

**SUBDIVISION REGULATIONS
OF
CALLOWAY COUNTY, KENTUCKY**

Effective March 1, 2003

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**ARTICLE I
GENERAL PROVISIONS**

SECTION 1.0 SHORT TITLE

These regulations shall be known and may be cited as the "Subdivision Regulations of Calloway County, Kentucky".

SECTION 1.1 PURPOSES AND GENERAL REQUIREMENTS

A. **PURPOSE:** These Subdivision Regulations as herein set forth, have been prepared to promote the public health, safety, morals, and general welfare of the County; to provide for the proper arrangement of streets in relation to existing or proposed streets; to insure that future growth will be orderly and conducive to the provision of minimum outlay of public and private expenditures in providing services to developing areas; to provide for adequate and convenient open spaces for vehicular and pedestrian traffic, utilities, access of fire fighting apparatus, recreation, light and air, and the avoidance of congestion of the population; to provide for provision of water, drainage, sewer, and other sanitary facilities and to facilitate the orderly and efficient layout and appropriate use of the land. In addition, these regulations also provide for the accurate surveying of land, preparing and recording of plats, and the equitable handling of all subdivision plats by providing uniform procedures and standards for observance by both the approving authority and subdivider. This shall be interpreted to include the following objectives which shall guide the Fiscal Court in formulating its decisions:

1. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health, or peril from fire, flood or other menace.
2. Proper provision should be made for drainage, water supply, sewerage, and other needed improvements and utilities.
3. Proposed roads shall compose a convenient and efficient traffic circulation system and shall be properly built prior to acceptance or with adequate security to insure that said roads will be built without the expenditure of public funds.
4. Streets shall be of such width and location to accommodate prospective traffic, afford adequate light and air, and to facilitate fire protection.
5. Areas of suitable location, size, and character for playground, other recreational purposes, or public community services shall be shown on the plat, whenever appropriate.

Nothing in these regulations shall prohibit the subdivider from placing self-imposed

restrictions, or imposing higher standards than required by these regulations. Such restrictions, however, shall be indicated on the plat.

B. SUITABILITY OF LAND FOR SUBDIVISION: In addition to the Purposes hereinbefore stated, the Fiscal Court shall consider the following factors and impose the following principles and general requirements with regard to all proposed subdivisions:

1. Land within the floodway shall not be platted for residential occupancy or building sites. Other land subject to flooding may be platted which will not increase the danger to health, life, and property. All land subject to flooding shall only be considered as provided by the Ordinances of this County and the National Flood Insurance Program Regulations.
2. The Fiscal Court shall determine and find whether the land proposed to be subdivided is suitable or unsuitable for subdivision development due to bad drainage, steep slopes, rock formations, and such other conditions as may increase the danger of health, life or property or aggregate erosion or flood hazards.
3. The Fiscal Court 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, welfare, or prosperity by reason of lack of adequate water supply, schools, proper drainage, good roads and transportation facilities or other public services; or which would necessitate an excessive expenditure of public funds for the supply of such services.
4. If after adequate investigations, conducted by applicable public agencies, it has been determined that in the best interest of the public the land or a portion thereof not be platted and developed for the purpose proposed, the Fiscal Court shall not approve the land or portions thereof for subdivision.

SECTION 1.2 AUTHORITY

These regulations are adopted in accordance with the Kentucky Revised Statutes - Chapter 100.111 - 100.991.

SECTION 1.3 VARIANCES

A. The Fiscal Court may grant a variance to these regulations where by reason of the unusual shape of a specific piece of property, or where by reason of exceptional topographical conditions, the strict application of these regulations would result in extreme practical difficulties and undue hardship upon the owner of the property; provided, however, that such relief may be granted without detriment to the public good and without substantially impairing the modifications, the Fiscal Court may require such conditions as will substantially secure the

objectives of the standards or requirements so varied or modified. Financial disadvantage to the property owner is not proof of hardship within the purpose of these regulations.

B. Variances in lot size and access easements for service roads may be granted when the subdivision or property is for the purpose of creating a lot or parcel of land to be owned or leased and maintained by a public utility to provide electric, water, sanitation, gas, telephone or cable television service to the general public; provided, however, that no private sanitary disposal system (septic tank and field) shall be installed on an substandard lot (less than one acre in area). The Fiscal Court may waive lot size when alternate methods of sanitary sewage are proposed.

SECTION 1.4 SCHEDULE OF IMPROVEMENTS

The subdivider of any tract or parcel of land located within Calloway County shall not proceed with the construction of any improvements until he has obtained: (1) approval or conditional approval of the preliminary plat; (2) approval or approval subject to conditions of the improvement drawings and specifications; or (3) final plat approval. Preliminary grading of the site may proceed following approval or conditional approval of the preliminary plat, providing that plans for erosion and sedimentation are submitted to the engineer, for approval or approval subject to conditions.

SECTION 1.5 GENERAL RESPONSIBILITIES

A. **SUBDIVIDER:** The subdivider shall use a land surveyor and engineer, as defined herein, to prepare plats and plans consistent with the design standards; accomplish improvements consistent with the improvement requirements; and submit said plats and plans in accordance with these regulations.

B. **CALLOWAY COUNTY FISCAL COURT:** The Fiscal Court is charged with the duty of making investigations and reports on the design and improvements of proposed subdivisions, and requiring conformance of such subdivisions with the Kentucky Revised Statutes, Chapter 100, and these regulations.

C. **DELEGATION OF AUTHORITY BY FISCAL COURT:** Pursuant to KRS 100, the Fiscal Court has delegated certain authority to the Calloway County Judge/Executive or its engineer. These delegations of authority are as provided in these regulations. However, the Calloway County Fiscal Court shall have final approval authority over all actions of the Calloway County Judge/Executive or its engineer.

SECTION 1.6. DEPARTMENT OF HIGHWAYS MAY REVIEW PLATS

The State Department of Highways may file with the County Judge/Executive a map of the territory within one (1) mile on either or both sides of any existing or proposed highway.

After receipt of the map by the County Judge/Executive, no preliminary plats shall be approved until one (1) copy of such preliminary plat has been referred to the designated office of the Department of Highways for its review. If the Department of Highways desires to make any recommendations on the plan, it shall communicate such to the County Judge/Executive or the Fiscal Court within fifteen (15) days after the receipt of the plat.

SECTION 1.7 MINIMUM REQUIREMENTS, ENFORCEMENT AND PENALTIES

A. All subdivision of land shall receive Fiscal Court approval. As permitted by statute, the Fiscal Court delegates to the County Judge/Executive the power to approve plats in accordance with the Fiscal Court's adopted regulations and ordinances, but all plats, preliminary and final, shall be approved or disapproved within ninety (90) days. The County Judge/Executive, with the approval of the Fiscal Court, may appoint a person to perform the duties delegated to the County Judge/Executive in this Ordinance.

B. No person or his agent shall subdivide any land, before securing the approval of a plat designating the areas to be subdivided, and no plat of a subdivision of land within the territory governed by this Ordinance shall be recorded by the county clerk until the plat has been approved and the approval entered thereon in writing by the County Judge/Executive, or other duly authorized officer of the Fiscal Court.

C. Pursuant to KRS 100.277, no person owning land composing a subdivision, or his agent, shall transfer or 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 and has been recorded. Any such instrument of transfer or sale shall be void and shall not be subject to be recorded unless the subdivision plat subsequently receives final approval, but all rights of such purchaser to damages are hereby preserved. The description of such lot or parcel by metes and bounds in any 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 rights or remedies he may otherwise have. Provided, however, any person, or his agent, may agree to sell any lot or parcel of land located within a subdivision by reference to an unapproved or unrecorded plat or by reference to a metes and bounds description of such lot and any such executory contract of sale or option to purchase may be recorded and shall be valid and enforceable so long as the subdivision of land contemplated therein is lawful and the subdivision plat subsequently receives final approval.

D. Any street, road or other public ground which has been dedicated shall be accepted for maintenance by the Fiscal Court after it has received final plat approval by the Fiscal Court. Any road that has been built in accordance with specific standards set forth in subdivision regulations or by ordinance shall be, by operation of law, automatically accepted for maintenance by the Fiscal Court forty-five (45) days after inspection and final approval of the final plat.

E. Any instrument of transfer, sale or contract that would otherwise have been void under this section and under any of its subsections previously, is deemed not to have been void, but merely not subject to be recorded unless the subdivision plat subsequently receives final approval of the Fiscal Court.

F. Unless otherwise provided herein and except for lots currently of record, no lot, tract, or parcel in a subdivision in which the property is located, may be sold or transferred unless a Final Plat has been approved as provided by these regulations, and recorded with the Calloway County Clerk.

G. The following fines and penalties are adopted for violations of these Regulations and as provided in KRS 100.991, to wit:

1. Any subdivider, public official or other person who does not comply with these Regulations, KRS Chapter 100, as applicable, or the conditions set forth by the Fiscal Court, or any court, or does not comply with the plans presented and approved, shall upon conviction, be fined not less than ten dollars (\$10) but not more than five hundred dollars (\$500) for each conviction. Each day of violation shall constitute a separate offense.
2. Any person, owner or agent who violates this chapter 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.
3. Any person who intentionally violates any provision of KRS 100.3681 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).
4. The Fiscal Court may appoint enforcement officers who shall have authority to issue citations for violations of these Regulations and KRS Chapter 100 which the officer has observed, but shall not have powers of peace officers to make arrests or carry deadly weapons. The defendant shall appear within a designated time pursuant to the citation.
5. The procedure for citations issued by an enforcement officer shall be as provided in KRS 431.015.

H. In addition and supplemental to any other penalties or remedies of the Fiscal Court provided in these regulations, the Fiscal Court may elect any or all of the following penalties:

1. In addition to any other remedies provided herein, the Calloway Fiscal Court may

take any such lawful action to prevent or remedy any violation or non-compliance including but not limited to an equitable action for injunctive relief or an action at law for damages. In such action, attorneys fees and costs of the Calloway Fiscal Court shall be assessed against the Defendant(s).

2. The Fiscal Court may direct that no new building permit or certificate of occupancy or public approval by any public agency shall be issued or granted until the person acts in conformity or compliance with these Regulations, the conditions imposed by the Fiscal Court, and/or the plans proposed and approved as determined by the Fiscal Court.

SECTION 1.8 RECORDING FINAL PLATS

After the approval of a final subdivision plat as provided herein, the final plat shall be recorded at the expense of the subdivider in the office of the Calloway County Clerk. The plat shall be in the form of a rectangle and the clerk shall not be required to record a plat exceeding twenty-four (24) inches on one side and thirty-six (36) inches on the other. The County Clerk shall provide a plat cabinet with an appropriate index for those plats which are too large to be placed in a plat book.

SECTION 1.9 TERRITORY EMBRACED

All territory within the legal boundaries of Calloway County, Kentucky, shall be embraced by the provisions of this Ordinance except for that territory that is regulated by the City of Murray, Kentucky, or permitted to be regulated by the City of Murray, Kentucky, as may be provided by any other Ordinance.

SECTION 1.10 APPENDICES

The tables and requirements contained in the Appendices to these Regulations are a part of these Regulations and are incorporated herein by reference. The Appendices shall be used as guides and regulations regarding their relevant subject matter for the Fiscal Court and all other parties affected by these Regulations.

SECTION 1.11 FEES

The following fees shall be paid upon filing the subject plat:

Minor Plat	\$	10.00
Preliminary Plat		100.00
Final Plat		100.00

**ARTICLE II
WORDS AND PHRASES**

SECTION 2.1 INTERPRETATION AND CONSTRUCTION

For the purpose of these regulations, certain terms, phrases, words, and their derivatives, are herewith defined as follows:

Words used in the future tense include the present;
Words used in the present tense include the future;
Words used in the singular form include the plural;
Words used in the plural form include the singular;
Words used in the masculine include the feminine;
Words used in the feminine include the masculine;
The word "shall" is mandatory;
The words "may" and "should" are permissive;
The words "street" and "road" shall be interchangeable and have the same meaning herein.

SECTION 2.2 DEFINITIONS

ACCESS POINT: An access point is:
(1) A driveway, a local street, a collector street, or subcollector street, intersecting an arterial street;
(2) A driveway or a local street intersecting a collector street or subcollector street; or
(3) A driveway or a local street intersecting a local street.

AGRICULTURE: The use of a tract of at least five (5) contiguous acres for the production of agriculture or horticulture crops, including but not limited to livestock products, poultry, poultry products, grain, hay, pastures, soybeans, tobacco, timber, orchard fruits, vegetables, flowers or ornamental plants, including provision for dwellings for person and their families who are engaged in the above agricultural use on the tract, but not including residential building development for sale or lease to the public.

ALLEY: Public right-of-way which normally affords a secondary means of access to abutting property.

BLOCK: A parcel of land within a subdivision that is bounded by streets or bounded by streets and the exterior boundary of the subdivision. For this definition, an alley is not considered a street, but part of the block.

BLOCK LENGTH: The distance between intersections of through streets, such distance being

measured parallel to the longest street bounding the block and from right-of-way line to right-of-way line of the two intersecting streets.

CERTIFICATE : Refers to the required certificates for final plat and conveyance plat.

CERTIFICATE OF OCCUPANCY:
A certificate which must be obtained prior to occupancy of any premises.

FISCAL COURT:
The Calloway County Fiscal Court, State of Kentucky.

CONVEYANCE PLAT (formerly Deed Plat or Convenience Plat):
A type of plat used in minor division of land, which is approved by the Calloway County Planning Commission and recorded in the county clerk's office. A conveyance plat is used to transfer a minor division of land in an expeditious manner without subjecting an applicant to the formal subdivision review process or a major division of land procedure.

DEVELOPER: Synonymous with the term "subdivider".

DETENTION BASIN:
A dry stormwater detention area that is used to detain stormwater runoff a specified length of time to keep the flow of water from the subject area to that of pre-development flow.

EASEMENT: A right, distinct from the ownership of the land, to cross property with facilities such as, but not limited to, sewer lines, water lines, and transmission lines, or the right, distinct from the ownership of the land, to reserve and hold an area for drainage or access purposes.

ENGINEER: A qualified registered professional engineer in good standing with the Kentucky Board of Registration for Professional Engineers and Land Surveyors.

FINAL PLAT: A subdivision plat proposed in accordance with the provisions herein in which said plat is designated to be placed on record with the county clerk after approval by the planning commission.

FLOOD: A general and temporary condition of partial or complete inundation of normally dry land areas from: (a) the overflow of inland waters; (b) the unusual and rapid accumulation of runoff of surface waters from any source; and (c) mudslides (i.e., mudflows) which are proximately caused or precipitated by accumulations of water on or under the ground.

FLOOD - 100 YEAR FREQUENCY:

The highest level of flooding that, on the average, is likely to occur 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 areas 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.

FLOODWAY ENCROACHMENT LINES:

The lines marking the limits of floodways on the official zoning map.

FRONTAGE LOT:

All the property abutting on one side of the right-of-way of a street, measured along the right-of-way line of the street between the intersecting lot lines. In no case shall the line along an alley be considered as acceptable for frontage.

FRONT YARD DEPTH:

The minimum distance required to be maintained within the lot between a line parallel to the front lot line, as defined herein, and the front lot line.

IMPROVEMENT PLANS:

The engineering plans showing design layout, types of materials and construction details for the physical structures and facilities to be installed in, or in conjunction with, the subdivision.

INSPECTOR:

The Fiscal Court's engineer, whose responsibility it is to inspect, or cause to be inspected, items required by these regulations.

CALLOWAY COUNTY:

Refers to both the incorporated and unincorporated areas of Calloway County, State of Kentucky.

LOT:

A parcel of land or any combination of several lots of record, occupied or intended to be occupied by a principal building or a building group as permitted under the applicable legislative body or fiscal court's zoning ordinance, together with their accessory buildings or uses and such access, yards, and other open spaces required under those zoning ordinances.

- LOT OF RECORD:** Except as otherwise defined by state statutes, a lot, parcel or tract of land designated on a plat, survey or deed, recorded by the office of the county clerk.
- LOT AREA:** The total area of a horizontal plane bounded by the front, side, and rear lot lines, but not including any area occupied by street, alley, or railroad rights-of-way, as opposed to an easement.
- LOT, CORNER:** A corner lot is a lot situated at the intersection of two streets and has frontage on both streets.
- LOT, DEPTH OF:** The distance measured in the mean direction of the side lot lines from the midpoint of the front lot lines to the midpoint of the rear lot lines.
- LOT, DOUBLE FRONTAGE:**
A lot other than a corner lot that has frontage on more than one street.
- LOT, FLAG:** A lot which abuts a public street via a narrow strip of land, at least 20 feet in width, except as herein provided.
- LOT, INTERIOR:** A lot other than a corner lot with only one frontage on a deeded and occupied public right-of-way.
- LOT LINE, FRONT:** The common boundary line of a lot and a street right-of-way line. In the case of a corner lot or a 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.
- LOT LINE, REAR:**
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 (10) feet in length within the lot parallel to and at the maximum distance from the front lot line. In the case of a corner lot, providing that all requirements for yard space are complied with, the owner may choose either side not abutting a street as the rear lot line, even though it is not opposite the front lot line. Once the choice has been made, it cannot be changed unless all requirements for yard space can be complied with.
- LOT LINE, SIDE:** Any boundary line of a lot, other than a front lot line or rear lot line.
- LOT WIDTH:** The width of the lot as measured along the building front setback line.

OFFICIAL MAP: The adopted official map of the applicable legislative body or fiscal court, as provided for in the Kentucky Revised Statutes, Chapter 100.

FISCAL COURT'S ENGINEER:

The ENGINEER employed by the Fiscal Court shall be the engineer for the Calloway County Fiscal Court and shall be authorized to check, review, approve, and inspect, or cause to be inspected, where provided in these regulations, all submissions and construction activities regarding their conformance to these regulations.

MOBILE HOME PARK:

Mobile Home Park means a parcel of land, under the control of any person, available to the public in which two or more mobile home lots are occupied or intended for occupancy by mobile homes and includes any service building, structure, inclosure or other facility used as part of the park or as otherwise provided in KRS Chapter 219.

PRELIMINARY PLAT:

A tentative plat of a proposed subdivision prepared in accordance with the provisions herein for presentation to the Fiscal Court for its action.

RESUBDIVISION:

Any change in a map of an approved or recorded subdivision plat that affects any street layout on the map or area reserved therein for public use or any lot line, or that affects any map or plan legally recorded prior to the adoption of any regulations controlling subdivisions.

RETENTION BASIN:

A pond or lake that is used to retain stormwater runoff until reaching a level of an overflow device that is designed at a specified elevation.

RIGHT-OF-WAY:

A general term denoting land, property, or interest therein, usually in a strip and dedicated for or devoted to such uses as a street, alley, or railroad.

**STREETS or
ROADS:**

Any vehicular ways except alleys.

A. All streets will be within dedicated rights-of-way which have been properly processed, approved, and recorded.

B. The following shall be used to classify all streets:

1. STREET, PRIVATE: A paved roadway which affords access to

abutting property for private users of such property. For the purposes of density calculations, a private street shall constitute the areas of its paved surface and sidewalks or the private right-of-way if designated on the recorded plat.

2. STREET, PUBLIC: A public roadway, constructed within the boundaries of an officially dedicated public right-of-way, which affords principal means of access to abutting property. For purposes of density calculations, a public street shall constitute all of the area within the public right-of-way.

3. STREET, ARTERIAL: Public thoroughfares which serve the major movements of traffic within and through the community.

4. STREET, COLLECTOR: Public thoroughfares which serve to collect and distribute traffic primarily from subcollector to arterial streets.

5. STREET, CUL-DE-SAC OR COURT: A street having an outlet at one end only and having the other end permanently closed with facilities permitting vehicles to turn around.

6. STREET, DEAD-END: A street having an outlet at one end only and terminated at the other end by undeveloped property. It may or may not have facilities permitting vehicles to turn around.

7. STREET, EXPRESSWAY: A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at major intersections.

8. STREET, FREEWAY: A divided multi-lane highway for through traffic with all crossroads separated in grades and with full control of access.

9. STREET, FRONTAGE ROAD (SERVICE OR ACCESS ROAD): A street adjacent to a freeway, expressway, or arterial street separated therefrom by a dividing strip and providing access to abutting properties.

10. STREET, LOCAL: Roadways which are designed to be used primarily for direct access to abutting properties.

11. STREET, SUBCOLLECTOR: A street designed to provide a

traffic route from local to collector streets.

SUBDIVIDER: Any individual, firm, association, syndicate, co-partnership, corporation, trust, governmental agency, or any other legal entity commencing proceedings under these regulations, to create a subdivision of land as defined herein for himself or for another.

SUBDIVISION: "Subdivision", as required by KRS 100.111, means the following:

(1) The division of a parcel of land into two (2) or more lots or parcels; for the purpose, whether immediate or future, of sale, lease, or building development, or

(2) If a new street or road is involved, any division of a parcel of land;

or

(3) Any division or redivision of land into parcels of less than one (1) acre occurring within twelve (12) months following a division of the same land shall be deemed a subdivision within the meaning of this section.

(4) The term "subdivision" shall include resubdivision and when appropriate to the context, shall relate to the process of subdivision or to the land subdivided.

(5) Provided, however, that a division of land for agricultural use and not involving a new street or road shall not be deemed a subdivision.

SURVEYOR: A qualified registered land surveyor in good standing with the Kentucky Board of Registration.

TRACT: A parcel of land identified by letter or number, the boundaries of which are shown on the recorded subdivision plat(see lot).

WATERCOURSE: A permanent channel designed to carry concentrated stormwater flows without erosion; applicable to open channels, roadside ditches and natural channels that are modified to accommodate increased flows generated by land development.

ARTICLE III
SUBDIVISION PROCEDURE

Any person desiring to subdivide any lot, tract, or parcel of land, or to change or rearrange any such lot, tract, or parcel of land of property governed by these regulations within Calloway County, shall comply with the procedures established in these Regulations.

SECTION 3.0 PRELIMINARY INFORMATION

The subdivider is encouraged to notify the County Judge/Executive of his intention to subdivide a property prior to submission of the preliminary plat. Such notification should include mention or illustration of any aspect or feature which will affect the design or layout of the subdivision. For clarity, the subdivider may utilize a map to illustrate various features or aspects of the property.

SECTION 3.1 MAJOR AND MINOR SUBDIVISIONS

- A. Definitions of Major and Minor Subdivisions.
 - 1. Minor Subdivision means a subdivision of five lots or less with no new road construction and with no major construction of utility lines. A new road construction shall include the improvement or widening of existing roads.
 - 2. Major Subdivision means all other subdivisions as defined in these Regulations.
- B. A preliminary plat and final plat shall be required for all major subdivisions.

SECTION 3.2 MINOR SUBDIVISION PROCEDURE

- A. The preliminary and final plat procedure shall not be required for a Minor Subdivision.
- B. The requirements of a plat for a Minor Subdivision shall meet the minimum requirements necessary and such other applicable requirements of Article IV of these Regulations for the subject matter of the plat. The minimum plat requirements for a minor plat shall include, but are not limited to, the following:
 - 1. The plat requirements in Subpart A of Section 4.1 of Article IV.
 - 2. The proposed uses for all land in the subdivision.

3. If the proposed use is not for only agricultural use or if the proposed use may require additional utility or sewerage systems, then the plat shall include the requirements of Subpart A of Section 4.3 of Article IV.
4. The plat shall be drawn consistent with the specifications in Section 5.0 of Article V.

C. The lots created in the Minor Subdivision must be served by existing public infrastructure, except as provided in Subpart B of this Section.

D. A minor subdivision shall be submitted for approval by filing a copy of said plat with the County Judge/Executive.

E. If the plat for a Minor Subdivision meets the requirements of these Regulations, then it may be signed and approved by the County Judge/Executive and be recorded by the owner with the Calloway County Clerk. The Fiscal Court may overrule the decision of the County Judge/Executive within 30 days of the signature thereof.

SECTION 3.3 SUBMISSION OF PRELIMINARY PLAT

A. A preliminary plat for a major subdivision shall be submitted for approval by filing of a copy of said plat in accordance with Article IV with the County Judge/Executive.

B. The subdivider shall file copies of the Preliminary Plat with the County Judge/Executive, prepared in accordance with the requirements of Article IV, at least twenty-one (21) consecutive days prior to the next regular meeting of the Fiscal Court. When a plan or plat requires Fiscal Court approval five (5) copies (one for each member) must be submitted along with other required copies. Such submission shall be considered the date of official filing. At the time of submission, the County Judge/Executive's representative shall indicate on the application, the date of submission and signature of said representative. At that time, the material required by Section 4.2 of Article IV shall also be filed with the County Judge/Executive.

C. The preliminary plat shall meet the design standards as set forth in these Regulations.

ARTICLE IV PRELIMINARY PLAT REQUIREMENTS

SECTION 4.0 SPECIFICATIONS FOR THE PRELIMINARY PLAT

The subdivider shall file with the Fiscal Court copies of the preliminary plat for review. Such plat shall be drawn at a scale of one (1) inch to two hundred (200) feet or greater (e.g., one

(1) inch to one hundred (100) feet.

SECTION 4.1 CONTENT OF PRELIMINARY PLAT

A. The following information shall be clearly shown on or accompany the preliminary plat:

1. Proposed name of subdivision, which shall not duplicate or too closely approximate, phonetically, or in spelling, the name of any other subdivision in the county;
2. Name, address, and phone number of record owner(s);
3. Name, address, and phone number of subdivider(s);
4. Name, address, and phone number of person, firm, or organization preparing the preliminary plat, with the seal and signature of the registered professional engineer or land surveyor responsible for its preparation, where applicable;
5. North point, written and graphic scale, and date;
6. Vicinity sketch map: a vicinity sketch map drawn at a scale of one (1) inch to two thousand (2,000) feet or greater (e.g., one (1) inch to one thousand (1,000) feet), including the following information, if applicable, within at least one-half ($\frac{1}{2}$) mile of the proposed subdivision: proposed subdivision name and location; existing and proposed streets; other significant features (e.g., streams, lakes, etc.);
7. Original parent tract deed book and page, group and remaining acreage;
8. The perimeter boundary lines of the tract to be subdivided and submitted as a preliminary plat shall be drawn to scale showing all bearings and distances;
9. The existing use or uses of the property and, to scale, the outline of any existing buildings or improvements to be retained and their location in relation to existing or proposed street and lot line locations (addresses if available);
10. The right-of-way lines and names of all existing or platted streets, other public ways and easements adjacent to or in connection with the subdivision including right-of-way widths and other important features at

least within one hundred (100) feet of the boundary lines, such as railroad lines, watercourses, etc.;

11. Names of adjacent subdivisions and the property lines, at least within one hundred (100) feet of the subdivision boundary, and owners of record of all adjacent parcels that are un-subdivided (for adjacent platted land, refer to subdivision plat by name, plat book, and page);
12. Location and dimensions of all existing easements and rights-of-way within the subdivision;
13. Existing utilities on and adjacent to the subdivision: location and size of water mains, sanitary, storm and/or combined sewers;
14. Existing contours at five (5) foot intervals within the subdivision;
15. Subsurface conditions on the subdivision; any known conditions that are not typical, or which may cause problems, such as: soils and geological formations, old mine shafts, wells, known mineral deposits, etc.

B. With regard to the proposed uses of the property, the following information shall also be clearly shown on or accompany the preliminary plat:

1. Streets and alleys: layout, names, right-of-way and pavement widths, approximate corner radii at the right-of-way line and the approximate proposed grades of all streets;
2. Other rights-of-way or easements: location, width, and purpose;
3. Lots: lots and blocks numbered;
4. Water and Sewer Systems: plan view layout of water lines, storm and sanitary sewer lines, including sizes, to serve the subdivision;
5. Statement of the lot area of the smallest lot in the subdivision (reference shall be made to the lot and block number);
6. Parcels of land intended to be dedicated or temporarily reserved for public use, or to be reserved by deed restriction or protective covenant for use by all property owners in the subdivision or parcels of land or lots to be used for any purpose other than private, shall be so designated;
7. Proposed uses for all land in the subdivision;

8. Approximate boundaries of areas subject to flood of 100-year frequency (including 100-year floodway) and the location, width, and direction of flow of all watercourses, lakes, marshy areas, and swamps;
9. Total site data: including acreage, number of lots, and, if applicable, approximate number of square feet or acres in parks and other public uses.

SECTION 4.2 ADDITIONAL INFORMATION TO BE SUBMITTED AT TIME OF FILING OF PRELIMINARY PLAT

- A. One (1) copy of an application for Preliminary Plat approval;
- B. Where individual on-site disposal systems have been approved, as per these regulations, the following note shall be included on the plat: "Plat approval for building development on lot(s) is contingent upon issuance of a final sewage construction permit and inspections by the District Health Department based upon a site evaluation and approved system";
- C. In the event the subdivider elects to proceed with preliminary grading following preliminary plat approval or conditional approval, but prior to submission and processing of the improvement drawings and specifications, one (1) copy of plans for control of erosion and sedimentation must also be submitted for review and approval.

SECTION 4.3 PROCEDURE FOR PRELIMINARY PLAT APPROVAL

- A. Prior to consideration by the County Judge/Executive, the following conditions must be met and filed with the Preliminary Plat, to wit:
 1. The Preliminary Plat shall receive the written approval of the Calloway County Health Department.
 2. If a connection to a public water line is proposed, the Preliminary Plat shall receive the written approval of the administrative officer of the agency or utility company supplying water services. A certificate of the availability of water shall appear on the Preliminary Plat. If a public water line is not proposed, then the Preliminary Plat shall show the water or well service to be provided and a certification of the availability of the water service proposed shall appear on the plat. If it is a private or new water system, then evidence of compliance with the applicable state regulations shall be filed with the Preliminary Plat.
 3. If a connection to a public sewerage system is proposed, the Preliminary

Plat shall receive the written approval of the administrative officer of the agency or utility company supplying sewerage services. A certificate of the availability of such services shall appear on the Preliminary Plat. If a public sewerage system is not proposed, then written approval of a septic or other system by the Calloway County Health Department for each lot shall be filed with the Preliminary Plat.

B. A hearing before the Fiscal Court shall be held on the preliminary plat. Within ninety (90) days after the hearing, the Fiscal Court shall approve, disapprove or approve subject to modifications, said plat. Failure of the Fiscal Court to act within ninety (90) days shall be deemed approval of the preliminary plat.

C. Notwithstanding any other provision herein, the Fiscal Court shall take no action on property or receive a request on property that is in litigation for any reason until such time the litigation is settled or resolved by final judgment. All deadlines provided in these Regulations shall be held in abeyance pending resolution of said litigation.

SECTION 4.4 CONSEQUENCE OF APPROVAL OF PRELIMINARY PLAT

A. Approval of the Preliminary Plat shall not constitute acceptance of the Final Plat.

B. Approval of the Preliminary Plat shall lapse unless the Final Plat is filed within one year of the date of filing of the Preliminary Plat unless an extension of time has been applied for in writing and been granted by the County Judge/Executive.

ARTICLE V FINAL PLAT REQUIREMENTS INCLUDING IMPROVEMENT DRAWINGS AND SPECIFICATIONS

SECTION 5.0 SPECIFICATIONS FOR THE FINAL PLAT

A. The subdivider shall file with the Fiscal Court, two (2) copies of the final plat for review. Following review, the subdivider shall submit two (2) sets of original reproducible mylars to the Fiscal Court's engineer for record purposes. The Final Plat shall be drawn at a scale of one (1) inch to fifty (50) feet or greater (e.g., one (1) inch to thirty (30) feet). However, if the final plat will contain lots of one hundred (100) feet or greater, fronting along a street, then a scale of one (1) inch to one hundred (100) feet or greater may be used.

B. Where necessary, the Final Plat may be on several sheets accompanied by an index showing the entire subdivision. The particular number of the sheet, the total number of sheets, and the relation of each adjoining sheet shall be clearly shown by a small key map on

each sheet. Each sheet of said plat shall show the north point, written and graphic scale and the date. The Final Plat shall contain a vicinity map showing the location of the subdivision with relation to at least one (1) east/west and one (1) north/ south major arterial. The Final Plat shall further show the following, including all mathematical information and data necessary to locate and retrace any of the required data thereon.

SECTION 5.1 INFORMATION TO BE CONTAINED ON FINAL PLAT

A. The boundary lines of the final plat shall be drawn in heavy solid lines with accurate lengths and bearings. These boundaries shall be determined by an accurate field survey, which shall be balanced and closed. All lines shown on the Plat which do not constitute a part of the subdivision shall be dashed. Any area enclosed by the subdivision, but not a part thereof, shall be labeled "Not A Part Of This Subdivision".

B. The exact location and the widths of all existing or recorded streets, intersecting or paralleling the boundaries of the subdivision at least within one hundred (100) feet.

C. The exact location and width of all abutting lot lines. Names of recorded owners of adjoining unplatted land and reference to subdivision plats of adjoining platted land by name, plat book, and page.

D. The boundary line of the proposed final plat shall be tied by bearings and distances to a selected point or points (described on the plat) on the nearest established centerline or right-of-way line of any street or highway or a previously established monument(s) in which case the location of said monument shall be identified and accurately described on the plat. In addition, the final plat shall be tied by bearings and distances to a point in the original parent tract.

E. Municipal and county boundaries lines, if applicable, shall be shown on the final plat.

F. The exact layout of the subdivision showing:

1. Street and alley centerlines and right-of-way lines shall be graphically shown; street names and bearings and distances along centerlines;
2. Sufficient linear, angular, and curve data (at least Delta, Tangent, Radius, and Length of Curve) to readily determine the bearing and length of the boundary lines of every block, lot and tract which is a part of the subdivision.
3. All easements or other rights-of-way (the limitation of the easement rights shall be stated or referenced on the plat).

4. All lot lines with dimensions and bearings.

G. Identification of any waivers of the subdivision regulations granted by the Fiscal Court, such as: sidewalks on one side of the street; width of street pavement; any need for additional off-street parking spaces; etc.

H. All blocks and lots numbered or lettered in a consecutive manner with no omissions or duplications. Ditto marks shall not be used for lot dimensions. Tracts offered for dedication, other than for streets or easements shall be designated by letter or number (further, the accurate outline of all such tracts shall be shown with the proposed use indicated thereon).

I. All permanent monuments set or to be set shall be shown on the Final Plat.

1. The location of all monuments placed in making the survey and if any points were reset, that fact shall be stated and attached to final plat for recording.

2. Monuments shall be set at intersections of street center-lines and curve points or offsets therefrom. The exact location of all such documents shall be shown on the final plat before approval is requested.

J. The accurate outline of all property (if applicable) which is to be reserved by deed restriction or protective covenant for the common use of the property owners in the subdivision.

K. Flood Hazard Information: Elevation and flood profiles shall be shown on the final plat if required by these regulations or flood insurance ordinances.

L. All easements shall be shown by a fine dashed line and clearly labeled and identified on the plat. If an easement shown on the plat is already of record, its recorded reference must be given.

M. Name of the subdivision and name or number of the larger subdivision or tract of which the tract now being subdivided is a part.

N. North point (approximating true north), written and graphic scale, and date.

O. Total site data: including acreage, and, if applicable, number of square feet or acres in parks and other public uses.

P. Certification, acknowledgments and descriptions: The following certificates, acknowledgments, and descriptions shall appear on the title sheet of the final plat:

1. Dedication certificates: a notarized certificate shall be signed and

acknowledged offering for dedication all parcels of land shown on the final plat which are intended for public dedication.

2. Surveyor's certificate: a certificate shall be signed in original ink and dated by a Registered Land Surveyor, in Kentucky, stating that he is responsible for the survey and that the Final Plat accurately depicts the subdivision and the survey. The original signature of such surveyor must be accompanied by his seal and registration number and date.
3. Reference of property from which the plat is taken: each reference in such description to any tract, development, or subdivision, shall show a complete reference to records of the county.
4. Other affidavits, etc.: the title sheet shall contain such other affidavits, certificates, acknowledgments, endorsements, and notaries seals as are required by law and by these regulations. If such documents are recorded elsewhere, then reference to such documents should be included on the final plat.
5. Certificate of approval by the and witnessed by the County Planner and/or the person designated by the Calloway County Flood Control Ordinance.
6. Certificate of acceptance for recording by the county clerk.
7. Where individual on-site disposal systems have been approved the following note shall be included on the plat: "Plat approval for building development on lot(s) is contingent upon issuance of a final sewage construction permit and inspections by the District Health Department based upon a site evaluation and approved system."

SECTION 5.2 ADDITIONAL INFORMATION TO BE SUBMITTED AT TIME OF FILING FINAL PLAT

- A. One (1) copy of an application for final plat approval.
- B. Traverse calculations or order closure certification referenced on the plat, resulting from an accurate and complete boundary survey of the perimeter of the final plat. Traverse calculations when computed from field measurements, on the ground, shall close with an error of closure not to exceed one (1) foot to five thousand (5,000) feet.
- C. Improvement drawings and specifications: (Improvement drawings and specifications will be required if not submitted previously for processing): Drawings, showing

typical cross sections, profiles, construction details, and specifications for all required improvements shall be prepared by a registered engineer and any other pertinent sections of these regulations.

- D. One (1) copy of the Sanitary Sewerage & Storm System Plans.
- E. One (1) copy of the Water System Plans.
- F. One (1) copy of the Street Plans and Profiles, including typical cross sections.
- G. One (1) copy of Drainage Report, including computations.
- H. One (1) copy of plans for control of erosion and sedimentation.
- I. Record Copies of Improvement Drawings: Where the improvement drawings and plans were previously submitted and approved prior to the sub-mission of the final plat, the subdivider shall be required to submit one (1) copy each of record copies of improvement drawings for: streets, sanitary sewerage and storm system, and water system.
- J. One (1) copy of all deed restrictions or protective covenants (may be either placed directly on the final plat, or if separately recorded, reference is made on the final plat).
- K. Final plat and construction review fees: Final plat and construction review fees shall be submitted in accordance with these regulations.
- L. One (1) copy of affidavit (if applicable) of the subdivider's engineer stating that the streets and roads in the subdivision have been built in compliance with these regulations and county ordinances for acceptance into the county road system.
- M. One (1) copy of affidavit (if applicable) of County Road Engineer or Supervisor stating that the streets and roads in the subdivision have been built in compliance with these regulations and county ordinances for acceptance into the county road system.
- N. Guarantee: a guarantee (if applicable) per Article VI.
- O. Certification by the Calloway County Attorney or such other attorney designated by the Fiscal Court that the final plat is ready for final plat approval by the Fiscal Court and is in compliance with these regulations.

**ARTICLE VI
AGREEMENTS AND GUARANTEES**

SECTION 6.1 COMPLETION OF IMPROVEMENTS PRIOR TO APPROVAL

No final subdivision plat shall be approved by the Fiscal Court or accepted for record by the County Clerk until the required improvements are constructed in a satisfactory manner and certified as such by the developer's engineer and approved by the appropriate County and City, if applicable, officials having jurisdiction. In lieu of such prior construction, the Fiscal Court may accept guarantees as provided in this regulation.

SECTION 6.2 GUARANTEES

The subdivider may execute and file guarantees with the Fiscal Court, (and if applicable, additional guarantees to the appropriate city legislative body), in lieu of actual installation or completion of the required improvements, except sidewalks, when requesting approval of the final plat.

A. Guarantees, except for sidewalks, shall be based on a cost estimate for the required improvements, for each phase of uncompleted construction as estimated by the subdivider's engineer. Such guarantees shall run to Calloway County Fiscal Court (and such additional guarantees as may be required by the appropriate city legislative body). Copies of such guarantees shall be submitted to the Fiscal Court and approved by the Fiscal Court. The cost estimate shall be based on the amount determined to be reasonably necessary to complete all of the improvements required to be constructed by the subdivider, as specified in the approved improvement drawings and specifications, including a sum in addition to fifteen (15%) percent above the cost estimate as a contingency for cost overruns plus engineering fees, attorney fees and the fees for plan review and construction review.

B. Except as herein provided, the guarantee shall be in the form of a good and sufficient surety bond, executed by the subdivider as principal, and a corporation authorized to act as a surety under the laws of the state of Kentucky, as surety. The guarantee shall be an assurance of faithful performance of any and all work and the construction and installation of all improvements required to be done by the subdivider, as specified in the approved improvement drawings and specifications, together with all other overrun and contingency sums as herein provided.

C. With regard to street, road or right of way construction, the guarantee shall contain the further condition that, should the subdivider fail to complete all work and improvements required to be done by him within twenty-four (24) calendar months of the date of approval of the final plat, or within a mutually agreed upon extension, but never to exceed twelve (12) consecutive calendar months, that the Fiscal Court shall cause all required work to be done and improvements constructed. The parties executing the guarantee shall be firmly and without contest bound for the payment of all necessary costs therefore. Whenever the subdivider elects to execute alternative forms of guarantee (i.e., cash, bonds, letter of credit, escrow agreement, etc.), written authorization from the County Judge/Executive concerning its adequacy, amount, etc., shall be filed with the Fiscal Court prior to approval of such guarantee and a final plat. All guarantees shall include a provision that in the event of any default on the part of the subdivider or the performance of any work or construction of any improvements for which such guarantees

have been deposited, the Fiscal Court may cause the required work to be done and the Fiscal Court shall be permitted to withdraw that amount required for payment of all costs therefore.

D. In addition to any other security or guarantees provided herein, the Fiscal Court shall be granted a first priority lien upon the real property to secure the improvements required by the Fiscal Court.

E. All written guarantees shall be approved in writing by the Calloway County Attorney or another attorney selected by the Fiscal Court prior to acceptance by the Fiscal Court.

F. In the case where sidewalk improvements have not been completed (i.e., construction of sidewalks as regulated herein are the responsibility of the builder and owner of the lot in question and are not required to be completed or guaranteed prior to final plat approval), a conditional certificate of occupancy may be given by contract with the applicable legislative body or Fiscal Court not to exceed six (6) months signed by both the builder and owner of the premises for which the improvements will serve.

G. No release shall be made of guarantees until the Fiscal Court has received written certification from the developer's engineer and from the appropriate County official that all improvements have been constructed in accordance with the previously approved plans.

H. Following final inspections of improvements, the County Engineer and the County Judge/Executive shall so certify in writing to the Fiscal Court to permit the release or return of the guarantee to the subdivider or surety within ten (10) days of such final inspection certification.

SECTION 6.2 FAILURE TO INSTALL IMPROVEMENTS

If it is determined by the Fiscal Court that improvements have not been installed as planned or that the improvements are not properly guaranteed, then the Fiscal Court may take action to secure installation of the improvements, including, but not limited to, civil actions for injunctive relief, damages, and/or foreclosure against the developer and such providers of the guarantees. The parties executing the guarantee shall be firmly bound for the payment of all necessary costs therefrom, including the attorney fees and costs of the Fiscal Court.

If such action is taken, no new building permit or certificate of occupancy or public approval by any public agency shall be issued or granted until all improvements are installed properly as determined by the Fiscal Court.

**ARTICLE VII
MINIMUM DESIGN STANDARDS**

SECTION 7.0 STREETS AND ROADS

A. All streets and roads shall be designed and built consistent with the requirements contained in the Appendices. In the event an issue not covered by these requirements occurs, then the Fiscal Court shall follow appropriate engineering requirements and the design standards of the Kentucky State Highway Department.

B. The arrangement of streets in new subdivisions shall make provision for the proper continuation of existing streets in adjoining areas, unless determined otherwise by the Fiscal Court.

C. Where adjoining areas are not subdivided and are appropriate for future subdivision, then arrangement of streets in the new subdivisions shall make provision for the proper protection of streets to those adjoining areas in a manner which shall provide for the practical development of the adjacent property.

D. Street Classification and Function:

1. Arterial Streets: Arterial streets should be planned so as to provide for the smooth flow of traffic between points of heavy traffic generation and from one section of the community or communities to another. Such arterial streets should not traverse the entire community. Arterial streets should not bisect neighborhoods but should act as boundaries between such neighborhoods. Direct access onto roadways from abutting properties shall be discouraged.
2. Collector Streets: Collector streets should be designed to provide a traffic route from subcollector streets to arterial streets. These streets should be designed to carry traffic which has an origin or destination within the neighborhood and between arterial streets. Said streets shall be designed in such a manner to discourage 'short cuts' through the neighborhood. Direct access to abutting property should be discouraged whenever possible.
3. Subcollector Streets: Subcollector streets shall be designed to provide a traffic route from local streets to collector streets. Said streets will serve equally both traffic movement and abutting properties.
4. Local streets, including Cul-de-sacs and Courts: Local streets shall provide direct and full access to each lot and direct traffic movement to another local street or to a subcollector street. Said streets shall be laid out so that their use by through traffic will be discouraged. Local street intersections with arterial streets

shall be discouraged, wherever practical.

5. Frontage roads: Frontage roads may be required along an existing or proposed arterial street to provide access to lots along such streets.
6. Alleys: Where alleys are to be provided (e.g., in case of certain commercial development), they shall be designed to provide only secondary access.

E. The name of a new road shall not duplicate existing or platted roads in the county or approximate such names in spelling or pronunciation, or by the use of alternate prefixes or suffixes. All road names must be approved by the County's 911 Coordinator.

F. All curves shall be minimum sight distance requirements in these Regulations and be constructed in a safe manner according to usual engineering standards and the State Highway Department's standards.

H. All streets shall be paved with concrete or asphalt and constructed in accordance with the specifications in the Appendix A or B as applicable. Pavement widths shall be measured from back of curb to back of curb, or if no curbs are required, then measurements shall include the entire paved surface. Minimum pavement widths for each type of street are shown in the Appendix to these Regulations.

I. The subdivider shall construct vertical curbs, at least six inches in height or roll curbs four inches in height, for all residential streets as identified in Appendix F. For streets to be constructed of asphalt, curb and gutter shall be constructed according to the typical section detail in Appendix C. All curbs and gutters shall be constructed of approved cement concrete and in accordance with the specifications in Appendix A and typical cross-sections in Appendix C.

J. Sidewalks shall not be required but are encouraged.

K. INTERSECTIONS

1. The centerline of all intersections shall intersect as nearly at a ninety degree angle as possible, but in no case shall the angle of intersection be less than seventy-five degrees or greater than one hundred five degrees, unless special variance is granted due to exceptional circumstances.
2. No streets, other than arterial streets, shall be permitted to intersect with freeways or expressways. The number of intersections with arterial streets within the subdivision shall be held to a minimum.
3. Except as otherwise required by these Regulations, intersections shall be

constructed consistent with State Highway Department standards.

SECTION 7.1 EASEMENTS

A. Public utility easements at least fifteen feet in length and/or width may be required along the front, rear and sides of lots where needed for the accommodation of a public utility, drainage, or sanitary structures, or any combination of the foregoing. The Fiscal Court may require an additional easement where deemed necessary.

B. The subdivider shall dedicate rights-of-way or provide easements for storm drainage purposes. Such easements shall be of a width which will provide for the maintenance needs of the water flow of the area.

SECTION 7.2 FLOOD PROTECTION

A. Land subject to flooding or otherwise uninhabitable shall not be platted for residential, commercial, or industrial uses or for any other use which may increase the danger of health, life, property or aggravate erosion or flood hazards. Such land within the subdivision shall be set aside on the plat for such uses as will not be endangered by periodic or occasional inundation.

B. All land outside the floodway of bodies of water but located within the floodplain, shall not be platted for residential occupancy or building sites. Other land subject to flooding may be platted which will not increase the danger to health, life, and property. All land subject to flooding shall only be considered as provided by the Ordinances of this County and the National Flood Insurance Program Regulations.

C. Approval shall not be given for streets within a subdivision which would be subject to flooding. All streets must be located at elevations above a flood of a 100-year frequency in order that no portion of the subdivision would become isolated by floods, except that where a secondary access is provided which would be above a 100-year flood frequency. However, streets may be permitted in areas subject to flooding of a 100-year frequency provided said streets provide access relating to rivers, lakes, streams, and recreational activities located along said areas.

SECTION 7.3 BLOCKS

A. The arrangement of blocks shall be such as to provide for convenient access, circulation, control and safety of street traffic. Blocks intended to be used for commercial or industrial purposes shall be designed specifically for such uses with space set aside for off-street parking and loading and/or unloading facilities.

B. Blocks shall be wide enough to accommodate a depth of two lots. Exceptions to

this prescribed block width shall be permitted in blocks adjacent to major arterial roads, railroads or waterways.

SECTION 7.4 LOTS

A. The lot arrangement shall be such that there will be no foreseeable difficulties in compliance with Health Department Regulations, and in providing driveway access to buildings on such lots from an approved street or publicly maintained road.

B. Lot dimensions shall comply with the minimum standards of the District and County Health Department regulations. A greater lot area than specified may be required for residential lots, if, in the opinion of the County Health Department, there are factors of drainage, soil conditions, or other conditions to cause potential health problems.

C. No major subdivision shall be approved unless the lot(s) to be subdivided shall have frontage on and access of at least fifty feet from a public maintained street. Lot frontage on curved streets and cul-de-sac may be reduced to a minimum of thirty-five feet. The requirement for fifty feet frontage can be waived if in the opinion of the Fiscal Court a hardship exist.

D. All subdivisions shall result in the creation of lots which are developable and capable of being built upon. No lots may be developed which create building sites which are impracticable to improve due to known problems related to soil conditions ro other topographical problems.

E. Strips, parcels, residuals or remnants of land surveyed for subdivision or record purpose which are less than minimum lot requirements and do not constitute a devil or spite strip may be sub-divided and shall be labeled "Not for conveyance or building development by itself but for attachment to adjacent land".

SECTION 7.5 OTHER INFRASTRUCTURE IMPROVEMENTS

A. All stormwater drainage systems shall be built in conformity with appropriate flood control, water drainage, usual engineering standards and at or above the minimum requirements of the State Highway Department and the County Road Department. All permits and approvals from the appropriate state agencies, including but not limited to the Natural Resources and Environmental Protection Cabinet, Division of Water Quality and Division of Floodplain Management Section, shall be obtained and filed with the Fiscal Court.

B. The County Road Supervisor shall approve all storm water and drainage systems.

C. The developer shall provide a water system in accordance with the appropriate local water district requirements and file approval of same from the appropriate water district. In those areas where a well is approved or permitted, the developer shall file the acceptance and

approval of these systems from the County Health Department.

D. All corners of the boundary survey shall be monumented. Every monument set shall be of a type or character having a degree of permanency consistent with that of the local terrain and physical features.

SECTION 7.6 FINAL CLEANING UP

Upon completion of the work, the subdivider and/or contractor shall clean up all ground occupied or affected by him in connection with the work.

SECTION 7.7 MOBILE HOME PARKS

A. Mobile Home Parks shall conform to the procedures for preliminary plats. The Final Plat for Mobile Home Parks shall not be considered without a State Operational Permit as per KRS 219.330.

B. No mobile home park shall be permitted on an area of less than five acres, however, the developer may develop the park in stages as long as he complies with an overall plan.

C. No mobile home shall be located closer than twenty feet to any building or mobile home within the park. No mobile home shall be located closer to any street than the minimum front yard set-back provisions of these regulations.

D. All mobile home spaces shall abut upon a street of not less than 30 feet in right of way width. All streets shall have a pavement width of not less than twenty feet and access to a public street. All streets within a mobile home park shall be paved surface and well lighted.

E. All mobile home parks shall comply for each mobile home with the sanitary sewage requirements of the District Health Department and file such approvals with its preliminary plat.

APPENDIX "A"

CEMENT CONCRETE FOR STREET, CURB AND GUTTER, SIDEWALK AND DRIVEWAY CONSTRUCTION.

The work covered by these specifications consists of furnishing all labor, equipment, and materials, and performing all operations in connection with the construction of air-entrained Portland Cement concrete pavement in accord with these specifications and the applicable Improvement Drawings.

The cement concrete pavement work shall consist of a single course of cement concrete, including reinforcement and longitudinal and transverse joints, where required, constructed on a prepared subgrade in general conformity with the lines, grades and cross-sections shown on the plans.

The data included herewith is based upon general soil conditions which exist in the area. These general soil conditions, representing approximately 75 percent of the soils in the area, are clayey overburden soils, described as lean to moderately plastic silty clays, classified according to the Unified Soil Classification System as CL soils. Any site which is made up of soils substantially different would be evaluated independently by a Qualified Recognized Geotechnical Engineers. This work should consist of drilling, testing, and an engineering evaluation of all field and laboratory data, in light of the proposed design. Examples of substantially different soil conditions are the very silty clays or clayey silts along the floodplain of the Licking and Ohio Rivers, the clayey sands, the silty fine sands, the fine to medium sands, and the fine to coarse sands and gravel of the floodplain of the Ohio River, such as the Belleview Bottoms in Boone County, the loess type deposits, clayey sands, silty sands, and sandy clays of the Fort Wright area and the "fat" waxy looking clays in Boone County.

ITEM 1.0 GRADING

This term shall consist of all grading above or below subgrade elevations of whatever nature required to bring the street to proper subgrade elevations, including necessary excavation for curb, gutter, sidewalk, construction of embankments, excavation and proper sloping of all cuts, and other work incidental thereto.

- 1.1 EXCAVATIONS: All excavations shall be made to approximate grade or subgrade elevations consistent with approved plans. Excavations shall not be steeper than a cut slope of 2.5 horizontal to 1 vertical.
- 1.2 EXCAVATION BELOW SUBGRADE: Whenever excavations below subgrade elevation to remove spongy or unstable material, organic matter, or other materials is required, the contractor shall remove same and shall replace with compactable soils as per Item 1.3. The excavation can be backfilled with soils

that were removed, provided they are clean clayey soils free of organic matter and other deleterious material, aerated and dried to near optimum moisture content or clean clayey borrow soils that have moisture contents near optimum moisture content.

- 1.3 CONSTRUCTION OF EMBANKMENT: All surface vegetation and heavy root system shall be removed to eliminate all vegetation from the area upon which the embankment is to be constructed. Soils so removed shall not be used in construction of embankment. These materials shall be stockpiled and respread across scarified areas after the scarified areas have been brought to within inches of finished grade.

Embankments shall be constructed of approved soils to approximate subgrade elevation in shallow level layers, 6 to 8 inches, within two (2) percent of optimum moisture content on the dry side of the curve or within three (3) percent of optimum moisture content on the wet side of the curve, compacted with an appropriate type of compaction equipment to a density not less than 95 percent of maximum density, as determined by the standard Proctor moisture-density test (ASTM D698-78 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-78 or AASHTO T-180). Embankments greater than ten (10) feet in height shall have soils below ten (10) feet compacted to 95 percent or 87 percent of maximum density, standard and modified Proctor, respectively. Except as otherwise approved by a Qualified/Recognized Geotechnical Engineer, all soils placed in areas directly impacting public improvements shall be constructed to slopes no steeper than 2.5 (horizontal) to 1 (vertical) and flatter where possible for ease of maintenance.

- 1.4 BACKFILL: Clayey soils or granular soils shall be used to backfill utility crossings beneath and within three (3) feet on either side of the pavement and compacted to the densities stated in Item 1.3. Under no conditions shall granular backfill be flushed with water to obtain compaction. Utilities which are parallel and within three (3) feet either side of the pavement shall be compacted.

Controlled Low Strength Material (CLSM) also referred to as flowable fill, flowable mortar or lean mix backfill may be used in place of compacted clayey soils or granular soils to uniformly backfill sewer conduit or utility trenches, catch basins, manholes or other excavations. Material mixture shall conform to the following requirements unless approved as equal.

- (1) Materials and proportions - a) Cement - Type I and II; 0-50 not to exceed 75 pounds per cubic yard (lb/cu.yd.); b) Fly Ash - ASTM C-618 Class "C" or "F"; 250 - 400 lb/cu.yd.; c) Concrete Sand; 2600 - 2900 lb/cu.yd.; and d) Water; 400-500 lb/cu.yd. Contractor shall be responsible for determining if proposed mixture is proprietary and indemnify the

planning commission or any legislative body from any claims.

- (2) Mixing - Backfill should be transported by mixing truck to ensure proper suspension when placed. Constant agitation is required.
- (3) Construction - Flowable fill is a fluid material. Caution should be used when backfilling pipe that is subject to flotation. Anchoring pipe may include placing backfill in 8 to 12-inch lifts until fluid head residues may be necessary. When used to backfill aluminum pipe, adequate separation such as a bituminous coating shall be required. Fill material shall extend from the top of compacted bedding or other backfill to bottom of pavement structure.
- (4) Settlement and hardening - To expedite settlement and hardening, bleed water shall appear on the surface within 5 to 10 minutes after placement. CLSM is not concrete and should not be rated on setting time. The material will achieve density as soon as water leaves the mixture. The time involved until the fill may be paved over varies with permeability of adjacent soils, temperature, humidity, and moisture in these soils. In most conditions, the in-place CLSM will be ready to pave over in 2 to 6 hours.
- (5) Excavatable Strength - Minimum of 20 pounds per square inch (psi) at 3 days and 30 psi at 28 days; Maximum of 100 psi at 28 days.
- (6) Flow Test - Fill 3-inch diameter x 6-inch high open ended cylinder to the top with material and level. Lift cylinder straight up. Material spread should be at least 8-inches in diameter.

- 1.5 SUBGRADE: The subgrade is defined as the top one (1) foot of the soil profile at finished grade prior to placing the pavement. This top one (1) foot of soil will consist of: (a) compacted fill placed for embankments as outlined in Item 1.3; (b) undisturbed soils in the transitional areas from cut to fill immediately below the topsoil; or (c) undisturbed soils at depths greater than 3 feet below the original ground surface in cut areas. The top one (1) foot of subgrade shall be compacted to 95 percent of maximum density as determined by the standard Proctor moisture-density test (ASTM D698-78 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-78 or AASHTO T-180) within three (3) percent of optimum moisture content on the dry side of the curve or four (4) percent of optimum moisture content on the wet side of the curve immediately prior to placing the pavement. This specification is similar to the compaction requirements in compacted fill areas since the embankment shall be compacted to 95 percent or 87 percent of maximum density as determined by the standard Proctor or modified Proctor moisture-density test, respectively. In transitional areas from cut to fill, the soils have been subject to seasonal changes of freezing and

thawing and wetting and drying. These soils will exist at moisture contents well above optimum moisture content and at densities on the order of 60 to 80 percent of maximum density (ASTM D698-78). These soils shall be scarified, aerated, and dried in order to obtain the specified percent compaction for subgrade. Soils in cut areas, three (3) feet below original grade, will exist at moisture contents above optimum moisture content and at densities on the order of 90 percent of maximum density (ASTM D698-78). These soils shall be scarified, aerated, and dried in order to obtain the specified percent compaction for subgrade.

Any soft or yielding areas, resulting from high moisture content that are encountered at the time of construction shall be scarified, aerated, and dried to reduce the moisture content nearer to optimum moisture content, then recompacted to the specified density.

The subgrade shall be shaped to plan elevation and cross-section. Immediately prior to placing the concrete, the subgrade shall be checked for conformity with the cross-section shown on the plans by means of an approved template on the side forms. If necessary, the materials shall be removed or added, as required, to bring all portions of the subgrade to correct elevations. The subgrade shall be thoroughly compacted and again checked with the template. Concrete shall not be placed on any part of the subgrade which has not been checked for correct elevation. The subgrade shall be clean of loose or wet material prior to placing concrete.

Prior to placing the concrete, the Contractor shall proofroll the compacted subgrade with a piece of heavy rubber tired equipment, such as a roadgrader, loaded backhoe or a loaded single axle dump truck. The Inspector shall observe the proofrolling for consistency. Areas which are subject to excessive pumping or rutting shall be reworked and recompacted as described above.

- 1.6 EQUIPMENT FOR COMPACTION OF BACKFILL, EMBANKMENT, AND SUBGRADE: Any compaction equipment capable of producing the required embankment and subgrade densities, without lamination, will be permitted. Clayey type or cohesive soils shall be compacted with a kneading type compaction equipment, such as a sheepsfoot roller. Cohesionless soils shall be compacted with vibratory type equipment, such as a vibrating plate or roller. All compaction equipment shall be in good condition and shall be operated efficiently to assure uniform compaction.
- 1.7 SUBGRADE FOR SIDEWALKS AND DRIVEWAYS: Subgrade for driveways shall comply with Item 1.5. except soil density tests are not required. Cohesive soils or lean concrete shall be used under driveways (i.e., apron and sidewalk portion of driveway minimum eight (8) feet back of curb for single- or two-family or nine (9) feet for multi-family or commercial), provided compaction is performed per Item 1.6. For sidewalks between driveways subgrade of cohesive soils shall be uniformly compacted per Item 1.6. Cohesionless or

granular soils may be used as a base on subgrade for sidewalks between driveways provided base thickness does not exceed four (4) inches or thickness equivalent to that of the sidewalk and compacted per Item 1.6

- 1.8 EQUIPMENT OPERATED ON STREETS: The contractor shall be permitted to operate only pneumatic tired equipment over any paved street surfaces and shall be responsible for correcting any damage to street surfaces resulting from the contractor's operation. Paved streets, adjacent to new development, shall have all loose soil or mud removed at the end of each day's work.
- 1.9 UTILITIES: Special precautions shall be taken by the contractor to avoid damage to existing overhead and underground utilities. Before proceeding with the work, the contractor shall confer with all public or private companies, agencies, or departments that own or operate utilities in the vicinity of the construction work. The contractor shall be diligent in his efforts to use every possible means to locate existing utilities.
- 1.10 SOIL DENSITY TESTS: Soil density tests, including moisture-density tests (ASTM D698-78 or ASTM D1557-78) and field density tests (ASTM D1556-64 or ASTM D2922-78) are required to determine the percent compaction in accord with the following:
- (1) Embankments - a minimum of one (1) test for each three (3) feet in elevation per 400 lineal feet or every 2500 cubic yards, or fraction thereof, of embankment section;
 - (2) Utility backfill excavations for storm, sanitary sewer and water system crossings - a minimum of one (1) test for each two (2) feet in elevation per 100 lineal feet, or fraction thereof, of utility trench open cut beneath street subgrade and within three (3) feet outside of street pavements;
 - (3) Subgrades - a minimum of one (1) test per 100 lineal feet for streets 500 lineal feet or less or one (1) test per 200 lineal feet for streets over 500 lineal feet at each of the following locations, where applicable:
 - (a) compacted fill placed for embankments;
 - (b) undisturbed soils in transitional areas from cut to fill immediately below the topsoil; and
 - (c) undisturbed soils at depths greater than 3 feet below the original ground in cut areas.

Density tests of soil embankment, utility excavations, or subgrade are not

applicable when at least one of the following conditions exist:

- (1) more than five (5) percent of the material contains greater than one (1) inch sieve size particles; or
- (2) more than 60 percent of the material contains greater than No. 4 sieve size particles except DGA (dense graded aggregate).

Proof of conditions (1) or (2) shall be performed by at least one (1) gradation test by a recognized testing laboratory and mailed directly to the inspector.

All soil density testing shall be at the expense of the developer. The results of these tests shall be mailed directly to the developer, design engineer, inspector, and the contractor. The results of all soil testing shall be compared to the densities, stated in Items 1.3, 1.4, 1.5, and 1.7 of these regulations. Any deficiencies found in construction work must be remedied in the field or resolved between the developer, contractor, and inspector, subject to approval by a qualified registered professional engineer.

ITEM 2.0 MATERIALS

Concrete shall be composed of Portland Cement, air-entraining agent, aggregates, and water.

- 2.1 **PORTLAND CEMENT:** Cement of the type specified shall conform to requirements of the current ASTM specifications including Portland Cement Type I or Type III - High Early Strength (Designations C 150, C 175 or C 595). Cement, which for any reason has become partially set or which contains lumps of caked cement, shall be rejected. Either packaged or bulk cement may be used.
- 2.2 **AIR-ENTRAINING AGENT:** Air-entraining agents shall conform to the requirements of the current ASTM specifications for air-entraining admixtures for concrete (Designation C 260).
- 2.3 **ADMIXTURES FOR CONCRETE:** Chemical admixture of the type specified shall conform to requirements of the current ASTM specifications for Admixtures of Type A thru and Type E (Designation C 494). No pozzolans (Fly Ash) will be allowed as substitute for cement.
- 2.4 **AGGREGATES:** All aggregates for concrete shall meet the current standard requirements for concrete pavements of the Kentucky Department for Transportation, Bureau of Highways, or the current ASTM specification for concrete aggregates (Designation C 33).

Aggregates shall be so handled that moisture content and gradation are reasonably uniform and do not change appreciably from batch to batch or hour

to hour.

No aggregates shall be used which have become contaminated or intermixed. Frozen aggregates or aggregates containing frozen lumps shall be thawed before use.

- 2.5 WATER: Water used in mixing or curing concrete shall be clean and free from injurious amounts of oil, acids, salt, alkali, or organic materials or other substances harmful to concrete. Normally, water from public supplies, which is suitable for drinking, is satisfactory.
- 2.6 REINFORCING STEEL: Reinforcing steel, if specified, shall conform to current Standard Specifications of the Kentucky Department of Transportation, Bureau of Highways.
- 2.7 JOINTS:
- 2.7.1 EXPANSION JOINTS: Expansion joints shall be non-extruding pre-formed joint fillers and shall conform to current Standard Specifications of the Kentucky Department of Transportation. The selection of the type will be at the contractor's option.
- 2.7.2 JOINT SEALING COMPOUND: The material used for filling and sealing cracks and/or joints shall be W. R. Meadows Sealtight #164 - Hot Pour Rubber Asphalt Sealer, W. R. Meadows Sealtight Hi-Spec Hot Pour Joint Sealing Compound or approved equal (AASHTO M 173).

ITEM 3.0 BATCHING

Batching shall conform to Kentucky Department of Transportation, Bureau of Highways Specification 601.08 through 601.18.

- 3.1 STRENGTH OF CONCRETE: Finished concrete shall attain a minimum expected strength at 28 days of 4000 pounds per square inch compressive strength and/or 570 pounds per square inch flexural strength "modulus of rupture".

Except for sidewalks and driveways, at least three (3) test cylinders shall be made for each day's placement for each 100 cubic yards, or portion thereof, by a recognized testing laboratory. One (1) cylinder shall be broken at seven (7) days and two (2) cylinders at 28 days. The results of these tests shall be sent directly to the Inspector, Design Engineer, Contractor, and concrete supplier.

The fabricating, curing, breaking, and reporting the test cylinders, slump test, and air content test shall be made at the contractor's expense.

3.2 PROPORTIONING CONCRETE: The proper proportions of cement, water, and aggregates shall be determined in accordance with ACI Standard 613, "Recommended Practice for Selecting Proportions for Concrete", or the Portland Cement Association booklet, "Design and Control of Concrete Mixtures", latest editions.

The entrained air shall be obtained by using an air-entraining agent. All concrete shall be air-entrained in accordance with the following:

MAXIMUM SIZE OF AGGREGATE (INCHES)	AIR CONTENT PERCENT BY VOLUME
1-1/2, 2, 2-1/2	5 +/- 1%
3/4, 1	6 +/- 1%
3/8, 1/2	7-1/2 +/- 1%

3.3 CONSISTENCY: The slump of the concrete shall not exceed four (4) inches. Consistency shall be measured as described in the current ASTM Standard Method of Slump Test for Consistency of Portland Cement Concrete (Designation C 143 or Method of Test for Ball Penetration for Portland Cement Concrete, Designation C-360).

3.4 READY-MIXED CONCRETE: All ready-mixed concrete shall be furnished in accordance with current ASTM specifications for ready-mixed concrete (Designation C 94 or AASHTO M 157). Any concrete, which is not plastic and workable when it reaches the subgrade, shall be rejected.

3.4.1 TIME OF DELIVERY: Concrete shall be delivered and discharged from a truck mixer or agitator truck within a period of one and one-half (1-1/2) hours at air temperatures up to eighty-five (85) degrees Fahrenheit, and one (1) hour at air temperatures higher than eighty-five (85) degrees Fahrenheit, after introduction of the water to the cement and aggregates or the cement to the aggregates. Delivery tickets shall have this time clearly shown thereon, and the inspector shall check to be certain that delivery is made within the period specified.

3.4.2 TYPE OF DELIVERY EQUIPMENT: Concrete shall be delivered in truck mixers or agitator truck (i.e., trucks providing mechanical agitation by revolving drums or revolving blades in a stationary drum) operated after time required for thorough mixing of the concrete at the speed designated by the manufacturer as agitating speed.

3.5 JOB-MIXED CONCRETE: Job-mixed concrete shall be mixed in a drum mixer,

which shall conform to the concrete paving mixer standards of the Mixer Manufacturers Bureau of the Association General Contractors of America. The mixer shall be capable of combining the aggregates, cement, and water into a thoroughly mixed and uniform mass within the specified time and of discharging the material without segregation.

The entire contents of the drum shall be discharged before recharging. The volume of the mixed materials per batch shall not exceed the manufacturer's guaranteed capacity of the mixer.

3.5.1 TIME OF MIXING: The mixing of each batch shall continue for not less than one minute after all materials, except water, are in the mixer. The mixer shall rotate at the rate recommended by its manufacturer. The mixer shall be provided with a batch timing device which shall be subject to inspection and adjustment by the inspector.

3.6 ADJUSTING SLUMP OF CONCRETE: Measured amounts of water can be added. After adding water, an additional slump test must be made.

ITEM 4.0 MEASURING AIR CONTENT

The air content shall be measured in accordance with ASTM Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method (Designation C 231) or ASTM Method of Test for Air Content of Freshly Mixed Concrete by the Volumetric Method (Designation C 173).

ITEM 5.0 FORMS

Except for slipform paving methods, fixed forms may be made of wood or metal and shall have a depth equal to or greater than the prescribed edge of thickness of the pavement. Each section or form shall be straight, free from bends or warps.

The method of connections between the form sections shall be such that the joint thus formed is tight and free from movement in any direction.

Forms shall be of such cross-sections and strength and so secured as to resist the pressure of the concrete when placed, and the impact and vibration of any equipment which they support without springing or settlement.

5.1 SETTING FORMS: The subgrade under the forms shall be compacted and shaped so that the form set shall provide the specified elevation. The supply of forms shall be sufficient to permit their remaining in place for sufficient time so, when removed, the concrete will not be displaced. All forms shall be cleaned and oiled each time they are used.

- 5.2 **GRADE AND ALIGNMENT:** The alignment and grade elevation of the forms shall be checked by the contractor immediately ahead of concrete placement and necessary corrections will be made. Any forms that have been disturbed or subgrade that has become unstable shall be corrected and forms reset and rechecked. Any variations in grade and alignment shall be subject to approval of the Design Engineer and Inspector prior to placing concrete.

ITEM 6.0 PLACING CONCRETE

The concrete shall be mixed in quantities required for immediate use and shall be deposited on the subgrade to the required depth and width of the construction lane in successive batches and in a continuous operation, without the use of intermediate forms or bulk-heads. The concrete shall be placed as uniformly as possible, in order to minimize the amount of additional spreading necessary. While being placed, the concrete shall be vibrated and compacted with suitable tools, so that the formation of voids or honeycomb pockets is prevented.

No concrete shall be placed around manholes or other structures until they have been brought to the required grade and alignment. Additional tamping and compaction will be required after raising manholes.

- 6.1 **COLD WEATHER CONCRETING:** Concrete may be placed when the air temperature in the shade and away from artificial heat is thirty-five (35) degrees Fahrenheit or higher. No concrete shall be placed upon frozen subgrade. However, if subgrade has been protected from freezing and concrete temperature is 50 degrees or higher, concrete may be placed until ambient temperature drops to 25 degrees. Concrete shall be protected from freezing for a period up to three (3) days or until concrete reaches a compressive strength of 500 psi.

- 6.2 **HOT WEATHER CONCRETING:** Except by approval of the inspector, concrete placing shall cease if the temperature of the plastic concrete cannot be maintained at ninety (90) degrees Fahrenheit or lower.

To facilitate the placement of concrete in hot weather, a retarding chemical admixture Type B or D, in conformance with ASTM C-494, may be used

ITEM 7.0 CONSOLIDATING AND FINISHING

The pavement shall be struck off and consolidated with a mechanical finishing machine, vibrating screed, or by hand-finishing methods. A slipform paver may also be used. When a mechanical finishing machine is used, the concrete shall be struck off at such a height that after consolidation and final finishing, it shall be at the elevation as shown on the plans.

The finishing machine shall be provided with a screed, which will consolidate the

concrete by pressure, vibration or both. The concrete shall be brought to a true and even surface, free from rock pockets. The edge of the screeds along the curb line may be notched out to allow for sufficient concrete to form the integral curb. Hand-finishing tools shall be kept available for use in case the finishing machine breaks down.

When hand-finishing is used, the pavement shall be struck off and consolidated by a vibrating screed to the elevation as shown on the plans. When the forward motion of the vibrating screed is stopped, the vibrator shall be shut off; it shall not be allowed to idle on the concrete.

- 7.1 SCRAPING AND STRAIGHTEDGING: The pavement may be required, by the inspector, where applicable, to be scraped with a straightedge, equipped with handles long enough to permit it to be operated from the edge of the pavement.

When irregularities are discovered, they shall be corrected by adding or removing concrete. All disturbed areas shall be floated with a wooden or metal float not less than three (3) feet long and not less than six (6) inches wide and again straight-edged.

- 7.2 EDGING: Before final finishing is completed, and before the concrete has taken its initial set, the edges of the slab and curb shall be carefully finished with an edger.

- 7.3 FINAL SURFACE FINISH: A burlap drag or medium broom shall be used as the final finishing method for concrete pavement. The drag shall be at least three (3) feet in width and long enough to cover the entire pavement width. It shall be laid on the surface of the pavement and dragged forward in the direction in which the pavement is being laid. If a broom finish is used, the brooming shall be drawn from the center to the edge of pavement using overlapping strokes to produce surface corrugations of uniform appearance about 1/16th inch in depth. The curb shall have the same final finish as the pavement.

The final surface of the concrete pavement and curb shall have a uniform gritty texture, and true to the grades and cross-sections shown on the plans.

ITEM 8.0 INTEGRAL CURB

Curbs shall be required along the edges of all street pavement where shown on the plans and shall conform to cross sections. Curbs may be constructed simultaneously with the pavement with extrusion equipment, hand formed immediately after the finishing operation, or built as a separate construction operation.

The integral vertical and rolled curb shall be constructed with or immediately following the finished operation. Special care shall be taken so that the curb construction does not lag the pavement construction and form a "cold joint".

When integral vertical curbs are required along the edges of all street pavement, depressed curbs two (2) inches above gutter line shall be provided at all driveway entrances and at such other locations as designated on the approved plans.

In placing concrete curb, sufficient spading shall be done to secure adequate bond with paving slab and eliminate all voids within and back face of the curb.

Curbs shall be formed to the cross-section in accordance with Appendix "C".

ITEM 9.0 CURING

Concrete shall be cured by protecting it against loss of moisture, rapid temperature change, from rain, flowing water, and mechanical injury for a period of not less than five (5) days from the beginning of the curing operation. Moist curing, waterproof paper, white pigmented liquid membrane compound, or a combination thereof, may be used for curing. Immediately after finishing operations have been completed, the entire surface of the newly placed concrete shall be covered by the curing medium which is applicable to local conditions and approved by the inspector.

The edge of concrete slabs exposed by the removal of forms shall be protected immediately to provide these surfaces and to prevent injury to concrete edges.

The covering material shall be kept free of any substances which may be detrimental to the surface of the concrete. The initial curing medium shall be effective and shall be applied so as to prevent checking, cracking, and the appearance of dry spots in the surface of the concrete. The contractor shall have the equipment needed for adequate curing at hand and ready to install before actual concrete placement begins. In all cases in which the curing medium requires the use of water, the curing shall have prior right to all water supply. Failure to provide sufficient cover material of the type selected, failure to maintain saturation for the entire curing period in the moist-curing methods, lack of water to adequately care for both curing and other requirements, or other failures to comply with curing requirements shall be cause for immediate suspension of concreting operations.

9.1 MOIST CURING: Moist curing shall be accomplished by covering of burlap, cotton mats, or other approved fabric mat used singly or in combination.

Curing mats shall be thoroughly wet when applied and kept continuously wet and in intimate contact with the pavement surface for the duration of the moist curing period. Other fabric mats shall conform in design and shall provide a curing medium at least equal to cotton mats. Cotton mats, other fabric mats, and burlap mats and burlap strips shall be furnished in the widths or lengths, after shrinkage, required to cover the entire width and edges of the pavement lane. Mats or burlap shall be lapped at joints between adjacent sheets to prevent drying at this location. Moist curing, when used as initial curing, shall be

continued for not less than twenty-four (24) hours. Type and weight of cotton mats for curing concrete shall conform to ASTM C-440 or AASHTO M-73. Burlap strips shall conform to AASHTO M-182.

- 9.2 WATERPROOF PAPER AND POLYTHENE SHEETING CURING: The surface of the concrete shall be wetted with a fine spray of water and then covered with the waterproof paper or sheeting. The paper or sheeting shall be in pieces large enough to cover the entire width and edges of the slab and shall be lapped not less than twelve (12) inches. Paper or sheeting shall be adequately weighted to prevent displacement or billowing due to wind. Paper or sheeting folded down over the side of the pavement widths shall be secured by a continuous bank of earth. Tears or holes appearing in the paper or sheeting during the curing period shall be immediately repaired.
- 9.3 LIQUID MEMBRANE CURING COMPOUND: Pigmented liquid membrane curing compound shall meet the specifications under ASTM C 309 classified as Type 1-D translucent with fugitive dye, Type 2 - white pigmented or approved equal. The curing compound must be applied to cover the surface completely and uniformly at a rate which will achieve the performance requirement specified in AASHTO specifications M 148 or ASTM Designation C 309. This method of curing shall be applied immediately behind the final finishing operation or after the initial curing when a combination of methods are used. Failure to provide complete and uniform coverage at the required rate will be cause for discontinuance of this method of curing and the substitution of one of the other approved methods. The compound shall be kept agitated to prevent the pigment from settling. Special care shall be taken to apply the curing compound to the pavement edges immediately after the forms have been removed.

ITEM 10.0 PAVEMENT JOINTS (all joints shall be constructed as per details in Appendix "C")

Concrete pavement shall include expansion, contraction, and longitudinal joints. Transverse joints may be expansion and contraction type joints which shall be continuous across the pavement lane including the curb. Longitudinal joints are parallel to the pavement lanes. Construction joints are necessary when the placement of concrete is delayed. The location of transverse construction joints may be either planned (coincidental with a contraction joint) or emergency (not coincidental with a contraction joint). In general, the location of longitudinal joints shall be centered between pavement lanes except for street widths 30 feet and wider.

The placement and construction of all pavement joints shall comply with joint details in Appendix "C" and shall be shown or referenced on the Improvements Drawings in accord with the following criteria:

10.1 EXPANSION JOINTS

Expansion joints shall be Type 1. Filler material shall conform to Item 2.7.1 of these regulations and extend the entire width of the pavement. The filler shall be held accurately in place during the placing and finishing of the concrete by a bulkhead, a metal channel cap or other approved method. Expansion joints shall be installed at the following locations: (1) at all street intersections at the point of curvature of the turning radii entering the intersection; and (2) at cul-de-sacs or turnarounds at the point of curvature of the first turning radii approaching the turn-around. In no case shall the expansion joint spacing exceed 150 feet.

No concrete shall be left above the expansion material or across the joint at any point. Any concrete spanning the ends of the joint next to the forms shall be carefully cut away after the forms are removed.

Before the pavement is opened to traffic, the groove above the filler shall be cleaned and sealed with joint sealing material specified in Item 2.7.2 of these regulations.

10.2 CONTRACTION JOINTS

Transverse joints shall be Type 2. Sawed joints shall be equal to a depth of one-fourth (1/4) of the pavement thickness as the minimum established standard continuous across the slab including additional depth at the integral curb faces. Such joints may also be grooved with a metal jointing tool to a depth of one and one half (1-1/2) inches including additional depth and special treatment at integral curb faces to control cracking. Other joint depths used with alternate pavement designs including stabilized pavement subbases shall be shown on the plans and reviewed per industry standards.

In no case shall the contraction joint be spaced at intervals greater than a distance of fifteen (15) feet between joints for integral curb concrete pavement. For concrete curb used with asphalt pavement, contraction joints shall be spaced at intervals not greater than ten (10) feet.

Where sawed joints are specified, they shall be sawed within a time frame of between four (4) hours and eight (8) hours following placement of each pavement section. However, depending upon temperature, weather conditions, and other factors affecting setting times, variations to these time frames may be required to ensure that joints are sawed early enough to control cracking, but late enough to prevent any damage by blade action to the slab surface and to the concrete immediately adjacent to the joint.

10.3 CONSTRUCTION JOINTS

Transverse construction joints shall be used wherever the placing of concrete is

suspended for more than thirty (30) minutes. A transverse construction joint shall be Type 3, with smooth bars (one end lubricated) if the joint occurs at the location of a contraction joint. A transverse construction joint shall be Type 4 with deformed tie bars (both ends bonded) if the joint occurs at any other location. Both Type 3 and Type 4 joints shall be butt type construction formed. In the case of integral curb concrete pavement where construction joints are sawed they shall be saw cut full depth where no vertical face of concrete is undermined creating a void under the pavement. In the case of concrete curb and gutter used with asphalt pavement, special care should be taken to ensure that all surfaces including the joint are uniform and result in the same integrity as an integral curb concrete placement.

10.4 LONGITUDINAL JOINTS

Longitudinal joints between lanes shall be Type 6 of the tied construction type. An alternative longitudinal joint Type 7 may be used with slip-form paving operations. As an option to drilling diagonal bars in Type 7, bent bars may also be injected in fresh concrete before it's initial set. Following subgrade preparation and testing, bent bars shall not be straightened until the concrete has cured sufficiently to enable bending without fracture of concrete slab as determined by the inspector. The location of longitudinal joints shall be centered between pavement lanes and coincide with lane markings wherever possible, except for street widths of thirty (30) feet and wider where joints shall be located at equal intermediate locations. In these cases, longitudinal joints may be sawed and shall be Type 5.

10.5 INTEGRAL CURB JOINTS

In the construction of transverse joints, special care must be taken to ensure that all transverse joints extend continuously through the pavement and curb per Items 10.2 and 10.3 of these regulations.

ITEM 11.0 TIE BARS

All tie bar reinforcement for concrete pavement shall conform to Item 2.6 of these regulations. All tie bars shall be deformed bars for Types 4, 5, 6, and 7, and plain or smooth bars for Type 1 and 3, as detailed in Appendix "C".

ITEM 12.0 JOINT SEALER

Pavement joint sealer shall be as specified in Item 2.7.2 of these regulations. Application of joint sealer shall be as follows:

Material must be melted in a double boiler, oil jacketed melter equipped with a mechanical agitator, pump, gas pressure gauges, and separate temperature thermometers for both oil bath and melting vat, with accessible control valves and

typical section details). Commercial and industrial entrances will require sidewalk thickness conforming to driveway pavement thickness.

ITEM 16.0 PAVEMENT THICKNESS

Pavement thickness for each type street classification shall be as provided in Table A-1. Streets that are subjected to exceptionally heavy truck traffic shall require a more complete detailed analysis by the subdivider's engineer and approved by the planning commission's duly authorized representative.

All arterial streets shall be designed in accordance with the requirements of the Kentucky Department of Transportation.

- 16.1 TOLERANCE IN PAVEMENT THICKNESS: Deficiency in pavement thickness determined by drilling or coring new concrete pavement shall not exceed 0.20 inches. When thickness of pavement is deficient by more than 0.20 inches, such areas shall be removed and/or replaced unless otherwise determined by the inspector and a qualified registered professional engineer.
- 16.2 SURFACE TOLERANCE: The finished surface shall be tested for smoothness by use of a 10-foot long straightedge placed parallel to the centerline of the pavement in each wheel lane. Ordinates measured from the face of the straightedge to the surface of the pavement shall at no place exceed one-quarter inch. Areas that do not meet the required surface accuracy shall be clearly marked out and the Contractor shall, at his own expense, as required by the planning commission's duly authorized representative:
1. Grind down any areas higher than 1/4 inch but not more than 1/2 inch above the correct surface.
 2. Correct any areas lower than 1/4 inch but not lower than 1/2 inch below the correct surface by grinding down the adjacent areas.
 3. When the deviation exceeds 1/2 inch from the correct surface, the pavement slab shall be broken out and replaced for a length, width and depth which will allow the formation of a new slab of the required quality in no way inferior to the adjacent undisturbed slab.

TABLE A-1

MINIMUM PAVEMENT THICKNESS FOR
STREETS - PORTLAND CEMENT CONCRETE*

STREET CLASSIFICATION	PAVEMENT THICKNESS (inches)**
Local Streets Including Courts And Cul-De-Sacs (serving 50 lots or less)	7
Subcollector Or Local Streets (serving more than 50 lots)	8
Collector	9

* Streets shall be designed in accord with the typical street section details in Appendix "C".

** Where streets are to serve industrial or commercial areas, the pavement design shall be based on a study prepared by the subdivider's engineer projecting the type of vehicles using the street and traffic volumes, approved by the planning commission's duly authorized representative.

Note: Welded wire fabric or wire mesh for reinforcing concrete pavements shall not be required unless otherwise specified by the design engineer.

APPENDIX "B"

ASPHALT CONCRETE PAVEMENT FOR STREET AND DRIVEWAY CONSTRUCTION

The work covered by these specifications consists of furnishing all labor, equipment, and materials, and performing all operations in connection with the construction of asphalt concrete pavement, in accord with these specifications and the applicable Improvement Drawings.

The asphaltic concrete pavement work shall consist of multiple layers of asphaltic concrete with or without granular base and subbase courses, constructed on a prepared sub-grade in general conformity with the lines, grades and cross-sections shown on the plans.

The data included herewith is based upon general soil conditions which exist in the area. These general soil conditions, representing approximately 75 percent of the soils in the area, are clayey overburden soils, described as lean to moderately plastic silty clays, classified according to the Unified Soil Classification System as CL soils. Any site which is made up of soils substantially different should be evaluated independently by Qualified Recognized Geotechnical Engineers. This work should consist of drilling, testing, and an engineering evaluation of all field and laboratory data, in light of the proposed design. Examples of substantially different soil conditions are the very silty clays or clayey silts along the floodplain of the Licking and Ohio Rivers, the clayey sands, the silty fine sands, the fine to medium sands, and the fine to coarse sands and gravels of the floodplain of the Ohio River, such as the Belleview Bottoms in Boone County, the loess type deposits, clayey sands, silty sands, and sandy clays of the Fort Wright area, and the "fat" waxy looking clays in Boone County.

ITEM 1.0 GRADING

This term shall consist of all grading above or below subgrade elevations of whatever nature required to bring the street to proper subgrade elevations, including necessary excavation for curb, gutter, sidewalk, construction of embankments, excavation and proper sloping of all cuts, and other work incidental thereto.

- 1.1 EXCAVATIONS: All excavations shall be made to approximate grade or subgrade elevations consistent with approved plans. Excavations shall not be steeper than a cut slope of 2.5 horizontal to 1 vertical.
- 1.2 EXCAVATION BELOW SUBGRADE: Whenever excavations below subgrade elevation to remove spongy or unstable material, organic matter, or other materials is required, the contractor shall remove same and shall replace with compactable soils as per Item 1.3. The excavation can be backfilled with soils

that were removed, provided they are clean clayey soils free of organic matter and other deleterious material, aerated, and dried to near optimum moisture content or clean clayey borrow soils that have moisture contents near optimum moisture content.

- 1.3 CONSTRUCTION OF EMBANKMENT: All surface vegetation and heavy root system shall be removed to eliminate all vegetation from the area upon which the embankment is to be constructed. Soils so removed shall not be used in construction of embankment. These materials shall be stockpiled and respread across scarified areas after the scarified areas have been brought to within inches of finished grade.

Embankments shall be constructed of approved soils to approximate subgrade elevation in shallow level layers, six (6) to eight (8) inches, within two (2) percent of optimum moisture content on the dry side of the curve or within three (3) percent of optimum moisture content on the wet side of the curve, compacted with an appropriate type of compaction equipment to a density not less than 95 percent of maximum density, as determined by the standard Proctor moisture-density test (ASTM D698-78 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-58-78 or AASHTO T-180). Except as otherwise approved by a Qualified/Recognized Geotechnical Engineer, all soils placed in areas involving public improvements shall be constructed to slopes no steeper than 2.5 horizontal to 1 vertical and flatter where possible for ease of maintenance.

- 1.4 BACKFILL: Clayey soils or granular soils, shall be used to backfill utility crossings beneath and within three (3) feet on either side of the pavement, and compacted to the densities stated in Item 1.3. Under no conditions shall granular backfill be flushed with water to obtain compaction. Utilities which are parallel and within three (3) feet either side of the pavement shall be compacted.

Controlled Low Strength Material (CLSM) also referred to as flowable fill, flowable mortar or lean mix backfill may be used in place of compacted clayey soils or granular soils to uniformly backfill sewer conduit or utility trenches, catch basins, manholes or other excavations. Material mixture shall conform to the following requirements unless approved as equal.

- (1) Materials and proportions - a) Cement - Type I and II; 0-50 not to exceed 75 pounds per cubic yard (lb/cu.yd.); b) Fly Ash - ASTM C-618 Class "C" or "F"; 250 - 400 lb/cu.yd.; c) Concrete Sand; 2600 - 2900 lb/cu.yd.; and d) Water; 400-500 lb/cu.yd. Contractor shall be responsible for determining if proposed mixture is proprietary and indemnify the planning commission or any legislative body from any claims.

- (2) Mixing - Backfill should be transported by mixing truck to ensure proper suspension when placed. Constant agitation is required.
- (3) Construction - Flowable fill is a fluid material. Caution should be used when backfilling pipe that is subject to flotation. Anchoring pipe may include placing backfill in 8 to 12-inch lifts until fluid head residues may be necessary. When used to backfill aluminum pipe, adequate separation such as a bituminous coating shall be required. Fill material shall extend from the top of compacted bedding or other backfill to bottom of pavement structure.
- (4) Settlement and hardening - To expedite settlement and hardening, bleed water shall appear on the surface within 5 to 10 minutes after placement. CLSM is not concrete and should not be rated on setting time. The material will achieve density as soon as water leaves the mixture. The time involved until the fill may be paved over varies with permeability of adjacent soils, temperature, humidity, and moisture in these soils. In most conditions, the in-place CLSM will be ready to pave over in 2 to 6 hours.
- (5) Excavatable Strength - Minimum of 20 pounds per square inch (psi) at 3 days and 30 psi at 28 days; Maximum of 100 psi at 28 days.
- (6) Flow Test - Fill 3-inch diameter x 6-inch open ended cylinder to the top with material and level. Lift cylinder straight up. Material spread should be at least 8-inches in diameter.

1.5 SUBGRADE: The subgrade is defined as the top one (1) foot of the soil profile at finished grade prior to placing the pavement. This top one (1) foot of soil will consist of: a) compacted fill placed for embankments and as outlined in Item 1.3; b) undisturbed soils in transitional areas from cut to fill immediately below the topsoil; or c) undisturbed soils at depths greater than three (3) feet below the original ground surface in cut areas. The top one (1) foot of subgrade shall be compacted to 98 percent of maximum density as determined by the standard Proctor moisture-density test (ASTM D687-78 or AASHTO T-99) or 89 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-78 or AASHTO T-180) within two (2) percent of optimum moisture content on the dry side of the curve or three (3) percent of optimum moisture content on the wet side of the curve immediately prior to placing the pavement. This specification is similar to the compaction requirement in compacted fill areas since the embankment shall be compacted to 95 percent or 87 percent of maximum density as determined by the standard Proctor or modified Proctor moisture-density test, respectively. In transitional areas from cut to fill, the soils have been subject to seasonal changes of freezing and thawing, and wetting and drying. These soils will exist at moisture contents well above optimum moisture content and at densities on the order of 60 to 80

percent of maximum density (ASTM D698-78). These soils shall be scarified, aerated, and dried, in order to obtain the specified percent compaction for subgrade. Soils in cut areas, three (3) feet below original grade, will exist at moisture contents above optimum moisture content and at densities on the order of 90 percent of maximum density (ASTM D698-78). These soils shall be scarified, aerated, and dried in order to obtain the specified percent compaction for subgrade.

Any soft or yielding areas, resulting from high moisture content, that are encountered at the time of construction, shall be scarified, aerated, and dried to reduce the moisture content nearer to optimum moisture content, then recompacted to the specified density.

The subgrade shall be shaped to plan elevation and cross-section. Immediately prior to placing the pavement, the subgrade shall be checked for conformity with the cross-section shown on the plans by means of an approved template on the side forms. If necessary, the materials shall be removed or added, as required, to bring all portions of the subgrade to correct elevations. The subgrade shall be thoroughly compacted and again checked with the template. Pavement shall not be placed on any parts of the subgrade which have not been checked for correct elevation. The subgrade shall be clean of loose or wet material prior to placing pavement.

Prior to placing the pavement, the Contractor shall proofroll the compacted subgrade with a piece of heavy rubber tired equipment, such as a roadgrader loaded backhoe or a loaded single axle dump truck. The Inspector shall observe the proofrolling for consistency. Areas which are subject to excessive pumping or rutting shall be reworked and recompacted as described above.

- 1.6 EQUIPMENT FOR COMPACTION OF BACKFILL, EMBANKMENT, AND SUBGRADE: Any compaction equipment capable of producing the required embankment and subgrade densities, without lamination, will be permitted. Clayey type or cohesive soils shall be compacted with a kneading type compaction equipment such as a sheepfoot roller. Cohesionless soils shall be compacted with vibratory type equipment, such as a vibrating plate or roller. All compaction equipment shall be in good condition and shall be operated efficiently to assure uniform compaction.
- 1.7 SUBGRADE FOR SIDEWALKS AND DRIVEWAYS: Subgrade for driveways shall comply with Item 1.5 except soil density tests are not required. Cohesive soils or lean concrete shall be used under driveways (i.e., apron and sidewalk portion of driveway minimum eight (8) feet back of curb for single or two-family or nine (9) feet for multi-family or commercial) provided compaction is performed per Item 1.6. For sidewalks between driveways, subgrade of cohesive soils shall be uniformly compacted per Item 1.6. Cohesionless or granular soils may be used as a base on subgrade for sidewalks provided base

thickness does not exceed four (4) inches or thickness equivalent to that of the sidewalk and compacted per Item 1.6.

- 1.8 **EQUIPMENT OPERATED ON STREETS:** The contractor shall be permitted to operate only pneumatic tired equipment over any paved street surfaces and shall be responsible for correcting any damage to street surfaces resulting from the contractor's operation. Paved streets adjacent to new development shall have all loose soil or mud removed at the end of each day's work.
- 1.9 **UTILITIES:** Special precautions shall be taken by the contractor to avoid damage to existing overhead and underground utilities. Before proceeding with work, the contractor shall confer with all public or private companies, agencies, or departments that own or operate utilities in the vicinity of the construction work. The contractor shall be diligent in his efforts to use every possible means to locate existing utilities.
- 1.10 **SOIL DENSITY TESTS:** Soil density tests, including moisture-density tests (ASTM D698-78 or ASTM D1557-78) and field density tests (ASTM D1556-64 or ASTM D2922-78), are required to determine the percent compaction in accord with the following:
- (1) Embankments - a minimum of one (1) test for each three (3) feet in elevation per 400 lineal feet or every 2500 cubic yards, or fraction thereof, of embankment section;
 - (2) Utility backfill excavations for storm, sanitary sewer, and water system crossings - a minimum of one (1) test for each two (2) feet in elevation per 100 lineal feet, or fraction thereof, of utility trench open cut beneath street subgrade and within three (3) feet outside of street pavements;
 - (3) Subgrades - a minimum of one (1) test per 100 lineal feet for streets 500 lineal feet or less or one (1) test per 200 lineal feet for streets over 500 lineal feet at each of the following locations, where applicable:
 - (a) compacted fill placed for embankments;
 - (b) undisturbed soils in transitional areas from cut to fill immediately below the topsoil; and
 - (c) undisturbed soils at depths greater than 3 feet below the original ground in cut areas.

Density test of soil embankment, utility excavations, or subgrade are not applicable when at least one of the following conditions exist:

- (1) more than five percent of the material contains greater than one (1) inch sieve size particles; or
- (2) more than 60 percent of the material contains greater than No. 4 sieve size particles except DGA (dense graded aggregate).

Proof of conditions (1) or (2) shall be performed by at least one (1) gradation test by a recognized testing laboratory and mailed directly to the inspector.

All soil density testing shall be at the expense of the developer. The results of these tests shall be mailed directly to the developer, design engineer, inspector, and the contractor. The results of all soil testing shall be compared to the densities, stated in Items 1.3, 1.4, 1.5, and 1.7 of these regulations. Any deficiencies found in construction work must be remedied in the field or resolved between the developer, contractor, and inspector, subject to approval by a qualified registered professional engineer.

ITEM 2.0 PREPARATION OF EXISTING GRANULAR BASE COURSES FOR SURFACING

- 2.1 **DESCRIPTION AND GENERAL REQUIREMENTS:** In areas where granular base course has been placed as a previous stage of street or road construction, the contractor shall blade, shape, and compact the base course in conformance with the required dimensions, line, grade, and cross-section to permit completion of the paving work. When directed by the Inspector, additional base course aggregates shall be provided or excess aggregate removed and disposed of, by the Contractor, as to provide conformance with the required roadway section.
- 2.2 **THICKNESS OF SURFACING REQUIRED FOR EXISTING GRANULAR BASE COURSES:** The existing thickness of granular base comprises a portion of the required Design Thickness as specified in Item 4.2 Appendix "B" of these regulations.

ITEM 3.0 ASPHALT PAVEMENT

- 3.1 **DESCRIPTION AND GENERAL REQUIREMENTS:** This item shall consist of furnishing all materials and performing all construction procedures required to build an asphalt pavement, on a prepared and approved subgrade, conforming to the requirements of these specifications and to the pavement design shown on the approved plans. It may include any, or all, but is not necessarily limited to, materials and methods specified under Item 3 only.

Asphalt pavement shall consist of an asphalt concrete surface course, or courses, constructed on a base course, or courses and/or subbase course,

designed in compliance with the requirements of Item 4.2 of Appendix "B" of these regulations.

Successive layers of the pavement shall be offset from the edge of the underlying layer, a distance equal to the course thickness of the lower layer, except when abutting existing construction. When the asphalt layers of the pavement abut a building foundation, barrier curb, or similar vertical surface, the abutting surface shall be heavily painted with asphalt prior to construction of the asphalt course. The surface course shall be finished one-fourth (1/4) inch above adjacent flush construction to permit proper compaction.

3.2.1 ASPHALT CONCRETE SURFACE COURSE: Asphalt Concrete Surface Course materials and construction shall conform to the current requirements of the Kentucky Department of Transportation, Bureau of Highways, for Asphalt Concrete Surface and Binder (Section 401, 402). Surface course mixture composition shall conform to the requirements Surface and Binder as set forth in Table B-1. Minimum Asphalt Concrete Surface, Binder and Bases Courses Thickness shall be as stated in Table B-2 of these regulations.

3.2.2 ASPHALT CONCRETE BASE COURSE: Asphalt Concrete Base Course materials and construction shall conform to the current requirements of the Kentucky Department of Transportation, Bureau of Highways, Specifications for Asphalt Concrete Base Course (Section 401, 403).

Composition requirements of the mixture shall conform to the gradation limits for Asphalt Concrete Base Course set forth in Table B-1. Asphalt content used shall fall within the range shown and shall be approved by the inspector.

3.2.3 CRUSHED AGGREGATE BASE COURSE:

3.2.3.1 DESCRIPTION: Crushed Aggregate Base Course, when provided for in the approved structural design of the pavement, shall consist of a granular layer constructed on prepared subgrade or subbase in accord with these specifications and in conformity with the approved dimensions, lines, grades, and cross-sections.

3.2.3.2 MATERIALS AND CONSTRUCTION METHODS: Crushed Aggregate Base Course shall conform to all the current requirements for materials and construction methods of the Kentucky Department

of Transportation for Dense Graded Aggregate Base Course as per Section 303.

3.2.4 GRANULAR SUBBASE COURSE:

3.2.4.1 DESCRIPTION: Subbase, when provided for in the approved structural design of the pavement, shall consist of a granular layer conforming to the following material and construction specifications.

3.2.4.2 MATERIALS AND CONSTRUCTION METHODS: Crushed Aggregate Subbase Course shall conform to all the current requirements for materials and construction methods of the Kentucky Department of Transportation for Dense Graded Aggregate Subbase Course as per Section 303.

3.2.5 ASPHALT PRIME COAT: Asphalt Prime Coat shall be applied to the surface of granular courses upon which asphalt base or surface courses will be constructed.

Asphalt Prime shall conform to the Kentucky Department of Transportation requirements for Cutback Asphalt Emulsion Primer Type L, as per Section 407. Prime shall be applied to the surface of granular base course at a rate of 0.25 to 0.50 gallons per square yard, as directed by the inspector, in conformance with requirements of the referred to specification.

3.2.6 ASPHALT TACK COAT: Tack Coat shall consist of SS-1h, meeting the current requirements of the Kentucky Department of Transportation. It shall, when directed by the inspector, be diluted with equal parts of water. Application equipment and procedure shall conform to the requirements of the Kentucky Department of Transportation for Tack Coats as per Section 407. Tack Coat shall be applied to the surface of asphalt courses that have become dusty or dry from traffic use at a rate of 0.10 gallons per square yard of the diluted SS-1h before the subsequent course is constructed or in other circumstances when the inspector so directs.

ITEM 4.0 DESIGN OF ASPHALT PAVEMENT STRUCTURE

4.1 DESCRIPTION: Asphalt pavement structures for subdivision streets shall be designed in conformance with the requirements of this specification. Thickness of the total pavement, and of component layers, shall be determined on the basis of Street Classification.

- 4.2 PAVEMENT THICKNESS REQUIREMENTS: Thickness of component layers of the pavement for streets within the right-of-way and of the total pavement structure shall be determined per Table B-2. Where streets are to serve industrial or commercial areas, pavement design shall be based on a study prepared by the subdivider's engineer projecting type of vehicles using said streets and traffic volumes, and approved by the planning commission's duly authorized representative.

ITEM 5.0 ADJUSTING MANHOLE TOPS

- 5.1 DESCRIPTION: The contractor shall raise or lower existing manhole tops to coincide with the finished grade elevation of the paving.

ITEM 6.0 JOINT SEALING COMPOUND

The material used for filling and sealing cracks and/or joints between concrete and/or asphalt shall be W. R. Meadows Sealtight #164 Hot Pour Rubber Asphalt Sealer or approved equal.

TABLE B-1

TABLE OF COMPOSITION LIMITS FOR BITUMINOUS CONCRETE

SIEVE SIZE	PERCENT PASSING BY WEIGHT		
	BASE	BINDER	SURFACE
1-1/2 inch	100		
1 inch	(2)		
3/4 inch	70 - 98	100	
1/2 inch	--	--	100
3/8 inch	44 - 76	57 - 85	80 - 100
No. 4	30 - 58	37 - 68	55 - 80
No. 8	21 - 45	25 - 52	35 - 60
No. 16	14 - 35	15 - 38	22 - 46
No. 50	5 - 20	5 - 20	5 - 21
No. 100	3 - 10	3 - 10	3 - 14
No. 200	--	--	2 - 7
Asphalt Content (1)	3.5 - 6.5	4.0 - 7.0	4 - 8

- (1) Percent by weight of the total mixture.
- (2) When the specified thickness of the Base course is 2 inches or less, either 100 percent of the aggregate shall pass the 1-inch sieve or the Contractor may request in writing to use Bituminous Concrete Binder. When the Contractor elects to use bituminous concrete binder in lieu of bituminous concrete base, all requirements for thickness and compaction (or density) will apply, the same as if bituminous concrete base was used.

TABLE B-2

THICKNESS REQUIREMENTS FOR ASPHALT PAVED STREETS

STREET CLASSIFICATION	PAVEMENT THICKNESS				
	TOTAL MINIMUM THICKNESS (METHOD 1)		TOTAL MINIMUM THICKNESS (METHOD 2)		
	SURFACE (INCH)	BASE (INCH)	SURFACE (INCH)	BASE (INCH)	GRANULAR SUBBASE (INCH)
Local (6)	2	2 @ 3"	2	3	6
Subcollector (7)	2	2 @ 3-1/2"	2	4	8
Collector	2	2 @ 4	2	5	8

NOTES:

1. Methods 1 and 2 will produce approximately the same pavement quality and strength.
2. Selection of the method shall be at the design engineer's option.
3. Designations pertinent to surface and binder and base courses used in this table correspond to the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction:

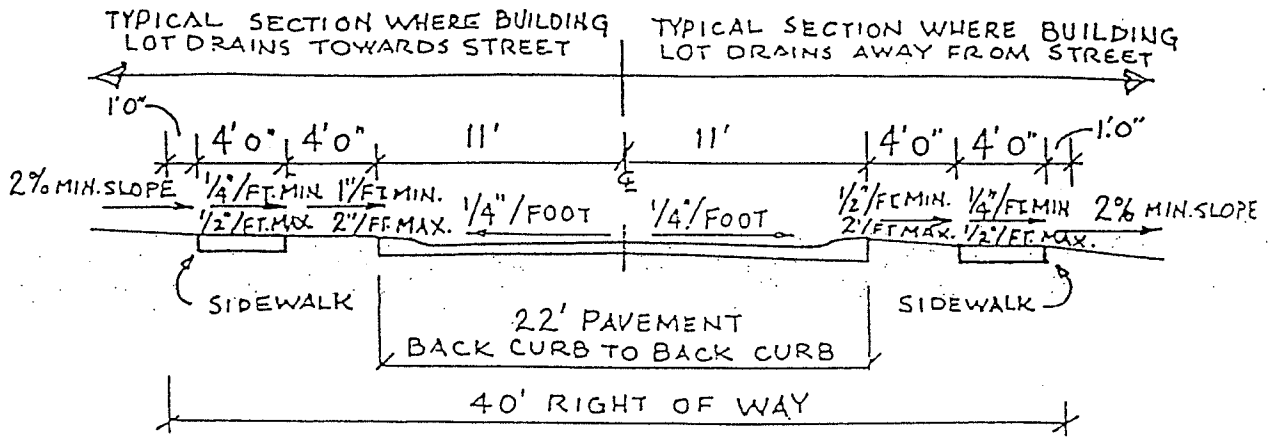
 Surface and Binder (State Highway Designation Sections 401, 402).

 Base (State Highway Designation Sections 401, 403) -- Each layer of bituminous concrete base shall be constructed to a compacted thickness no less than three inches nor more than five inches, unless otherwise directed by the inspector.

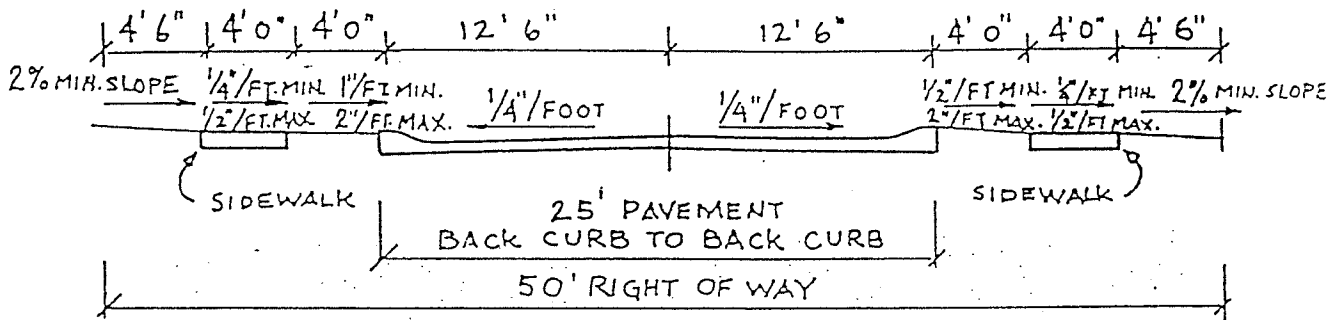
 Granular base or granular subbase for Method 2 shall conform to composition limits specified in Sections 3.2.3 and 3.2.4. Each layer of granular base or subbase shall be constructed to a compacted thickness no less than three inches nor more than eight inches, unless otherwise directed by the inspector.
4. Where streets are to serve industrial or commercial areas, the pavement design shall be based on a study prepared by the subdivider's engineer projecting the type of vehicles using the street and traffic volumes, approved by the planning commission's duly authorized representative.
5. Arterial streets shall be based on requirements of the Kentucky Department of Transportation.
6. Pavement thickness alternatives (Method 1 or 2) for LOCAL streets include COURTS and CIL-DE-SACS serving 50 lots or less.
7. Pavement thickness alternatives (Method 1 or 2) for SUB-COLLECTOR streets include LOCAL streets serving more than 50 lots.

APPENDIX "C"

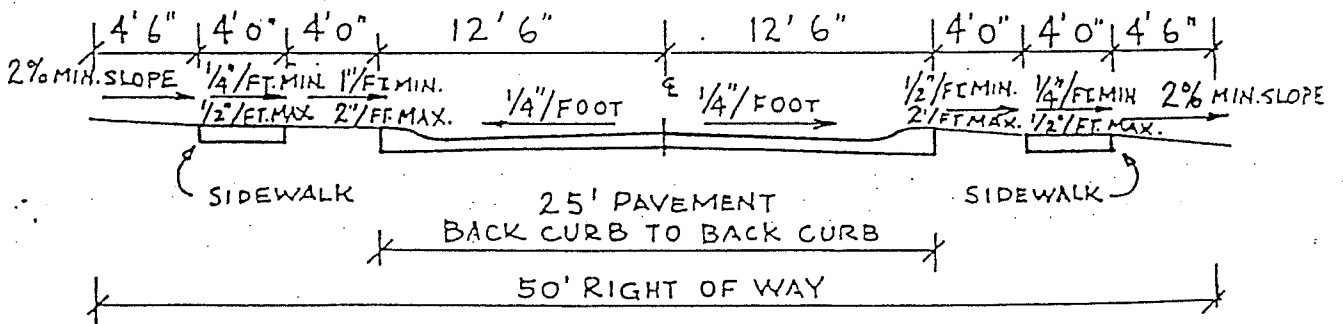
**STANDARD CONSTRUCTION REQUIREMENTS AND DETAILS FOR STREETS,
SIDEWALKS, DRIVEWAYS, EROSION CONTROL, AND STORM DRAINAGE SYSTEMS**



TYPICAL SECTION - COURTS - DEADEND

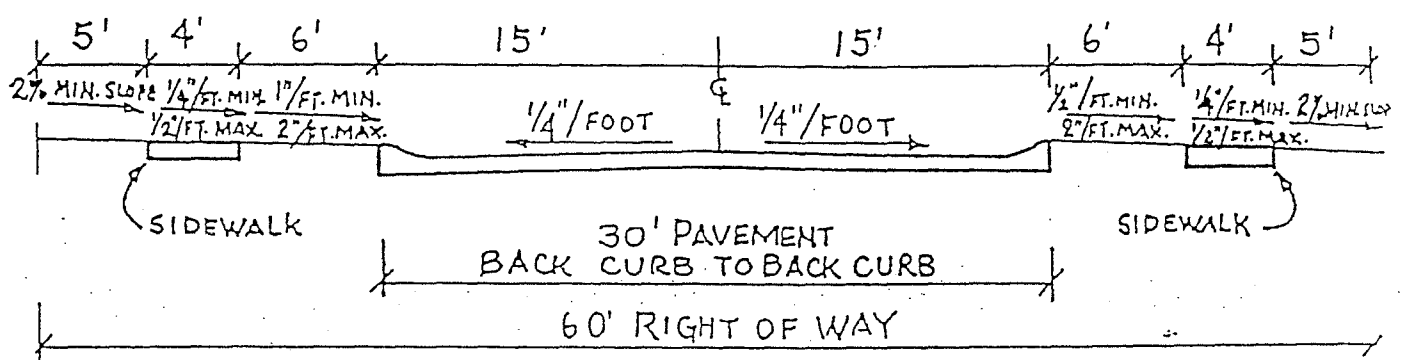
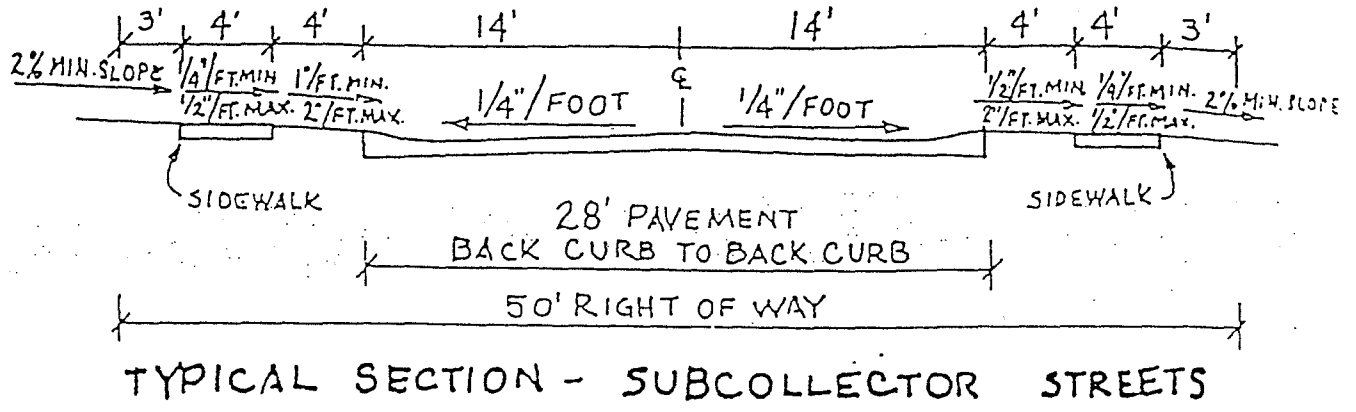


TYPICAL SECTION - CUL-DE-SACS - DEADEND

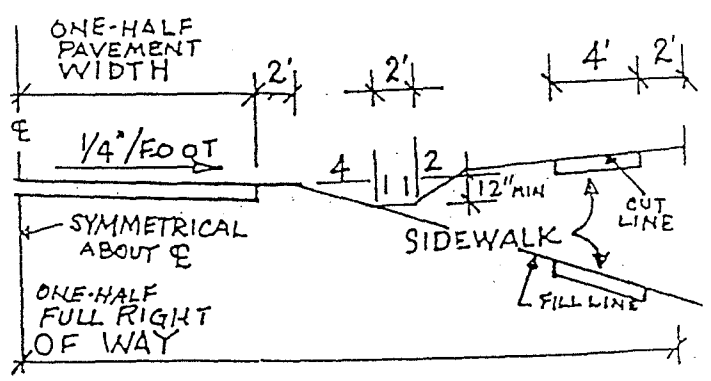


TYPICAL SECTION - LOCAL STREETS

NOTE: SLOPES OUTSIDE OF STREET PAVEMENT ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES ALONG SAME SIDE OF STREETS.

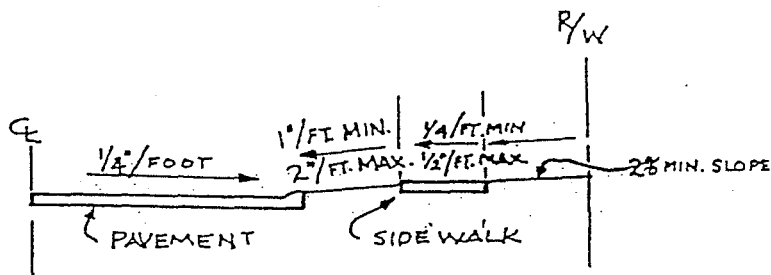
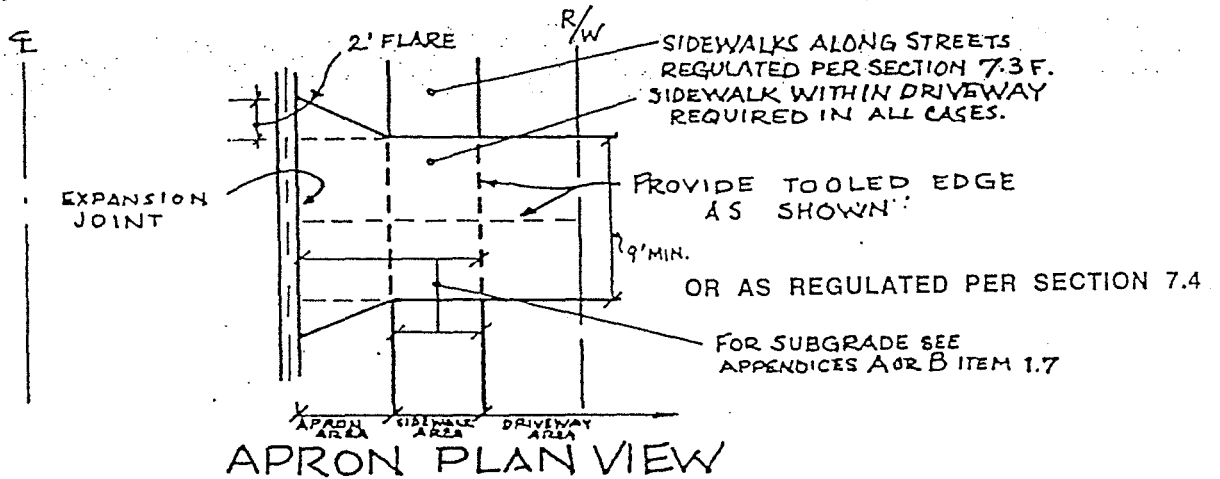


NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES SAME SIDE OF STREETS.

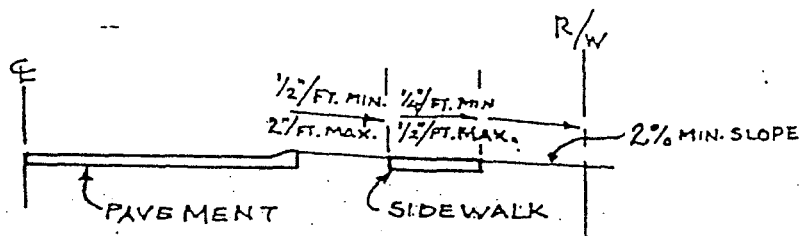


TYPICAL SHOULDER AND DITCH DETAIL
EXISTING STREETS AND ROADS ONLY

RESIDENTIAL DRIVEWAY APRON DETAILS

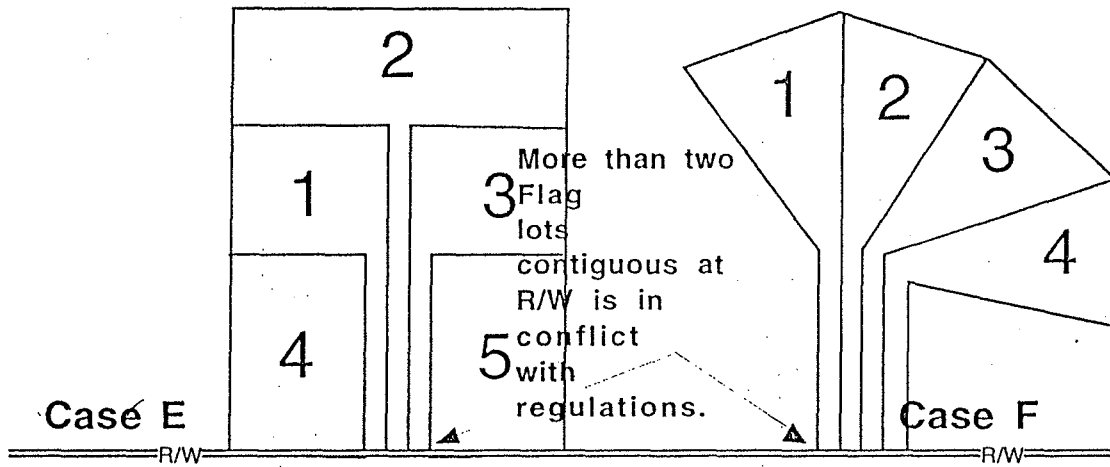


APRON GRADE WHERE LOTS DRAIN TO STREET



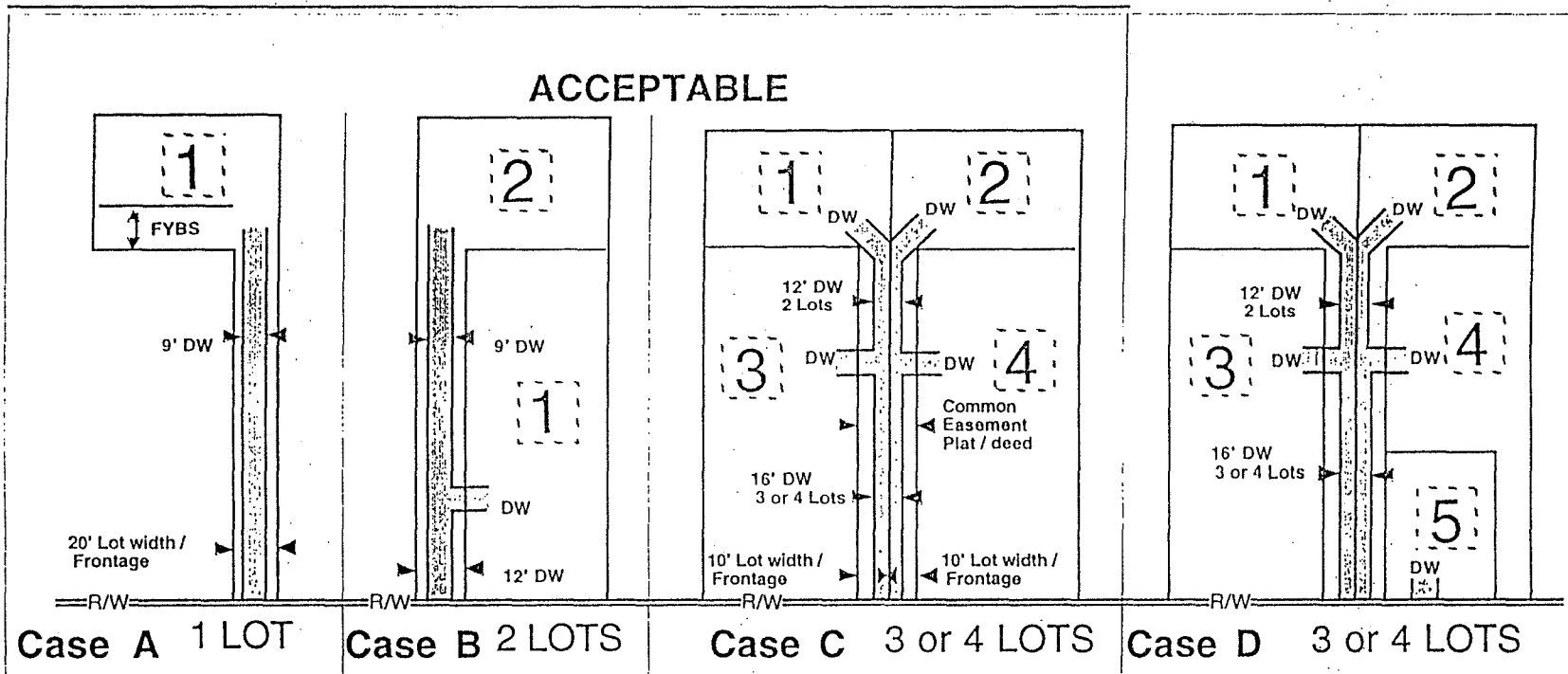
APRON GRADE WHERE LOTS DRAIN AWAY FROM STREET

NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES ON SAME SIDE OF STREETS



Case D with a 5th Driveway from lot 5, and Case E, and Case F will require public or private streets.

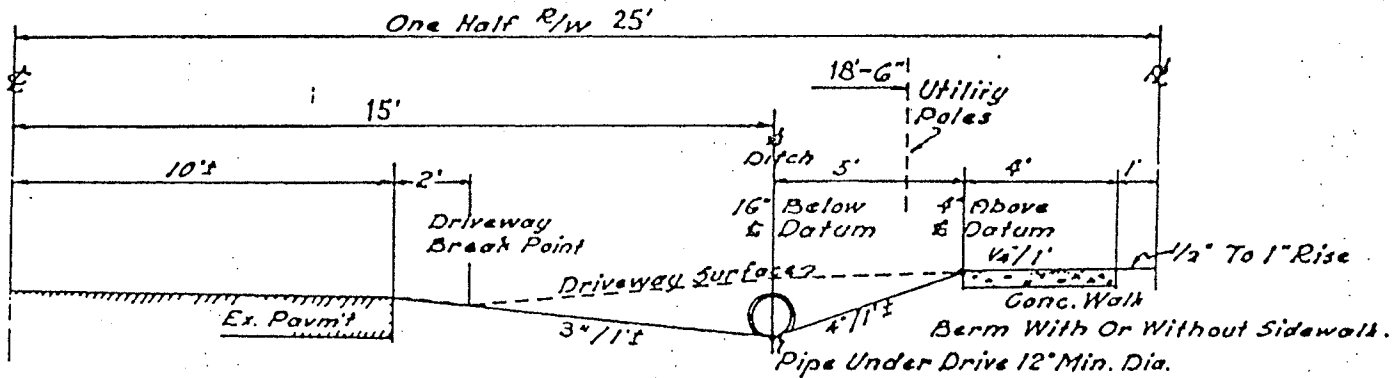
C-5



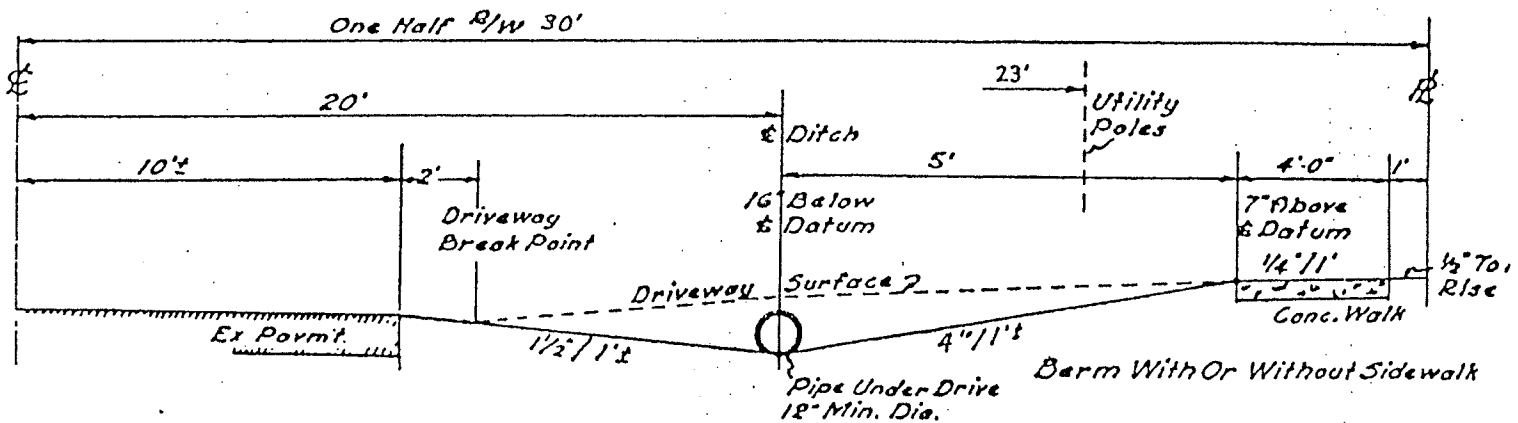
NOTES:
 FYBS= Front Yard Building Setback Line
 9' DW= Min. Width of Driveway (12' for driveways 150' or longer)
 1= Lot Number

LOT LAYOUT SKETCHES INCLUDING FLAG LOTS

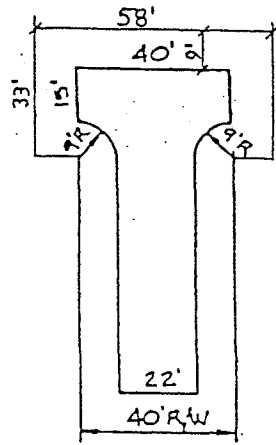
TYPICAL SECTION-SIDE DITCH DRAINAGE AT DRIVEWAY



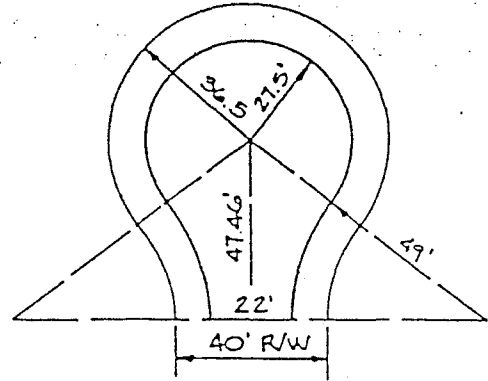
50 FOOT RIGHT OF WAYS



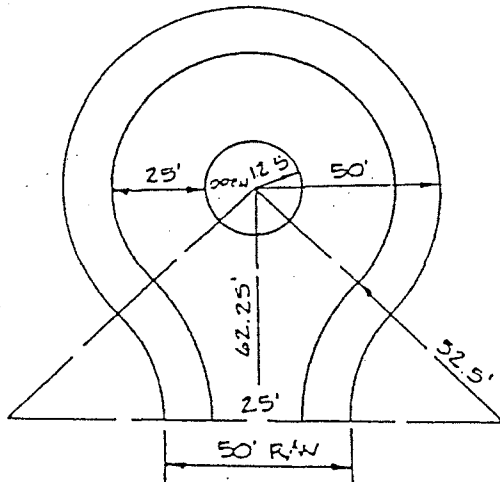
60 FOOT RIGHT OF WAYS



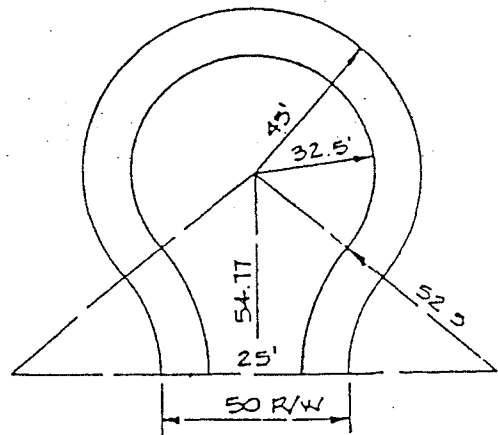
COURT
ALTERNATE T-TYPE



COURT

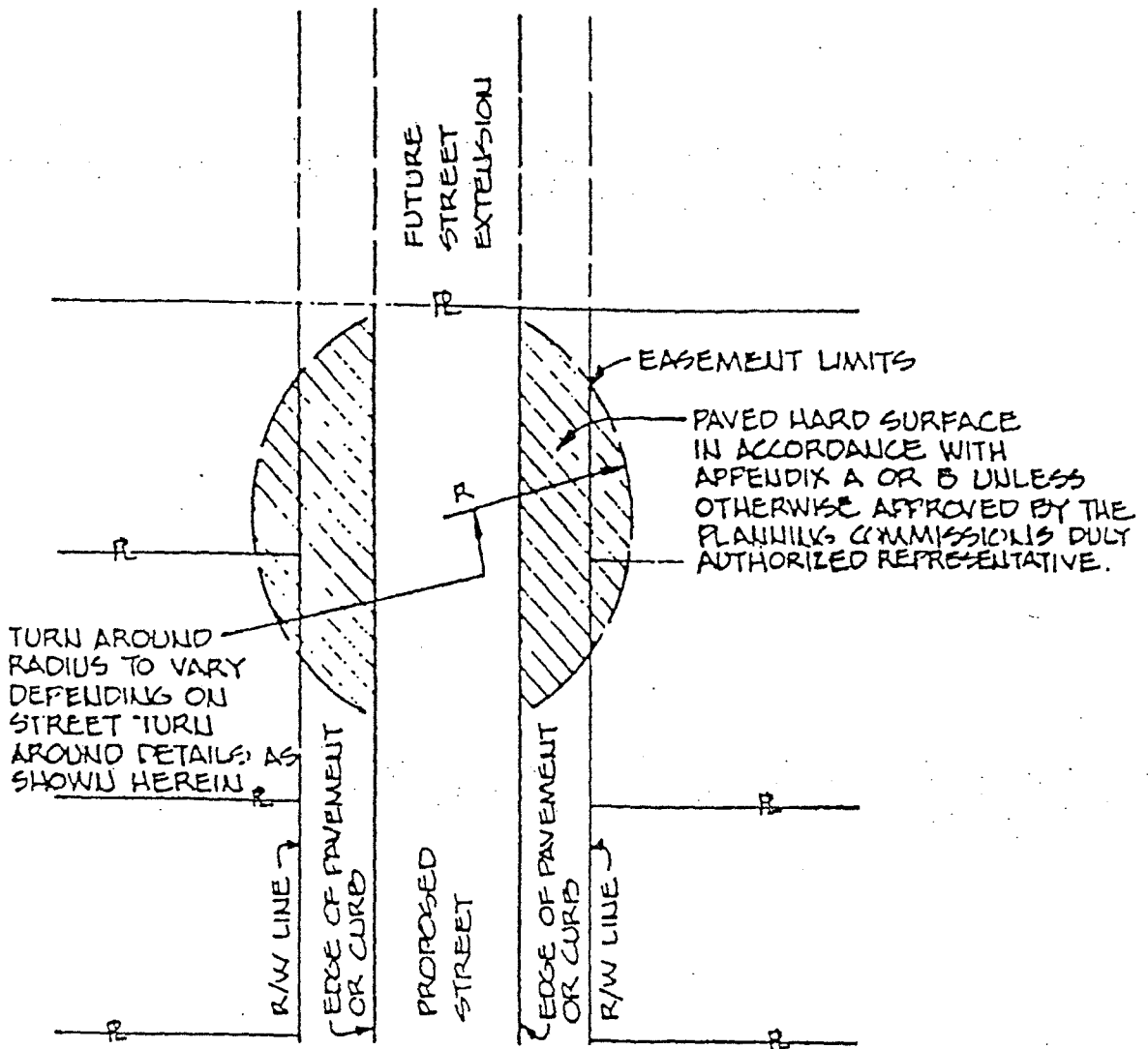


LOCAL



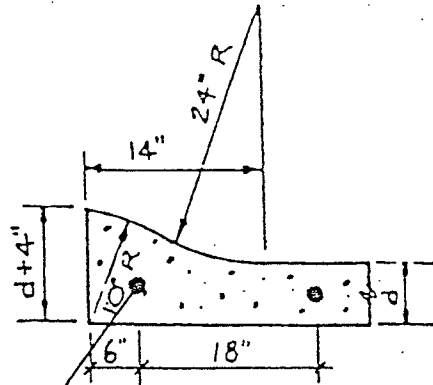
CUL-DE-SAC

TURN AROUND DETAILS
FOR DEADEND STREETS



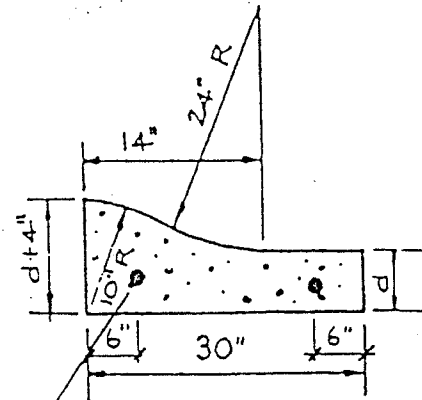
DETAIL OF TEMPORARY TURNAROUND
 FOR FUTURE STREET EXTENSION

CURB AND GUTTER DETAILS



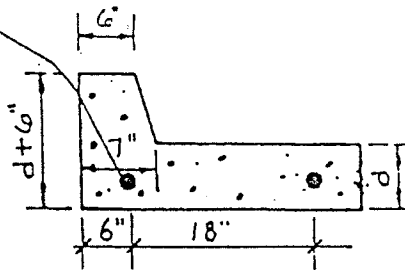
**INTEGRAL CURB
CONCRETE PAVEMENT**

• 3/4" Φ DOWELS 18" LONG
18" O.C. TYPE I EXPANSION JOINT
WITH CAP.

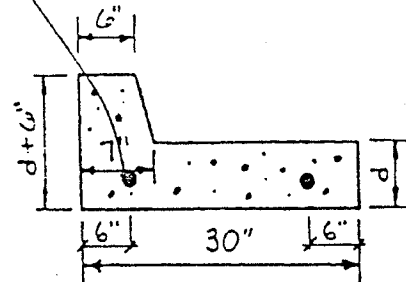


**CONCRETE CURB
ASPHALT PAVEMENT**

• 3/4" Φ DOWELS 18" LONG 18" O.C.
TYPE I OR TYPE 3 TO COINCIDE WITH
EXPANSION OR CONSTRUCTION JOINTS

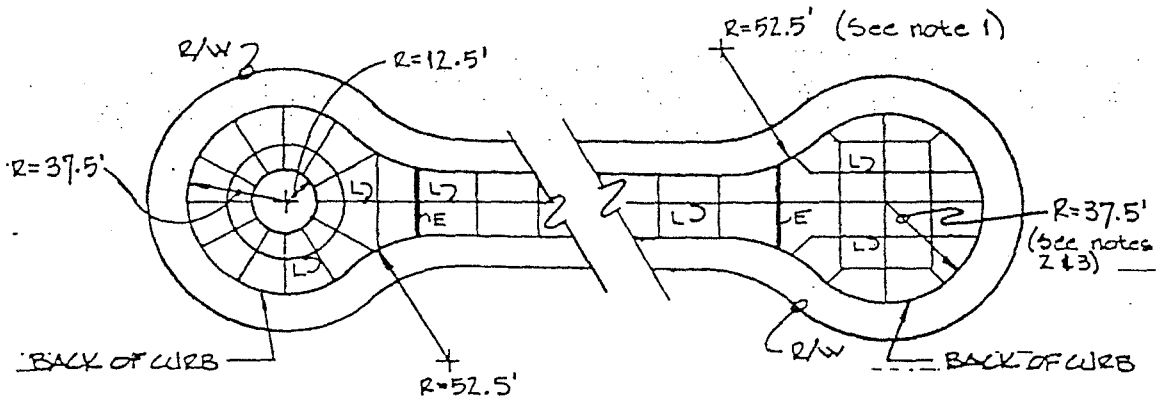


**INTEGRAL CURB
CONCRETE PAVEMENT**



**CONCRETE CURB
ASPHALT PAVEMENT**

NOTE: Transverse expansion, contraction and construction joints shall conform to Item 10.0 of these regulations

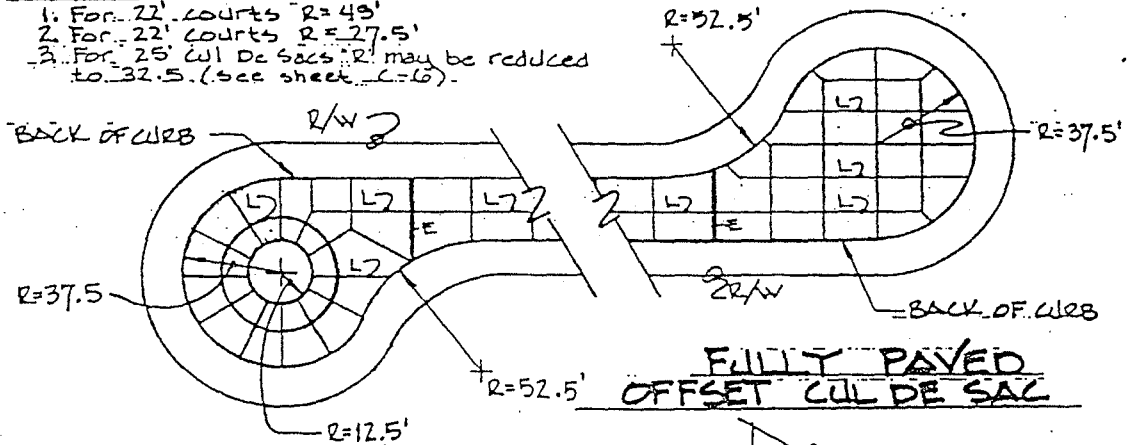


OPEN CENTER CUL DE SAC

FULLY PAVED CUL DE SAC

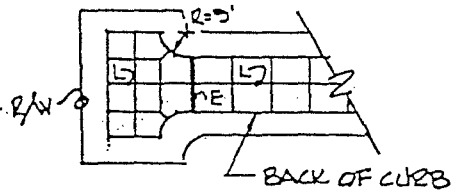
NOTES:

1. For 22' courts $R=49'$
2. For 22' courts $R=27.5'$
3. For 25' Cul De Sacs R may be reduced to 32.5' (see sheet C-6)

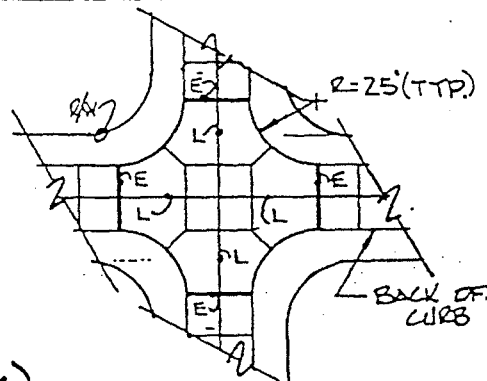


OPEN CENTER OFFSET CUL DE SAC

FULLY PAVED OFFSET CUL DE SAC



ALTERNATE T-TYPE (COURTS)



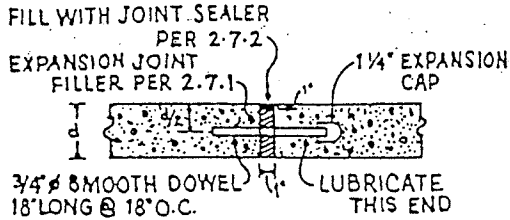
INTERSECTION

KEY:

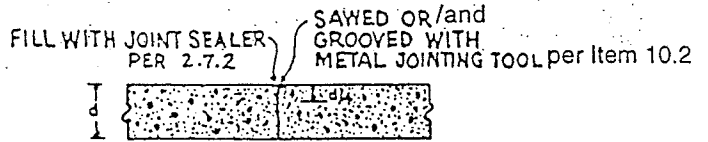
- E = Expansion Joint
- L = Longitudinal Joint
- Unmarked joints are to be contraction joints

TYPICAL CONCRETE JOINTING PLAN

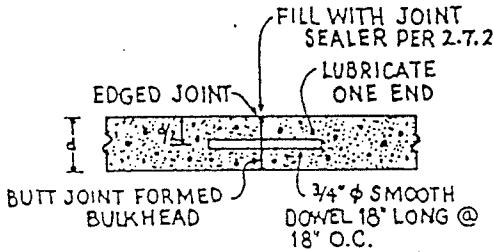
JOINT DETAILS



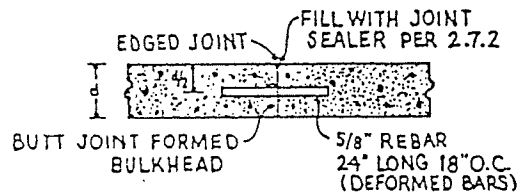
TYPE 1-Expansion Joint



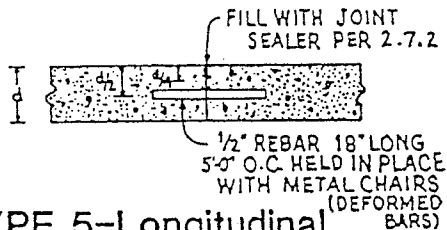
TYPE 2-Transverse Contraction Joint
(sawed or grooved joint)



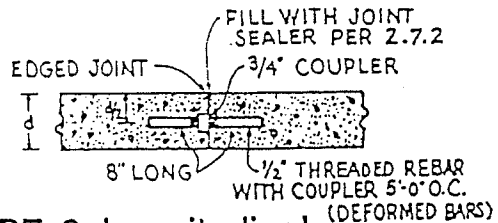
TYPE 3-Transverse Construction Joint
(planned-coincide with contraction joint)



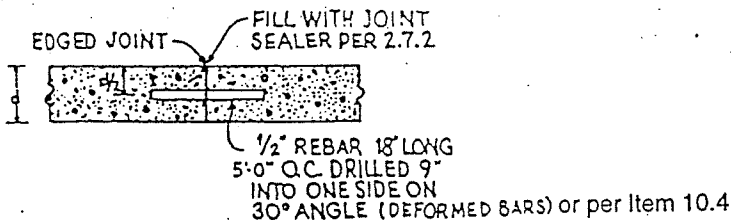
TYPE 4-Transverse Construction Joint
(emergency-not coincide with contraction joint)



TYPE 5-Longitudinal Sawed Joint

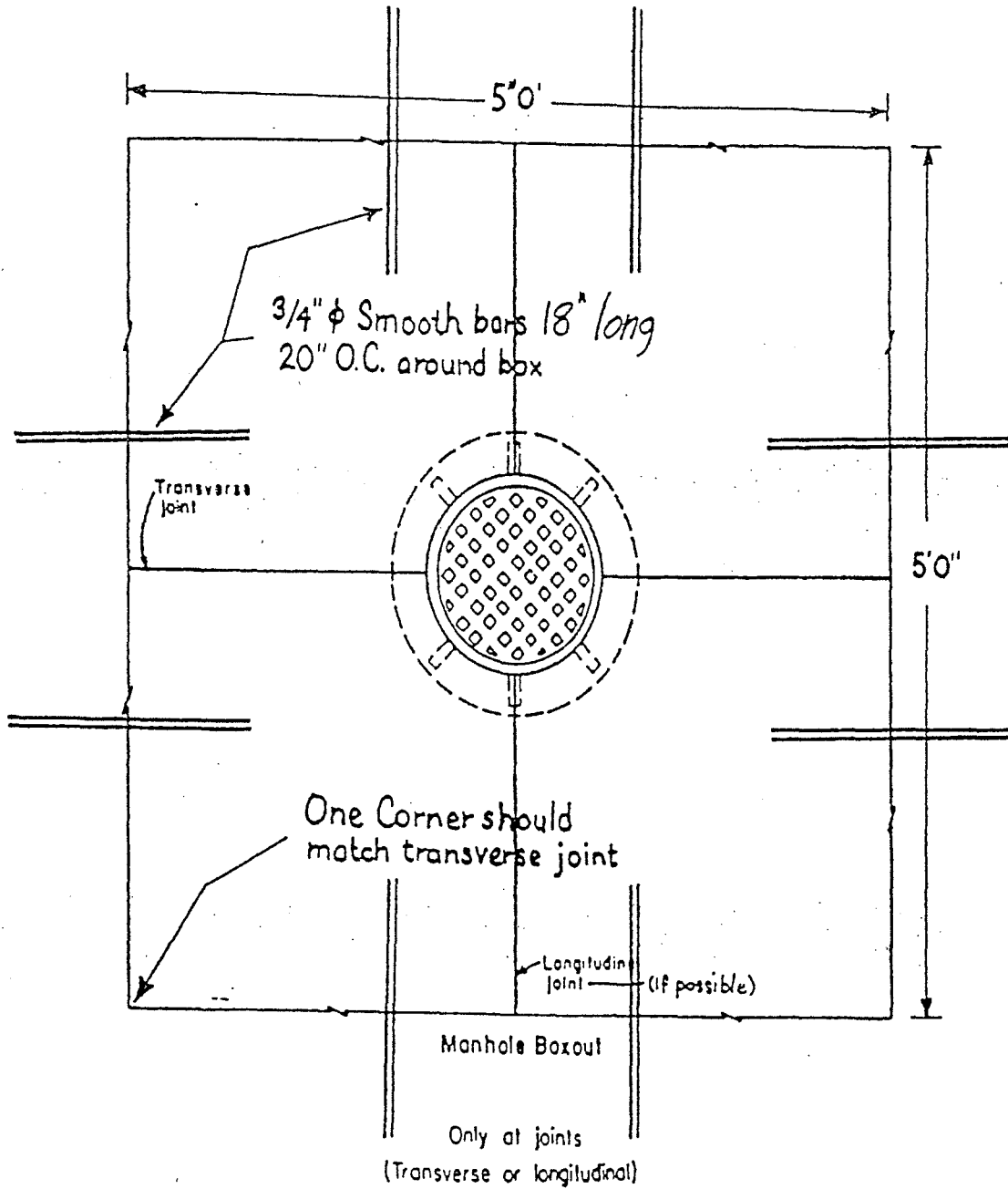


TYPE 6-Longitudinal Construction Joint
(threaded rebar)

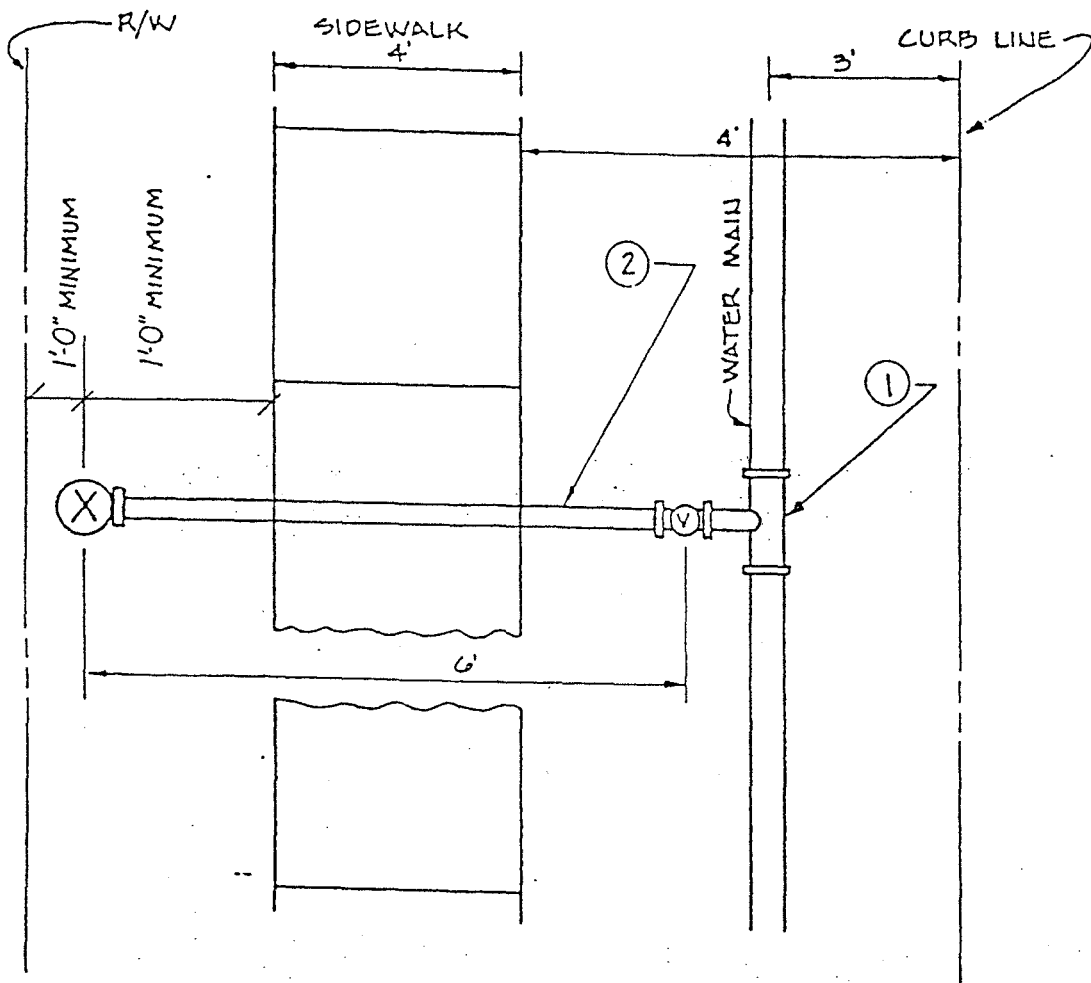


TYPE 7-Longitudinal Construction Joint Alt. (drilled)

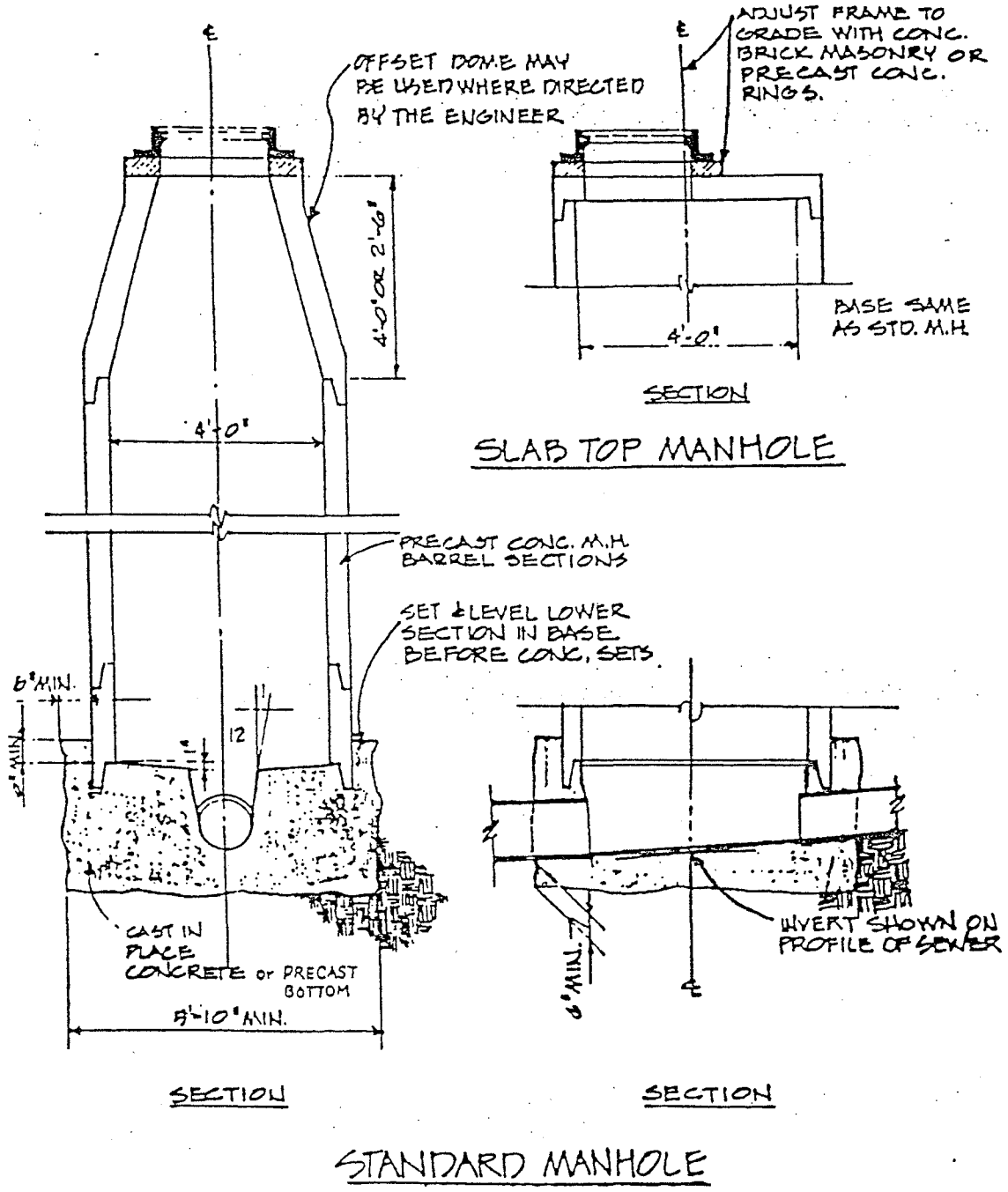
MANHOLE DETAIL IN CONCRETE PAVEMENT



TYPICAL WATER MAIN AND FIRE HYDRANT ASSEMBLY LOCATION FOR ALL STREETS



- ① - ANCHORING TEE - CLOW PART NO. F-1217 OR APPROVED EQUAL
- ② - HYDRANT ADAPTER - WILL BE SOLID X SWIVEL CLOW PART NO. F-1211MS OR APPROVED EQUAL

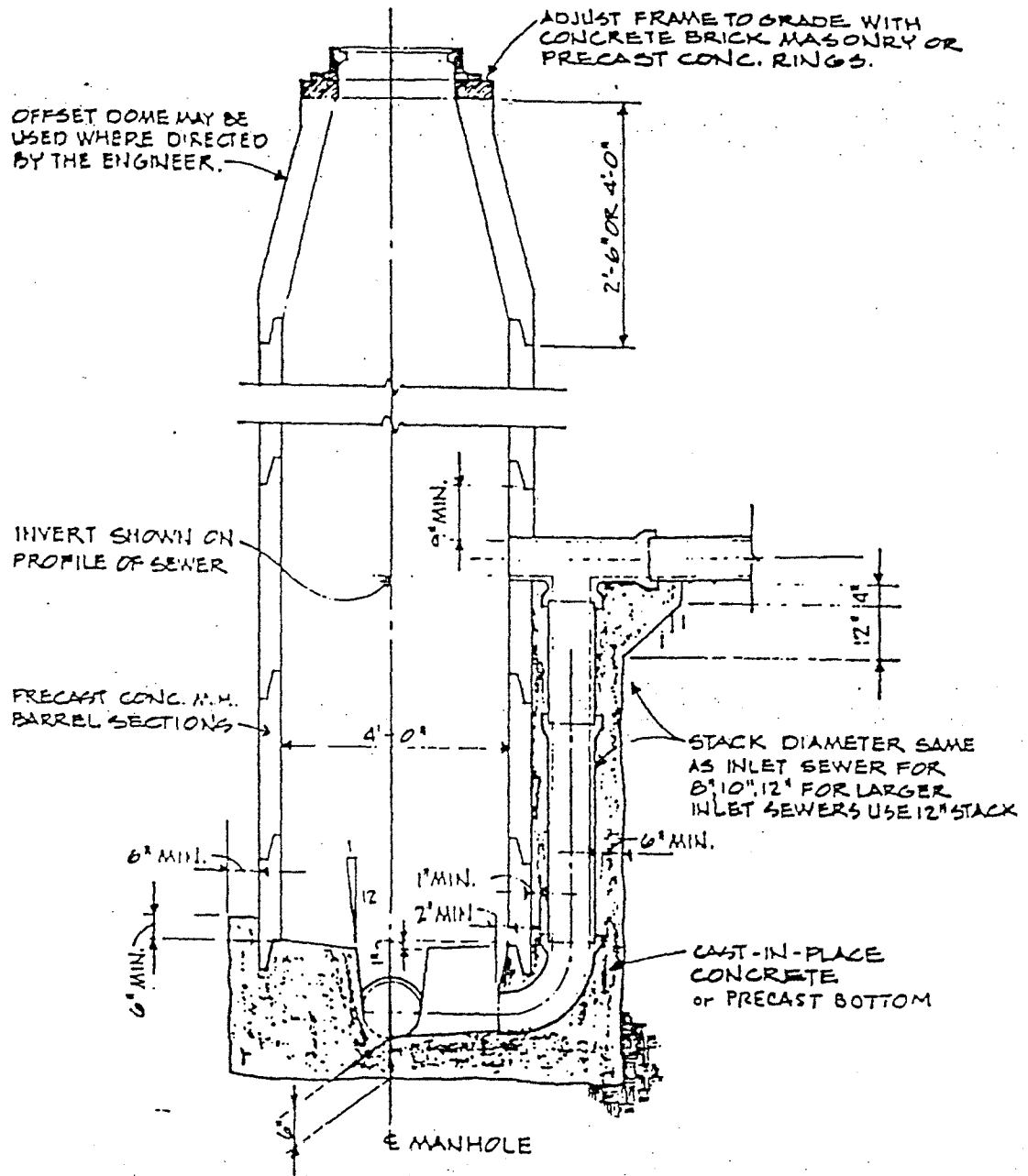


SECTION
SLAB TOP MANHOLE

SECTION

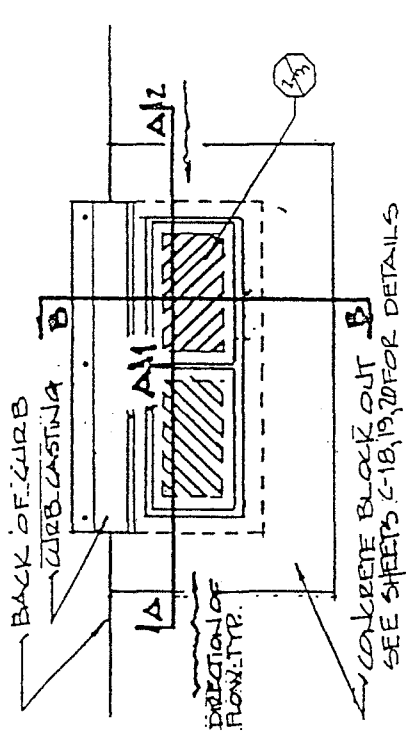
SECTION

STANDARD MANHOLE

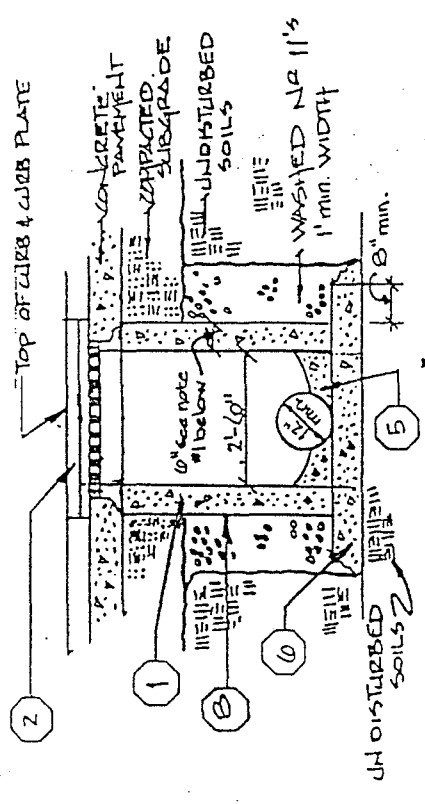


SECTION

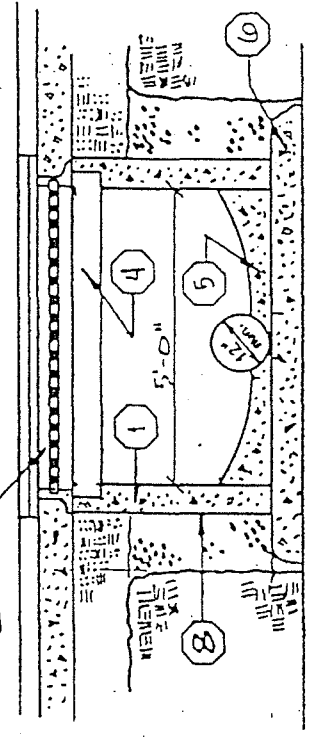
STANDARD DROP MANHOLE



PLAN OF CATCH BASIN



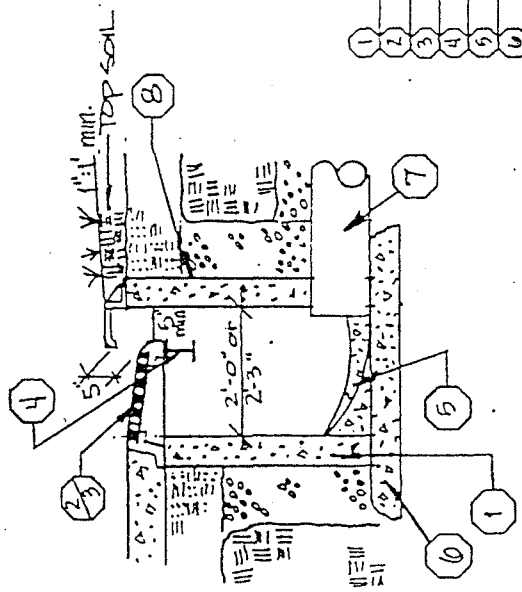
SECTION AA-1

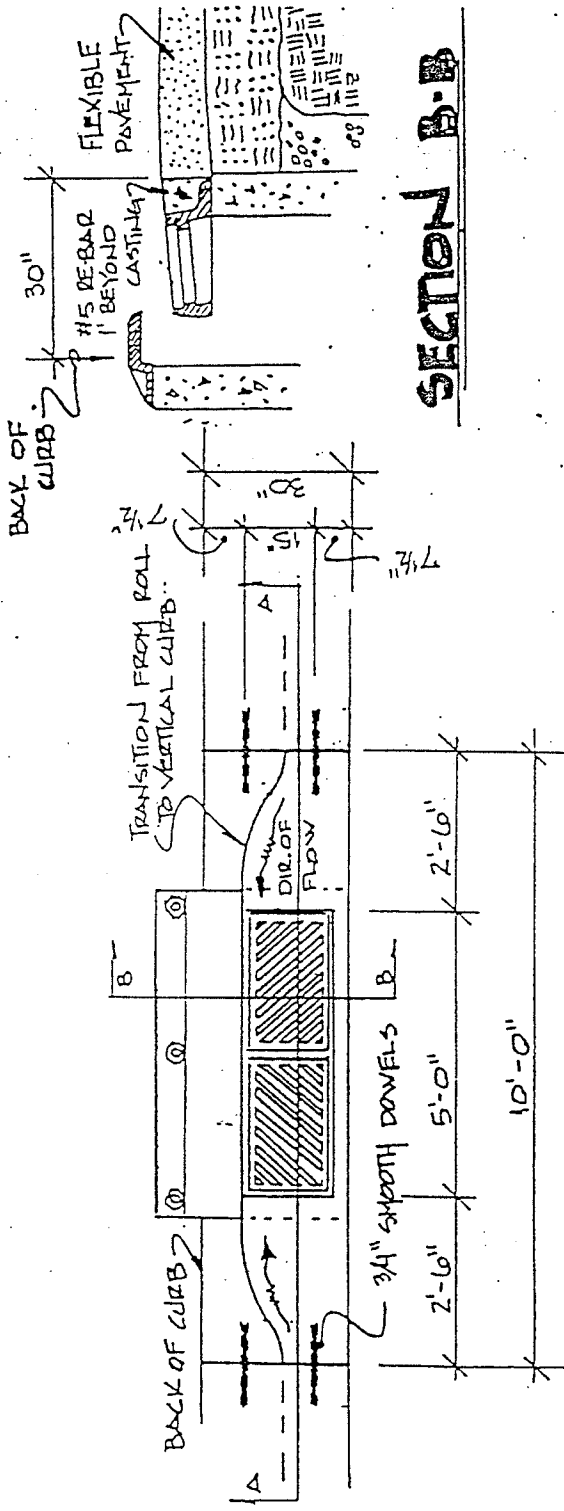


SECTION AA-2

- 1 CONCRETE BLOCK OR SAND BLOCK MAY BE USED IN PLACE OF PRECAST OR CURB-PLATE CONCRETE.
- 2 SUBGRADE SHALL BE PROVED TO THE FULL DEPTH OF THE CURB PLATE WITH APPROVED EQUIV.
- 3 PRECAST CURB: FRAME GRATE AND CURB PLATE: NEED NOT BE SET IN PLACE FOR APPROVED EQUAL
- 4 5/8" X 1/2" S. X 1/4" STEEL BEAM - TOP: WITH SEPARATE OR BOLTED INVERT
- 5 4" MIN. DEPTH - 4000 PSI. AE. CONCRETE WITH SCRIBED INVERT
- 6 12" MIN. DEPTH 4000 PSI. AE. CONCRETE EXTENDED MIN. 8" BEYOND EXTERIOR OF BOX
- 7 12" MIN. DIA. PIPE FOR ALL PRECASTS AND RISES. SEE SHEETS 17-D
- 8 ALL REINFORCING BARS SHALL NOT YIELD AN OPENING GREATER THAN THE SIZE OF

SECTION B-B

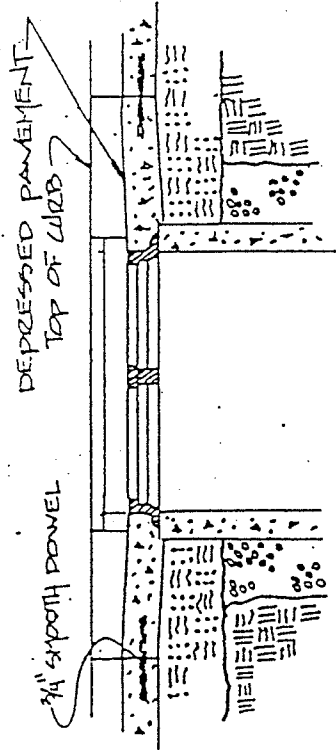




SECTION B-B

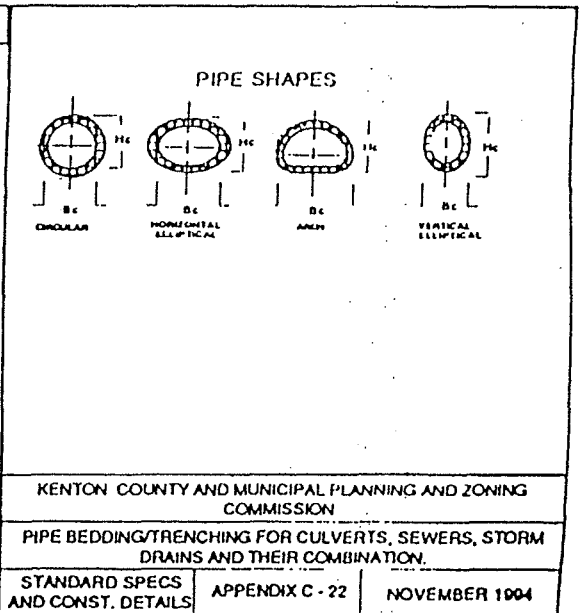
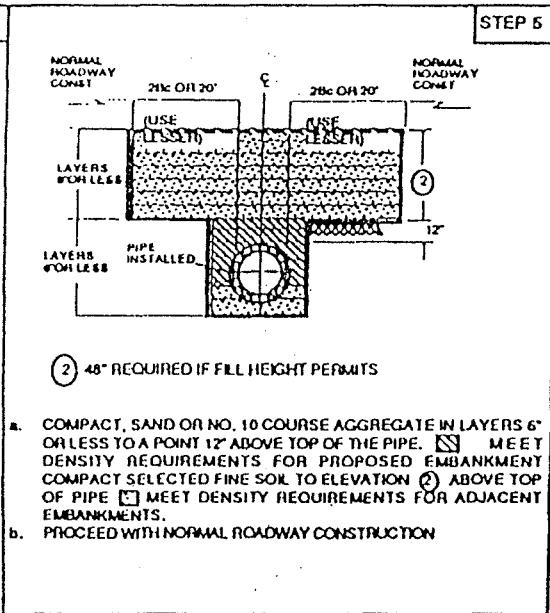
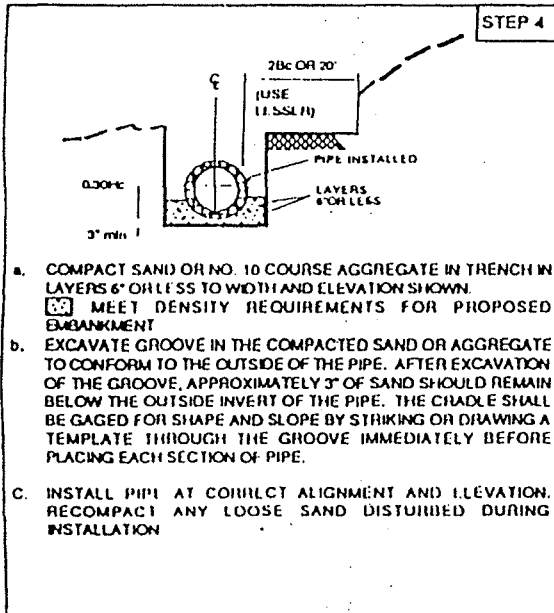
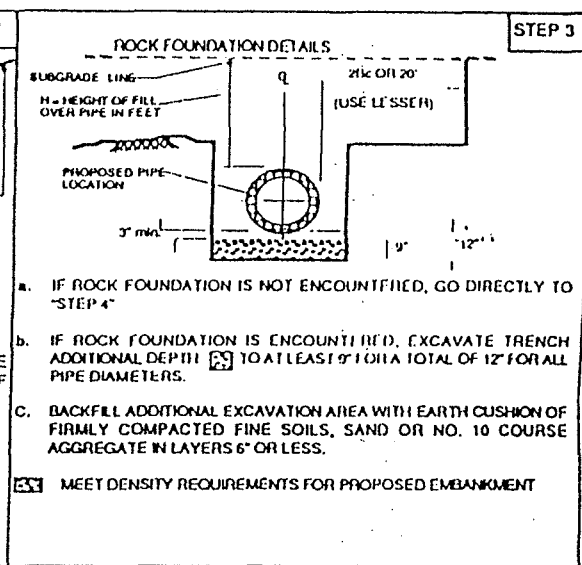
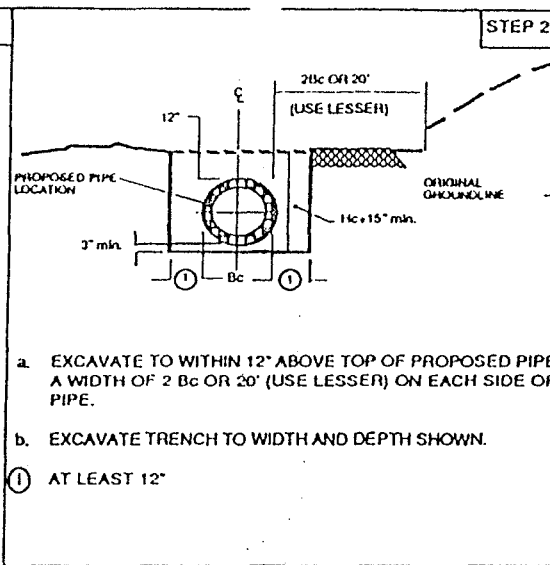
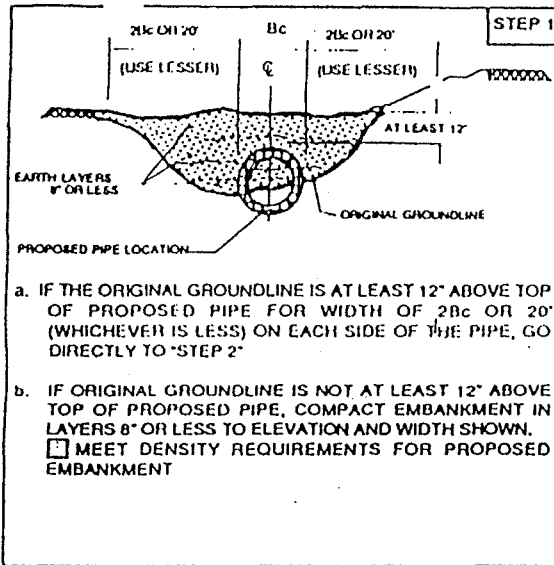
PLAN VIEW

- BLOCKOUTS SHALL BE PAVED WITH 4000 PSI AIR ENTRAINED PORTLAND CEMENT CONCRETE.
- BLOCKOUTS FOR SINGLE INLET CATCH BASINS SHALL BEAR THE SAME DIMENSIONS AS THE DOUBLE INLET CATCH BASIN.
- 3/4" X 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT - SEE SHEET C-10 FOR DOWEL DETAILS.
- PAVEMENT THICKNESS SHALL CONFORM TO THE RELATED STREET CLASSIFICATIONS PER SECTION 7. TABLES OF THESE REGULATIONS.



SECTION A-A

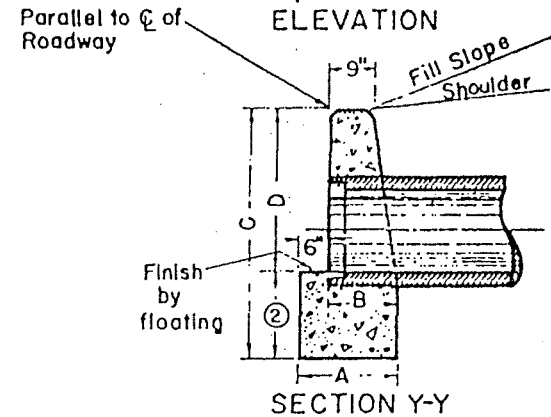
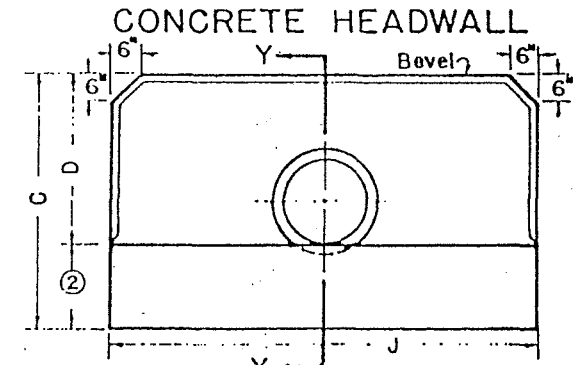
**ALTERNATIVE - B
FLEXIBLE PAVEMENT BLOCKOUT DETAIL**



Capacity of inlet shall be 2 times pipe discharge diameter at same maximum headwater depth.

DIMENSIONS AND QUANTITIES

HEADWALL TYPE	DIAMETER OF PIPE	HEADWALL DIMENSIONS									CUBIC YARDS CONCRETE FOR ONE HEADWALL ②	
		A	B	C	D	E	F	G	H ①	J	EARTH	ROCK
STANDARD	12"	1'-8"	1'-2"	4'-0"	2'-6"	—	—	—	—	6'-0"	1.05	0.87
	15"	1'-8½"	1'-2½"	4'-3"	2'-9"	—	—	—	—	6'-9"	1.25	1.03
	18"	1'-9"	1'-3"	4'-6"	3'-0"	—	—	—	—	7'-6"	1.48	1.23
	21"	1'-9½"	1'-3½"	4'-9"	3'-3"	—	—	—	—	8'-3"	1.73	1.46
	24"	1'-10"	1'-4"	5'-0"	3'-6"	—	—	—	—	9'-0"	1.99	1.69
RAISED	12"	1'-8"	1'-2"	4'-6"	3'-0"	—	—	—	—	7'-6"	1.45	1.23
	15"	1'-8½"	1'-2½"	4'-9"	3'-3"	—	—	—	—	8'-3"	1.69	1.43
	18"	1'-9"	1'-3"	5'-0"	3'-6"	—	—	—	—	9'-0"	1.96	1.67
	21"	1'-9½"	1'-3½"	5'-3"	3'-9"	—	—	—	—	9'-9"	2.25	1.93
	24"	1'-10"	1'-4"	5'-6"	4'-0"	—	—	—	—	10'-6"	2.54	2.19
STANDARD ELL	12"	1'-8"	1'-2"	4'-0"	2'-6"	2'-0"	3'-8"	3'-0"	2'-6"	4'-8"	1.19	0.99
	15"	1'-8½"	1'-2½"	4'-3"	2'-9"	2'-3"	3'-11½"	3'-6"	2'-9"	5'-2½"	1.42	1.19
	18"	1'-9"	1'-3"	4'-6"	3'-0"	2'-6"	4'-3"	4'-0"	3'-0"	5'-9"	1.67	1.41
	21"	1'-9½"	1'-3½"	4'-9"	3'-3"	2'-9"	4'-6½"	4'-6"	3'-3"	6'-3½"	1.93	1.63
	24"	1'-10"	1'-4"	5'-0"	3'-6"	3'-0"	4'-10"	5'-0"	3'-6"	6'-10"	2.22	1.89
RAISED ELL	12"	1'-8"	1'-2"	4'-6"	3'-0"	2'-9"	4'-5"	3'-9"	3'-3"	5'-5"	1.62	1.37
	15"	1'-8½"	1'-2½"	4'-9"	3'-3"	3'-0"	4'-8½"	4'-3"	3'-6"	5'-11½"	1.88	1.59
	18"	1'-9"	1'-3"	5'-0"	3'-6"	3'-3"	5'-0"	4'-9"	3'-9"	6'-6"	2.16	1.85
	21"	1'-9½"	1'-3½"	5'-3"	3'-9"	3'-6"	5'-3½"	5'-3"	4'-0"	7'-0½"	2.47	2.12
	24"	1'-10"	1'-4"	5'-6"	4'-0"	3'-9"	5'-7"	5'-9"	4'-3"	7'-7"	2.79	2.41
	27"	1'-10½"	1'-4½"	5'-9"	4'-3"	4'-0"	5'-10½"	6'-3"	4'-6"	8'-1½"	3.14	2.72



NOTES

Circular Pipe includes slightly elliptical concrete pipe with circular reinforcement.

Volume displaced by barrel of pipe has been computed using inside dimension of pipe.

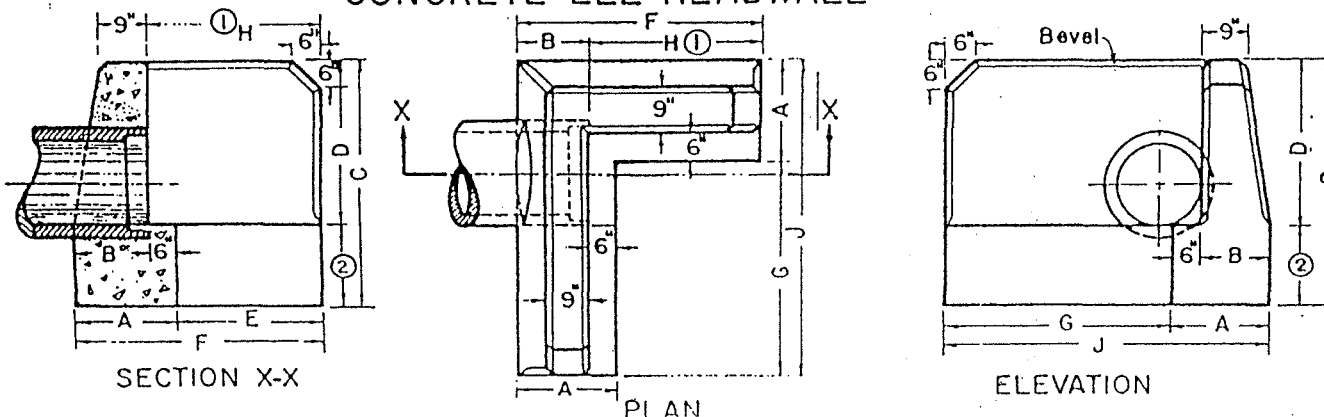
① The dimension and/or the angle of intersection between the walls may be varied on construction.

② Volume based on values of 18" for earth, 12" for rock.

Straight face Headwalls for 24-inch pipe and smaller used as inlets are prohibited.

Safety Guards or Railings may be required (See Appendix C-25)

CONCRETE ELL HEADWALL



KENTUCKY BUREAU OF HIGHWAYS	
CONCRETE HEADWALLS FOR 12"-27" CIRCULAR PIPE CULVERTS	
STANDARD DRAWING No. RDH-005	
DESIGNED BY <i>F. H. [Signature]</i>	7-26-27
CHECKED BY <i>[Signature]</i>	2.22.28

**ENCLOSURE GRATE FOR INLET HEADWALL
24" DIAMETER PIPE OR LESS**

Grate to be painted per filed specifications using H.B. Fuller Powder Coating IF5301 or equivalent

4 ea. - 1/2 x 2 1/4" Flat Cold Rolled Stock #C1018 punched with holes 1/4" larger than cross member diameter

Round Steel Bar C1018 continuous 3/4" Diameter for Headwalls with E of 5'-3" less or 1" Diameter C1018 for Headwalls with E greater than 5'-3"

Four 4-1/2" x 2 1/4" x 3" Anchor tabs to be welded into place. Grate to be mounted to Headwall with 4 - 5/8" x 5" corrosion proof bolts.

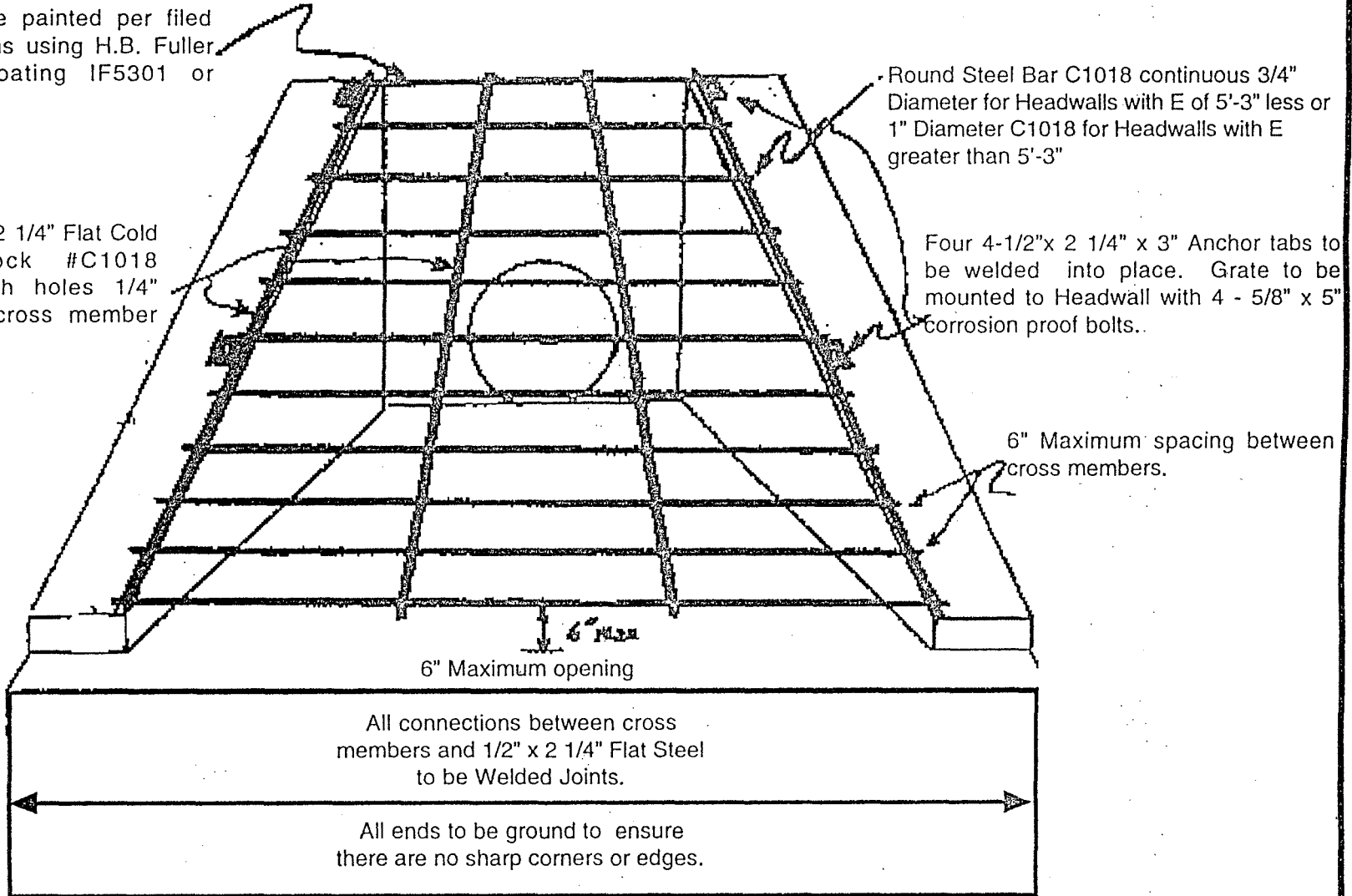
6" Maximum spacing between cross members.

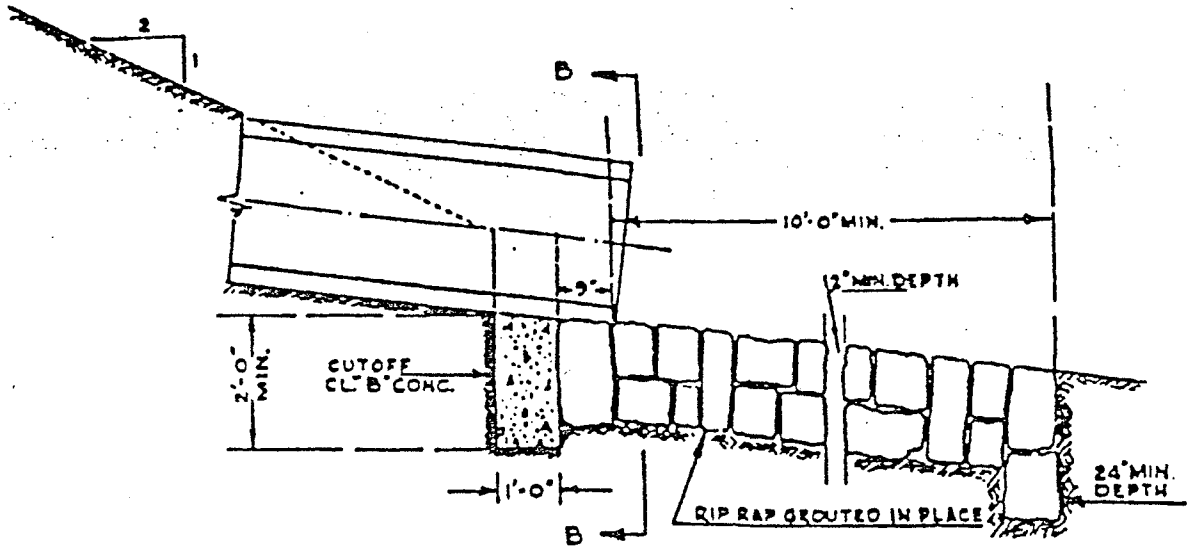
6" Max
6" Maximum opening

All connections between cross members and 1/2" x 2 1/4" Flat Steel to be Welded Joints.

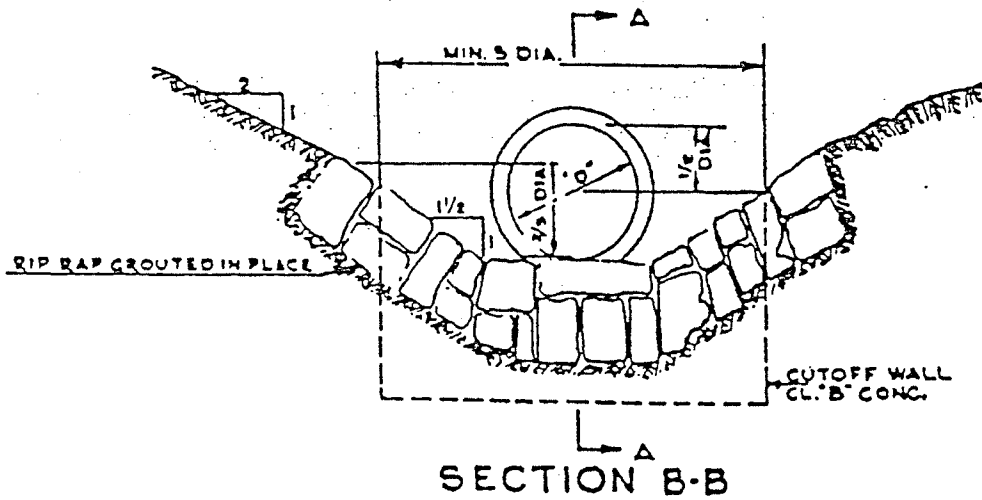
All ends to be ground to ensure there are no sharp corners or edges.

APPENDIX C-26





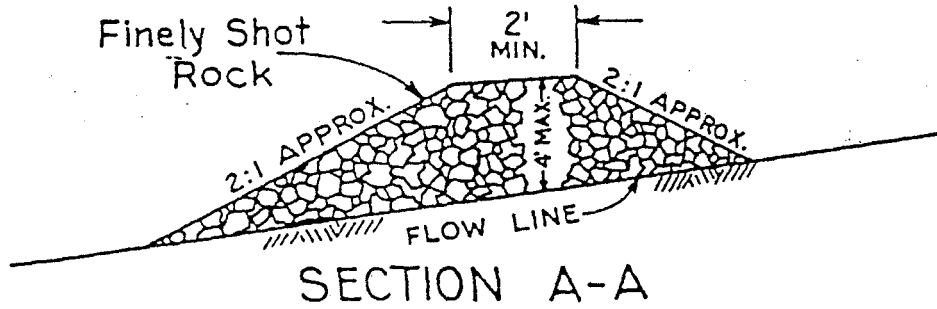
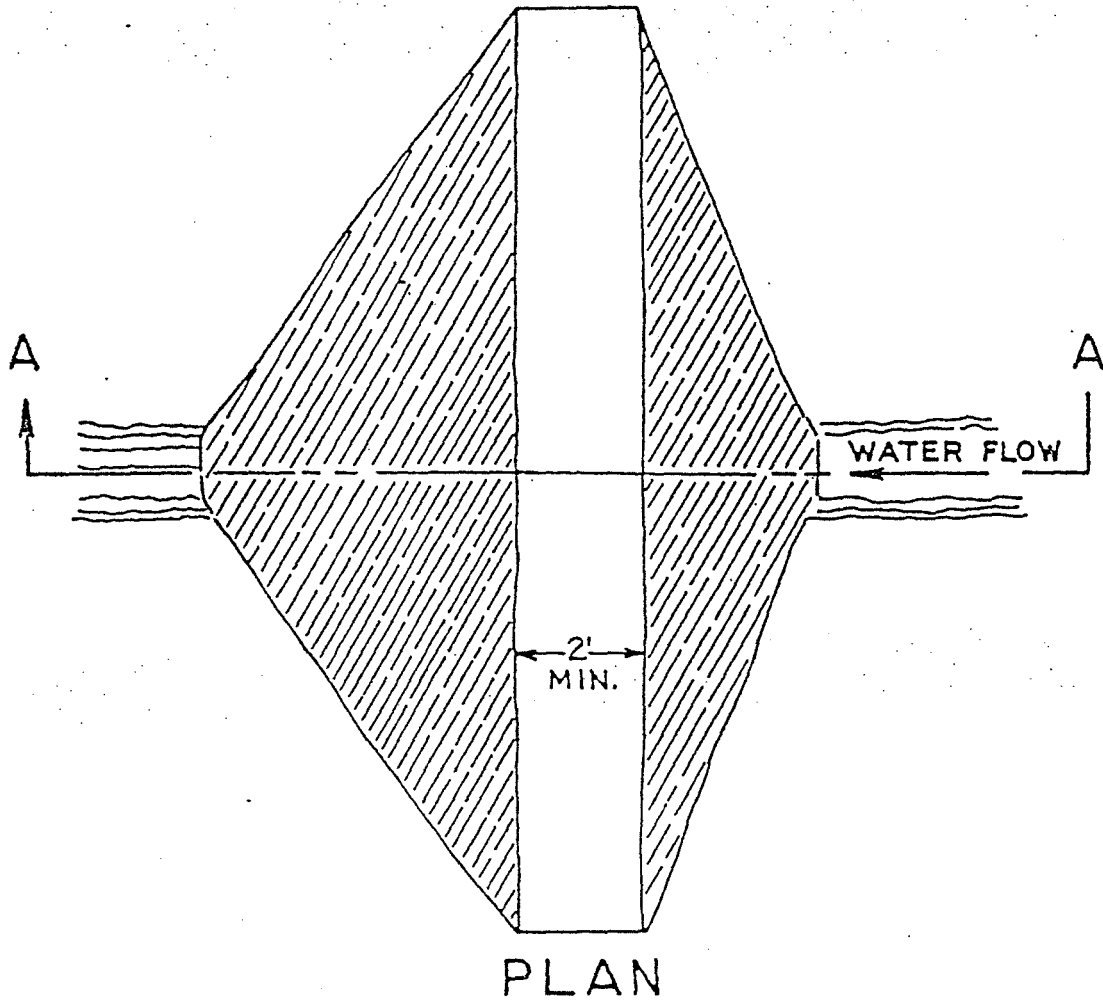
SECTION A-A



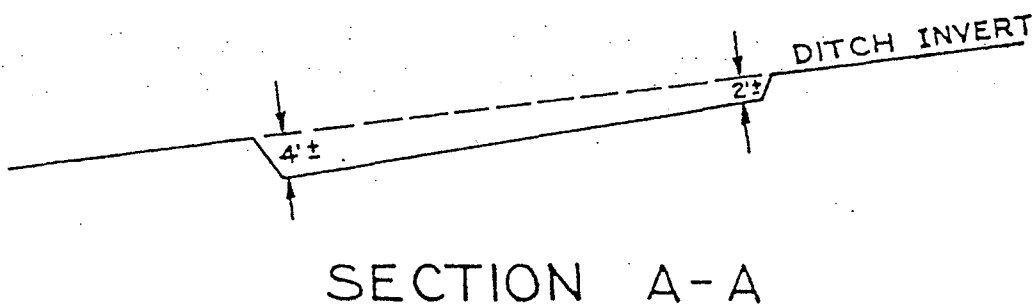
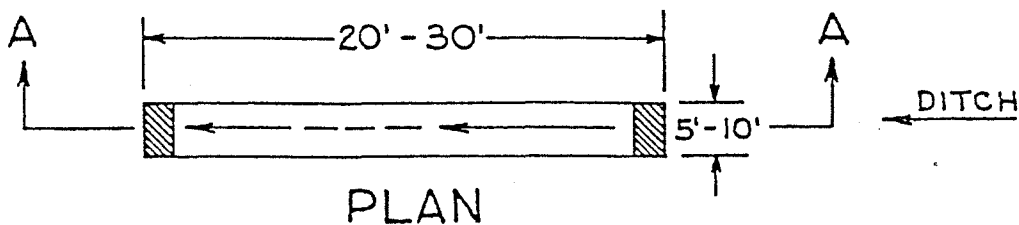
TO BE USED WHERE RIP RAP APRON IS CALLED FOR ON PLANS AND NO DETAIL IS PROVIDED.

RIP RAP APRON AND CUTOFF WALL

SILT CHECK

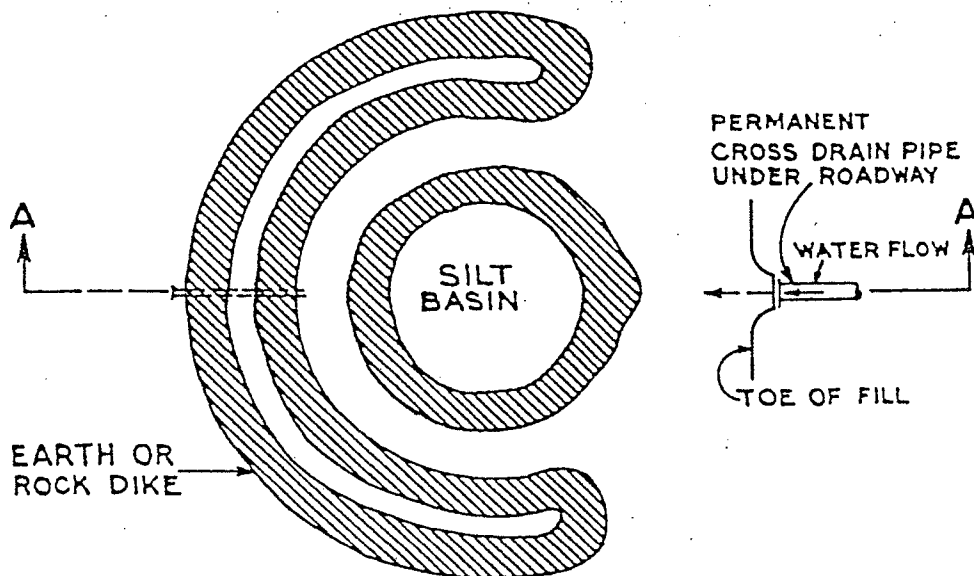


SILT TRAP TYPE A

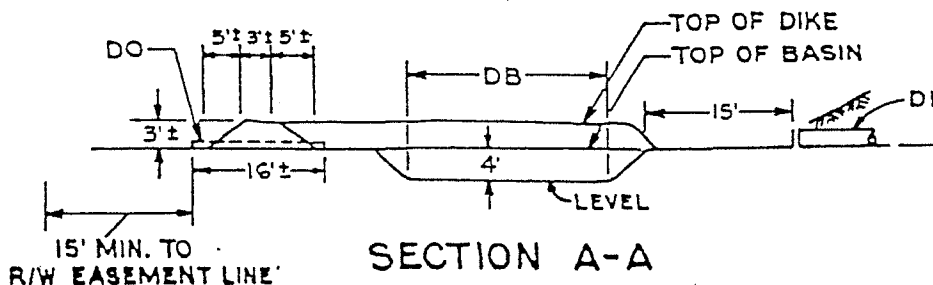


NOTE: SILT TRAP TO BE CLEANED WHEN IT IS APPROXIMATELY 50% FILLED WITH SEDIMENT. SILT TRAPS TO BE PLACED IN SURFACE DRAIN DITCHES AND SIDE DITCHES JUST BEFORE THE WATER (RUNOFF) LEAVES THE RIGHT OF WAY, ENTERS A WATER COURSE, AND AT THE END OF CUT SECTIONS, AND IMMEDIATELY PRECEDING DITCH INLETS. LOCATION OF TRAP AND SIZE (OTHER THAN AS SHOWN) TO BE AS DIRECTED BY THE ENGINEER WHO SHALL REVISE SIDE IF AND AS MAY BE REQUIRED. DIMENSIONS ARE APPROXIMATE.

SILT TRAP TYPE B



PLAN

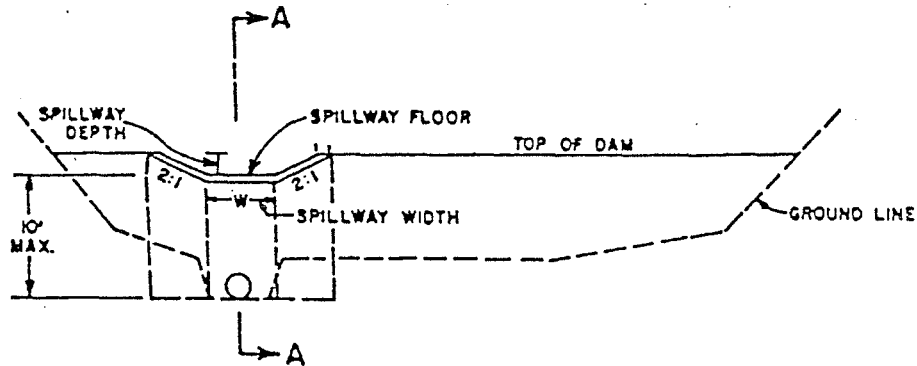


SECTION A-A

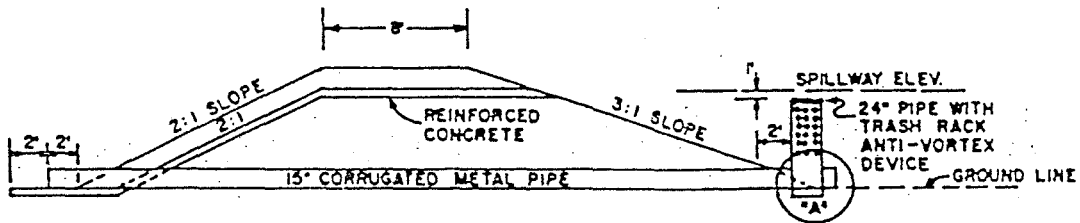
NOTE: ALL DIMENSIONS OF BASIN AND DIKE WILL NOT REQUIRE CONSTRUCTION TO NEAT LINES. THE PLAIN VIEW ABOVE INDICATES THE SILT BASIN IS ROUND, HOWEVER, IT IS DRAWN IN THIS MANNER FOR ILLUSTRATION PURPOSES ONLY. THE BASIN MAY BE CONSTRUCTED AS LONG AS THE AREA AND DEPTH OF THE BASIN IS AT LEAST AS LARGE AS INDICATED. DIKES MAY BE CONSTRUCTED OF EARTH OR BROKEN ROCK. EARTH DIKE MUST BE CONSTRUCTED WITH A PIPE AS SHOWN, HOWEVER, BROKEN ROCK DIKES MAY NOT NEED A PIPE.

	DI	DB	DO
SDB	18"	15'	6"
SDB	24"	20'	8"

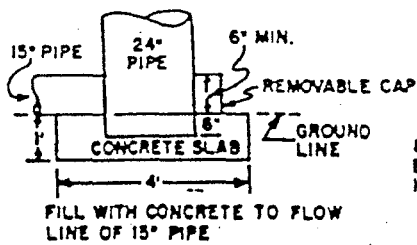
TYPICAL DETAILS FOR SEDIMENTATION BASIN



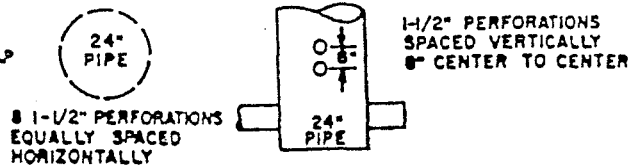
ELEVATION



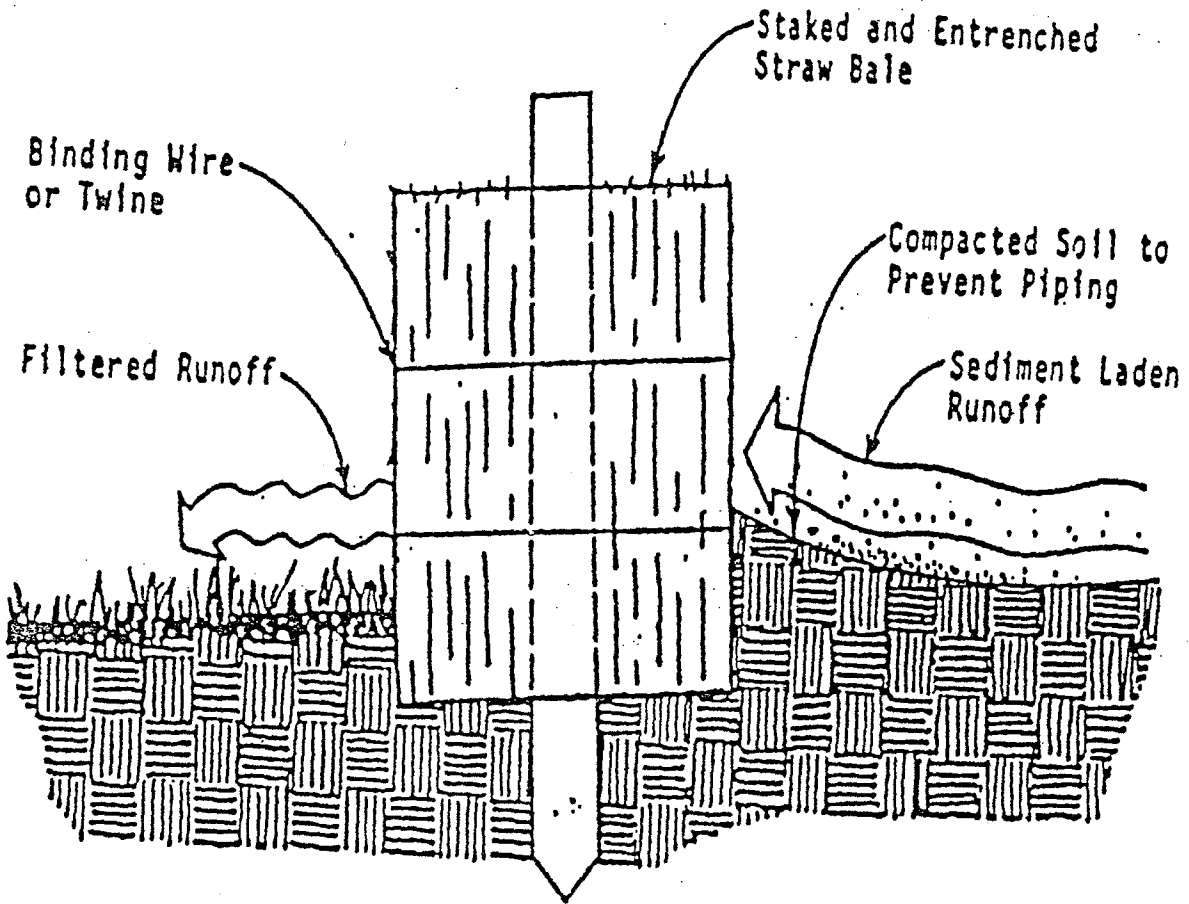
SECTION A-A



DETAIL "A"



DETAIL SHOWING LOCATION OF PERFORATIONS
IN 24" PIPE



E. Curves and Sight Distance Criteria:

1. Horizontal Curve: When there is a change in the alignment of a street along the centerline, a curve with a radius adequate to insure safe sight distance shall be constructed. The minimum radii of curves shall be:

STREET TYPE	MINIMUM CURVE RADIUS
Arterial	*
Collector	400 feet
Local or Subcollector	100 feet

2. Sight Distance: Minimum sight distance shall be as required on Tables 2A, 2B, and 2C.
3. Reverse Curves: A tangent of at least two hundred (200) feet for collector streets, shall be provided between reverse curves. No tangent shall be required for local and subcollector streets.

STREET DESIGN STANDARDS

Street Classification:	<u>Arterial</u>	<u>Collector & Secondary</u>	<u>Minor</u>	<u>Marginal Access</u>	<u>Cul-de-Sac</u>
Minimum width of right-of-way:	60 feet	50 feet	50 feet	50 feet	100 feet
Minimum width of pavement:	32 feet	20' with 2' shoulder	20' with 2' shoulder	20' with 2' shoulder	70' with 2' shoulder
Minimum radius of horizontal curves:	400 feet	100 feet except for street intersection corners	100 feet except for street intersection corners	--	--
Minimum length of vertical curves as measured from center line of right-of-way	200 feet, but not less than 50 feet for each 1% algebraic difference of grade	100 feet, but not less than 25 feet for crest curve and 35 feet for sag curve for each 1% algebraic difference of grade	100 feet, but not less than 25 feet for crest curve and 35 feet for sag curve for each 1% algebraic difference of grade	80 feet	70 feet
Minimum length of tangents between reverse curves:	300 feet	100 feet except when excessive grades may be reduced to reasonable grades by shortening tangent	100 feet except when excessive grades may be reduced to reasonable grades by shortening tangent	50 feet	50 feet
Minimum allowable grade:	5%	7%	12%*	12%*	12%*
Minimum grade for drainage:	0.5%	0.5%	0.5%	0.5%	0.5%
Minimum site distance	over 300 feet as specific case requires	300 feet	100 feet	80 feet	80 feet

* Grades greater than 12% will be permitted by the Planning Commission if recommended by Design Engineer.

APPENDIX E

SIGHT DISTANCE FOR VEHICLES EXITING FROM ACCESS POINTS ONTO ADJACENT ROADS

D= DISTANCE ALONG MAJOR ROAD FROM ACCESS POINT TO ALLOW VEHICLE TO ENTER (FEET) SEE ACCOMPANYING ILLUSTRATION

VEHICLE TYPE	20 MPH				30 MPH				40 MPH				50 MPH				60 MPH			
	2 lane		4 or 6 lane		2 lane		4 or 6 lane		2 lane		4 or 6 lane		2 lane		4 or 6 lane		2 lane		4 or 6 lane	
	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR
Passenger Car	150	130	130	130	360	260	220	260	530	440	380	440	740	700	620	700	950	1050	950	1050
Truck	300	200	200	200	500	400	400	400	850	850	850	850	1600	1600	1600	1600	2500	2500	2500	2500

Measured from a vehicle ten (10) feet back of the pavement edge.

TABLE 2B

LEFT TURN SIGHT DISTANCE FOR VEHICLES ENTERING ACCESS POINTS

S=SIGHT DISTANCE ALONG MAJOR ROUTE FOR VEHICLE TO SAFELY TURN LEFT INTO ACCESS POINT (FEET) SEE ACCOMPANYING ILLUSTRATION

VEHICLE TYPE	20 MPH			30 MPH			40 MPH			50 MPH			60 MPH		
	2 Lane	4 Lane	6 Lane	2 Lane	4 Lane	6 Lane	2 Lane	4 Lane	6 Lane	2 Lane	4 Lane	6 Lane	2 Lane	4 Lane	6 Lane
Passenger Car	150	160	170	230	250	270	370	390	420	520	550	580	700	740	780
Truck	260	260	300	400	400	480	570	620	670	810	880	950	1000	1100	1200

Notes: Values are for urban conditions. On rural streets, distances are to be increased by 10 percent to allow longer drive reaction time.

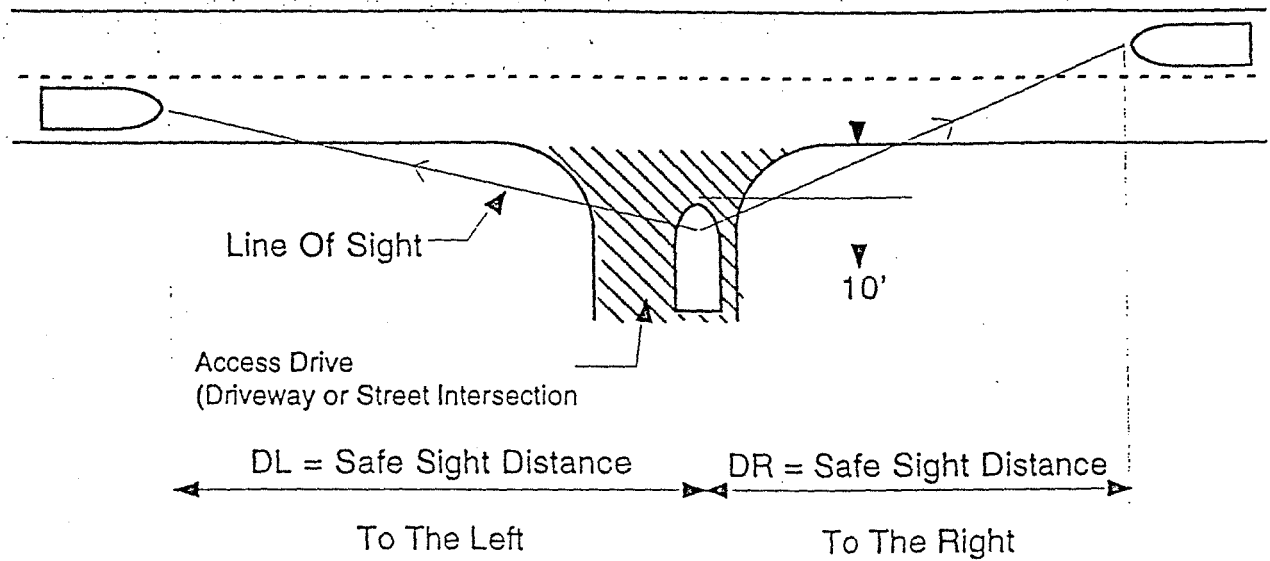
The sight distances apply when street grades are zero (0) percent to three (3) percent, either up or down. When an upgrade is steeper than three (3) percent, adjustments are to be made to compensate for the longer time required to reach the speed of highway traffic. The time is less than shown when the highway is descending. Adjustment factors apply to grades only in that portion of the road between the access points and the downstream point at which a vehicle emerging from the access points has been able to accelerate to within ten (10) miles per hour of the route speed.

When the street, in the section to be used for acceleration after leaving the access point, ascends at three (3) percent to four (4) percent, then sight distances in the direction of approaching ascending traffic are to be increased by a factor of 1.4. When the access point ascends at five (5) percent to six (6) percent, sight distances should be increased by a factor of 1.7.

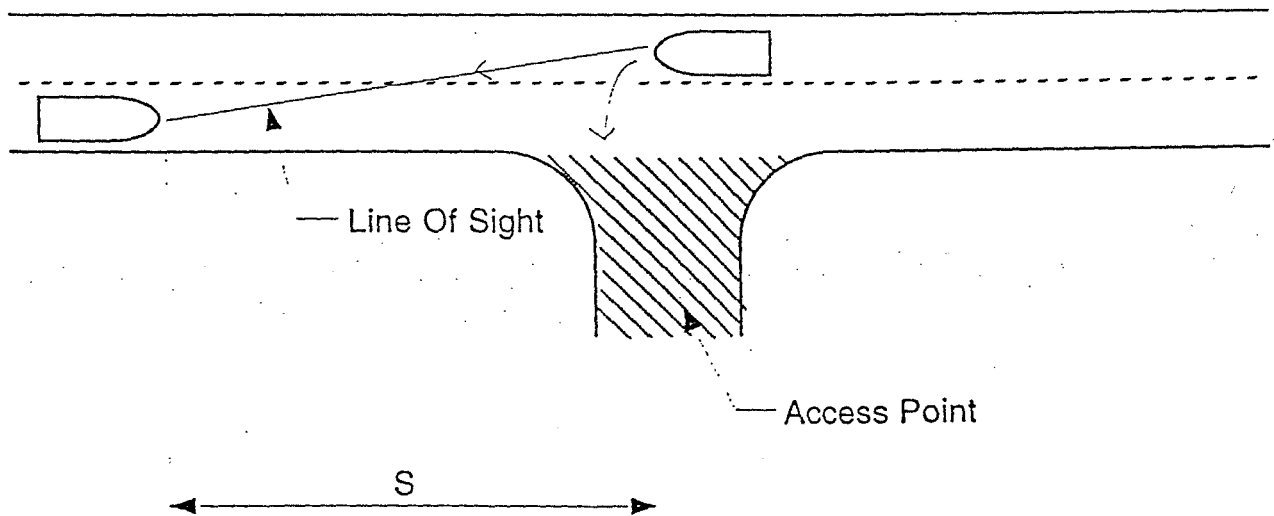
When the street, in the section to be used for acceleration after leaving the access point, descends at three (3) percent to four (4) percent, then sight distances in the direction of approaching descending traffic are to be reduced by a factor of 0.6. If the road descends at five (5) percent to six (6) percent, sight distances should be reduced by a factor of 0.5.

TABLE 2C

SIGHT DISTANCE FOR VEHICLES EXITING FROM ACCESS POINTS
(refer to Table 2A)



LEFT TURN SIGHT DISTANCE FOR VEHICLES ENTERING ACCESS POINTS
(refer to Table 2B)



APPENDIX F

IMPROVEMENT REQUIREMENTS BY TYPE OF STREET SERVING SUBDIVISIONS

TYPE OF STREET (I)	NUMBER OF LOTS SERVED	RIGHT-OF-WAY (in feet)	PAVEMENT WIDTH (in Feet)	CURB AND GUTTER (C)	SIDEWALKS ALONG STREET	ON-STREET PARKING	MINIMUM FRONT YARD DEPTH REQUIRED (in feet)	OFF-STREET PARKING REQUIRED	MINIMUM LOT WIDTH REQUIRED (in feet)	MINIMUM PAVEMENT THICKNESS
COURTS										
Deadend					(B)					
Typical	Under	40	22	Yes	Both Sides	One Side	(A)	(A)	(A)	(G)
Optional	7	40	20	Yes	Both Sides	None	35	4 spaces (E)	(A)	
CUL-DE-SAC										
Deadend					(B)					
Typical	7-25	50	25	Yes	Both Sides	One Side	(A)	(A)	(A)	(G)
Optional		40	22	Yes	Both Sides	None	50	4 spaces (E)		
LOCAL										
Typical	Under	50	25	Yes	Both Sides	One Side	(A)	(A)	(A)	(G)
Optional	100	40	22	Yes	Both Sides	None	50	4 spaces (E)	100 (H)	
SUB-COLLECTOR										
Typical	100-	50	28	Yes	Both Sides	One Side	(A)	(A)	(A)	(G)
Optional	500	40	22	Yes	Both Sides	None	50	4 spaces (E)	100	
COLLECTOR (D1)										
Typical	Over	60	30	Yes	Both Sides	One Side	(A)	(A)	(A)	(G)
Optional	500	60	22	Yes	Both Sides	None	50	4 spaces (E)	100	
ARTERIAL (F) D2)	VARIES	VARIES	VARIES	VARIES	(B)	VARIES	(A)	(A)	(A)	(F)

NOTE: Where streets are to serve industrial or commercial areas, the pavement design shall be based on a study prepared by the subdivider's engineer, projecting the type of vehicles using the street and traffic volumes and approved by the planning commission's duly authorized representative.

- (A) Minimum dimension as per applicable zoning ordinances.
- (B) Sidewalks shall be required along both sides of all streets in all areas identified as Urban Service Area per the Comprehensive Plan. Subdivisions developed along existing roadways shall require a sidewalk along the subdivider's frontage of such roadways unless waived by the planning commission. When subdivisions are designed to provide pedestrian walkways to the rear of lots or in locations other than along the street, the planning commission, or its duly authorized representative, may waive sidewalks along the streets. Sidewalks within the Non-Urban Service Area are further regulated by Section 7.3F of these regulations.
- (C) Shoulders and side ditches, along existing streets, may be permitted and designed in accordance with these regulations (see Appendix D) provided the minimum front yard depth is 50 feet, the minimum lot width is 100 feet, the minimum right-of-way is increased by 10 feet, except for collector streets.
- (D1) Driveway access points along collector streets shall be discouraged, however, if permitted, shall be spaced not less than 200 feet apart.
- (D2) Driveway access points along arterial streets shall be discouraged, however, if permitted shall be spaced not less than 600 feet apart.
- (E) Individual off-street parking spaces shall be laid out in such a manner to insure that each space has unrestricted ingress and egress to a public street (i.e., not blocked from gaining access to the street via another parked vehicle).
- (F) Arterial streets shall be designed in accordance with the requirements of the Kentucky Department of Transportation.
- (G) Minimum pavement thickness for portland cement concrete and asphalt concrete shall be designed in accordance with Tables A-1 and B-2, respectively.
- (H) In the case of local streets serving less than 25 lots, the minimum lot width shall be as per the applicable zoning ordinance requirements.
- (I) Design of public streets and private streets shall conform to minimum standards of these regulations except private streets within residential property regimes are further regulated by Administration Policy No.2.

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