs), narrower travel lanes, roundabouts, & more elements. Whenever a new street is constructed, whether by a developer or the city, all aspects of a complete street design should be considered.

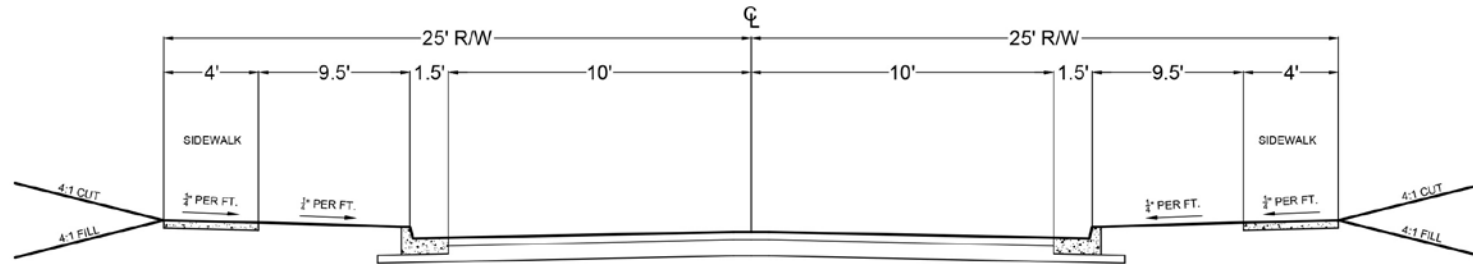
Figure 10.1 – Typical Section for Residential Local, Cul de Sac over 500 Feet Long, Commercial Service Road; Residential Cul de Sac Under 500 Feet Long



RESIDENTIAL LOCAL, CUL-DE-SAC OVER 500' LONG, COMMERCIAL SERVICE ROAD TYPICAL SECTION NTS

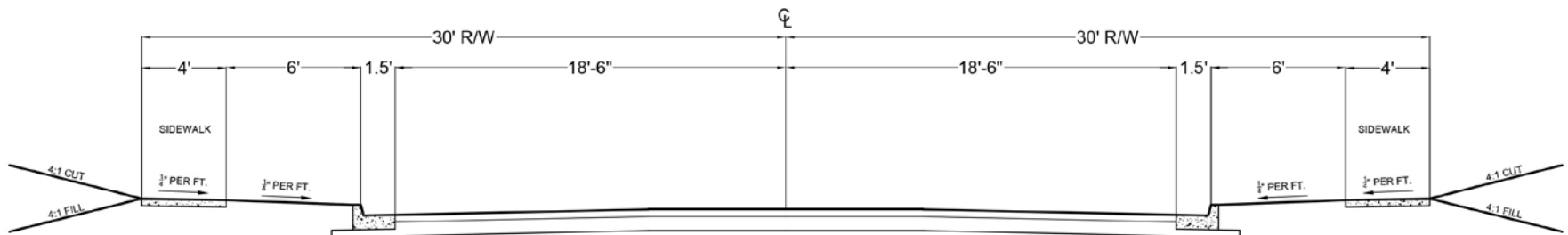


RESIDENTIAL CUL-DE-SAC UNDER 500' LONG, TYPICAL SECTION NTS

Figure 10.2 – Typical Section for Residential Special; Residential Collector, Non-residential Local**RESIDENTIAL, TYPICAL SECTION, SEE NOTE BELOW**

NOTE: RESIDENTIAL LOCAL WHERE 15 UNITS OR LESS HAVE ACCESS, OR THE AVERAGE LOT WIDTH IS GREATER THAN 100' (SINGLE FAMILY HOMES ONLY); AND WHERE TWO PARKING SPACES PER BEDROOM ARE PROVIDED BEHIND THE BUILDING LINE, EACH HAVING INDEPENDENT ACCESS TO THE STREET.

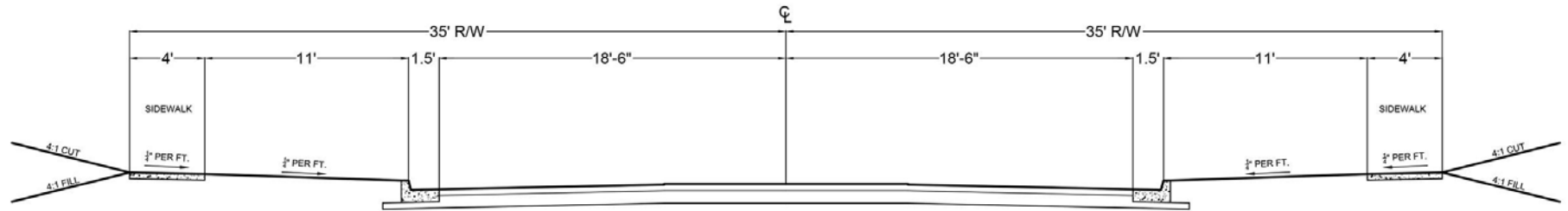
NTS

**RESIDENTIAL COLLECTOR, NON-RESIDENTIAL LOCAL STREET TYPICAL SECTION**

NOTE: SIDEWALK MAY BE ELIMINATED ON ONE SIDE WHEN STREET IS COMPLETELY CONTAINED WITHIN AN INDUSTRIAL AREA.

NTS

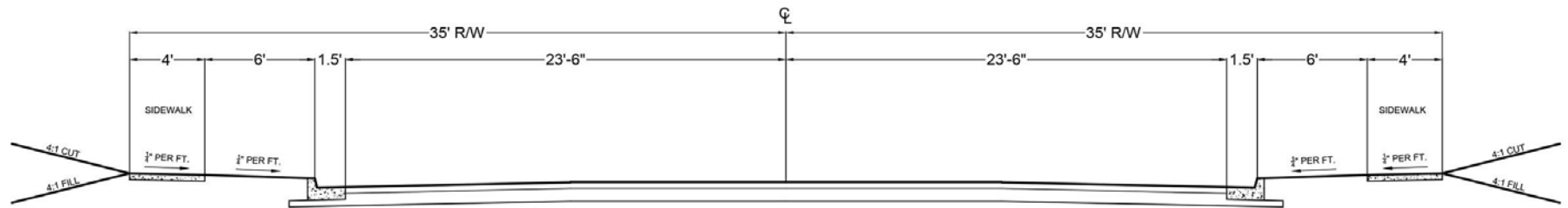
Figure 10.3 – Typical Section for Non-Residential Collector, Industrial Area; Non-residential Collector, Intersection with Arterial Street for at least 250 Feet



NON-RESIDENTIAL COLLECTOR, INDUSTRIAL AREA TYPICAL SECTION

NOTE: SIDEWALK MAY BE ELIMINATED ON ONE SIDE WHEN STREET IS COMPLETELY CONTAINED WITHIN AN INDUSTRIAL AREA.

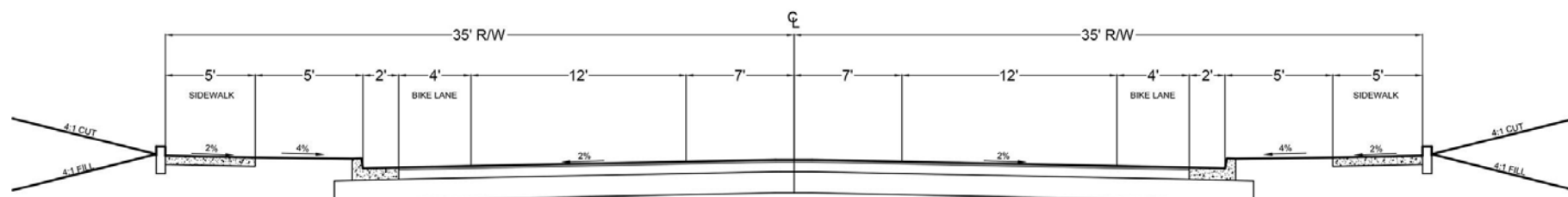
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NON-RESIDENTIAL COLLECTOR, INTERSECTION WITH ARTERIAL STREET FOR AT LEAST 250'

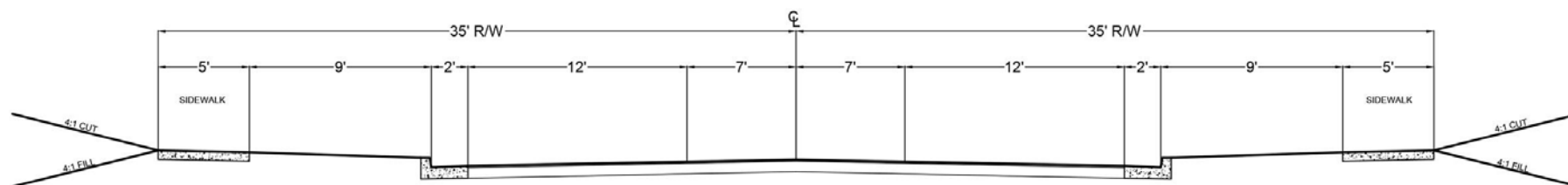
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Figure 10.4 – Typical Section for Minor Arterial, Two-Way-Left-Turn Lane with Bike Lanes; Minor Arterial, Two-Way-Left-Turn Lane



MINOR ARTERIAL, TWO-WAY-LEFT-TURN-LANE WITH BIKE LANES

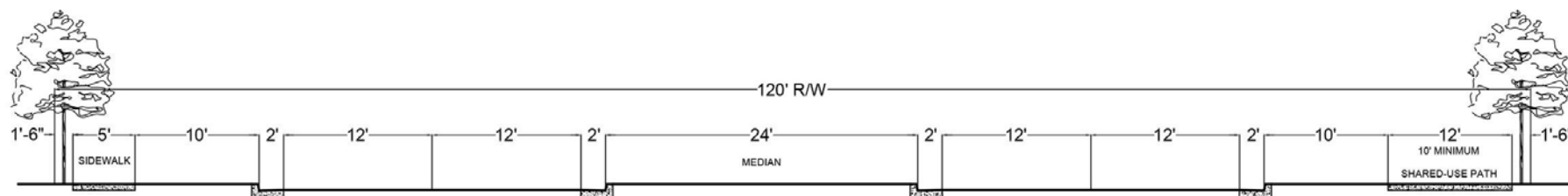
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MINOR ARTERIAL, TWO-WAY-LEFT-TURN-LANE

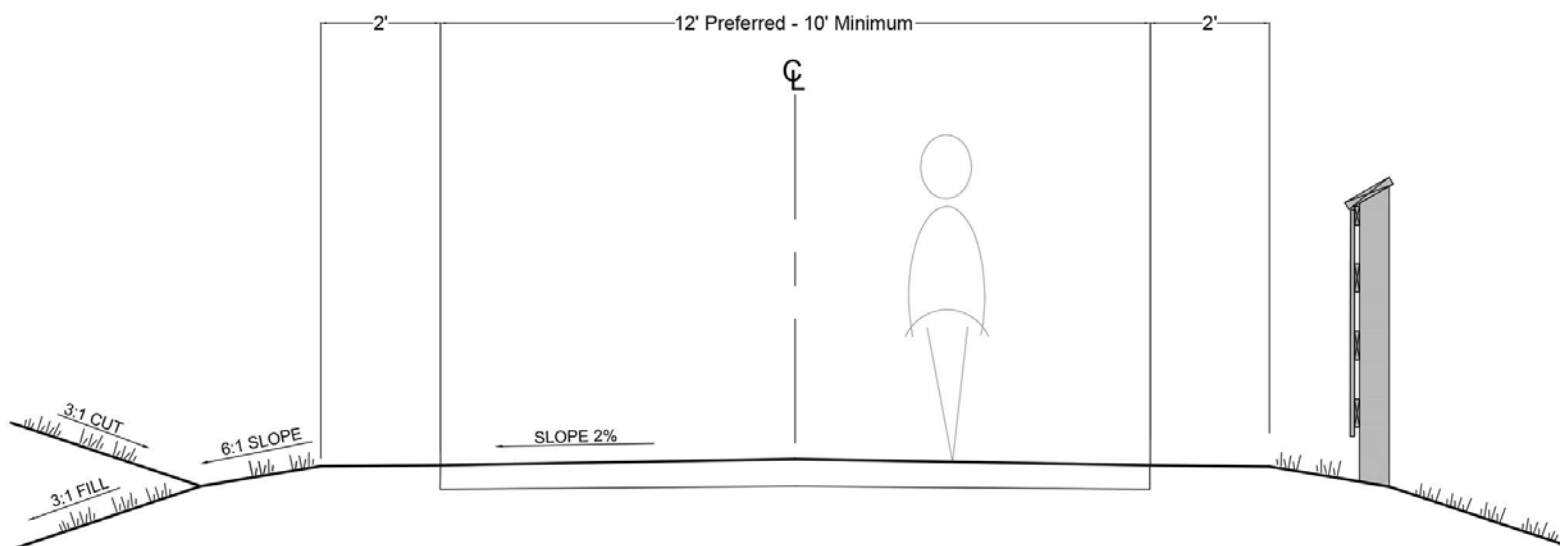
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Figure 10.5 – Typical Section for Major Arterial with Median; Shared-Use Path



MAJOR ARTERIAL WITH MEDIAN

NTS



SHARED-USE PATH TYPICAL SECTION

NTS

10.5 Green Streets

The concept of a green street provides a balanced approach to meet the transportation needs of pedestrians, bicyclists and motorists while incorporating stormwater quality and quantity best management practices. As a permitted community under Kentucky Pollutant Discharge Elimination System (KPDES), the City of Richmond is required to meet certain water quality provisions of the EPA's Clean Water Quality Act of 1987. Thus, the green street model provides a practical and cost-effective option to address Richmond's permitting obligation. Green Streets provides reduction of stormwater runoff by diverting rainwater from other infrastructure networks including: sanitary sewer systems, basement foundation drainage, and combined sewer overflows (CSOs) thus improving overall water quality. The green street improvements are completed within the street right-of-way similar to the Complete Street model.

A Green Street addresses stormwater on-site through use of vegetated areas; provides water quality benefits and replenishes groundwater (if an infiltration BMP is installed); meets broader community goals by providing improved pedestrian and, bicycle facilities; and serves as an urban greenway segment that connects neighborhoods, parks, recreation facilities and schools. The installation of a green street creates attractive and safer streetscapes that enhance a community's livability for all users of the public right-of-way. The goal of a green street should be to create synergy within Richmond's infrastructure by enhancing and expanding the public open space, preserving or improving the character of the surrounding land use while providing water quality and quantity benefits for the community.

The design and function of green streets should vary with the surrounding land use and community activities. Urban, campus, and suburban streets should each respond to their environment and develop unique and distinctive characteristics. A green street integrates a number of treatments that may include accessible sidewalks, traffic calming, road diet, rain gardens, vegetative swales, planter boxes, street trees within stormwater filter units and other pedestrian-scaled features. The implementation of the green streets program should be a part of an overall Stormwater Low Impact Development (LID), Green Infrastructure, Smart Growth policy that offers mixed-use development options with multi-functional infrastructure which would reduce the demand for increased infrastructure capacity, while meeting general water quality requirements.

10.6 Approved Streets

Any vehicular way approved by the City of Richmond as providing access to a property either being a public or private street as follows:

- **Public Streets**

Public streets are streets dedicated to the public use and which are maintained by the City of Richmond.

- **Private Streets**

Private streets are streets owned by and dedicated to use by a specific subdivision or homeowners' association. Private streets may be permitted by the City of Richmond. Subdivision plans containing private streets shall conform to all other subdivision regulations. Private streets are streets constructed, used, and maintained under the provisions of the Subdivision Regulations and have identical design standards as Public Streets. Construction guarantees shall also be the same as for public streets, as outlined in Section 516 of the Development Ordinance. The Section below outlines the special requirements for private streets.

- **Special Requirements for Private Streets**

- **No Disruption to Through Movement:** Private streets may be permitted only if they meet the definition of local streets; if they provide absolutely no present or future impediment to necessary through traffic movement in the general area; and, if adjoining properties and the general area already have, or are capable of providing a proper, efficient and safe street system that will in no way depend upon the private streets.
- **Right-of-Way Setback:** Private street right-of-way and building setback lines shall be shown on the plat and shall at least meet minimum requirements of the Development Ordinance required for public streets to assure conformance if such streets are ever accepted for public dedication at a later date.
- **Street Improvement Standards:** Private streets shall conform to the design standards set for public streets.

- **Future Acceptance by Government:** Any plan containing permitted private streets shall have such streets so labeled and shall contain the following signed certification by the owner: *"Private Street Responsibilities of the Owners - The owners of this property and any successors in title hereby agree to assume full liability and responsibility for any construction, maintenance, reconstruction, snow removal cleaning or other needs related to the private streets so designated on this plan, and do hereby fully relieve the City of Richmond from any such responsibility. The owners understand that the private streets will not result in any reduction in taxes required by and payable to the city of Richmond. Furthermore, if the owners in the future should request that the private streets be changed to public streets, the owners do fully agree that before acceptance of such streets by the City of Richmond, the owners will bear full expense of reconstruction or any other action necessary to make the streets fully conform to the requirements applicable at that time for public streets prior to dedication and acceptance. Finally, the owners also agree that these streets shall be dedicated to public use without compensation to the owners and without the owners expense in making such streets conform to the requirements applicable at that time for public streets, if at some future date, the City of Richmond so requests."* (Signed and Dated by Owners.)
- **Government and Utility Access:** Any plan containing permitted private streets shall show and label all other easements normally required; shall conform to all other applicable sections of the Subdivision Regulations and other local ordinances; and shall contain the owners signed certification: *"Government and Utility Access - The owners of this property hereby agree to grant full rights of access to this property over the designated street, utility, and other easements for governmental and utility agencies to perform their normal responsibilities."* (Signed and Dated by Owners)
- **Street Signs:** The developer shall provide and install any and all street signs necessary for private street intersections. The owners of the private streets shall also maintain the street signs at their expense. The signs shall be consistent in size and appearance with the City of Richmond standard street sign, but will also identify the street as a private street, with the letters "pvt" at the end of the street name.
- **Maintenance Responsibility:** Homeowners' association or other mechanism

that provides for equitable common responsibility for private street maintenance and repair shall be required to be established by the development's contractor. The contractor's responsibility to create such a mechanism shall be noted on the final plat of the subdivision. A requirement that each property owner be individually responsible for maintenance and repair of the portion of the street abutting the lot shall not be considered as acceptable for fulfilling the requirements of this section.

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Chapter 11

Geometric Design Standards

11.1 General

There are three primary elements that determine the geometric characteristics of a roadway. These are:

- Typical cross section
- Horizontal alignment
- Vertical alignment

Although the three primary design elements essentially establish the geometric characteristics of a roadway, there are numerous secondary design elements that must be considered in the total geometric design. Many of these secondary design elements are discussed here.

For any roadway project, the minimum values used for these primary elements are established based on the design controls and design criteria for the particular roadway. Design controls and design criteria normally considered in the design of a roadway are:

- Functional classification
- Area (urban or rural)
- Volume of traffic (DHV and ADT)
- Percentage of trucks
- Design speed
- Topography (flat or rolling terrain)
- Level of service (*Highway Capacity Manual* for detail)
- Special considerations such as the length of project, the condition of roads in the vicinity of the project, and the likelihood of adjoining segments being improved in the foreseeable future.

In the early stages of a project, geometric design criteria shall be coordinated with the City of Richmond. In a few cases, the typical cross-section design may depend also on whether or not the project is to be financed with state or federal-aid funds.

The Geometric Design Criteria for each classification of roadway are used to determine the values for each of the components that make up the typical cross-section (i.e., pavement width and slope, shoulder width and slope, ditch width and slope, and typical earth slopes in cuts and fills for typical street sections.) Also, refer to the City of Richmond's "*Standard Drawings*."

11.2 City of Richmond Standard Drawings

The city of Richmond's "*Standard Drawings*," current edition shall be used in conjunction with this manual. The engineer is referred to these standard drawings for additional information and background material concerning the design criteria presented in this manual.

11.3 Kentucky Transportation Cabinet (KYTC)

The Kentucky Transportation Cabinet's "*Standard Drawings*" and "*Standard Specification for Road and Bridge Construction*," current edition has also been approved for use in conjunction with this manual. The engineer is referred to this manual for additional information and background material concerning the design criteria presented in this manual.

11.4 AASHTO Guidelines

The American Association of State Highway and Transportation Officials (AASHTO) is an organization that investigates and comments on the design policies of all states. The latest edition of AASHTO's "*A Policy on Geometric Design of Highways and Streets*" has been approved for use in conjunction with this manual. The engineer is referred to the AASHTO manual for additional information and background material concerning the design criteria presented in this manual.

11.5 Manual on Uniform Traffic Control Devices

The U.S. Department of Transportation Federal Highway Administration's "*Manual on Uniform Traffic Control Devices (MUTCD)*" current edition has been approved for use in conjunction with this manual. The engineer is referred to this manual for additional information and background material concerning the design criteria presented in the manual.

11.6 Highway Capacity Manual

The Transportation Research Board National Research Council's *Highway Capacity Manual Special Report 209* has been approved for use in conjunction with this manual. The engineer is referred to this manual for additional information and background material concerning the design criteria presented in this manual.

11.7 Typical Cross Section

There are four basic design controls that are used to determine the typical cross-section for a given roadway:

- Functional Classification
- Area (Rural or Urban)
- Volume of traffic
- Design speed

11.8 Horizontal Alignment

There are several components that comprise the total horizontal alignment design of a roadway. These components and their relationships are discussed below:

11.9 Circular Horizontal Curves

The minimum radius of a curve that can be used for a given design speed is shown in table 10.1. This minimum has been established based on the laws of mechanics. Even though this minimum is allowable, the engineer should always strive to keep horizontal curves as flat as possible.

If compound curves are used, the radius of the flatter curve shall not be more than 50 percent greater than the radius of the adjacent sharper curve.

An alignment where horizontal curves, either in the same direction or opposite direction, are separated by only a short length of tangent roadway should be avoided. This situation creates an alignment that is not pleasing in appearance and also creates problems in superelevation transition. It is preferable to use flatter curves connected by smooth spiral transition curves.

11.10 Spiral Transition Curves

When going from a tangent section into a horizontal curve, or vice versa, a motor vehicle does not follow a path that is parallel to the centerline of the road. The minimum length of spiral curves for given conditions is also shown on these tables. These minimum lengths should be rounded up to even lengths that permit simple calculations. The accepted reference for calculating spiral curves is *Transition Curves for Highways* by Joseph Barnett and AASHTO's "A Policy on Geometric Design of Highways and Streets."

11.11 Superelevation

When a motor vehicle traverses a horizontal curve, centrifugal force tends to move the vehicle radially outward. To help offset this force, the roadway is superelevated on horizontal curves.

Superelevation tables indicate the amount of superelevation to use for a given design speed and radius of curve. In general, a maximum rate of 4.0 percent should be used in urban areas. Refer to AASHTO tables for all other applications. In urban and suburban areas where frequent interruptions in traffic flow are anticipated, and the elevation of existing streets and development must be considered, a lesser rate of maximum superelevation may be used. Local and collector/connector roadways will generally not be subject to superelevation treatment.

The superelevation runoff distance (L) should be the length of spiral, if spirals are used.

The tangent runout, the transition distance from a normal crown section to a flat section, shall be calculated by the formula:

$$R = L * c e$$

Where:

L = Length of spiral or length of runoff

c = Normal rate of pavement crown (1/4 "per foot) e = Superelevation rate

11.12 Superelevation at Intersections

The superelevation rates for the through road at an intersection should comply with the appropriate values. At signalized intersections in urban areas, the Engineer may elect to use either reverse crown superelevation or no superelevation, after consideration of (a) vehicle's ability to stop and accelerate during periods of ice and snow, (b) right-of-way damages, (c) grade on existing street approaches and entrances, and (d) drainage.

When introducing or removing superelevation rates, the maximum gradients between pavement edge and centerline profiles from the following table should be used:

Table 11.1 – Design Rate of Cross Slope Change for Curves at Intersections

Design Speed (MPH)	15 & 20	25	30	35 or more
Change in Superelevation Rate (Ft. per Ft.) per 100'	0.075	0.071	0.067	0.065

Reference: Adapted from AASHTO "Green book."

Superelevated areas adjacent to a through lane having a normal crown, or a different superelevation, result in a "cross-over line" which can cause a hazardous pitch or sway in a vehicle. The maximum difference in superelevation for a road turning away from a through lane is as shown in the following table:

Table 11.2 – Maximum Algebraic Difference in Pavement Cross Slope at Turning Roadway Terminals

Design Speed of Exit or Entrance Curve (MPH)	Maximum Algebraic Difference in Cross Slope at Cross Over Crown Line (foot per foot)
15 and 20	0.05 - 0.08
25 and 30	0.05 - 0.06
35 and over	0.04 - 0.05

Reference: Adapted from AASHTO "Green book."

11.13 Pavement Widening on Curves

When traversing a horizontal curve, the rear wheels of a motor vehicle track inside the front wheels. In addition, it is difficult for a driver to hold the vehicle in the center of the lane when rounding a curve. These problems become more pronounced when lane widths are narrow and curves are sharp.

To partially offset these conditions, pavements shall be widened on horizontal curves when the degree of curve is 5 degrees or greater and the normal lane width is less than 12 feet.

Reference should be made to AASHTO'S *"A Policy on Geometric Design of Highways and Streets,"* to determine the amount of widening to be used for a particular radius of a curve. When spiral transition curves are used, the widening should be equally divided between the inside and outside edges of pavement. The widening should transition from zero at the tangent to spiral (T.S.) to full widening at the spiral to curve (S.C.).

When spiral transition curves are not used, all the widening should be done on the inside edge of pavement. The widening should transition from zero at the beginning of the tangent runoff (L) to full widening at the point of full superelevation.

11.14 Lane Width

The width of the traffic lanes on intersecting roads is controlled by the geometrics approved by the City of Richmond. For channelized turning movements, the following lane widths shall be used for the turning road:

Table 11.3 – Curvature and Lane Width (Channelization Only)

Speed (MPH)	15	20	25	30	35	40	45
Radius (Ft.)	50	90	150	230	310	430	550
Lane Width (Ft.)	18	17	16	16	15	15	15
(Widen lanes one foot for each barrier curb used)							

Reference: Adapted from AASHTO "Green book."

11.15 Deceleration Lane Tapers

Tapers or deceleration lanes for vehicles turning from the major road into the minor road are highly desirable for both safety and added capacity. A long radius with no taper is preferable to a short radius and an inadequate taper. On high-speed facilities, taper rates should conform to AASHTO's *A Policy on Geometric Design of Highways and Streets*. However, on most urban intersections, much shorter tapers are satisfactory. Minimum taper rates of 8:1 for speeds up to 30 mph and 15:1 for operating speeds up to 50 mph may be used. (Check the green book for the higher speed ratio)

11.16 Horizontal Sight Distance

Sight distance is the length of roadway that is visible ahead to the driver as he traverses the roadway. In some cases, the sight distance across the inside of horizontal curves is obstructed by objects such as cut slopes, vegetation, buildings, etc. When designing the horizontal alignment, the engineer should check to determine that adequate sight distance is obtained on horizontal curves. In some instances, additional right-of-way may be required. The most recent edition of AASHTO's *"A Policy on Geometric Design of Highways and Streets"* will aid in that determination.

Both stopping sight distance and passing sight distance must be considered. Horizontal sight distance shall be coordinated with the vertical sight distance discussed in the following section of this manual.

Intersection sight distance is an additional subject that is to be considered in roadway design for roads with at-grade intersections. Refer to the ASSHTO "Green Book" and the TRB Access Management Manual for additional information.

11.17 Vertical Alignment

Vertical Alignment - As with horizontal alignment, there are several components that comprise the total vertical alignment design of a roadway. These components and their relationships are discussed below:

- **Grades**

The grade line is a series of straight lines connected by parabolic vertical curves to which the straight lines are tangent. Under all conditions, these lines should be smooth flowing. Short, choppy grades are unsightly and disrupt roadway and vehicle operating conditions.

Maximum Grade: The maximum allowable gradient for all roadway classes is based on the design speed and type of terrain. The maximum grades for roads are shown in Table 10.1.

Minimum Grade: It is necessary to maintain a minimum grade in order to provide adequate drainage; a minimum longitudinal grade of at least 0.80% should be maintained at all times.

11.18 Driveway Grades

Driveways shall be designed with a gradient that will provide for a flat landing area (+ - 3%) adjacent to the edge of right of way. Refer to the Access Management Manual for additional detail for driveway grades.

11.19 Vertical Curves

The transition from one rate of grade to another is effected by the introduction of vertical curves. The curve that is used for this purpose is a simple parabola. All standard route surveying textbooks cover the method of calculating vertical curves and that subject is not covered in this manual.

In addition to sight distance, the engineer should consider riding comfort and appearance when selecting a length of vertical curve. Long curves give a more pleasing appearance and provide a smoother ride than short vertical curves. The most recent edition of AASHTO's "A Policy on Geometric Design of Highways and Streets" will aid in that determination.

11.20 Sight Distance

Sight distance is the length of roadway visible ahead to the driver. In roadway design, consideration must be given to stopping sight distance and passing sight distance.

11.21 Stopping Sight Distance

Stopping sight distance is that distance that is required for a driver to bring their vehicle to a safe stop after the object becomes visible when traveling at the designated design speed.

11.22 Passing Sight Distance

Passing sight distance is the minimum sight distance required for the driver of one vehicle to pass another vehicle safely and comfortably. Passing must be accomplished without reducing the speed of an oncoming vehicle traveling at the design speed should it come into view after the overtaking maneuver is started.

11.23 Cul-de-Sacs

Cul-de-sacs shall not be longer than one thousand (1000) feet, including the turnaround which shall be provided at the closed end with a right-of-way radius of fifty (50) feet, curb radius of forty (40) feet, and a transition curve radius of seventy-five (75) feet. Longer cul-de-sacs may be permitted because of unusual topographic or other conditions and, in such cases the Planning Commission may require additional paving width if necessary to prevent overloading of street capacity. Temporary turnarounds may be required at the end of stub streets as long as it is retained within the street right-of-way.

Figure 11.1 - Cul-De-Sac with Median

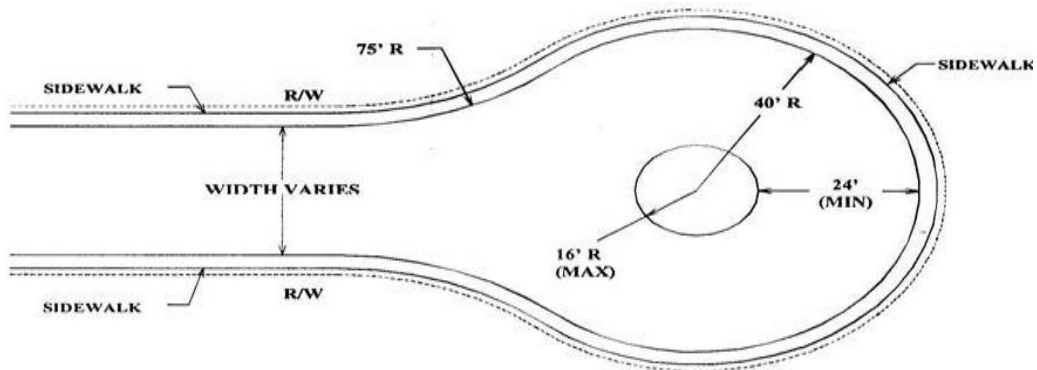
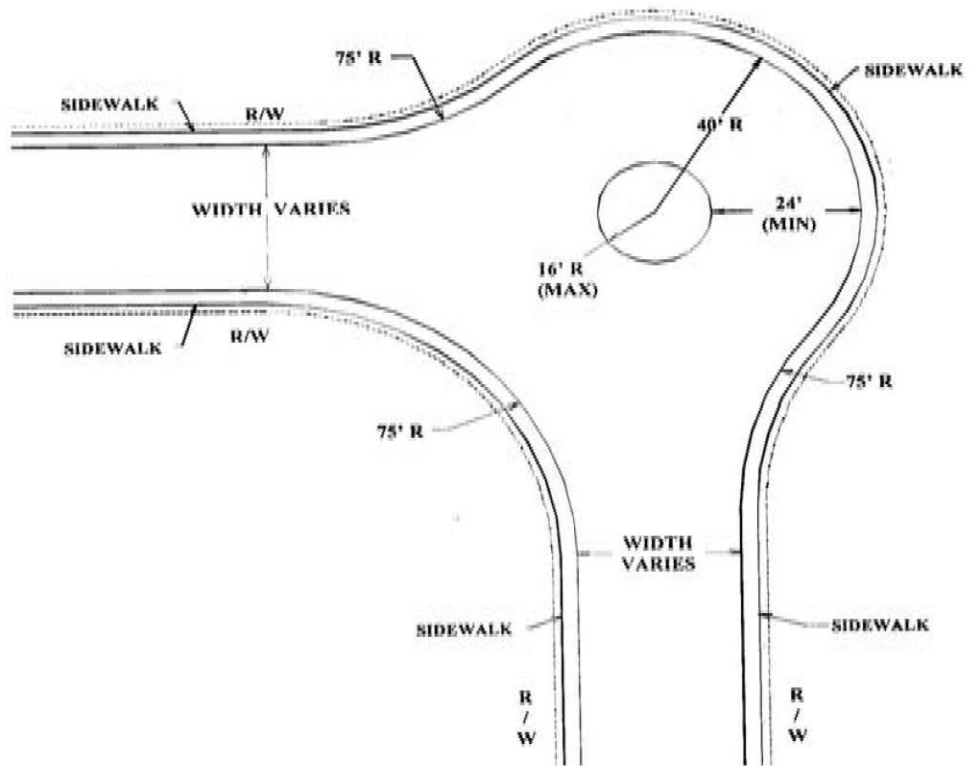


Figure 11.2 - 90° Corner with Added Cul-de-Sac



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Chapter 12

Intersection Design Requirements

12.1 Intersections

An intersection is defined as the general area where two or more roads meet or cross, including the road and roadside facilities for traffic movement within it. An intersection is an important part of a road because the efficiency, safety, speed, cost of operation and capacity depends on its design.

There are three general types of intersections:

- Intersections at-grade
- Grade separations without ramps
- Interchanges

At-grade intersections will be discussed in this chapter. For information on grade separations without ramps and interchanges, as well as additional information regarding at-grade intersection design, the Engineer is referred to the current edition of AASHTO's *A Policy on Geometric Design of Highways and Streets*, and KDOH's *Design Manual and Standard Drawings*.

12.2 General Design Considerations and Objectives for At-Grade Intersections

The main objective of intersection design is to reduce the severity of potential conflicts between vehicles, bicycles, pedestrians, and facilities while facilitating the convenience, ease, and comfort of drivers in making the necessary maneuvers at intersections. Four basic elements enter into design considerations of at-grade intersections:

- **Human Factors**
 - Driving Habits
 - Ability to make decisions
 - Driver expectancy
 - Decision and reaction time
 - Conformance to natural paths of movement
 - Pedestrian use and habits
- **Traffic Considerations**

- Design and actual capacities
 - Design-hour turning movements
 - Size and operating characteristics of vehicle
 - Movements (diverging, merging, weaving, and crossing.)
 - Vehicle speed
 - Transit involvement
 - Accident Experience
- **Physical Elements**
 - Character and use of abutting property
 - Vertical alignments at the intersection
 - Sight distance
 - Angle of intersection
 - Conflict area
 - Speed-change lanes
 - Geometric features
 - Traffic control devices
 - Lighting equipment
 - Safety features
 - Bicycle traffic
 - **Economic Factors**
 - Cost of improvements
 - Effects of controlling or limiting right-of-way on abutting residential or commercial properties where channelization restricts or prohibits vehicular movements
 - Energy consumption

12.3 Vertical and Horizontal Alignment of Intersections

Both vertical and horizontal curves should be avoided within an intersection, if at all possible; to reduce the potential problems caused by superelevation, drainage, and sight distance. In addition to grades being as flat as practical, the roads should intersect at 90°, if possible. Intersection angles as small as 80° are acceptable; however, when the intersection angle becomes less than 80°, the Engineer should give consideration to re-alignment of one or both roads. The sight distance should be equal to or greater than the minimum values for specific intersection conditions.

12.4 Turning Radii

As the turning radii are increased, all of the following are also increased: paving costs, intersection area required, distance pedestrians will need to traverse. Additionally, increased turning radii encourage higher turning speeds. Substandard radii result in unnecessary lane encroachment and increased traffic conflict and accident potential. For left and right turns, the following are considered to be reasonable **minimum** turning radii:

- **For standard local-local residential street intersections:** 25 feet radius, based on a curb clearance of three (3) feet and without lane encroachment for a typical street width, using the AASHTO design passenger vehicle.
- **For commercial local-local street intersections:** 35 feet radius.
- **For local-collector or collector-collector intersections:** 25 feet radius, based upon a desire to slightly improve maneuverability of a vehicle in entering or leaving a collector.
- **For collector - arterial intersections:** 35 feet radius.
- **For arterial-arterial intersections:** 35 feet radius. However, the radii should be no larger than 55 feet where pedestrian traffic is present and 75 feet for all other intersections.

Vehicle turning templates should be used to verify the adequacy of turning movements in an intersection. Where right-of-way is restricted, the use of either taper curves or three-centered curves, as described in AASHTO's *A Policy on Geometric Design of Highways and Streets* is recommended.

For all turn radii designs stormwater drainage inlets must be designed and placed outside of the turn radius and no type "A" drainage inlets within 100 feet.

12.5 Pedestrian Conflicts

Intersection design must promote the safe and efficient movement of both vehicles and pedestrians. Documentation should consist of:

- The vehicular flow, including percentage and types of trucks,
- Pedestrian movement (i.e., heavy, moderate, light),
- The presence of pedestrian generators (i.e., the downtown area, schools, malls, etc.), and
- The City of Richmond's recommendation.

If the City feels that there is an amount of pedestrian activity that may affect final design of an intersection, the developer shall arrange for counts of the existing pedestrian movements to be made.

Intersections shall be designed to accommodate pedestrians when:

- Pedestrian activity is considered heavy,
- Special conditions (such as a school) exist, and
- The project team determines that the need to accommodate the pedestrian is greater than the concerns for vehicular movement.

However, when conditions indicate that an approach to an intersection will generate heavy traffic volumes and that pedestrian movements will be negligible in comparison to the vehicular volumes, enlarged radii, including free flow movement on right turn lanes may be used. If a decision is made to allow free flowing movements, consideration should be given to discourage pedestrian movements in those locations by relocating sidewalks or, where practicable, adding fences or other blockades to prevent pedestrians from entering the road area. If moderate pedestrian activity exists, but the need to handle vehicular flow is still greater, the left and right turning radii should be designed for the yield condition, but still be enlarged to accommodate the largest vehicle that would regularly be expected to use the intersection.

12.6 Procedure for Design of an At-Grade Intersection

The following procedures are to be used in designing at-grade intersections.

- **Assembling Basic Data**
- **Traffic Analysis**

The first step in design of an intersection, the developer may be required to conduct traffic counts, if there are no counts available from the Kentucky Transportation Cabinet.

If the size of the intersection warrants, the Engineer shall then perform a detailed traffic analysis based on the guidelines contained within the *Highway Capacity Manual*. This analysis will determine the lengths of storage lanes required and the type of traffic control device needed.

Following are general guidelines for the use of left-turn storage lanes on multi-lane and two-lane roads:

- *Multi-Lane Roads:*

All projects where the median is 16 feet or more in width, left turn lanes should be designed at the following locations:

- Existing and proposed street and road intersections
- All major traffic generators such as schools, churches, shopping centers, etc.

The geometrics of the storage lane shall be determined by the criteria in AASHTO's *A Policy on Geometric Design of Highways and Streets*.

- *Two-lane Roads:*

Left storage lanes on two-lane arterial and collector/connector roads should be considered for each of the traffic conditions listed below:

- *Left Turn DHV Less Than 50* - Channelization is not justified with these volumes unless severe sight distance restrictions and unusual traffic conditions are encountered. In the event that the City of Richmond determines that channelization of an intersection with left turn movements in this category is

needed; the justifications for the channelization shall be documented along with the estimated construction and right-of-way costs.

- *Left Turn DHV 50-200* - Channelization at intersections with these left turn volumes is desirable in the event that sight distance is restricted by alignment or grade and the construction of such channelization does not involve large quantities of excavation or borrow, bridge widening, or other expensive items. In the event that high costs are involved in the construction of a channelized intersection in this left turn volume category; justifications along with cost estimates shall be documented.
- *Left Turn DHV Over 200* - Channelization should be provided at intersections with these turning volumes unless otherwise approved by the City of Richmond.

Before a decision is made to eliminate channelization of an intersection with left turn volumes of more than 50 DHV on the basis of excessive costs; consideration should be given to the volume of traffic opposing the left turn movement. In cases where opposing volume is sufficiently large, a more in-depth study may be warranted. The results of this study could offset, to a certain degree, the high construction cost and justify the channelization of a particular intersection.

- **Site Topography:**

Sufficient site data should be collected to obtain the following:

- All topography, which should be plotted on either a 1" = 50' or 1" = 20' scale, depending on the area involved and the site condition requirements
- Profiles on the intersecting roads
- Property ownership
- Sufficient cross-sections or contours for studying right-of-way damages, sight distances, and potential drainage problems

- **Accident Data:**

When re-designing an existing intersection, the Engineer shall request accident records from the City of Richmond Division of Police, or the Kentucky State Highway Office, or the KYTC Division of Traffic. These records very often indicate a specific problem area within an intersection, such as inadequate sight distance, etc., which must be addressed in the re-design.

- **Preparing Alternate Studies**

After assembling the above-described data, the Engineer shall prepare studies of alternate plans for the intersection. The major items that should be included in these studies follow:

- **Proposed Alignment of the Intersecting Roads:** The Engineer shall carefully study the alignment of any existing intersections to determine if realignment is required. Realignment should definitely be considered if any of the following conditions exist:
 - The intersection angle is less than 80°
 - Excessive horizontal curvature exists
 - Savings in the cost of right-of-way acquisition could be realized by shifting the alignment
 - Intersection sight distance is restricted
- **Proposed Grades of the Intersecting Roads:** The Engineer shall evaluate grades at existing intersections, and consider modifying existing grades if any of the following conditions occur:
 - Excessively steep grades exist
 - Less than desirable stopping sight distance exists
 - Savings in the cost of right-of-way acquisition could be realized by raising or lowering grades
- **Proposed Road Crossings with Depressed Medians:** In an effort to reduce the sharp breaks in the profile of roads crossing a proposed road with a depressed median, a procedure has been developed as shown in KDOH's *Standard Drawings* Exhibit 10-01. It allows the grade points on the road having the depressed median to be adjusted to reduce the severity of the breaks at the inside edges of pavement. The use of this procedure on initial and ultimate construction projects shall be decided on a case-by- case basis at the preliminary line and grade inspection.
- **Channelization Details:** Each intersection must be evaluated to determine the need for channelization. Any of the following conditions may warrant channelizing of an intersection:

- High accident frequency
- Dense vehicular traffic
- High-speed vehicular traffic
- Complex intersection
- Wide road
- Difficulty in providing adequate control by standard signs and markings
- Specific warrants cannot be stated. Each location calls for special study.

When the decision is made to channelize an intersection, the design of traffic islands should be as simple as possible. This is to avoid confusing traffic. Each island should have a definite purpose and there should be as few as possible. The City of Richmond's policy is to normally provide only flush islands. Exceptions to this policy may be made in cases where the island is large and may be utilized to shield pedestrians or where placement of special signing or poles may be required. When a decision is made to utilize a raised island, the matter should be discussed at an inspection. Documentation is to be provided as part of the inspection report. If all parties agree that the raised island is acceptable, the island should be designed as a mountable island.

- **Maintenance of Traffic during Construction:** The Engineer shall develop a plan for maintaining traffic during construction for each alternate studied. This plan shall be developed sufficiently to detail traffic lanes that are to be maintained, a general sequence of construction phasing, and any detours or temporary pavement widening which will be required.
- **Right-of-Way Widths:** The Engineer shall exercise great care in the establishment of vertical and horizontal alignments in order to minimize right-of-way damages. In commercially developed areas, right-of-way widths shall be held to a minimum and construction easements utilized where practicable. The Engineer shall make provisions for the replacement of existing entrances, curbs, sidewalks, etc., where possible, in order to minimize damages.
- **Proposed Drainage:** The type of proposed drainage system (storm sewer or open ditch) to be utilized shall be determined. A preliminary size and location shall be specified for all drainage structures larger than a 36" diameter pipe culvert. A careful evaluation shall be made of the effects that proposed realignments and/or grade changes would have on drainage of the intersection.

- **Evaluation of Major Utility Relocations:** All major existing utilities such as water lines, gas lines, sanitary sewers, underground telephone cables, and overhead electric transmission facilities shall be shown on the plans. In many cases, it may be necessary to alter the alignment and/or grade in order to avoid relocation of major utilities.
- **Pedestrian Facilities:** The Engineer shall make a determination of the need for pedestrian facilities such as sidewalks, wheelchair ramps and, in some cases, pedestrian overpass structures.
- **Obtaining Cost Estimates**

After alternate plans for the intersection have been studied, the Engineer shall select the most feasible alternates and obtain estimated costs for right-of-way acquisition, utility relocation, and construction for each.

- **Submitting the Recommended Alternate**

Signalized intersections, intersections signalized for pedestrians, channelized intersections and intersections on urban projects shall be submitted to the City of Richmond for approval. Submittals shall be after preliminary line and grade and prior to final plans-in-hand inspection. Some intersections (interchanges or complicated intersections) will require a separate geometric layout sheet that should include an approval signature block. Urban projects with multiple intersections may be submitted with a cover letter that includes a listing of the intersections by either name or centerline station and the approval signature block with a copy of the plan and profile sheets of all intersections listed.

The Engineer shall select the preferred alternate for submittal to the City of Richmond Engineer. In cases where there is no clear-cut preferred alternate, it may be necessary to submit several alternates for consideration.

The following data shall be submitted for each plan:

- Plan sheets or sheets detailing channelization, right-of-way widths, drainage, curbs, utilities, etc.
- Profiles
- Traffic Analysis
- Cost Estimates
- A report detailing other plans studied and the reasons they were not adopted
- A stamped original of the geometric layout sheet of the intersection

After Richmond approval, the Engineer shall incorporate the approved design into the final plans and include the approved and signed layout detail sheet.

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Chapter 13

Pavement Design Criteria and Roadway Inspection

13.1 Purpose

The purpose of this chapter is to establish the pavement design standard. These pavement design standards must also fully correspond to the appropriate design standards set forth in other sections of this manual.

It is critical to note that prior to the development of this Roadway Manual, the City of Richmond has experienced premature distress on many of the city's heavily traveled streets. In analyzing this problem, it has become apparent that the city needed to upgrade its pavement design procedure. To that end, there is a need to emphasize in this Manual that the city has set a 20-year life cycle standard for the design of all streets in Richmond. The design standards outlined in this chapter, and throughout this manual, are designed specifically to achieve this goal.

13.2 Performance Serviceability Index and Terminal Serviceability Index

- **Performance Serviceability Index**

The functional performance of a pavement concerns how well the pavement serves the user. That is to say, what is the riding comfort and riding quality on a particular road? In order to quantify riding comfort, the serviceability-performance concept was developed by AASHTO. Over time, a road's pavement's serviceability and performance serviceability index decrease. The major factors influencing these losses are traffic, age, and environment.

The serviceability index scale ranges from zero (0) (impassable street) to five (5) (perfect street). Immediately after initial construction, the values that shall be used for the serviceability index are 4.2 for flexible pavement and 4.0 for rigid pavements.

- **Terminal Serviceability Index**

The terminal serviceability index is the lowest acceptable level before resurfacing or reconstruction becomes necessary. The lowest acceptable level is dependent upon the street's functional class. Table 13-1 presents values that shall be used in Richmond.

Table 13. 1 - Terminal Serviceability Index for Richmond Roadway Classifications

Classification of Roadway	Terminal Serviceability
Arterials (both Major and Minor)	2.5
Collector	2.5
Local Streets	2.0
Alleys	1.0

13.3 Earthwork, Subgrade Preparation, and Soil/Subsurface Investigations

The proper investigation and preparation of subgrade, granular base, and base course are critical in the life of a street's surface course.

- **Definitions**

The following are the basic definitions upon which this section will build:

- **Subgrade:** The natural soil material upon which the upper roadway layers are constructed.
- **Modified Subgrade:** Layer designed to augment the subgrade strength. This layer is only used when subgrade strength is below a particular level. It consists of chemically altered or compacted subgrade materials, often in combination to achieve certain strength characteristics required in specific conditions. Additionally, modified subgrade acts to reduce frost and water intrusion actions.
- **Granular Base:** Constructed on top of the subgrade. It consists of granular material such as crushed stone or gravel. The specifications for the granular base are more rigorous than that for the subgrade in terms of strength, hardness, gradation, and aggregate types. The granular base layer is placed on the subgrade to support an asphalt base course or a portland cement slab.
- **Pavement:**
 - **Base Course:** The base course is the layer, or layers, of a specified material of designed thickness placed on the granular base. In the case of an asphalt pavement, the base course further serves as a foundation course to support the

surface course. In the case of a portland cement pavement, there is only one course of pavement material and the base course and surface course are one and the same.

- **Surface course:** The purpose of the surface course is to accommodate the traffic load, provide a smooth riding surface, resist the wear and tear from traffic, provide skid resistance to vehicles, and prevent excessive water from penetrating into the base course. In the case of asphalt pavement, the surface course of the pavement section consists of a mixture of mineral aggregates and asphalt materials. In the case of a portland cement pavement, there is only one course of pavement material and the base course and surface course are one and the same.

- **Testing Requirements**

Before a new roadway design is undertaken, appropriate testing of the existing soils and future subgrade must be completed. The Engineer shall review soil maps, core graphics, and appropriate site-specific geotechnical data prior to completing the roadway's pavement design.

- **Geotechnical Investigation**

Prior to initiating field work, a boring plan and tabulation of borings shall be developed. The boring plan shall be presented on topographic or site mapping of sufficient scale to accurately depict site conditions. The plan shall show the locations and symbols for all borings proposed for the project. The tabulation of borings shall identify each hole; indicate the type of soil sampling to be performed and the length of rock core to be obtained; show the estimated depths of the borings; and identify any instrumentation, such as groundwater observation wells, to be installed in the borings. It shall be noted that additional subsurface exploration, or modifications of the guidelines presented, may be warranted depending upon site conditions observed and project requirements.

A geotechnical exploration performed for a roadway/street shall provide subsurface data that may be used to evaluate:

- Cut stability sections in soil and rock
- Embankment construction/fill placement
- Embankment stability
- Settlements of embankments
- Subgrade materials to be used for pavement support

Borings shall be performed along the roadway centerline to determine soil types and thicknesses. Soil samples collected from these borings may be subjected to standard engineering classification, water content, moisture-density, and California bearing ratio (CBR) testing (This is not the same test used by the KYTC). These test results shall then be used to design pavements. If significant cuts and fills are planned, then additional borings may be necessary at selected roadway sections to provide data with which evaluations of cut and embankment stabilities may be made.

- **Soil Profile Borings**

Soil profile borings shall be performed at maximum 300-foot spacings along the project alignment through both cut and fill intervals. Typically, these borings shall be drilled along the centerline of the roadway. In an area of embankment construction that will require fill placement greater than 15 feet in height, the profile boring at that section shall be offset from centerline to the point of maximum fill height (the shoulder). Soil profile borings in fill intervals shall be advanced to a depth equal to the proposed fill height or to auger refusal, whichever is less. In areas requiring more than ten feet of excavation to obtain ditch grade, the boring shall be offset to the point of maximum excavation (the ditchline). Soil profile borings in a given cut interval shall be drilled to a depth equal to five feet below the ditch grade of the section on which they are to be drilled, or to auger refusal, whichever is less. Side-hill situations requiring both excavation and embankment construction at a single station may have two borings performed; one in the ditchline of the cut, and one at the fill shoulder.

Bag samples shall be collected for each soil type encountered within each 1,000-foot interval of roadway length. If the soil type collected will be used for fill during construction, then 30-pound samples shall be obtained so that enough soil will be available for appropriate laboratory testing. For roadways/streets less than 1,000-feet in length, a minimum of two bag samples shall be collected, even if only one soil type is visually identified in the borings.

Moisture content samples shall be collected from selected soil profile borings at depth intervals of five feet, and for every change in soil type. These samples consist of soil cuttings generated from the augering process. Moisture content samples shall not be collected from soil cuttings obtained below the water table. When the water table is encountered, other techniques such as thin-walled tube sampling or standard penetration testing shall be used to collect samples for moisture content testing.

Bag samples of the predominant soil types encountered shall be collected from selected soil profile borings to provide specimens for engineering classification,

moisture-density (standard or modified Proctor), and California bearing ratio (CBR) testing. These samples also consist of soil cuttings generated by the augering process. Care should be exercised not to combine different soil types for the same bag sample. **Samples that will be used for a combination of classification, moisture-density, and CBR testing shall be a minimum of 50 pounds.**

- **Cut Stability Borings**

Cut intervals may require rock core borings, rock soundings, sample borings, and/or open face logging to provide sufficient data for cut slope design. **In general, at least one critical cut slope section shall be evaluated for each 500-foot length of roadway cut interval, or fraction thereof, which will exhibit cuts deeper than 15 feet.** Identification of a "critical section" requires engineering judgment and experience. A critical cut section is typically one that exhibits the deepest proposed excavation, and/or will expose complicated geologic conditions.

Rock core borings shall be located such that core samples from the entire geologic column, from the highest point in the cut interval to five feet below the lowest point of the ditch in the cut interval, are retrieved. Cuts in steep side-hill situations may require more than one rock core boring per critical section to provide sufficient data for design of the cut slope. The first core boring shall be drilled in the ditchline, and the second boring drilled near the top of the proposed cut slope. Where more than one rock core boring is required to represent the entire geologic column in a cut interval, the rock recovered from the borings shall overlap a minimum of 10 feet, by elevation, in both cross section and profile views. If bedrock is not encountered within 10 feet of the ground surface in the rock core boring of a critical cut section, a sample boring shall be performed a minimum of 20 feet upslope and perpendicular to centerline from the rock core boring. An observation well shall be installed in this additional boring to monitor groundwater levels if the soil depth at this location exceeds 5 feet. To further identify soil depths within a cut interval, rock soundings shall be performed in the ditchline at approximate intervals of 100 feet. Such soundings shall be drilled to auger refusal or to a depth of five feet below the ditchline, whichever is less.

- **Embankment Stability Borings**

Embankment stability borings shall be performed for proposed critical embankment sections that are greater than 20 feet in height from toe to crest. In general, at least one critical embankment section shall be evaluated for each 1,000-foot length of fill interval, or fraction thereof. A critical embankment section may be identified as the cross section exhibiting the tallest or least stable embankment configuration within the fill interval. Assessment of the plans and cross-sections to select critical sections

requires engineering judgment and experience. Embankment stability borings shall consist of sample borings and/or soil profile borings drilled to a depth equal to twice the height of the proposed embankment or to bedrock, whichever is less. Two borings shall be performed for each critical section; one at the point of highest fill placement (the shoulder), and one boring near the toe of the proposed slope. When soil thicknesses exceed 5 feet in a sample boring drilled for evaluation of embankment stability, a groundwater observation well shall be installed prior to backfilling. Observation well readings shall be performed periodically to provide groundwater data to use in subsequent embankment stability analyses.

- **Subgrade Analysis**

The majority of pavements constructed in Kentucky are constructed on fine-grained soils. Approximately 85% of the soils consist of clay and silt. When first compacted, these fine-grained soils usually have sizable bearing strength. If pavements are constructed immediately after compaction of fine-grained soils, then major problems typically will not be encountered when placing and compacting layers of paving materials. Problems arise, however, when surface and subsurface water penetrates compacted fine-grained soils. Water from rainfall, snowmelt, and groundwater seepage enters the fine-grained soils subgrade, causing swelling and producing a loss of bearing capacity in the subgrade. The most susceptible, adverse period occurs when a fine-grained soil subgrade is exposed to the wetting conditions of winter and early spring.

Because the subgrade's type and condition is so critical to the final life expectancy of a street, proper geotechnical analysis must be completed. In particular, this testing will include a California Bearing Ratio (CBR) calculation for the soils. It is noted that all soils with a California Bearing Ratio (CBR) of less than four (4), using the ASTM Method, will require soil stabilization.

- **Subgrade Preparation**

Due to the likelihood for void development, granular base construction directly on a weak natural soil is not permitted. All streets shall be constructed on a compacted or stabilized subgrade. The subgrade is to consist of manually compacted soil or it shall be chemically stabilized.

Methods for mechanical stabilization of subgrade soils include the following approaches:

- Controlling subgrade density-moisture
- Undercutting poor materials and backfilling with granular materials

- Proof rolling and re-rolling of the subgrade
- Using granular layers
- Using granular layers reinforced with geofabrics

Commercially available chemical stabilizers include hydrated lime and portland cement. Both have been demonstrated to be effective in stabilizing subgrade soils as stable paving platforms and are believed to contribute to reducing fatigue and extending the life of pavement structures. Portland cement has been demonstrated to be most suitable for stabilizing more granular, coarse grained subgrades. Hydrated lime has been demonstrated to be most suitable for stabilizing fine- grained soils with high clay content.

- **Granular Base and Pavement Design**

The Engineer shall design the dense granular base (DGA) and pavement thicknesses using the procedures in the AASHTO Pavement Design Guide. The Engineer shall compare the results of the pavement design to the thicknesses in Table 13.2. In no case shall the thickness of the base and asphalt/portland cement course be less than those shown in Table 13.2. Concrete paving shall be Class A as defined by the KYTC.

Table 13. 2 - Minimum Thickness Standards for Granular Base and Pavement Courses

Street Classification	Thickness (Inches)	
	Asphalt Surface Course/ Asphalt Base Course/ Dense Granular Base	Portland Cement Single Course/Dense Granular Base
Arterials and non-residential streets (all classifications)	1 / 6 / 9	8 / 4
Residential collector streets (urban and rural)	1 / 6 / 8	7 / 4
Residential local streets (urban And rural)	1 / 3 / 9	6 / 4
Note: "Full depth" asphalt concrete pavements are not permitted in the City of Richmond. Asphalt pavements must be constructed on a proper depth of granular base.		

The City of Richmond may also approve experimental materials for limited use. It is the responsibility of the design Engineer intending to use these materials that must demonstrate their effectiveness and required structure thickness.

13.4 Pavement Design Procedures

The procedures for designing flexible pavement are listed below:

- For a residential street, estimate the number of houses that will be served by the street. For a loop/cul-de-sac, it will equal the number of houses on that street. For a continuing street, it will equal the number of houses that will use the street when entering/leaving the subdivision.
- For a street that will serve industrial or commercial property, estimate the gross floor area for the development. For hotels and motels, estimate the number of rooms.
- Determine the number of Equivalent Single Axle Loads (ESALs) from Table 13.5 for residential streets, and from Table 13.6 for commercial/industrial streets.
- Based on the CBR, determine the required Structural Number from Table 13.7. The minimum structural number shall be 2.84 for residential streets, 4.04 for collector streets, and 4.16 for arterial streets.
- Determine the required thickness of asphalt, the dense granular base (DGA), and No. 2 stone to achieve the required Structural Number. The layer coefficients are listed below:
 - Asphalt – 0.44
 - DGA – 0.12
 - No. 2 Stone – 0.08

Following are the minimum thicknesses for asphalt and DGA.

Table 13.3 – Minimum Thickness for Asphalt and DGA

Street Classification	Asphalt	DGA
Residential Local	4"	9"
Residential Collector	7"	8"
Arterial/Non Residential	7"	9"

From November 1 to March 1, a “winter design” may be used with the following minimum thicknesses. A filter fabric shall be placed between the No. 2 stone and the subgrade when using the winter design.

Table 13.4 – Winter Design for Minimum Thickness for Asphalt and DGA

Street Classification	Asphalt	DGA	No. 2 Stone
Residential Local	4"	4.5"	As required to meet SN
Residential Collector	7"	4.0"	As required to meet SN
Arterial/Non	7"	4.5"	As required to meet SN

- If unstable areas are discovered during the proof roll test, then stabilize the area by removing 4 to 8 inches of the unstable material and replacing it with No. 2 stone. No. 2 stone used to make up the structural number shall be separated from the subgrade by filter fabric. Stabilization is required when the soil subgrade pumps during the proof roll test. A CBR less than 4 does not automatically mean the subgrade is unstable.

Table 13.5 - Equivalent Single Axle Loads for Residential Streets

Number of Houses Served By the Street	Equivalent Single Axle Loads				
	Construction Trucks	Moving Vans	Garbage Trucks	School Buses	Total
0	0	0	6240	12000	18240
20	600	240	6240	12000	19080
40	1	480	6240	12000	19920
60	1	720	6240	12000	20760
80	2	960	6240	12000	21600
100	3	1200	6240	12000	22440
120	3	1440	6240	12000	23280
140	4	1680	6240	12000	24120
160	4	1920	6240	12000	24960
180	5	2160	6240	12000	25800
200	6	2400	6240	12000	26640
220	6	2640	6240	12000	27480
240	7	2880	6240	12000	28320
260	7	3120	6240	12000	29160
280	8	3360	6240	12000	30000
300	9	3600	6240	12000	30840
320	9	3840	6240	12000	31680
340	1	4080	6240	12000	32520
360	1	4320	6240	12000	33360
380	1	4560	6240	12000	34200
400	1	4800	6240	12000	35040

Notes:

Number of Houses Served By the Street – For a loop/cul-de-sac, it will equal the number of houses on that street. For a continuing local street or a collector, it will equal the total number of houses that will use the street when entering/leaving the subdivision.

Construction Trucks – Based on 20 loaded supply trucks per house and 1.5 ESALs per truck, for a total of 30 ESALs per house.

Moving Vans – Based on each house selling 4 times in 20 years and each transaction involving one loaded moving van for the seller and buyer, for a total of 8 trucks per house. It assumes 1.5 ESALs per truck for a total of 12 ESALs per house.

Garbage Trucks – Based on the following for a 20-year design life:

- 2 garbage trucks/street/wk x 52 wks/yr x 20 yrs x 1.5 ESALs/truck = 3120 ESALs
- 1 recycling truck/street/wk x 52 wks/yr x 20 yrs x 1.5 ESALs/truck = 1560 ESALs
- 1 yard waste recycling truck/street/wk x 52 wks/yr x 20 yrs x 1.5 ESALs/truck = 1560 ESALs Total of above = 6240 ESALs per street for garbage trucks
- School Buses – Based on the following for a 20-year design life:
- 2 school buses/day/street x 200 days/yr x 20 yrs x 1.5 ESALs/truck = 12,000 ESALs per street

Table 13.6 - 20-Year ESALs for Various Industrial and Commercial Developments

	Gross Floor Area (Sq. Ft.) x 1000											
Land Use	1	5	10	20	40	60	80	100	200	300	500	1,000
General Light Industrial (15% Trucks)	80,000	115,000	159,000	246,000	418,000	586,000	752,000	915,000	1,681,000	2,370,000	3,515,000	5,020,000
General Heavy Industrial (20% Trucks)	3,000	16,000	31,000	63,000	126,000	188,000	251,000	314,000	628,000	942,000	1,570,000	3,141,000
Warehousing (25% Trucks)	32,000	123,000	219,000	389,000	692,000	968,000	1,229,000	1,479,000	2,629,000	3,681,000	5,623,000	9,994,000
General Office Building (2% Trucks)	1,000	8,000	17,000	35,000	70,000	105,000	141,000	176,000	354,000	531,000	885,000	1,771,000
Retail <200,000 Sq. Ft. (2% Trucks)	21,000	102,000	201,000	393,000	745,000	1,056,000	1,327,000	1,557,000	2,100,000			
Retail >200,000 Sq. Ft. (2% Trucks)										2,840,000	3,923,000	6,630,000

	Number of Rooms							
Land Use	10	50	100	200	400	600	800	1,000
Hotel (1% Trucks)	3,000	38,000	83,000	171,000	348,000	525,000	702,000	879,000
Motel (1% Trucks)	8,000	47,000	99,000	207,000	433,000	667,000	906,000	1,149,000

Notes:

1. Number of trips generated for each type of development calculated from the Manual of Trip Generation published by the Institute of Transportation Engineers.
2. ESALs calculated by the computer program PAS 5 developed by the American Concrete Pavement Association.
3. Trucks were assumed to be 50% C5As (TYPE 9) and 50% SU3As (TYPE 6).
4. Loaded Type 9s were assumed to weigh 80,000 pounds. Empty or nearly empty Type 9s were assumed to weigh 50,000 pounds.
5. Loaded Type 6s were assumed to weigh 46,000 pounds. Empty or nearly empty Type 6s were assumed to weigh 30,000 pounds.
6. 50% of both Type 9s and Type 6s were assumed to be empty.
7. The numbers in the table have been rounded to the nearest 1000.

Table 13.7 – Structural Numbers

	Structural Number						
ESALs	CBR 1	CBR 2	CBR 3	CBR 4	CBR 5	CBR 6	CBR 7
1,000	2.15	1.65	1.39	1.23	1.09	1.01	1.00
2,000	2.38	1.84	1.58	1.39	1.27	1.17	1.08
3,000	2.54	1.97	1.69	1.50	1.36	1.26	1.17
4,000	2.65	2.07	1.77	1.58	1.44	1.33	1.24
5,000	2.74	2.14	1.84	1.64	1.50	1.39	1.30
6,000	2.81	2.20	1.89	1.69	1.55	1.43	1.34
7,000	2.88	2.26	1.94	1.74	1.59	1.47	1.38
8,000	2.94	2.31	1.99	1.78	1.63	1.51	1.42
9,000	2.99	2.35	2.02	1.81	1.66	1.54	1.45
10,000	3.03	2.39	2.06	1.85	1.69	1.57	1.47
20,000	3.35	2.65	2.30	2.07	1.90	1.77	1.67
30,000	3.55	2.82	2.44	2.20	2.03	1.89	1.79
40,000	3.70	2.94	2.55	2.31	2.13	1.99	1.87
50,000	3.81	3.03	2.64	2.39	2.20	2.06	1.94
60,000	3.91	3.12	2.71	2.45	2.27	2.12	2.00
70,000	3.99	3.19	2.78	2.51	2.32	2.17	2.05
80,000	4.07	3.25	2.83	2.56	2.37	2.22	2.10
90,000	4.13	3.30	2.88	2.61	2.41	2.26	2.14
100,000	4.19	3.35	2.93	2.65	2.45	2.30	2.17
200,000	4.60	3.70	3.24	2.94	2.72	2.55	2.42
300,000	4.86	3.91	3.43	3.12	2.89	2.71	2.57
400,000	5.04	4.07	3.57	3.25	3.01	2.83	2.69
500,000	5.19	4.19	3.68	3.35	3.11	2.93	2.78
600,000	5.31	4.30	3.78	3.44	3.20	3.01	2.85
700,000	5.42	4.39	3.86	3.52	3.27	3.08	2.92
800,000	5.51	4.47	3.93	3.58	3.33	3.13	2.98
900,000	5.60	4.54	4.00	3.64	3.39	3.19	3.03
1,000,000	5.67	4.60	4.06	3.70	3.44	3.24	3.07
2,000,000	6.19	5.04	4.45	4.07	3.79	3.57	3.40
3,000,000	6.51	5.31	4.70	4.30	4.01	3.78	3.60
4,000,000	6.75	5.51	4.88	4.47	4.17	3.93	3.74
5,000,000	6.93	5.67	5.03	4.60	4.30	4.06	3.86
7,000,000	7.23	5.92	5.25	4.81	4.49	4.25	4.04
10,000,000	7.55	6.19	5.50	5.04	4.71	4.45	4.24

13.5 State and Federal Highways

All streets and rural roadways in Richmond designated as State or Federal Highways must be designed in accordance with the design requirements approved by the Kentucky Department of Highways.

13.6 Pavement Design Requirements for Developments in Phases

For new developments being completed in phases, several special street design requirements apply.

- **Delay in the Application of the Asphalt Surface Course**

The final 1-inch surface course of asphalt shall be applied after all the primary services of utilities have been installed, and in accordance with the following requirements:

- The final surface course shall be applied within three (3) years of the construction of the original street.
- The initial base course of asphalt concrete shall be designed such that this layer alone shall provide the required structural strength for the road's first three (3) years of usage.

- **"True Use" Design Standards**

For developments that are designed in phases, streets shall be designed to reflect the usage they will experience over the first three years of the street's life. Therefore, if a street will be a primary access route for construction traffic during a subdivision's site development, this street shall be designed to meet the industrial/commercial street standards, to reflect its true usage in the first three years of its existence, verses being designed to reflect its eventual usage as a residential street. This standard is required to prevent the premature damaging of the street's pavement and granular base, and to ensure that the 20-year life cycle for Richmond's streets is achievable.

13.7 Curb/Gutter Design and Storm Drainage Capacity Requirements

Curbs and gutters are required for all new streets in Richmond and shall be designed in accordance with the KYTC standards for design of drainage facilities.

13.8 Grading and Embankments

The area on which streets and embankments are to be constructed shall be cleared of all vegetation for a depth of at least three (3) inches and the material removed shall be disposed of outside of the limits of the typical section. Prior to construction of embankments, any unsuitable material on which the embankment will be superimposed shall be removed and the area stabilized by conventional methods. The embankments shall be formed by placing material in successive horizontal layers of not more than twelve (12) inches in thickness (loose depth). Each layer shall be thoroughly compacted by rolling with a ten-ton three wheel roller, sheep's foot roller, or other approved roller.

13.9 Cut Section Elevation

Cut sections shall be excavated to the required typical section and any unsuitable material encountered shall be removed and the area backfilled in six (6) inch horizontal layers and thoroughly compacted before successive layers are placed.

13.10 Solid Rock Excavation

If solid rock is encountered during the grading operation, the solid rock shall be removed to a depth of six (6) inches below sub-grade elevation and backfilled to meet the requirements above.

13.11 Repair of Utility Crossings

When pipe or other underground construction takes place within existing streets and roads, the streets must be reconstructed to meet current design standards. Restoration of pavement will be completed based on the type of existing roadway material, i.e., concrete or asphalt pavement. The type of trench restoration, whether flowable fill material or conventional stone backfill, will be determined by the City of Richmond. Standard Drawings of the pavement repairs are included in Appendix C, at the end of this manual.

13.12 Bituminous Pavement Construction and Inspection

The quality of bituminous pavement construction is an important phase of construction that reflects directly on Richmond's public image. Problems that arise because of poor quality bituminous pavement construction, however, remain visible and may serve as a constant source of complaints long after a project is finished.

On infrastructure construction projects the following basic objectives in bituminous pavement construction are:

- Support traffic loads;
- Protect subgrade, subbase, and/or base from surface water;
- Minimize loss of surface material;
- Provide a reasonable surface texture;
- Provide flexibility for subbase deflections; and
- Provide resistance to weathering.

These basic objectives shall have been incorporated into the design of the pavement sections or repair efforts. One of the Inspector's primary tasks is to understand how field observations of actual construction conditions may affect these basic objectives of road construction and to relay any concerns to the Engineer.

Prior to construction of new pavements or the repair/resurfacing of existing pavements, the Inspector shall have a thorough understanding of Contract Documents, the geotechnical report, this manual, and the individual components of the pavement section. In some instances, the project specifications may dictate the use of lime stabilization or cement modification (or other means) to stabilize bearing materials. In these instances, the Inspector shall obtain the appropriate construction specifications, product data, or reference materials and become familiar with the particular job requirements. At other times, the Contract Documents may place logistics constraints on the Contractor (i.e. the Contractor may be required to pave certain areas before others, etc.). The Inspector shall observe the Contractor operations and notify the Engineer when these constraints are not being met.

The Contract Documents may require the Contractor to submit material certifications, aggregate sieve analyses, and bituminous pavement mix formulas. Prior to construction, the Inspector shall verify that the appropriate submittals have been made and approvals received. The status of contractor submittals, inspector observations and field test results shall be documented.

13.13 Inspection of New Pavements

New pavements are typically comprised of four components. The prepared roadway bed is typically called the subgrade. The subgrade may consist of natural soils or an approved soil fill. In some instances, the uppermost surface (6-18 inches) of the subgrade is modified to improve bearing characteristics and increase stability. This modified or improved zone of the subgrade is sometimes called the subbase. The subbase may also consist of select materials, such as natural gravels or merely select borrow material. The granular base course typically overlies the subgrade (and subbase) and generally consists of dense-graded aggregate (DGA). The granular base is followed by a mixture of

asphalt and coarse-grained aggregate called the asphalt base course. The final (top) component of the bituminous pavement section is the asphalt surface course, which is generally thinner than the underlying base course, contains smaller aggregates, and more bitumen.

The thickness and composition of the pavement section is typically based on an engineering design utilizing the site-specific soils. Soil samples are normally collected during the geotechnical exploration of the site and are subjected to tests that indicate their acceptability for bearing materials. A typical test to indicate acceptability of bearing medium is the California Bearing Ratio (CBR) (ASTM D 1883) test. Unfortunately, in Madison County, many of the residual soils have high clay contents and are poor bearing media, (i.e., low CBR). High clay contents typically mean poor drainage characteristics and low long-term strengths. Consequently, many pavement designs in the Madison County area incorporate the use of subgrade modifications such as additions of cement or lime, biaxial geogrids, filter fabric or aggregate subbases. Pavement sections may also incorporate means to improve natural drainage characteristics such as piping networks or the addition of open-graded subbases. The Inspector shall be familiar with the descriptions of soils utilized in the pavement design, and have a basic understanding of the drainage requirements so that he/she is able to identify changed subgrade and drainage conditions and bring them to the attention of the Engineer.

- **Subgrade**

Several items shall be verified by the Inspector prior to establishing subgrade competency. These items include:

- Verify that any bedrock identified at the subgrade level has been undercut to the depth specified in the Contract Documents.
- Verify that utilities which traverse the roadway alignment have been installed,
- Verify that the subgrade is free from ruts, large stones, and excessive dust,
- Verify that the subgrade elevation is correct according to the cross-sections and alignment, and
- Request a subgrade proof-roll test.

Regarding the above items, any noteworthy observations shall be brought to the attention of the Engineer. These verifications will help reduce the amount of interruptions in the paving operations and future discontinuities in the pavement surface. Regarding the last item, the Inspector shall request that the roadway subgrade be subjected to a subgrade proof-roll test so that soft, wet, or pumping areas may be identified. The minimum total weight of the loaded dump truck shall be 37 tons. The truck shall be operated at walking speed over the entire subgrade.

Any excessive deflections such as rutting or pumping may require stabilization measures and shall be brought to the attention of the Engineer. The Inspector shall observe the operations to verify correct speed and ensure all areas of the subgrade are covered.

Typical treatments of soft or wet areas of the pavement subgrade include removal and replacement (undercutting), "working-in" No. 2 stone, or installation of a geogrid/geotextile system and crushed stone. The extents and performance requirements of such improvements shall be set forth in the Contract Documents or as directed by the Engineer.

Other means to stabilize the subgrade are available. Lime stabilization or cement modification (KTC Section 304) may be required and the Inspector shall become familiar with the requirements in the Contract Documents for each. On projects that require these special treatments, the Inspector shall consult with the Engineer to obtain a revised Proctor curve(s), compaction requirements, and construction operations to be utilized. The Inspector shall be aware that changes in soil subgrade conditions (material types, moisture conditions, etc.) may have a direct influence on the type and extent of stabilization/modification being utilized and he/she shall stay in close contact with the Engineer. Any deviations from the Inspector's understanding of the required soil conditions, compaction requirements, application rates or construction operations and procedures shall immediately be reported to the Engineer.

The pavement subgrade shall be compacted to a uniform density throughout according to the requirements of the Contract Documents. If the density of the subgrade has been diminished by exposure to weather, after having been previously compacted, it shall be recompacted to the required density and moisture content.

Observations made shall be reported on the Pavement Subgrade Inspection Form. At the completion of subgrade verification and preparation operations, the Contract Documents may require the installation of subgrade drainage systems or perforated pipe underdrains. *Refer to KYTC standards for installation of perforated pipe.*

- ***Subbase***

Subbases, if required by the Contract Documents, may consist of select materials, such as natural gravels, that are stable but that have characteristics that make them not completely suitable as granular base courses. Subbases may also be of stabilized soil or merely select borrow. The purpose of a subbase is to permit the building of relatively thick pavements at low costs. Thus, the quality of subbases can vary within wide limits, as long as the thickness and material requirements set forth in the Contract Documents are fulfilled. Because subbases may consist of a variety of material types and consistencies, they can be grouped according to the nature of quality control procedures that shall be implemented during placement. Typical groupings utilized in the Contract Documents are "Soils" and "Aggregates."

Select borrow soils are typically placed in an engineered fashion to a specified density and within a certain percentage of optimum moisture content. The Inspector shall verify that the necessary soil samples have been obtained and that the proper tests have been performed. The Inspector shall assist the Contractor with obtaining representative samples from the proposed borrow area(s). Further, the Inspector shall review the results of the testing to ensure that the soils fulfill the requirements of the Contract Documents. Such information may include a complete soil classification (ASTM D 2487), CBR, and Proctor moisture-density relationship (ASTM D 698 or ASTM D 1557). The soils shall be placed in accordance with the Contract Documents that usually include a maximum loose lift thickness of 8 inches and a compacted density of 95 percent of the standard Proctor maximum dry density.

Aggregate materials utilized as subbase shall be placed in accordance with the Contract Documents. Aggregates with a small percentage of fines are typically bladed in place and tamped to minimize voids and bridging. Aggregates with a greater percentage of fines, such as dense-graded aggregate (DGA), are typically compacted to a certain percentage (usually 84 percent) of the solid volume density determined from the oven-dry bulk-specific gravity (KM 64-607).

If the top surface of the subgrade has been modified with the application of cement or stabilized with lime, the Engineer or Contract Documents may treat this zone as a subbase. In any case, the precautions and items to observe for such improvements are noted in the previous section. The Inspector shall also be aware that the pavement section may also include aggregate-geogrid or aggregate-geotextile layers. The Inspector shall become familiar with the construction techniques discussed in the Contract Documents as well as their testing requirements. Under all circumstances, the Inspector shall verify that construction materials, specified depths or thicknesses and construction practices are implemented in the field as specified in the Contract Documents. Any deviations shall be brought to the attention of the Engineer.

- ***Granular Base Course***

The granular base course, unless stated otherwise in the Contract Documents, shall consist of compacted dense-graded aggregate (DGA) meeting the requirements set forth in Section 805 of the Kentucky Transportation Cabinet's (KTC) Standard Specifications for Bridge and Road Construction. The Contract Documents may require that the DGA be obtained from a previously approved source. If the DGA source has not previously been approved, the Contractor may be required to submit results of physical tests performed on the material to verify that it meets the requirements referenced above. The Inspector shall assist the Contractor in obtaining a representative sample and in its care and handling.

The DGA shall be applied in thicknesses specified in the Contract Documents. Typically, these lifts are no less than 3 inches and no more than 6 inches in thickness. Each lift of DGA shall be compacted to a density specified in the Contract Documents

that is generally no less than 84 percent of the solid volume density based on the oven-dry bulk specific gravity as determined by KM 64-607. A typical minimum frequency for field density testing of DGA placement is one test per 2,000 square feet with a minimum of one test per shift during which DGA is placed. The DGA shall be compacted using a vibratory roller or vibratory plate.

In addition to the previously stated guidelines for compaction equipment and lift thickness, the Inspector shall pay close attention to the moisture content of the DGA base during placement and compaction. Before arriving at the site, the DGA shall be adequately mixed with water in a pugmill. During transportation and storage on site, the DGA shall be covered to prevent loss of moisture. DGA shall not be stored or stockpiled at the site unless otherwise provided for in the Contract Documents. If drying of the DGA occurs, the Contractor shall add water to the DGA and shall thoroughly mix the material prior to its placement. A moisture content value between five and seven percent at the time of compaction is typically adequate for the placement of limestone DGA.

- ***Asphalt Base and Surface Courses***

An asphalt base course is an intermediate asphalt course placed between a granular base course and an asphalt surface course. The surface course represents the top portion of the asphalt pavement. These asphalt mixes consist of well-graded aggregate and asphalt cement. The aggregate gradation of the base is typically coarser than that of the surface mix. In addition, in a typical mix, the asphalt content will range from 4 to 8 percent, by weight. The aggregate gradation and asphalt content requirements shall be specified in the Contract Documents. The Inspector shall compare test results and certifications submitted by the Contractor with the requirements to ensure compliance.

The requirements of the equipment used to spread and compact bituminous pavement shall meet the requirements of the Contract Documents. The paver must spread the mixture without tearing the surface and must strike a finish that is true to the required cross section, uniform in density and texture, and free of irregularities. The speed of the paver shall be adjusted as necessary to that speed which provides the best result for the type of mixture being placed. The Inspector shall observe each course immediately after striking off and before rolling for irregularities that require correction. Fat sandy droppings shall be removed and fat areas shall be removed and replaced with satisfactory material. Any portion of the pavement course that is defective or that shows excessive segregation shall be removed and replaced with suitable material.

Well-proportioned asphalt mixes compact readily if spread and rolled at proper temperatures. Compaction requirements vary widely from project to project and consequently, the Contract Documents shall be referenced in this regard. Rolling shall start immediately after the material has been spread by the paver, provided undue lateral movement does not take place under the roller. If rolling causes displacement of the material, the affected areas shall be loosened at once with an

asphalt rake and restored to the original grade with loose material before re-rolling. Rolling shall be done with care to prevent undue roughening of the pavement surface.

Rolling of a longitudinal joint shall be done immediately behind the paving operation. The initial, or breakdown, pass with the roller shall be made as soon as it is possible to roll the mixture without cracking the mat or having the mix picked up on the roller wheels. The second, or intermediate, rolling shall follow the breakdown rolling as closely as possible and shall be done while the paving mix is still at a temperature that will result in maximum density. The finish rolling shall be done while the material is still workable enough for removal of roller marks.

Roller wheels shall be kept moist during compaction, with only enough water to prevent the wheels from picking up the asphalt mixture. Rollers shall move at a slow but uniform speed generally with the drive roller or wheels nearest the paver. The line of rolling shall not be suddenly changed or the direction of the roller suddenly reversed.

The pavement course thicknesses and construction tolerances shall be specified in the Contract Documents. The surface of each course shall be checked with templates, straightedges, and/or stringlines for uniformity. These checks can be made by the Contractor in the presence of the Inspector. All irregularities exceeding the allowable tolerances must be repaired as required by the Contract Documents or as directed by the Engineer. The Inspector must note all checks and measurements made of pavement surface uniformity in the Daily Field Report and report any repairs made.

- ***Tack Coat***

The purpose of the tack coat is to increase the bond between old and new surfaces. It may be required on new pavements between the binder and surface courses or on repair of existing pavements. If the tack coat is too heavy, the tack coat may act as a lubricant between the two surfaces, causing the mat to slip when rolled. If the tack coat is not adequate, the mat will not bond to the underlying course properly and may slip under the roller, causing waving or cracking of the mat being placed. In either case, subsequent raveling will occur and eventually a deterioration of the surface will develop.

Unless otherwise stated in the Contract Documents, the tack coat shall be type SS-1h. Prior to applying the tack coat, the area to receive pavement shall be cleaned. The tack coat shall be applied well in advance of the paving operation to allow all water to evaporate before the surface course is placed. This chemical process is termed "breaking" or "setting." One way to determine when the material has set is that its color will change to dark brown within a short time after application, with the exact length of time depending on the ambient and pavement temperatures. Work shall be planned so that no more tack coat than is necessary for the day's

operation is placed on the surface. Existing traffic and weather conditions may curtail the distance tack can be placed ahead of the paving operation.

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Chapter 14

Bicycle Routes, Shared-Use Paths, and Pedestrian Walkways

14.1 Purpose

The purpose of this chapter is to establish the minimum and preferred design standards for sidewalks, other pedestrian facilities, and bicycle facilities. The outlined standards in this chapter include both minimum and preferred design standards with clarifications regarding when it is appropriate to apply the range of standards presented.

14.2 Pedestrian Sidewalks

Pedestrian walkways are required on both sides of all roads in the City of Richmond, unless a type of street is specifically exempted or a special exception is granted by the city. Most pedestrian walkways are generally equivalent to the traditional sidewalk model, however this manual allows for innovative walkway designs, such as a shared-use path. Both traditional sidewalks and these alternative designs are discussed further in this section.

In today's subdivisions, sidewalks have the following functions:

- Provision for maximum safety of children playing on their block
 - Protection of children walking to and from schools, neighbors, and parks
 - Provision for adults to walk to and from parks, neighborhood shopping, and transit stops
 - Provide safe travel pathways for handicapped individuals
- **Conventional Sidewalk Design**
 - General Requirements: Sidewalks should be constructed in accordance with the City of Richmond Standards and Specifications and in accordance with applicable provisions of the Americans with Disabilities Act.

Sidewalk design considerations must include:

- Providing a roughened surface to ensure proper traction
- Establishing a maximum grade consistent with local conditions, with an absolute maximum grade set at 1:12
- Providing a lateral draining slope of 2 percent

- Providing curb cuts that comply with the Americans with Disabilities Act Accessibility Guidelines
- **Standard Alignment/Typical Cross Section:** Sidewalks must be constructed between the curb line and the right-of-way limit/line. The standard alignments for sidewalks are listed below in the following table.

Table 14. 1 – Standard Sidewalk Alignments/Typical Cross Section

Street Classification:	Widths (Ft)	
	Distance from Roadway	Width of Sidewalk
Non-Residential and Industrial Collector (40' street width)	11	4
Non-Residential and Industrial Collector (51' street width)	6	4
Residential collector streets and industrial locals	6	4
Local residential streets	6-9.5	4
Local residential cul-de-sac streets	6-7.5	4

If the available right of way between the curb and adjacent property line is of insufficient size to accommodate the requirements of this section, alternative designs of the sidewalk may be constructed with the approval of the City of Richmond. It should be noted that the absence of curbs and gutters on a street is not sufficient justification for the elimination of sidewalks.

When right-of-way restrictions and lack of yard easement necessitate a sidewalk next to the curb, and additional 2 feet of sidewalk width is required.

- **Special Alignments with Standard Sidewalks:** Depending on utility placement, a meandering sidewalk alignment within the border area may be considered. Such an alignment is more visually appealing and may save trees or other major plantings, avoid rock outcroppings, etc. However, this should not be used as a justification for locating long sections of sidewalk near the edge of the street.
- **Bridges:** Where sidewalks are required on bridges, they shall be a minimum width of six (6) feet of “barrier free” space.

- **Curb Ramp Guidelines**

Sidewalks constructed to the requirements herein shall include a curb ramp wherever an accessible route crosses a curb. Curb ramps shall be designed and constructed in accordance with this manual and as required by the American with Disabilities Act (ADA). If there are cases of conflict, ADA standards shall apply. Work within the right-of-way shall be constructed in accordance with the details shown on the plans

The following curb ramp specifications are established for Richmond:

- Curb ramps shall be located so that they are not obstructed by parked vehicles and shall not intrude into vehicular traffic lanes.
- The least possible slope shall be used for any curb ramp. Curb ramp shall not exceed a 1:12 rise to horizontal run ratio. Curb ramp wings not exceed a 1:10 rise to horizontal run ratio. If space limitations prohibit the use of a 1:12 slope or less, a flat landing 48 inches deep and as wide as the ramp area must be located at the top of each curb ramp. In existing right-of-way or street locations where each existing property lines do not allow for this 48-inch deep landing the wings or flared sides of the ramp must have a slope of 1:12 maximum.
- Sloped surfaces shall be stable, firm, and slip-resistant. Ramp surface may need a detectable warning surface system integral to the walking surface.
- The minimum width of the curb ramp shall be 48 inches exclusive of flared sides or wings. On existing sidewalks only, where 48 inches is not feasible, a minimum width of 36 inches, exclusive of flared sides or wings shall be allowed. If a curb ramp is located where pedestrians must walk across the ramp, or where handrails or guardrails do not protect it, it shall have flared sides. Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp.

- Curb ramps shall be located so as to provide a continuous accessible path of travel.

- **Non-conventional Sidewalks**

With the approval of the Richmond Planning Commission, an alternative sidewalk design (such as a shared-use path) may be substituted for a conventional sidewalk, provided that maintenance and public access agreements are provided and that the alternative design is accessible to persons with disabilities as defined and required in the Americans With Disabilities Act.

- **Meandering Sidewalks:** Meandering sidewalks may be used in order to avoid trees or other natural features, provided that sufficient right-of-way is dedicated to accommodate them.
- **Paved Trails:** In some residential areas, a paved trail may be used in lieu of or in addition to the conventional sidewalk. Sidewalks are typically adjacent and parallel to streets, whereas paved trails meander along natural pedestrian circulation routes.
- **Mid-block access trails:** Mid-block access trails are an appropriate non-conventional sidewalk design. These pedestrian-ways usually run between two houses along a right-of-way established solely for pedestrian traffic. Because of their proximity to houses, special consideration to a resident's privacy should be taken into account.

14.3 Bicycle Compatible Facilities Construction

This section is designed to outline the criteria necessary to successfully accommodate bicycle compatible facilities. There are five types of bicycle facilities to be discussed: 1) shared roadways, 2) signed shared roadways, 3) bike lanes, 4) shared-use paths, and 5) other considerations. The preferred method of providing bicycle travel depends on the type of user and the primary purpose of the travel area. In most circumstances, bicycles share the road with other vehicles, but in some circumstances no bicycle traffic on a road or a dedicated bicycle path are the preferred travel methods.

- **Shared-Use Paths**

A shared-use path is distinguished from other bicycle routes in that it is a motorized vehicle- free-route. It should be located as far from a road as practical. Intersections with shared- use paths and roads should be kept to an absolute

minimum and should be designed to minimize conflicts.

- **Geometric Design Criteria for Shared-Use Paths:** One of the most important considerations in the design of shared-use path is that it is, in essence, a mini-roadway and should be designed and constructed as such. Additionally, it has been found nationally that it is virtually impossible to prevent pedestrian usage of bicycle paths. Therefore, throughout this manual the term “bicycle path” is not used. Instead, the term shared-use path is used and design standards are based on the assumption that additional path width is desirable whenever feasible.

For shared-use paths, a horizontal and vertical alignment must be calculated for the appropriate design speed. This alignment should be staked in the field for construction, just as would be provided for a similar roadway project. Subgrade, Granular Base, and pavement courses should be provided in a similar fashion to that for a road construction project.

- **Width:** If a shared use path must be in a road’s right-of-way, there should be a minimum distance of 5 feet separating the shared use path from the road. If this is not possible, a suitable physical barrier is recommended. One-way traffic on the path, in the same direction as the adjacent traffic flow, is strongly encouraged. One-way paths will often be used as two-way facilities unless effective measures are taken to assure one-way operation. Without such measures, it shall be assumed that shared-use paths will be used as two-way facilities and designed accordingly.

For all shared-use paths separation from pedestrians by lane designations or adjacent sidewalk is also desirable where feasible.

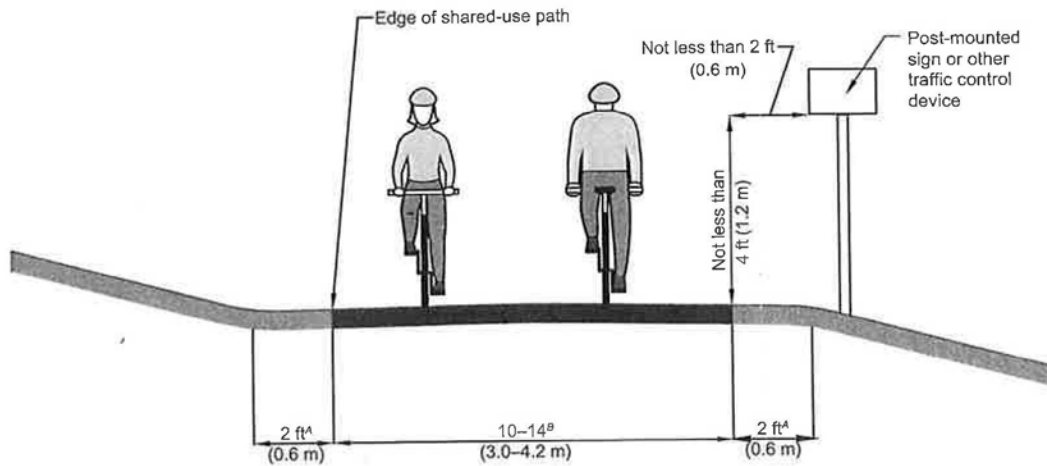
A desirable width for shared use paths is 10 to 12 feet as these widths allow better bicycle flow and are wide enough for occasional maintenance vehicle usage. Logically, the path’s width should be wider as the user volume of the path increases. In addition to the pavement width, the need to provide an adequate graded shoulder and vertical/lateral clear distances are another important consideration. A minimum of 2 feet graded grass area is the recommended area to be maintained adjacent to both sides of the pavement.

A minimum of 8 feet for two-way traffic and 6 feet for one-way traffic is suitable if all the following conditions are met:

- Bicycle traffic is expected to be low, even on peak days or during peak hours,
- Pedestrian use of the facility is expected to be no more than occasional,

- There will be good horizontal and vertical alignment providing safe and frequent passing opportunities,
- Maintenance vehicles will not be used.

Figure 14.1 – Shared-Use Path on a Separated Right-of-way



Notes:

^A (1V:6H) Maximum slope (typ.)

^B More if necessary to meet anticipated volumes and mix of users, per the *Shared Use Path Level of Service Calculator* (9)

Reference: Adapted from the AASHTO Guide for the Development of Bicycle Facilities, 2012.

- **Clearance Distances:** A minimum vertical clear distance of 8 feet is required. A minimum vertical clear distance of 10 feet is recommended for two reasons. (1) It provides the minimum horizontal clearance that will be required by maintenance vehicles. (2) There is a “psychological shy minimum” perceived by bicyclists. With a minimum of 10 feet of clearance, bicyclists have a comfortable perception while riding under a structure. At less than 10 feet of clearance, bicyclists become uncomfortable and begin to “shy away” from the overhead structure.

An absolute minimum horizontal clear distance of 2 feet is required for all obstructions/hazards. Three feet is the recommended minimum horizontal clear for poles, trees, fences, and all other solid objects. Five feet is the recommended minimum horizontal clear distance for all embankments.

- **Design Speed:** The speed that a cyclist travels is dependent upon the geometric features of the traveled way, type of users, weather conditions, and physical condition of the rider, terrain, and path surface. In determining the design

speed for a shared-use path, the geometric features of curvature, superelevation, grade, and width of the traveled way are used to produce traveling speed that is at least as high as the preferred speed of the fastest traveler. For paths less than 2% grade, a design speed of 18 mph is generally sufficient; in areas with hilly terrain and sustained steeper grades (6% or greater), the appropriate design speed should be selected based on the anticipated travel speeds of bicyclists going downhill. In all but the most extreme cases, 30 mph is the maximum design speed that should be used.

- **Horizontal Alignment:** The typical adult bicyclist is the design user for horizontal alignment. The method used to calculate the horizontal alignment is the “lean angle” method, although there are situations where the superelevation method of design is helpful. Most cyclists lean at a maximum lean angle of 20 degrees. Table 14.2 shows minimum radii for horizontal curves on paved, shared use paths at 20 degree lean angles.

Table 14.2 - Minimum Radii for Horizontal Curves on Paved, Shared Use Paths at 20% Lean Angle

Design Speed – V (mph)	Minimum Radius - R (ft)
12	27
14	36
16	47
18	60
20	74
25	115
30	166

Reference: Adapted from the AASHTO Guide for the Development of Bicycle Facilities, 2012.

- **Drainage:** It should be noted that the cross-slope of the path can be 1% on shared use paths, to better accommodate people with disabilities and to provide enough slope to convey surface drainage in most situations. A cross slope that provides a center crown with no more than 1 % slope in each direction may also be used. A minimum transition length of 5 ft. for each 1% change in cross slope should be used. Steeper cross slopes may be required on unpaved paths or other specialty trails. The Engineer should evaluate local conditions to determine which direction to slope the path.

- **Grade:** Whether or not a shared-use path is favorable to cyclists is largely dependent upon the grade and alignment of the intended path. The amount of energy a cyclist expends will affect the usage of the trail. Therefore, grades should be kept to a minimum.

A shared-use path's grade should not be greater than 6%. Grades over 6% are considered acceptable for distances less than 400 feet long, when higher speeds are acceptable, and additional width is provided. However, due to Richmond's topography, grades up to 10% may be warranted for short distances in some locations. For all shared-use paths, grades should not exceed 3% within 50 feet of an intersection.

- **Shared-Use Path Pavement Structure:** Shared-use paths shall be machine laid using the following design standards. This standard will allow for continuous use of the path by bicycles and pedestrians as well as provide sufficient strength for occasional use by maintenance and safety vehicles.

Table 14.3 - Shared-Use Path Minimum Thickness Standards for Granular Base and Pavement Courses

	Pavement Layer:	Thickness (Inches):
Asphalt	Asphalt Surface	1.25 inches
	Asphalt Base	1.75 inches
	Granular Base	8 inches of DGA
	Subbase	3 inches of #2 stone (if needed)
Pervious Concrete	Pavement	6 inches of Pervious Concrete
	Granular Base	12 inches of #57 stone
	Subbase	3 inches of #2 stone (if needed)
Concrete	Pavement	6 inches of concrete
	Base	4 inches of DGA
	Subbase	3 inches of #2 stone (if needed)

- **Site Distance:** Shared-use paths shall be designed with adequate stopping sight distances, to provide bicyclists with an opportunity to see and react to the unexpected. Stopping distance for a bicycle is a function of a bicyclist's break reaction time, the initial speed of the bicycle, the coefficient of friction between the tires and the pavement, and the breaking ability of the bicycle.

Refer to the AASHTO Guide for the Development of Bicycle Facilities, 2012, Fourth Edition, or the latest edition, to calculate stopping site distance.

- **Bicycle Lanes**

A street or roadway with a bicycle lane has a designated outside lane located within the vehicular roadway that is intended for the preferential or exclusive use of bicycles. The bicycle lane is usually 4-5 feet wide and is delineated by means of pavement markings. Bicycle lanes used on roads that allow parking should be designed to accommodate both uses. Bicycle lanes should be designed to allow cyclists to flow through intersections. Bicycle lanes shall always be one-way in the same direction as the traffic flow.

Geometric Design for Bicycle Lanes: A Street with bicycle lanes must be designed using the following geometric design standards:

- **Drainage Grates:** Drainage inlet grates with openings large enough to entrap a narrow wheel are prohibited on streets with bicycle lanes. Suitable drainage grate designs include, but are not limited to, diagonal bars at 45-degree angles, slotted grates with cross bars, or slanted bars transverse to traffic. Long slotted grates with one (1) inch or more wide openings parallel to traffic cannot be used on streets with bicycle lanes. All such grates and covers should be kept out of the bicyclist's expected path.
- **Railroad Grade Crossings:** The road-surface should be within one-half (1/2) inch of the track height and the slot between road and track should be less than one (1) inch wide. The street should be designed so that the cyclist can cross the tracks at a perpendicular angle. Where this is not possible, commercially available compressible flange fillers must be used. Crossing guards must be utilized in the track areas. Concrete crossing guards or rubber crossing guards are preferred. Asphalt and timber crossing guards are discouraged.
- **Bicycle Lane Width:** Lane widths as defined in the Recreational Landscape Manual.
- **Signalized Intersections:** Intersections timing cycles should be adjusted to account for the bicycle lane. Loop detectors with sensitivity designed for bicycles should be installed in bicycle lanes at intersections.

- **Bicycle Route Streets**

These streets are designed to be compatible with bicycle traffic, and may not necessarily require shared lane markings for bicycles. Street routes with signs designating them “Bicycle Routes” should be constructed in a manner that meets the design requirements discussed below. The City of Richmond will designate these streets.

Geometric Design for Bicycle Route Streets: For a street to receive a designation as a bicycle route, the following geometric design modifications should be made:

- **Drainage Grates:** Drainage inlet grates with openings large enough to entrap a narrow wheel are prohibited on streets with a “bicycle route” designation. Suitable drainage grate designs include, but are not limited to, diagonal bars at 45-degree angles, slotted grates with cross bars, or slanted bars transverse to traffic. Long slotted grates with one (1) inch or more wide openings parallel to traffic cannot be used on streets with “bicycle route” designation.
- **Railroad Grade Crossings:** The road-surface should be within one-half (1/2) inch of the track height and the slot between road and track should be less than one (1) inch wide. The street should be designed so that the cyclist can cross the tracks at a perpendicular angle.
- **Outer Lane Width:** The following outer lane widths are the minimums for a street with “bicycle route” designation:
 - **Local Streets:** Can often be compatible for bicycles without additional pavement.
 - **Collector Streets:** Should provide an outer lane with a minimum width of 14 feet.
 - **Arterial Streets:** Should provide an outer lane with a minimum width of 14 feet.

- **Bicycle Signs and Pavement Markings**

In order to ensure the safe and efficient operation of shared-use paths and bicycle compatible streets, they must have adequate signs and markings to warn bicyclists of hazardous conditions or obstacles, to delineate bicycle rights-of-way, to exclude undesired vehicles from the route, and to warn motorists and pedestrians of the presence of bicycle traffic. For bicycle paths and bicycle compatible streets that meet the requirements laid out in this section, appropriate standard signs should be used to designate bicycle routes and denote appropriate warnings and hazards.

These standards are referenced in Guide for the Development of Bicycle Facilities, AASHTO 2012 and the current Manual on Uniform Traffic Control Devices (MUTCD).

Chapter 15

Design Procedures

15.1 New Road Construction Requirements

New road construction shall meet the criteria set forth within this manual and must conform to adopted City of Richmond standards and policies for design and construction.

15.2 Existing Road Improvement Requirements

Existing road improvements shall meet the criteria set forth within this manual, shall conform to the adopted City of Richmond standards and policies for design and construction, and shall conform to the initial/ultimate design plans approved when the original road was constructed.

15.3 Preparation of Plans for All Road Construction Projects

- **Design Computer Programs available**

Various road design programs are available for the Kentucky Department of Highways Division of Information Technology and the Kentucky Division of Highway Design as well as other design programs available from commercial sources. KYCOGO, which deals with coordinate geometry, deed preparation, cross-section plots, templates, earthwork, graphics interfaces and data collector interfaces, is available through the Division of Information Technology. Software to support Computer Aided Design and Drafting is also available through that office. For information on the availability of all other computer programs relating to highway design, contact the Division of Information Technology. Information can also be accessed through the Kentucky Department of Transportation website.

- **Cover/Title Sheet**

The cover/title sheet shall contain the following information:

- Proper headings (City of Richmond, for example)
- Project title
- Construction contact information including but not limited to all utilities.
- Sheet number
- Checked by
- Construction plan approval stamp box (For use by the City of Richmond)

- Index of sheets and sheets not included
- Location map
- North arrow
- Engineer's signature and seal
- Consultant seal and signature
- Date

- **General Notes Sheet(s)**

General note sheets shall contain a revised listing of current special notes, special provisions, general notes and other such items. Special notes unique to the project, whether plan notes or proposal notes, along with traffic notes and utility notes, shall be provided. All special proposal notes shall be prepared as follows:

- The project number and note title shall be on the first sheet of notes or cover sheet
- Sheet number
- List and/or check applicable standard drawings and show total standard drawings
- Show total bridge sheets
- Type of work (grade, drain & surfacing)
- Control of access
- Design criteria
- Project limits, begin and end stations
- Project construction schedule
- Location of bridges
- Equations
- Check breakouts, section lengths and project length
- Scale
- Cut and fill calculations

- **Typical Section Sheets**

The typical section to be used on a project is generally determined by the basic geometric criteria for the functional classification of the road. The typical section sheet shows the geometric and pavement details for each project. In addition to geometric and pavement details, the typical section sheet shall show the path limits of road excavation for solid rock undercut and removal of low bearing soils which shall be utilized in the cross sections. The following information shall also be included:

- Tangent and super elevated sections
- Pavement design

- Undercut and sub-grade lines
- Guardrail location
- Note pertaining to slopes outside limits of shoulder
- Edge details (step-outs, keys)

- **Summary Sheets**

Sheet for general summary, pipe drainage summary, right of way summary, paving quantities, and paving areas can be used to provide uniformity. All items shall be shown on the general summary.

- Bid item titles, and if applicable, KDOH bid item codes are required on all summary sheets for all bid items that have been assigned code numbers in the current listing
- Pipe quantities shall be summarized to the nearest foot length
- Vertical elongation of culvert pipe represents an addition cost to the supplier. Therefore, reference notes shall be used to specify when vertical elongation is required, in accordance with current KDOH's Standard Drawings
- Entrance pipe, perforated pipe and non-perforated pipe shall not be shown by location but by quantities only; however, entrance pipe thirty feet or greater is classified as culvert pipe and shall be shown as such by location with the quantity shown as entrance pipe.
- Complete Material List
- Complete Price List of all improvements and infrastructure

- **Plan Profile Sheets**

Plan sheets may be either full size with separate profile sheets or the conventional half-plan, half-profile sheets. The first plan sheet shall contain the standard symbols. Each plan sheet shall show the beginning and ending stations for each plan sheet, a north arrow, and station equations for main line and approach intersections. Lengths of proposed structures shall be shown. The direction of centerline stationing shall run from south to north and from west to east. The alignment shall be a heavy line with the centerline stationing shown at 100-foot intervals. All P.I.'s, P.O.S.T.'s, P.O.T.'s and triangulation points shall be shown by stationing vertically. Each tangent shall have its calculated bearing shown and all curve data must be shown. The P.C., P.T., T.S., S.C., C.S. and S.T. must be drawn with the station number shown on a line drawn perpendicular to the point. Curve data shall be shown for all simple and spiral curves consisting of the following:

- Simple Curves
 - P.I Station Δ = Delta
 - Angle T = Tangent Distance
 - L = Length of Curve
 - R = Radius of Curve
 - E = External Distance e = Rate of Super Elevation
 - Runoff = Runoff Distance
 - Runout = Runout Distance
- Spiral Curves
 - P. I Station
 - Δ = Delta Angle
 - Ts= Tangent Distant Spiral Curve
 - Ls = Length of Spiral Curve
 - Lc= Length of Simple Curve
 - Os= Spiral Angle
 - LT = Long Tangent Spiral Curve
 - ST = Short Tangent Spiral Curve
 - R = Radius of Simple Curve
 - Es= External Distance Combination of Simple and Spiral Curve
 - E = Rate of Super Elevation
 - Runoff= Runoff Distance
 - Runout = Runout Distance

Plan sheets shall show as a minimum the following information:

- Sheet numbers
- North arrow
- Scale
- Topographic information
- Vertical controls and origin of levels
- Horizontal control
- Curve data
- Centerline and stationing
- Intersection stations
- Curb lines, gutter lines, and right of way lines, sidewalks and/or bicycle paths
- Storage of lanes and tapers
- Shoulders
- Sub-drainage
- Channelization islands
- Pavement markings

- Property lines, easements and ownership, source of title including deed book and plat
- Disturbed limits
- Drainage systems and structures
- Erosion control measures
- Approach roads
- Entrances
- Utilities (existing and proposed)

Profile sheets shall also show proposed structures with construction notes for the location, type, size and skew, surface ditches and description of all benchmarks. The first plan/profile sheet shall indicate the source of elevations used along with a summary of all USGS, USC & GS, and City of Richmond markers within the limits of the project, and the earthwork calculation for the entire project, and utility owner (with address).

- Profile sheets shall show as a minimum the following information:
 - Sheet number
 - Vertical curve data, grades, sight distances
 - Roadway stationing
 - Proposed grade elevations
 - Existing profile elevations
 - Surface ditching
 - Drainage structures
 - The plans shall extend at least 300 feet beyond the project limit

- **Scales**

Alignment and topography on plan sheets shall be plotted using a scale of 1 inch = 50 feet in rural areas and urban areas of sparse topography. Urban areas of dense topography shall be at a scale of 1 inch = 20 feet. Profile sheets shall be plotted on the same horizontal scale as the plan and the ratio of the vertical scale to the horizontal scale shall be 1:10. Ground-line and grade-line elevations shall be shown at 50-foot intervals.

Detour plan and profile shall be included and numbered with the plan and profile sheets.

- **Utility Plans**

Utility plans are required for each project if any utilities are involved. Utility plans may be either separate plans for utilities or construction plan sheets showing

utilities, depending upon the complexity of the project and the number of utilities involved. The Engineer is referred to KDOH's Utilities Guidance Manual for specific procedures to be followed and for the consideration that shall be given to the effect of utility installations with regard to safety, aesthetics, operational characteristics of the highway and cost of utility construction and maintenance. The Engineer shall coordinate with the effected utility and City of Richmond Planning & Zoning Department to assure compliance with all applicable local, state, and federal permits and regulations.

- **Detail Sheets**

Detail sheets shall consist of all other sheets not classified in the layout sheet's index of sheets and include special drawings, standard drawings not yet in the Standard Drawings, elevations development sheets, interchange and intersection layout sheets and contour grading plans.

- **Reference Sheets**

Reference points may be plotted on the plan sheets if they are few and the plan sheets are not crowded. Otherwise, all reference points shall be plotted on a separate sheet containing only reference points.

- **Soil Profile Sheets**

Soil profiles on 1" = 100' horizontal and 1" = 10' vertical scales shall be required for all functional classifications of roads. The soil profiles is for the use of the Engineer in establishing cut and fill slopes, CBR for pavement design, cut and embankment stability sections, rock refill, and shrinkage and swell factors.

- **Pipe Drainage Sheets**

All inlets, manholes, pipes and culverts with the exception of entrance pipe and longitudinal pipe shall be plotted on standard cross-section sheets with slope lengths and sizes shown. Pertinent data such as discharge, high-water elevations and material quantities shall be shown.

- **Cross-section Sheets**

Cross-sections grading plans can be used. A scale of either 1" = 10' or 1" = 5' shall be used on urban arterial, collector and local roads. Templates, end areas, grade elevations, volumes and sheet totals shall be shown. If cross-sections have been developed from aerial photography, the general notes sheet and first cross-section

sheet shall carry the following note: “Cross-sections for the project developed from aerial photography.”

15.4 Initial / Ultimate Design Plans

Some projects are designed with a geometric design typical section calling for two-lane initial and four-lane ultimate construction. In these cases:

- Centerline and grade shall be established to fit both initial and ultimate construction and to insure a symmetrical median and conformity to super elevation.
- Initial and ultimate construction shall be shown using solid and broken lines for all drainage, structures, special detail sheets and cross-section templates.
- Construction notes, quantities, earthwork distribution and general summary shall be for initial construction only.
- Disturbance limits shall be shown for initial construction; however, the outside limits for ultimate construction must be determined and shall be shown for right-of-way determination.
- Right-of-way acquisition and utility relocation, if necessary, shall be for ultimate construction.

- **Roadway Plan Review by the Engineer**

The primary function of this section is the final review, checking, correcting and updating of road plans to current standards and specifications immediately prior to letting of projects to contract. This requires gathering and coordinating of all the information needed for preparing bid proposals, including the plans, quantities, standard drawings, special provisions and notes. It also requires requesting and incorporating input and recommendations.

The following checklist outlines the items that are checked during the review process:

- **General Summary**

- Check all quantities, bid items, and units (use Item Code Index)
- Check to ensure Specifications, Standard Drawings, or Detail Sheets cover all bid items
- Make sure breakouts are correct and agree with those shown on the Layout Sheet for project lengths
- Include Erosion Control Item(s)
- After summary has been inked in its final form, call all quantities back to the work sheets in the project folder, and make a final check of addition, project subtotals and totals

- Make sure all applicable reference notes are shown
- Paving Areas Summary
- Compute paving areas from Plan and Profile and applicable detail sheets
- Check earthwork areas
- Check to see that all culvert pipe shown is in agreement with Pipe Sheets. Check for Flood Evaluation Data
- Check construction notes for general items such as guardrail, perforated pipe, removal items, etc.
- Be sure control of access points are shown

- **Detail Sheet**

- Check for any other special drawings that may be required (construction items not covered by Standard Drawings)

- **Soil Profile Sheets**

- Check to ensure that the Geotechnical Engineering recommendations have been incorporated into the plans
- Be sure Classification Note is shown on first sheet

- **Pipe Sheets**

- Pipe alternates
- Classes and schedules of pipe
- Pipe lengths (scaled)
- Concrete and steel reinforcement quantities for headwalls

- **Cross Section Sheets**

- When applicable, cross-section sheet shall carry the following note: "Cross-sections for this project developed from aerial photography."

15.5 Right of Way

Sufficient right-of-way should be acquired in order to avoid the expense of purchasing developed property or the removal of other physical encroachments from the highway right-of-way. A wide section of right-of-way must be given careful consideration for a balanced design. The selection of a width based on minimum or desirable dimensions is typically established with respect to facility type and surround conditions.

15.6 Easements

Construction easements- Whenever a proposed subdivision affects an existing or proposed road in such a way that will necessitate cuts and fills in adjoining property, construction easements on such adjoining property shall be required.

15.7 Response Sheet

Attach a response sheet for all items that are not met or illustrated on the construction plans as set forth in the Construction Plan Manual.

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Chapter 16

Planning Approval/Disapproval Procedures and Design Submittal Checklist

16.1 Compliance Statement

The primary objective of all subdivision design projects is to provide maximum livability. Transportation considerations, including the physical layout and the geometric design standards, are influenced by four overall factors: (a) safety, for motorized vehicles, bicycles, and pedestrians; (b) efficiency of service; (c) livability of amenities; and (d) economy –of land use and construction/maintenance costs.

All plans submitted for review by the City of Richmond shall include a signed Compliance Statement that certifies that the plans have been prepared in accordance with this document and all other requirements of the City of Richmond. A copy of the Compliance Statement can be found in Appendix D of this document.

16.2 Traffic/Roadway Elements to be Included in Improvement Plans

In designing new roads and applying for plan approval, the Engineer shall ensure that the items in the following checklist are included in the Improvement Plans.

- **General Requirements**

- Street names are in compliance with the City of Richmond's street-naming standard and shall not be the same (or close in spelling or phonetics) to the name of an existing street in Madison County.
- Street numbers are to be assigned to each lot by the City of Richmond, in order to provide a separate and distinct address for each lot.

- **Existing Conditions:**

- All contiguous land owned by the contractor to be included in the plat drawing
- Include existing structures
- Include building setbacks to property lines
- Include public streets and right-of-ways on and adjacent to the property, including curbs, sidewalks, driveways, and other pedestrian/bicycle path
- Ground elevations at appropriate contour intervals on the property and on adjacent property within 100 feet of the property
- Easements of record, indicating location, width, and purpose
- Utilities on and adjacent to the property
- Wooded areas, wooded fencerows, and isolated trees greater than 1 foot in

diameter. (Showing full tree canopy size on drawing, not merely trunk location)

- Grasslands, marshes, and wetlands
- Water courses, ponds, or other water features
- Walls, rock outcroppings, mounds, and historic features

- **Grading, Drainage Plan, and Erosion Control Plan**

- Existing and proposed contours at appropriate intervals
- Retaining walls
- Estimated volume of soil proposed to be moved, removed, and/or imported
- Cut and fill plan showing depth of cuts or fills, in appropriate intervals and a cross section showing existing and proposed ground elevations

- **Street Easements, Lot Line, and Utility Easements**

- Show all proposed public streets and alleys. For street and alley right-of-ways, show the names, bearing angles, angles of intersection, and width
- For arc shaped streets, show the length, radii, points of curvature, and tangent bearings
- For lot lines, show dimensions in feet and hundredths, and bearing and angles to minutes if other than right angles to the street lines
- All easements are to be shown and clearly labeled as to their width and purpose
- All of the following existing and proposed utility information is to be included: water mains, fire hydrants, valves storm sewers, sanitary sewers, catch basins/sediments traps, gas lines, electric lines, and cable television lines, and telephone lines. As appropriate, these liens need to show: pipe size and type, invert elevations, manhole elevations, and catch basin elevations

- **Street Profiles and Cross Sections**

- Plan and profile of each proposed street
- Existing and proposed ground and street grade surface on the tract and 300 feet beyond the tract
- Centerlines and elevations at all grade change points, vertical curves and grades
- Standard and any special cross-sections
- Use same horizontal scale as for the approved preliminary plan
- Use a vertical scale of 1/10 of the horizontal scale

- **Street Geometrics**

- Conform to geometric design standards
- Conform to cross-section design standards
- Conform to sight triangle and minimum sight distance requirements
- Local streets conform to a geometric design standard that discourages high-speed use by its very design and not by relying solely on signage

- **Street Continuity**

- Streets are designed in a manner that is overall continuous in nature
- Collector/Connector streets conform to an interconnected design standard by connect to existing Collector/Connector or arterial roads
- Street design conforms to the “no land-locking” standard for any tract of land
- Local streets conform to a geometric design standard that discourages high-speed use by its very design and not by relying solely on signage

- **Street Names**

- Streets in obvious alignment with existing streets bearing same name
- New streets do not duplicate existing street names

- **Planning For Conflicting Traffic Or Land Use**

- Streets are designed in a manner to minimize negative impacts from neighboring and conflicting land uses

- **Half Streets and Reserve Strips**

- Street design conforms to rules against the use of half streets and reserve strips
- All temporary stub streets include a temporary cul-de-sac design

- **Cul-De-Sacs**

- All Cul-de-sacs are designed to a length no longer than one thousand (1000) feet
- All Cul-de-sacs are designed with proper bulb geometrics
- Use of Cul-de-sacs in the design is not excessive

- **Medians**
 - Medians meet geometric design standards for the road type on which they are being used
 - Provisions for maintenance of median areas, and their associated landscaping and plantings, are provided for in subdivision plan
 - Landscaping and plantings are of a nature that they will not conflict with road sight distances
- **Pedestrian Walkways**
 - Sidewalk design requirements are met
 - Alternative pathways, including mid-block pedestrian cut throughs, bicycle/multi-use paths and bicycle lanes on road are provided—as appropriate or desired
- **Private Streets (If Applicable)**
 - All private streets in the plan meet all Richmond’s special requirements for this street classification
- **Street Pavement Design**
 - Grades and embankments are appropriate to the site
 - If excavation is required, plan sufficiently meets Richmond’s regulations
 - Subgrade and granular base preparation for the road are appropriate for both the site and the proposed street design and meet applicable standards
 - Base course design is appropriate for both the site and the proposed street design meets applicable standards
 - Surface course (paving) design is appropriate for both the site and the proposed street design and meet applicable standards
 - Proper street crown is incorporated into road design
 - Proper curb and gutter design are included in the roadway design
- **Intersections and Access Standards**
 - Intersections are designed to conform to Richmond’s standards
 - Both access by road classification and access spacing protocols are followed
- **Landscaping**
 - Landscape planning protocols have been followed

- **Stamping Of Drawings**

- Documents of appropriately stamped by a Kentucky licensed professional engineer

- **Response Sheet**

- Attach a response sheet for all items that are not met or illustrated on the construction plans as set forth in the Construction Plan Manual

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Chapter 17

Roadway Construction Forms and Statements

17.1 General

All roads in the City of Richmond shall be constructed in accordance with this manual. Any item not included in this manual shall be constructed according to the Kentucky Transportation Cabinet's (KTC) Standard Specifications for Road and Bridge Construction. Items not covered by the KTC specifications shall require a special design by the Engineer and shall be approved by the City of Richmond.

17.2 Blasting

The use of explosive/blasting materials for construction purposes will require compliance with both the City of Richmond requirements, listed in the Development Ordinance, Section 510.4, Topography and Site Grading, and also the State of Kentucky regulations from the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch.

The Explosives and Blasting Branch responds to all public complaints that concern ground vibrations, noise, flyrock and other adverse effects of blasting. The investigation of these complaints involves inspection of the operation generating the complaint and extensive seismic monitoring.

17.3 Forms

Appendix D contains forms that are related to development and roadway construction activities. Some of the forms are also used for sediment and erosion control activities and used for activities other than roadway construction. They are included in this manual to ensure compliance with not only roadway construction but also for sediment and erosion control during roadway construction.

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Appendix A

Terms and Definitions

Average Daily Traffic (ADT). The average number of vehicles that pass a defined point within a 24-hour period.

Bicycle Lane. A portion of roadway designated for preferential or exclusive use by bicycles. It is distinguished from the portion of the roadway for motor vehicle traffic by a paint stripe, pavement marking, curb, or other similar device.

Shared-Use Path. A path or trail that is physically separated from the motorized vehicular traffic of a roadway. It is designed for the exclusive use of non-motorized uses, including bicycle riders, pedestrians, and other non-motorized recreational uses. This shared-use path may be either within the roadway right-of-way or within an independent right-of-way.

Bicycle Route Roadways. A road that is officially designated, signed, and marked as a bicycle route but which is open to motor vehicle travel and upon which no bicycle lane is designated.

Building Set Back Line. A line beyond which buildings must be set back from the right-of-way line.

Clearance (Horizontal). Lateral distance from edge of traveled way to a roadside object or feature.

Clearance (Vertical). The vertical distance between the roadway surface and an overhead object or feature.

Desirable. A condition that should be met when attainable. Desirable values will normally be used where the social, economic, or environmental impacts are not critical.

Developer. An individual, partnership, corporation, or other legal entity or agent thereof that undertakes the activities covered by regulations.

Driveway Approach. A driveway approach designed and intended to serve as access from a roadway to a lot or parcel of land that is adjacent to the roadway.

Easement. The right to use another person's property, but only for a limited and specifically named purpose; the owner generally continues to make use of such land since he has given up only certain, and not all, ownership rights.

Easement Area. A strip of land over, under, or through which an easement has been granted.

Encroachment. Any structure or device positioned within, over, or upon the right-of-way, that is not the property of the City of Richmond.

Engineer. A qualified Professional Engineer registered and currently licensed to practice engineering in the Commonwealth of Kentucky and competent in the area of roadway engineering.

Engineering. The preparation of plans, specifications and estimates for the contract administration of construction of streets, drainage facilities, utilities and other similar public works installed within a subdivision for public use.

Flat Terrain. Topography with grades in the range of 0% to 8%. This terrain is conducive to generally long sight distance potential with little or no construction difficulty or major expense.

Frontage. All property on one side of a street between two intersecting streets (crossing to terminating) measured along the line of the street; or if the street is dead-ended, than all of the property abutting one side between an intersecting street and the dead-end of the street.

Grade. The change in elevation between two points along the vertical alignment of a roadway. Usually expressed as the change per 100 feet or percent.

Gutter. A generally shallow waterway adjacent to a curb used, or suitable for, drainage of water.

Intersection. A point at which two (or more) streets join another street at an angle, whether or not the streets cross the other.

Movement. Is the capacity to move quantities of vehicles or people between various origins and destinations at a reasonable speed.

Owner. The governing body of City of Richmond is referred to as “owner” throughout this manual. When referenced in the context of this manual, the terms “owner” and “city” are defined to include all applicable decision making bodies in relations to roadway and/or subdivision design approvals.

Pavement (Asphalt). A flexible pavement structure consisting of mineral aggregates bound together with asphalt material. The structure maintains intimate contact with and distributes loads to the subgrade and depends on aggregate interlock, particle friction, and cohesion for stability.

Pavement (Concrete Slab). A rigid pavement structure that distributes loads to the subgrade. The pavement consists of one course of portland cement in a concrete slab. This slab has relatively high bending resistance.

Pavement. Pavement refers to the materials used to cover the ground surface along roadways. It is a combination of granular base, base course, and surface course placed on a subgrade to support the traffic load and distribute the load to the roadbed. Pavement has several distinct layers:

Subgrade. The natural soil material upon which the upper roadway layers are constructed.

Modified Subgrade. Layer designed to augment the subgrade strength. This layer is only used when subgrade strength is below a particular level. It consists of chemically altered or compacted subgrade materials, often in combination to achieve certain strength characteristics required in specific conditions. Additionally, modified subgrade acts to reduce frost and water intrusion actions.

Granular Base. Constructed on top of the subgrade. It consists of granular material such as crushed stone or gravel. The specifications for the granular base are more rigorous than that for the subgrade in terms of strength, hardness, gradation, and aggregate types. The granular base layer is placed on the subgrade to support an asphalt base course or a portland cement slab.

Base Course. The base course is the layer, or layers, of a specified material of designed thickness placed on the granular base. In the case of an asphalt pavement, the base course further serves as a foundation course to support the surface course. In the case of a portland cement pavement, there is only one course of pavement material and the base course and surface course are one and the same.

Surface Course. The purpose of the surface course is to accommodate the traffic load, provide a smooth riding surface, resist the wear and tear from traffic, provide skid resistance to vehicles, and prevent excessive water from penetrating into the base course. In the case of asphalt pavement, the surface course of the pavement section consists of a mixture of mineral aggregates and asphalt materials. In the case of a portland cement pavement, there is only one course of pavement material and the base course and surface course are one and the same.

Pedestrian Way. A travel route designed primarily for pedestrian travel.

Recommendation. The formal opinion of the city staff concerning approval, conditional approval, disapproval, or postponement of consideration of a plan or plat or the opinion of a responsible agency concerning an aspect of a plan or plat.

Right-of-way (ROW). The strip of land dedicated for public streets and/or related facilities, including utilities and other transportation uses.

Right-of-way Width. The shortest horizontal distance between the lines which delineate the right-of-way of a street.

Road. For the purpose of this manual “road” shall be defined the same as “street.”

Rocking. The preparation of a roadway base.

Rolling Terrain. Topography with grades over 8%. This terrain offers condition where the natural slopes consistently rise above and fall below the road or street grade and where occasional steep slopes offer some restriction to normal horizontal and vertical alignment.

Shall. Also defined as “must.” A mandatory condition. Where certain requirements in the design or application of this manual are described with the “shall” or the “must” stipulation, it is mandatory that the requirements be met.

Shared Parking. Parking that can be used to serve two or more individual land uses without conflict or encroachment.

Should. A desirable advisory condition. Where the word "should" is used in this manual, it is considered to be advisable and usually recommended, but not mandatory.

Sidewalk. A paved area within the street right-of-way or sidewalk easement specifically designed for pedestrians.

Sight distance. The distance visible to the driver of a passenger automobile, measured along the normal path of roadway. The minimum sight distance available on a road should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path.

Street. A street shall include a right-of-way, the street pavement, curb, and gutter. A street is primarily used as a channel for vehicular movement and secondarily as a drainage channel for stormwater. For the purposes of this manual, the terms “street” and “road” are all used interchangeably.

Street, Approved. Any vehicular way approved by the City of Richmond as providing vehicular and pedestrian travel, and--as appropriate--access to a lot. Included in this definition are:

Public Streets. All streets dedicated to the public use and which are maintained by the City of Richmond.

Private Streets. Are streets owned, constructed, used, and maintained by a particular subdivision under the appropriate Richmond subdivision regulations and the covenants of the particular subdivision.

Access Easements. When permitted, by the City of Richmond as the sole means of vehicular access to a lot, are types of restricted street that may be used by the public, or privately, as designated by the city and subject to the provisions of the Richmond subdivision regulations.

Street, Classified. A street, either existing or proposed, which is assigned a functional street Classification by the City of Richmond.

Street, Classification. Types of streets as set forth in this manual. The following street classifications are established in this manual:

Expressways. Streets used only for movement of vehicles, providing for no vehicular or pedestrian access to adjoining properties. Expressways generally carry higher volumes, require greater right-of-way width, and permit higher speed limits than any other class of street.

Arterials. Streets that should be used only for the movement of vehicles, and should not provide for vehicular access to adjacent properties.

Collectors. Streets that are used both for the movement of vehicles and for providing access to adjacent properties.

Locals. Streets that are used primarily for providing access to adjacent properties.

Service Roads. Local streets that run parallel to a street with a higher classification on one side and run parallel to properties requiring access on the other side. In this way, a service road provides an access route to properties adjacent to higher classification streets while at the same time reducing the number of access points from these properties onto the higher classification streets.

Alleys. Alleys generally have two open ends, each end connects with different streets, and property generally backs onto both sides of the alley, Alleys primarily provide access to or from the rear or side of a property.

Street Grade. The officially established grade of the street upon which a lot fronts. If there is no officially established grade, the existing grade of the street at the midpoint of the lot shall be taken as the street grade.

Street Name Sign. The street name sign is the sign that designates the official name of the street.

Traveled Way. The portion of the roadway used for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

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Appendix B

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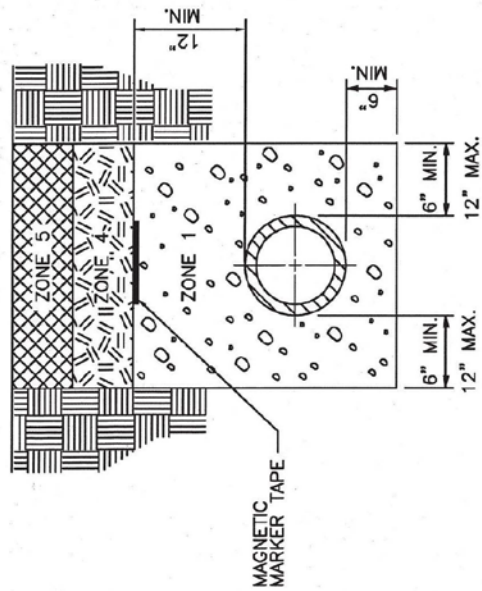
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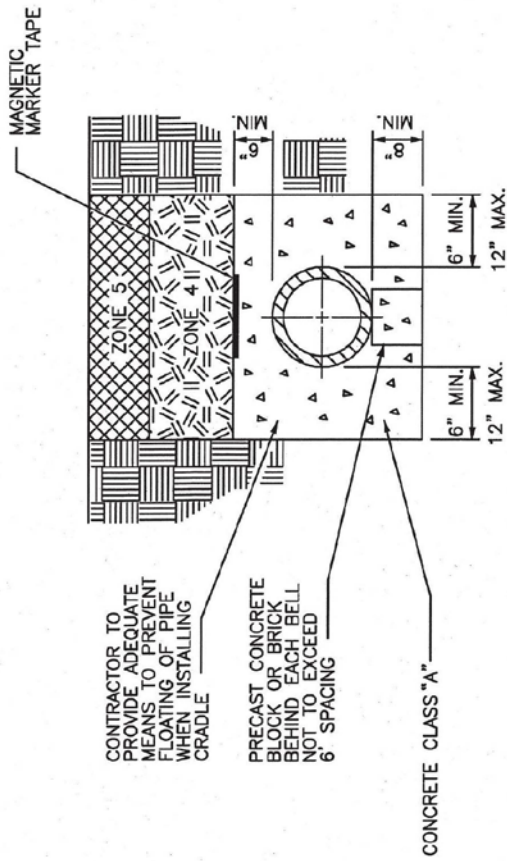
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Appendix C

Standard Drawings



PIPE LAID IN ROCK OR SOIL TRENCH



STANDARD CONCRETE ENCASEMENT (NOTE: AS REQUIRED BY DESIGN)

PIPE BACKFILL DESCRIPTIONS	
ZONE 1	NO. 9 STONE
ZONE 2	NO. 9 OR NO. 57 STONE
ZONE 3	COMPACTED DGA
ZONE 4	CONSOLIDATED SOIL (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE
ZONE 5	12" MAX. TOPSOIL NO ROCK ALLOWED

NOTES:

1. COVER, UP TO AND INCLUDING ZONE 4 SHALL BE ESTABLISHED BEFORE TRENCH EXCAVATION.
2. ALL SANITARY SEWER LINES CONSTRUCTED FROM NON-METALLIC MATERIALS SHALL HAVE MAGNETIC MARKER TAPE INSTALLED IN THE TRENCH ABOVE THE SANITARY SEWER LINE.
3. MAGNETIC MARKER TAPE FOR SANITARY SEWER ONLY.

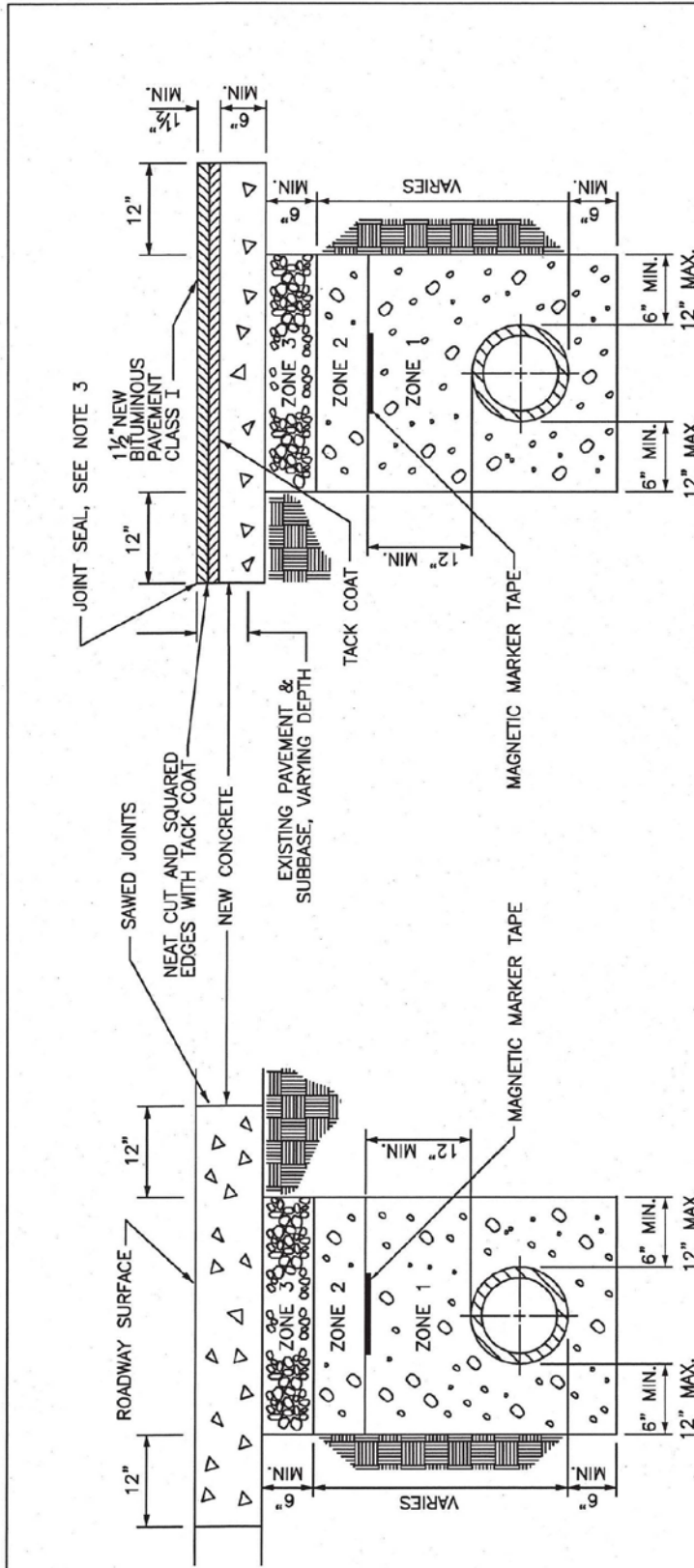
NO.	DATE	REVISION DESCRIPTION	BY

CITY OF RICHMOND, KENTUCKY

TRENCHING, LAYING,
BACKFILLING AND BEDDING
OUTSIDE R/W LIMITS

STANDARD DRAWING NO.	200
APPROVAL	
PUBLIC WORKS DIRECTOR	
DATE	

CITY OF RICHMOND, KENTUCKY



CONCRETE PAVEMENT

BITUMINOUS PAVEMENT

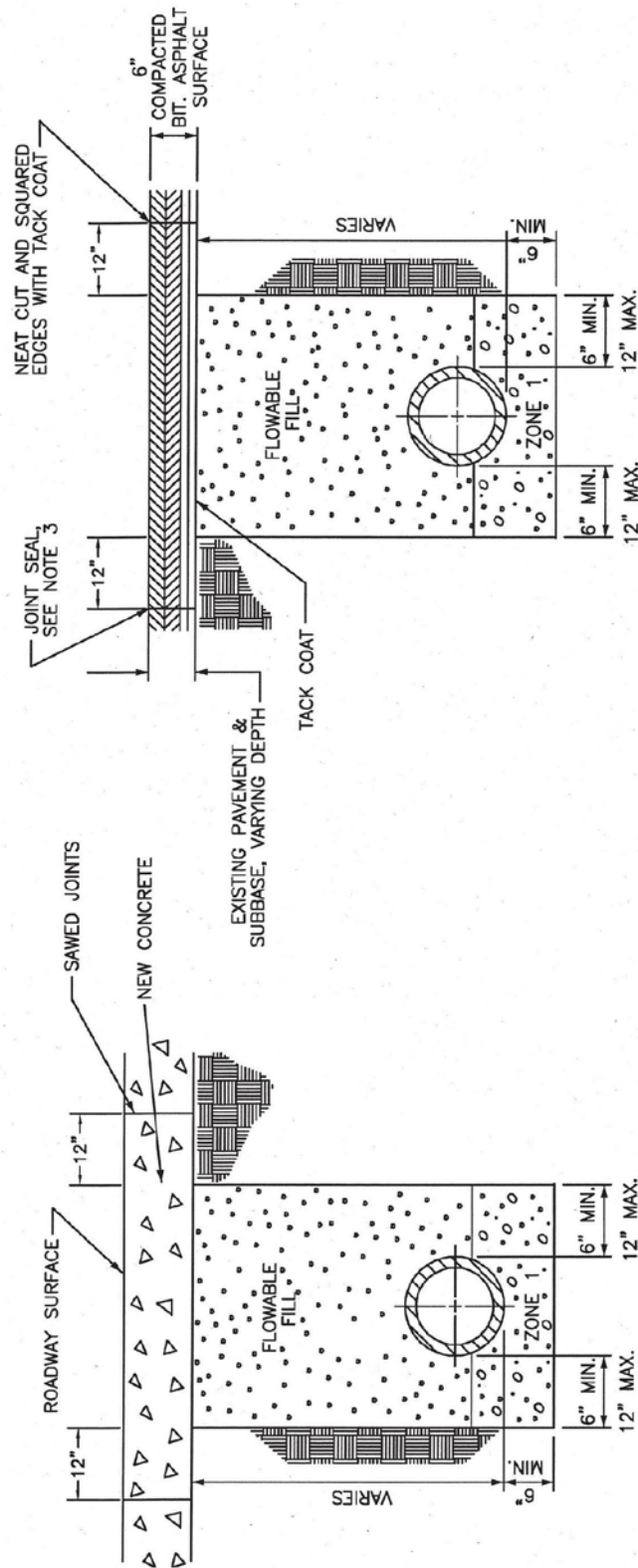
NOTES:

1. REPLACE CONCRETE PAVEMENT WITH NEW CONCRETE PAVEMENT. 6" MINIMUM OR EXISTING THICKNESS, WHICHEVER IS GREATER.
2. JOINT SEAL PERIMETER OF CUT PAVEMENT WITH FLEXMASTER POURABLE CRACK SEALANT 1109 OR APPROVED EQUAL.
3. MAGNETIC MARKER TAPE FOR SANITARY SEWER ONLY.

PIPE BACKFILL DESCRIPTIONS	
ZONE 1	NO. 9 STONE
ZONE 2	NO. 9 OR NO. 57 STONE
ZONE 3	COMPACTED DGA
ZONE 4	CONSOLIDATED SOIL (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE
ZONE 5	12" MAX. TOPSOIL, NO ROCK ALLOWED

NO.	DATE	REVISION DESCRIPTION	BY
CITY OF RICHMOND, KENTUCKY			
TRENCHING, LAYING BACKFILLING AND BEDDING UNDER STREET PAVEMENT			
STANDARD DRAWING NO.		201-1	DATE
APPROVAL			
PUBLIC WORKS DIRECTOR			

CITY OF RICHMOND, KENTUCKY



CONCRETE PAVEMENT

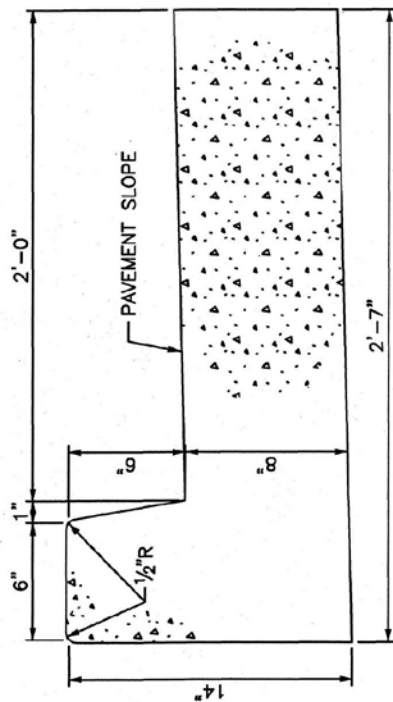
BITUMINOUS PAVEMENT

PIPE BACKFILL DESCRIPTIONS	
ZONE 1	NO. 9 STONE
ZONE 2	NO. 9 OR NO. 57 STONE
ZONE 3	COMPACTED DGA
ZONE 4	CONSOLIDATED SOIL (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE
ZONE 5	12" MAX. TOPSOIL, NO ROCK ALLOWED

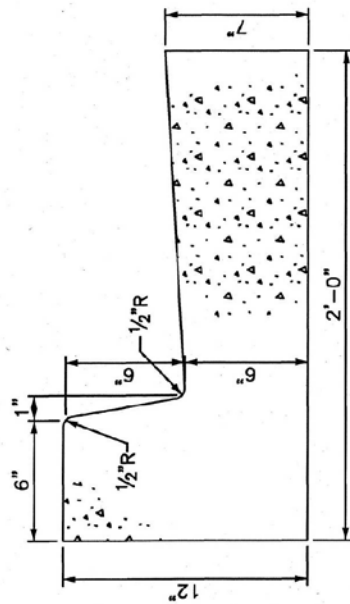
- NOTES:
- PER KYTC SPECIFICATION 601.03.03 FROM STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION EDITION 2004, OR MOST RECENT.
 - REPLACE CONCRETE PAVEMENT WITH NEW CONCRETE PAVEMENT, 6" MINIMUM OR EXISTING THICKNESS, WHICHEVER IS GREATER.
 - JOINT SEAL PERIMETER OF CUT PAVEMENT WITH FLEXMASTER POURABLE CRACK SEALANT 1109 OR APPROVED EQUAL.

NO.	DATE	REVISION DESCRIPTION	BY
CITY OF RICHMOND, KENTUCKY			
TRENCHING, LAYING, BACKFILLING AND BEDDING UNDER STREET PAVEMENT USING FLOWABLE FILL			
STANDARD DRAWING NO. 201-2			
APPROVAL			
PUBLICATIONS DIRECTOR			
DATE			

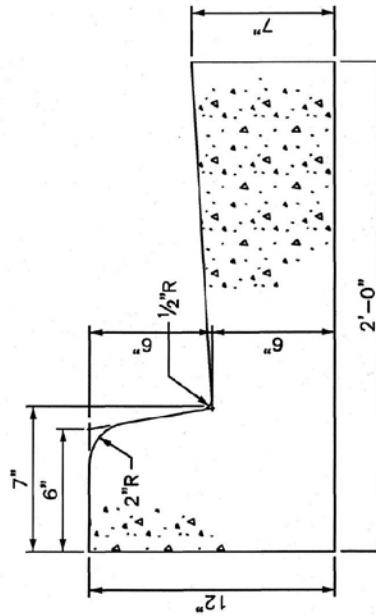
CITY OF RICHMOND, KENTUCKY



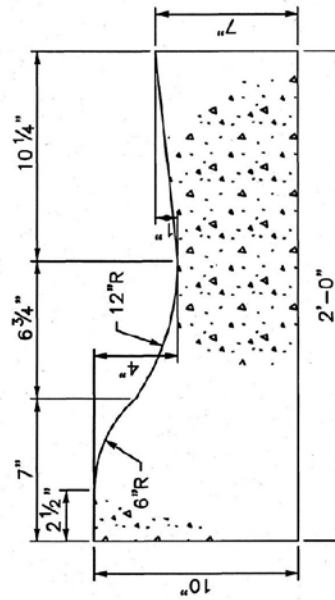
TYPE 2



TYPE 1



TYPE 3



TYPE 4

(RESIDENTIAL LOCAL STREETS ONLY)

NOTES:

1. CONCRETE SHALL BE KDOT CLASS "A".
2. SAWED CONTRACTION JOINTS SHALL BE CONSTRUCTED EVERY 20 FEET, WITH A MIN. DEPTH OF 3", IN ACCORDANCE WITH KDOT STANDARD SPECIFICATION.
3. EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL BREAKS IN ALIGNMENT, AT CONTACT WITH NEW OR EXISTING CONCRETE, AT ALL DRAINAGE INLETS, AT THE BEGINNING AND ENDING POINTS OF CURVES, AND NOT TO EXCEED 200' MAXIMUM SPACING FOR SLIP FORM APPLICATION AND 30' MAXIMUM SPACING FOR HAND PLACED.
4. ALL CONCRETE SHALL BE CURED WITH WHITE PIGMENTED MEMBRANE FORMING COMPOUND (AASHTO M 148, TYPE 2).

NO.	DATE	REVISION	DESCRIPTION	BY

CITY OF RICHMOND, KENTUCKY

CURB AND GUTTER

STANDARD DRAWING NO. 301

APPROVAL PUBLIC WORKS DIRECTOR

CITY OF RICHMOND, KENTUCKY

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Appendix D

Forms

Compliance Statement (Public)

Please attach the following Certificate

Compliance Certification for Public Infrastructure

I hereby certify that these Construction Drawings known as:

have been prepared in accordance with The City of Richmond Development Ordinance; all Technical Manuals and Standard Drawings; all requirements on the certified Construction drawings; all applicable State and Federal regulations and permits; and that construction will be done in accordance of the City approved and stamped Construction Drawings.

I further certify that as a Kentucky Licensed Engineer I will provide sufficient oversight, reporting and documentation during construction to enable us to certify that the construction was done in accordance with the approved Construction Plans, State and Federal Regulations so long as we are under contract with the Owner / Developer for such services.

KY Licensed Engineer

Design Firm

Date

Owner/Developer's Signature

Date

Owner/Developer's Printed Name

Date

Compliance Statement (Private)

Please attach the following Certificate

Compliance Certification for Private Development

I hereby certify that the Development Plans known as:

have been prepared in accordance with The City of Richmond Development Ordinance; all Technical Manuals and Standard Drawings, all requirements on the certified Development Plan; all applicable State and Federal regulations and permits; and that construction will be done in accordance with these Development Plans. I agree to retain

_____ (name of design professional) to provide sufficient oversight during construction to enable him/her to certify that the construction was done in accordance with these City approved and stamped Development Plans.

I further certify that as a Kentucky Licensed Engineer I will provide sufficient oversight, reporting and documentation during construction to enable us to certify that the construction was done in accordance with the approved Development Plans, State and Federal Regulations so long as we are under contract with the Owner / Developer for such services.

Design Professional Engineer

Design Professional's Firm

Date

Owner/Developer's Signature

Date

Owner/Developer's Printed Name

Date

PAVEMENT SUBGRADE INSPECTION REPORT FORM (continued)

Page 2 of 2

Proof Roll:

Truck Model _____

Gross Weight _____

☐ Pass ☐ Fail

Remarks _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Date of Issuance: _____

DEVELOPER: _____

Contact: _____

Project: _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To City of Richmond

And To _____
Developer

The Work to which this Certificate applies has been inspected by the Engineer (through full-time representation as defined in the Infrastructure Development Agreement), and that Work is hereby declared to be substantially complete and in accordance with the Contract Documents.

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of DEVELOPER to complete all the Work in accordance with the Contract Documents.

The responsibilities between the CITY OF RICHMOND and DEVELOPER for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

CITY: _____

DEVELOPER: _____

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of DEVELOPER'S obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on _____
Date

ENGINEER

By: _____
(Authorized Signature)

DEVELOPER accepts this Certificate of Substantial Completion on _____
Date

DEVELOPER

By: _____
(Authorized Signature)

CITY accepts this Certificate of Substantial Completion on _____
Date

By: _____
(Authorized Signature)

PLAT CHECKLIST

Plat Name _____

Final (Y/N)_____ Amended (Y/N)_____ #

Engineer's Stamp (Y/N) _____ Land Surveyor Stamp (Y/N) _

Engineer's Certification and Signature_____

Owner's Certification and Signature City of Richmond Certification

Zone _____ Length of Streets _____ Number of Lots _____

Bonded (Y/N) _____

Street Cross Sections (Y/N)_____ Cul-de-sac Detail (Y/N) _____

As Built:	Sanitary:	On site	Off site
	Street:	On site	Off site
	Storm:	On site	Off site

Easements: On site _____ Off site _____

Easement Maintenance Note (Y/N)_____ Detention Maintenance Note (Y/N)____

Floodplain Shown (Y/N) _____ Flood Protection Elevations (Y/N) ____

Alluvial Soils Shown (Y/N)_____

Building Setback of 25' from the Floodplain Shown (Y/N)_____

Drainage Easements Shown (Y/N) _____

Vegetative Buffer Strip Shown (Y/N) _____

Monument Description Complete (Y/N) _____

Reference Meridian Identified (Y/N)

Unadjusted Error of Closure (Y/N) _____ Adjustment Statement (Y/N) _____

Bearings and Distances: On Plat: _____ Accuracy _____ Survey Class A (Y/N) _____

Have the requirements from the Improvement Plans been placed on the plat? (Y/N) _____

Comments: _____

City of Richmond

PRECONSTRUCTION CONFERENCE

Date: _____ KPDES No. _____

Project Name/No.: _____ Project Location: _____

Engineer: _____
Company Name Contact PersonOwner: _____
Company Name Contact PersonBMP Plan Preparer: _____
Company Name Contact PersonInspector: _____
Company Name Contact PersonGeneral Contractor: _____
Company Name Contact PersonDate NOI Submitted: _____ Copy of NOI Received? ☐ Yes ☐ No

Attach list of Preconstruction Conference attendees

On-Site Location of BMP Plan (KY10 Part IV): _____

Process for Modifying BMP Plan (attach additional sheet if necessary): _____

Is SPCC Plan needed? ☐ Yes ☐ No If yes, has SPCC Plan been prepared? ☐ Yes ☐ NoIs GWPP Plan needed? ☐ Yes ☐ NoIs a 404 Permit or 401 Water Quality Certification required? ☐ Yes ☐ NoIf yes, has permit applications been submitted to the KDOW and the USACE? ☐ Yes ☐ NoHas permit coverage been issued? ☐ Yes ☐ No Date permit application submitted: _____Has the following been identified on the BMP plan: Material storage: ☐ Yes ☐ NoWaste Disposal Site? ☐ Yes ☐ No Sanitary facilities? ☐ Yes ☐ NoConcrete washout? ☐ Yes ☐ NoAre there any areas of particular environmental concern?: ☐ Yes ☐ No

If yes, please list: _____

Other conditions:

City of Richmond

PRECONSTRUCTION CONFERENCE

Date/Time: _____

Project Name/No.:

Name

Company

E-mail

Phone #

[illegible]