OFFICIAL SUBDIVISION REGULATIONS

CITY OF COLD SPRING, KENTUCKY

Prepared By:
Cold Spring Planning Commission and Zoning Commission
and
Northern Kentucky Area Planning Commission

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SIMPLIFIED DESCRIPTION OF STEPS INVOLVED IN PROCEDURE FOR PROCESSING SUBDIVISION IMPROVEMENT PLANS

STEP #1 PRE-APPLICATION CONFERENCE: Developer, or his agent, is encouraged to notify the planning commission's duly authorized representative and discuss his land development intentions for conformance to the comprehensive plan, zoning, and subdivision regulations.

STEP #2 PRELIMINARY PLAT: Developer proceeds with the preparation of his preliminary plat.

Developer applies for preliminary plat approval with the submission of the preliminary plat to the planning commission's duly authorized representative at least thirty (30) consecutive days prior to the next regular meeting of the planning commission. Planning commission forwards copies of the preliminary plat to other applicable agencies (highway department, fire department, water district, sanitation district, natural resources conservation district, city engineer, tree commission, other utilities, etc.).

The planning commission's duly authorized representative reviews input from applicable agencies and prepares and submits recommendations to the planning commission.

Planning commission acts on preliminary plat (approval, approval subject to conditions, or disapproval) at its regular meeting.

STEP #3 GRADING AND/OR EROSION AND SEDIMENTATION CONTROL PLANS: After the preliminary plat is approved, or conditionally approved, developer proceeds with the preparation of grading and/or erosion and sedimentation control plans. (These plans may also be submitted as part of the preliminary plat or later with the improvement drawings and specifications.)

Prior to any construction grading, developer submits grading and/or erosion and sedimentation control plans to the planning commission's duly authorized representative for action. The planning commission's duly authorized representative reviews the submitted plans for conformance to the approved, or conditionally approved, preliminary plat and the requirements of the subdivision regulations, and notifies developer of action.

STEP #4 IMPROVEMENT DRAWINGS & SPECIFICATIONS: After the preliminary plat is approved, or conditionally approved, developer proceeds with preparation of improvement drawings and specifications.

Prior to any construction of improvements, developer submits improvement drawings and specifications to all local and state agencies and the commission's duly authorized representative for review and action. Developer also submits copies of improvement drawings and specifications to other applicable agencies (water district, sanitation district, city engineer, etc.).

The commission's duly authorized representative reviews submitted improvement drawings and specifications for conformance to the approved, or conditionally approved, preliminary plat and the requirements of the subdivision regulations, coordinates with all applicable agencies concerning input, and notifies the developer of action.

STEP #5 FINAL PLAT: After the grading and/or erosion and sedimentation control plans and the improvement drawings and specifications are approved, or conditionally approved, and permits are granted by other local and state agencies, developer may proceed to grade and construct the improvements. After the improvements are completed and inspected by the planning commission's duly authorized designated inspectors (unless an acceptable guarantee is to be used), developer proceeds to prepare the final plat.

In order to avoid expiration of a preliminary plat, within twenty-four (24) months after approval, or conditional approval, of the preliminary plat, the developer must submit the final plat (for all or sections of the total area included in the preliminary plat), to the commission's duly authorized representative for review and action.

The commission's duly authorized representative reviews the submitted final plat for conformance to the approved, or conditionally approved, preliminary plat and improvement drawings and specifications and the requirements of the subdivision regulations. Final approval of the final plat shall be given in one of two ways:

1. After construction of improvements: After the subdivider has installed all required improvements in compliance with these regulations, and has provided record copies of drawings, the planning commission's duly authorized representative may then recommend final approval. The original drawing of the final plat shall then be signed and dated by the chairman or other officer of the planning commission.

2. Before construction of improvements: The planning commission's duly authorized representative may recommend final plat approval before all required improvements are installed, provided that a guarantee is provided for the purpose of assuring installation of such improvements. The amount of the guarantee shall be based on an estimate made by the subdivider's engineer and approved by the planning commission's duly authorized representative. Upon determination that all requirements of these regulations have been met, the planning commission's duly authorized representative may recommend final approval. The original drawing of the final plat shall then be signed and dated by the chairman or other officer of the planning commission. The guarantee shall not be returned to the subdivider until all improvements are installed, inspected, and record copies of drawings have been provided.

STEP #6 RECORDING: After approval of the final plat, the original drawing of the final plat shall be filed in the County Clerk's Office, after which lots may be sold, leased, or transferred. In the case where sidewalk improvements have not been completed, a conditional certificate of occupancy shall be given, provided either a guarantee is executed or a time period of completion is established by contract with the city not to exceed six (6) months, signed by both the builder and owner of the premises for which the improvements will serve.

ARTICLE I

APPLICATION AND AUTHORITY OF REGULATIONS

REGULATIONS FOR ESTABLISHING SUBDIVISION PROCEDURES FOR THE SUBMISSION AND APPROVAL OF THE PRELIMINARY AND FINAL PLATS AND RECORDING OF FINAL PLATS; DESIGN STANDARDS AND PRINCIPLES FOR THE LAYOUT OF SUBDIVISIONS AND FOR THE SURVEYING AND PLATTING REQUIREMENTS THEREOF; REQUIRING THE INSTALLATION OF CERTAIN IMPROVEMENTS AND PROVIDING FOR THE NECESSARY CONSTRUCTION AGREEMENTS AND GUARANTEES THEREIN; PROVIDING FOR CERTAIN PRELIMINARY AND FINAL PLAT REQUIREMENTS; DEFINING CERTAIN TERMS USED HEREIN; PROVIDING FOR THE METHOD OF ADMINISTRATION AND ENFORCEMENT AND THE PENALTIES FOR VIOLATION THEREOF; PROVIDING FOR THE MEANS OF ADOPTION AND AMENDMENT; REPEALING ALL REGULATIONS, RESOLUTIONS, ORDERS, ORDINANCES, AND/OR CODES IN CONFLICT HEREWITH.

SECTION 1.0 SHORT TITLE: These regulations shall be known and may be cited as the "Subdivision Regulations" of the City of Cold Spring, State of Kentucky.

SECTION 1.1 PURPOSE AND AUTHORITY

A. PURPOSE: These Subdivision Regulations, as herein set forth, have been prepared in accordance with the adopted comprehensive plan for the City of Cold Spring to promote the public health, safety, morals, and general welfare of the city; to provide for the proper arrangement of streets in relation to existing or proposed streets; 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, 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 subdividers.

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

SECTION 1.2 SCHEDULE OF CONSTRUCTION AND SALE OF LOTS: Except for lots 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 by the planning commission's duly authorized representative, signed by the chairman or other officer of

the commission, and recorded with the County Clerk of the county in which the property is located.

SECTION 1.3 SCHEDULE OF IMPROVEMENTS: The subdivider of any tract or parcel of land shall not proceed with the construction of any improvements until he/she 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 planning commission's duly authorized representative, for approval, or approval subject to conditions.

SECTION 1.4 GENERAL RESPONSIBILITIES

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

B. PLANNING COMMISSION: The planning commission, or its duly authorized representative, is charged with the duty of making investigations and reports on the design and construction inspections of improvements of proposed subdivisions, and requiring conformance of such subdivisions with the Kentucky Revised Statutes, Chapter 100, as amended, and these regulations.

C. DELEGATION OF AUTHORITY BY PLANNING COMMISSION TO ITS DULY AUTHORIZED REPRESENTATIVE: Pursuant to KRS 100, the planning commission has delegated certain authority to its duly authorized representative. These delegations of authority are as provided in these regulations. However, the planning commission shall have final approval authority over all actions of its duly authorized representative as provided for in Articles VII and VIII of these regulations.

ARTICLE II

DEFINITIONS

SECTION 2.0 WORDS AND PHRASES: 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.

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.

AGRICULTURAL USE: The use of a tract of at least five (5) contiguous acres for the production of agricultural or horticultural 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 persons 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 rights-of-way which normally afford 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 OF OCCUPANCY: A certificate which must be obtained prior to occupancy of any premises.

COMMISSION (OR PLANNING COMMISSION, OR PLANNING AND ZONING COMMISSION): The Cold Spring Planning and Zoning Commission.

COMPREHENSIVE PLAN: A guide for public and private actions and decisions to assure the development of public and private property in the most appropriate relationships. It shall contain as a minimum, the following elements:

A. a statement of goals and objectives, principles, policies, and standards;
B. a land use plan element;
C. a transportation plan element;
D. a community facilities plan element;
E. may include any additional elements, such as, without being limited to: community renewal, housing, flood control, pollution, conservation, natural resources, regional impact, historic preservation, and others.

DEVELOPER: Synonymous with the term "subdivider".

DULY AUTHORIZED REPRESENTATIVE: An individual, or group of individuals, firm, or agency appointed or contracted by the planning commission, 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.

EASEMENT: An interest in real property, distinct from the fee ownership of the land, granting the legal right to cross property with facilities such as, but not limited to, sewer lines, water lines, and transmission lines, or the right, distinct from the fee 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's duly authorized representative and signed by the chairman, or other officer, of 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.

FLOODPLAIN 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 (1) foot at any point.

FLOODWAY ENCROACHMENT LINES: The lines marking the limits of floodways on the official zoning map.

FRONTAGE: 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, MINIMUM: The minimum distance required by the zoning ordinance to be maintained within the lot between a line parallel to the front lot line, as defined herein, and the front lot line.

IMPROVEMENT DRAWINGS AND SPECIFICATIONS: 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 planning commission's duly authorized representative, whose responsibility it is to inspect, or cause to be inspected, items required by these regulations.

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

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 rights-of-way, and shall be in one (1) zone only.

LOT, CORNER: A lot situated at the intersection of two (2) streets or on a curved street in which the interior angle of such intersection or curved street does not exceed one hundred thirty-five (135) degrees.

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.

LOT, INTERIOR: A lot, other than a corner lot, with only one (1) frontage on a deeded 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. In the case of a flag lot, the interior line most parallel to and nearest the street right-of-way line.

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.

LOT LINE, SIDE: Any boundary line of a lot, other than a front lot line or rear lot line.

LOT WIDTH: The horizontal distance width of a lot, as measured between the side lot lines along the building front setback line.

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.

OFFICIAL MAP: The adopted official map of the city, as provided for in the Kentucky Revised Statutes, Chapter 100.

PRELIMINARY PLAT: A tentative plat of a proposed subdivision prepared in accordance with the provisions herein for presentation to the planning commission 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.

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: Any vehicular ways except alleys.

A. Except as provided for herein, 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, ARTERIAL: Public thoroughfares which serve the major movements of traffic within and through the community.

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

3. 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.

4. 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.

5. STREET, EXPRESSWAY: A divided arterial street with full or partial control of access, and generally with grade separations at major intersections.

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

7. 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.

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

9. 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.

10. 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.

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: 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 if a new street is involved, any division of a parcel of land; providing that a division of land for agricultural use and not involving a new street shall not be deemed a subdivision. The term includes resubdivision and, when appropriate to the context, shall relate to the process of subdivision or to the land subdivided; 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 these regulations.

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.

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 within the jurisdiction of the City of Cold Spring, shall comply with the procedures established in this article and other applicable articles and sections of these regulations and in the sequence specified.

SECTION 3.0 PRELIMINARY INFORMATION: The subdivider is encouraged to notify the planning commission, or its duly authorized representative, of his/her 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 SUBMISSION OF PRELIMINARY PLAT: The subdivider shall file fifteen (15) copies of the Preliminary Plat with the planning commission's duly authorized representative, prepared in accordance with the requirements of Article IV, at least thirty (30) consecutive days prior to the next regular meeting of the planning commission. Such submission shall be considered the date of official filing. At this time, the following material shall also be filed with the commission's duly authorized representative, where applicable.

A. APPLICATION FOR PRELIMINARY PLAT APPROVAL: An application, provided by the commission, shall be submitted. At the time of submission, the commission's duly authorized representative shall indicate on the application, the date of submission and acknowledge the applicant's signature.

B. STATEMENT OF RECOMMENDATIONS: Where public construction projects are to be included in the subdivision, review and recommendations shall be made and forwarded to the appropriate public agencies.

C. INDIVIDUAL ON-SITE DISPOSAL SYSTEM PERMIT: Where individual on-site disposal systems have been approved, per the applicable zoning ordinance and 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 Northern Kentucky District health Department based upon a site evaluation and approved system".

D. PRELIMINARY PLAT FEES: Preliminary Plat and Certificate Of Land Use Restriction fees shall be submitted in accordance with the planning commission's by-laws.

E. GRADING AND/OR EROSION AND SEDIMENTATION CONTROL PLANS: In the event the subdivider elects to proceed with grading, following preliminary plat approval, or conditional approval, but prior to the submission of improvement drawings and specifications, grading plans and/or erosion and sedimentation control plans (as per Section 7.12) must also be submitted to the planning commission's duly authorized representative for review and approval. Plan review and construction review fees shall be submitted in accordance with the planning commission's by-laws.

SECTION 3.2 PROCESSING OF THE PRELIMINARY PLAT: Within three (3) working days after the date of filing of the preliminary plat, the planning commission's duly authorized representative shall notify the local and state governmental agencies, and other organizations of the public meeting, and transmit copies of the proposed preliminary plat.

The local and state governmental agencies, and other affected organizations, shall forward their comments and/or recommendations, if any, to the planning commission, or its duly authorized representative, prior to or at the meeting of the planning commission at which the issue will be heard.

The preliminary plat, the application, and all other required information, shall be checked by the planning commission's duly authorized representative for compliance with: (1) the requirements of the preliminary plat, as per Article IV; (2) the requirements of the applicable zoning ordinance; and (3) any other pertinent sections of applicable regulations.

SECTION 3.3 PLANNING COMMISSION ACTION: The commission's duly authorized representative shall review the preliminary plat, including determination of its conformance to the requirements of these regulations, and shall consider the recommendations and/or comments of all applicable local and state governmental agencies and other applicable organizations, and shall forward such recommendations and/or comments to the planning commission along with its recommendation. The planning commission shall then review the recommendation of its duly authorized representative and/or comments of all applicable local and state governmental and other affected organizations, and take one of the following actions: (1) approve the plat; (2) approve the plat, subject to conditions; or (3) disapprove the plat; within two (2) consecutive meetings from date of official filing, unless such time is extended by agreement between the planning commission and the subdivider. Approval of the preliminary plat by the commission does not constitute final approval of the subdivision, but is merely an authorization to proceed with the preparation of the improvement drawings and specifications and the final plat.

In the event of approval, conditional approval, or disapproval of the preliminary plat, a statement, in writing, by the planning commission, or its duly authorized representative,

setting forth the conditions of approval, or reasons for disapproval, shall be submitted to the subdivider.

Approval, or conditional approval, of a preliminary plat shall be valid and not subject to additional requirements for a period of twenty-four (24) consecutive calendar months, except that if a portion of an approved preliminary plat is approved, or conditionally approved, as improvement drawings and specifications or final plat, said approval, or conditional approval, of the remainder of the preliminary plat shall be valid for twenty-four (24) consecutive calendar months after the date of approval, or conditional approval, of said improvement drawings and specifications or final plat, as provided for in Sections 3.6 and 3.7, respectively). The planning commission may, upon receipt of a request by the subdivider, grant an extension to this twenty-four (24) month period if prevailing conditions have not changed appreciably.

SECTION 3.4 SUBMISSION AND PROCESSING OF GRADING PLANS AND/OR EROSION AND SEDIMENTATION CONTROL PLANS: Following approval, or conditional approval, of the preliminary plat, the subdivider may elect to proceed with grading of the area to be subdivided, provided that plans for erosion and sedimentation, per Section 7.12, are submitted to the planning commission's duly authorized representative who shall check the erosion and sedimentation plans for grading to insure their conformance with the approved, or conditionally approved, preliminary plat and that they meet the requirements established in Article VII and other pertinent sections of these regulations. Following this review, the planning commission's duly authorized representative shall take one of the following actions: (1) approve the erosion and sedimentation plans for grading; (2) cause to revise or approve the erosion and sedimentation plans for grading, subject to conditions; or (3) disapprove the erosion and sedimentation plans for grading. In the event of conditional approval or disapproval, a statement, in writing, by the planning commission's duly authorized representative, setting forth the conditions of approval, or the reasons for disapproval, shall be submitted to the subdivider. Three (3) copies of grading plans and/or erosion and sedimentation control plans shall be submitted to the planning commission's duly authorized representative, for final approval, prior to the start of construction.

SECTION 3.5 SUBMISSION OF IMPROVEMENT DRAWINGS AND SPECIFICATIONS: Following approval, or conditional approval, of the preliminary plat by the planning commission, the subdivider may elect to submit the improvement drawings and specifications to the planning commission's duly authorized representative for review and approval, prior to the submission of the final plat. It shall also be the responsibility of the subdivider to submit copies of the improvement drawings and specifications to the applicable local and state governmental agencies and other organizations affected by the subdivision. Said improvement drawings and specifications shall include at least the area intended for processing as a final plat. At this time, the subdivider shall submit to the planning commission's duly authorized representative the following:

A. One (1) copy of the Sanitary Sewerage and Storm System Plans and Profiles (as per Sections 7.0 and 7.1).

B. One (1) copy of the Water System Plans (as per Section 7.2).

C. One (1) copy of the Street Plans and Profiles, including typical cross sections (as per Section 7.3).

D. One (1) copy of the Drainage Report, including computations (as per Section 7.0).

E. One (1) copy of the grading plans, including control of erosion and sedimentation (as per Section 7.12), if not submitted previously for processing as per Section 3.4.

F. Plan review and construction fees in accordance with the planning commission's by-laws.

SECTION 3.6 PROCESSING OF IMPROVEMENT DRAWINGS AND SPECIFICATIONS: The planning commission's duly authorized representative shall check the improvement drawings and plans to insure they are in conformance with the approved, or conditionally approved, preliminary plat and that they meet the requirements established in Article VII and other pertinent sections of these regulations. The planning commission's duly authorized representative shall cause to have the subdivider's engineer incorporate requirements of all applicable local and state governmental agencies and other organizations as they pertain to the proposed improvement drawings and specifications. Following these reviews, the planning commission's duly authorized representative shall take one of the following actions: (1) approve the improvement drawings and specifications; (2) cause to revise or approve the improvement drawings and specifications, subject to conditions; or (3) disapprove the improvement drawings and specifications. In the event of revisions, conditional approval, or disapproval, a statement, in writing, by the planning commission's duly authorized representative, setting forth the reasons for such action shall be submitted to the subdivider. Three (3) copies of improvement drawings and specifications shall be submitted to the planning commission's duly authorized representative, for final approval, prior to the start of construction.

SECTION 3.7 SUBMISSION OF THE FINAL PLAT

A. GENERAL: Except as herein provided, the final plat shall only be submitted after the preliminary plat has been approved, or conditionally approved. The final plat shall conform to the approved or conditionally approved preliminary plat and shall include all changes, additions, deletions, or approvals as may be required per conditional approval by the commission, or its duly authorized representative, and shall be prepared in accordance with Article V and other applicable sections

of these regulations. Resubdivisions of previously approved or recorded final plats which do not involve new building development may be submitted without a preliminary plat and processed in accord with Section 3.8 of these regulations.

B. PREPARATION: The subdivider may cause, within twenty-four (24) consecutive calendar months after the approval or conditional approval of the preliminary plat or improvement drawings and specifications, the subdivision or any part thereof, to be surveyed and a final plat thereof to be prepared. Except as required within Section 7.3, J., regarding street interconnection/extension, the final plat shall contain only that portion of the approved or conditionally approved preliminary plat and improvement drawings and specifications, where applicable, which the subdivider wishes to have approved, recorded, and developed at that time. Final plats which are a portion of the approved or conditionally approved preliminary plat shall be named and listed as "SECTION NO. (approved *by planning commission's duly authorized representative* of (*Name of Subdivision*)". Final plats which are resubdivisions of approved and recorded final plats shall be labeled as "RESUBDIVISION OF (*Appropriate Listing Title* - lots, Section No., Subdivision Name)". The subdivider shall ensure that the final plat is prepared under the supervision of a registered land surveyor.

C. FILING: The subdivider shall submit, to the planning commission's duly authorized representative, two (2) copies of the final plat drawing prepared in accordance with Article V of these regulations for review. At this time, the following material shall also be filed with the commission's duly authorized representative, unless otherwise noted:

1. Application for final plat approval: An application (provided by the commission) shall be submitted. At the time of submission, the commission's duly authorized representative shall indicate, on the application, the date of submission.

2. Traverse sheets or other closure documentation: One (1) copy of the traverse sheets or other closure documentation shall be submitted. In no case shall the unadjusted linear error of closure of the actual field traverse be less than a ratio of 1:5000. The closure accuracy required shall include a closed traverse of the subdivision boundaries (as per Section 5.0, B.).

3. Improvement Drawings and Specifications: Improvement drawings and specifications will be required, if not submitted previously for processing, as per Sections 3.4, 3.5, and 3.6, and include the following where applicable:

    a. Grading plans, including erosion and sedimentation control measures (as per Section 7.12).

b. Storm sewer system and sanitary sewerage plans and profiles, including a drainage report with computations (as per Sections 7.0 and 7.1).

c. Water system plan (as per Section 7.2).

d. Street plans and profiles, including typical cross sections (as per Section 7.3).

4. Record copies of improvement drawings: Where the improvement drawings and specifications were previously submitted and approved prior to the submission of the final plat, as per Section 3.5 and 3.6, and where public improvements were constructed the same or differently reflecting significant changes from the originally approved improvement drawings, the subdivider shall submit one (1) reproducible mylar of record copies of improvement drawings, including plans and profiles for streets, sanitary sewerage, storm sewer, and water systems.

5. Special testing reports: All required testing reports, including soils (i.e., embankments, subgrade, utility trenches), sanitary sewers (i.e., low pressure air acceptance, storm sewers (i.e., larger than 30 inch diameter), and concrete street paving (i.e., strength, slump, air content, and cylinder tests).

6. Fees: Plan review, plat review, construction review, and recording fees shall be submitted in accordance with the planning commission's by-laws.

7. Guarantee: A guarantee, if applicable, per Section 7.16 of these regulations shall be submitted.

SECTION 3.8 PROCESSING OF THE FINAL PLAT, AND WHERE APPLICABLE, THE IMPROVEMENT DRAWINGS AND SPECIFICATIONS: The planning commission's duly authorized representative shall check the final plat as to conformity with the approved, or conditionally approved, preliminary plat and all other pertinent aspects as required in Article V and other applicable sections of these regulations. Where applicable, the planning commission's duly authorized representative, shall also check the improvement drawings and specifications, drainage plans, and plans for erosion and sedimentation control, to insure that they are in conformity with the preliminary plat and that they meet the requirements established in Article VII and other pertinent section of these regulations. In the event the improvement drawings and specifications were previously submitted and approved, prior to submission of the final plat, the planning commission's duly authorized representative, shall review the record copies of improvement drawings for conformity to the preliminary plat. Following review, the planning commission's duly authorized representative shall recommend one

of the following actions: (1) approve the final plat; (2) cause to revise or approve the final plat, subject to conditions; or (3) disapprove the final plat.

SECTION 3.9 PLANNING COMMISSION ACTION: Following the review of the final plat and, when applicable, the improvement drawings and specifications, as per Section 3.8, the planning commission's duly authorized representative shall take one of the following final actions:

A. FINAL APPROVAL -- final approval of a plat shall be recommended in one of two ways:

1. After construction of improvements: After the subdivider has obtained approval, or conditional approval, as indicated in Section 3.6 and has installed all required improvements in compliance with these regulations, final inspections have been performed in accord with Section 7.13, and record copies of drawings have been submitted, the planning commission's duly authorized representative shall then recommend final approval. The original drawing of the final plat shall then be signed and dated by the chairman, or other duly authorized officer of the planning commission.

2. Before construction of improvements: The planning commission's duly authorized representative may recommend final approval before all required improvements are installed, provided that a guarantee is provided for the purpose of assuring installation of such improvements. The amount of the guarantee shall be based on an estimate made by the subdivider's engineer. The type of guarantee shall be a good and sufficient surety bond, unless other forms of guarantees are acceptable by the planning commission's legal counsel. All guarantees shall be approved by the planning commission's duly authorized representative (see Section 7.16). Upon determination that all requirements of these regulations have been met, the planning commission's duly authorized representative may recommend final approval. The original drawing of the final plat shall then be signed and dated by the chairman, or other duly authorized officer of the planning commission. The guarantee shall not be returned to the subdivider until all improvements are installed, inspected, and record copies of drawings have been provided, according to these regulations.

B. REVISIONS/DISAPPROVAL: Should the planning commission's duly authorized representative decide to cause revisions to be made or recommend disapproval of the final plat, written notice of such action, including the reasons for revisions/disapproval shall be mailed to the subdivider by the planning commission's duly authorized representative. The action shall be entered on the official records of the planning commission.

SECTION 3.10 EFFECT OF APPROVAL: After the final plat has been reviewed by the planning commission's duly authorized representative, all changes, additions, deletions have been made, two (2) sets of original reproducible mylars and six (6) paper copies for final plats and condominium regime plats or two (2) originals and one (1) copy for identification plats shall be submitted for final approval. Said mylars, or originals, shall include all certificates, acknowledgements, endorsements, and notary seals, and all signatures completed in original ink, except for signatures of the chairman, or other duly authorized officer, of the planning commission and county clerk (e.g., copies of plat signatures are not acceptable by the county clerk for recording). Following this review, the final plat may be recommended for approval by the planning commission's duly authorized representative, and signed by the chairman, or other duly authorized officer, of the planning commission. Disposition and recording shall be as specified in Sections 3.11 and 3.12 of these regulations.

SECTION 3.11 DISPOSITION OF APPROVED FINAL PLAT: After approval of the final plat, signed by the chairman, or other duly authorized officer, of the planning commission, one (1) original mylar and one (1) copy of the final plat shall be forwarded to the county clerk's office for recording, per Section 3.12. Copies of final plats and condominium regime plats shall be forwarded to the legislative body, post office, and related utilities, by the planning commission's duly authorized representative. Copies of approved identification plats, with signature of the chairman, or other duly authorized officer, of the planning commission, shall be forwarded or picked up by the subdivider, or his/her agent, for preparation of any instrument of transfer or other documents to be recorded per Section 3.12.

SECTION 3.12 RECORDING: After approval of a final plat, condominium regime plat, or identification plat, the original drawings of the approved final plat, and one (1) copy, shall be forwarded to the county clerk's office by the planning commission's duly authorized representative on a regular basis. Final plats and condominium property regime plats shall be recorded by the county clerk. Unrecordable identification plats, by themselves, will be held until instruments of transfer, or other documents, are presented for recording, not to exceed a time frame of four (4) months from the date of approval, as signed by the chairman, or other duly authorized officer, of the commission. The subdivider shall be responsible for preparation of any instrument of transfer or other document, to be recorded with identification plats in the county clerk's office, after which lots may be sold, leased, or transferred. If such instruments are not presented to the county clerk within the required time frame, such instruments are not subject to be recorded until identification plats are refiled with the planning commission and reprocessed for approval for recording with plats. The county clerk shall forward a copy of all approved plats to the PVA (Property Valuation Administrator) for further processing (i.e., property records, PIDN's, etc.).

SECTION 3.13 SUBMISSION OF RECORD COPIES OF IMPROVEMENT DRAWINGS: Where improvements were constructed, the subdivider shall submit to the

planning commission's duly authorized representative, one (1) reproducible mylar of the Record Copies of Improvement Drawings, including plans and profiles for streets, sanitary and storm sewer, and water systems reflecting significant changes, where applicable, prior to approval of a Final Plat, per Section 3.9, A., 1., or release of Guarantee, per Sections 3.9, A., 2. and 7.16.

SECTION 3.14 ACCEPTANCE OF IMPROVEMENTS FOR MAINTENANCE AND/OR LAND OFFERED FOR DEDICATION: After all improvements have been installed in accordance with the approved improvement drawings and specifications and the record copies of drawings have been submitted, and the inspector has indicated that inspections were made and approved, as per Section 7.13, the improvements for maintenance, or in the case of lands to be dedicated, may accept such lands in fee simple, by easement, or other such instrument approved by the legislative body, pursuant to applicable state statutes and other applicable regulations. Acceptance of any street, or other public ground, is regulated by KRS 100.277(4).

SECTION 3.15 SUBMISSION AND PROCESSING OF IDENTIFICATION PLATS

A. GENERAL: It is the purpose of the identification plat to provide a process whereby parcels or lots may be subdivided from land, without having to be processed through preliminary and final plat procedures, as established in these regulations. Identification plats for subdividing and platting land including strips, parcels, tracts, residuals, remnants, lots, or lot-splits, for sale, lease, mortgages, or building development, may be used in accord with these regulations. In order to be processed as an identification plat, the following requirements must be met in addition to other requirements of these regulations:

1. Except for tracts subdivided for financing or mortgage purposes, in areas approved, or conditionally approved, as a preliminary plat, as noted in Section 3.15, A., 3., d., the parcel to be subdivided for conveyance or record shall not involve construction of any public improvements, including water lines, storm and sanitary sewers, and streets, for which preliminary and final plat processes are required.

2. Not more than two (2) lots, and remaining residual or remnant of land, for building development may be subdivided from the original parent tract of land under ownership in the same name of record.

3. Identification plats for partial surveys involving strips, parcels, tracts, residuals, remnants, lot-splits, may be used an infinite number of times, provided such plats comply with the following requirements:

   (a) Lot lines that are to be adjusted in recorded subdivision plats shall not involve more than three (3) contiguous lots. If more than three (3) lots are involved, then said lots shall be handled as a

resubdivision and processed according to the applicable requirements for final plats in accord with Section 3.7, A. of these regulations.

(b) Strips, parcels, residuals or remnants of land surveyed for conveyance or record purposes which are less than minimum lot requirements of the zoning district shall be labeled "Not for conveyance or building development by itself, but for attachment to adjacent land in the same ownership". Partial surveys isolated from the remainder of property shall not be approved if residual or remnant land contains an existing principal residence or building where such remnant is less than minimum lot requirements of the zoning district. Divisions or remnants of land from parent tracts containing an existing residence served by on-site sewage disposal systems are further regulated by Section 6.6, D.

(c) Unplatted residuals or remnants of land referenced in deeds resulting from partial surveys, having less than five (5) acres, under ownership in same name shall be surveyed, platted, and approved prior to approval of additional partial surveys or transfer, sale, or conveyance of such unplatted residual or remnant of land to a new owner. A new instrument of transfer, or other document, shall be prepared based upon the approved identification plat prior to recording.

(d) Tracts or parcels surveyed for financing and mortgage purposes shall be labeled as in (b) above; or, in areas approved or conditionally approved as a preliminary plat as follows: "Subject tract approved for financing and mortgage purposes only in the name of (Developer or Subdivider). Any development within tract or further subdivision must comply with previously approved preliminary plat with conditions on file at planning commission offices unless amended via submission of revised plans".

4. Except as noted in item (3) above or KRS 100.292, the identification plat process shall not be permitted in areas already approved or conditionally approved as a preliminary plat.

B. SUBMISSION OF THE IDENTIFICATION PLAT: The subdivider shall submit to the planning commission's duly authorized representative, two (2) copies of the identification plat at a size measuring 8-1/2" x 11" or 8-1/2" x 14" (intended for attachment to a deed) and prepared in accordance with the applicable requirements of Article V, other pertinent sections of these regulations, and minimum standards of practice for Land Surveying in Kentucky, latest revision,

as defined in KRS 322. In addition, the identification plat shall also contain the following information:

1. For lots proposed for building development, a statement by a registered land surveyor preparing the plat that the parcel represents the first, second, or residual or remnant parcel subdivided from the original tract of land under ownership in the same name of record.

2. In the case of the second lot or remnant parcel to be subdivided for building development, sufficient information shall be included to locate the parcel being subdivided in relation to the previous subdivided lots or parcels, as well as their location within the original tract of land under ownership in the same name of record.

3. A vicinity 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) on the plat showing, within one-half (1/2) mile of the proposed subdivision, existing roads and other significant features (e.g., streams, lakes, etc.).

At this time, the following information shall also be filed with the planning commission's duly authorized representative:

1. Application for identification plat approval: An application, provided by the commission, shall be submitted. The commission's duly authorized representative shall indicate on the application the date of submission.

2. Traverse sheets or other closure certification referenced on the plat: The closure accuracy required shall include a closed traverse of the subdivision boundaries, as per Section 5.0, B.

3. Description: One (1) copy of the description, written by a land surveyor, for the purpose of defining complete land boundaries accurately describing the actual boundary survey.

4. Identification plat fees: Plat review, construction review, and recording fees shall be submitted in accordance with the planning commission's by-laws.

C. PROCESSING OF IDENTIFICATION PLAT: The planning commission's duly authorized representative shall review the identification plat as per the applicable requirements of Article V, the requirements of this section, other pertinent sections of these regulations, and minimum standards of practice for Land Surveying in Kentucky. Following the review, the planning commission's duly authorized representative shall recommend one of the following actions: (1) approve the identification plat; (2) cause to revise the identification plat, subject

to conditions: or (3) disapprove the identification plat. Should the planning commission's duly authorized representative recommend revision or disapproval of the identification plat, written notice of such action, including the plat revisions or reasons for disapproval shall be mailed to the subdivider by the planning commission's duly authorized representative. After final review of the identification plat, by the planning commission's duly authorized representative, two (2) originals and one (1) copy of the plat shall be submitted to the planning commission's duly authorized representative for final approval and disposition, per the requirements of Section 3.11. The action shall be entered in the official records of the planning commission. If approved and signed by the chairman, or other duly authorized officer, of the planning commission, the original identification plat may be recorded with the deeds, or other documents, in the county clerk's office, per the requirements of Section 3.12.

SECTION 3.16 SUBMISSION AND PROCESSING OF CONDOMINIUM PROPERTY REGIME PLATS

A. GENERAL: In accord with the Horizontal Property Law (KRS 381.805 - 381.910), whenever a developer, the sole owner, or the co-owners of a building or buildings constructed or to be constructed, expressly declare, through the recordation of a master deed or lease, a condominium property regime may be established. Once the property is submitted to the condominium property regime, a unit in the building(s) may be individually conveyed and may be the subject of ownership possession or sale and other acts as if it were sole and entirely independent of the other units in the building(s) of which they form a part and the corresponding individual titles and interest shall be recordable. It is the purpose of the condominium property regime plat to provide a process whereby two (2) or more apartments, townhouses, rooms, office spaces, or other units in existing or proposed buildings or structures may be subdivided and offered or proposed to be offered for sale in accordance with requirements as established by these regulations. In order to be processed as a condominium property regime plat, the following requirements must be met in addition to other requirements of these regulations and applicable state statutes:

1. For proposed projects, including buildings involving private or public improvements, prior to the review of a condominium property regime plat, a preliminary plat, per Section 3.1 and improvement drawings and specifications, per Section 3.5, are required to be submitted for processing in accord with these regulations.

2. For existing building conversions not involving public improvements, submission and processing shall be in accord with Section 3.16, B. and C., respectively.

B. SUBMISSION OF CONDOMINIUM PROPERTY REGIME PLATS: In addition to the requirements in Section 3.16, A., 1., the developer shall submit to the planning commission's duly authorized representative, two (2) copies of the final plat drawing prepared in accordance with Article V of these regulations, bearing the certification of a registered land surveyor, for review. In addition to other requirements of these regulations, the final plat shall show the location of the building or buildings proposed for the condominium project. Simultaneously, with the submission of the final plat, there shall be attached two (2) copies of a set of floor plans of the building or buildings in accord with state statutes, bearing the certification of a registered architect or professional engineer. In addition to other requirements, elevations based upon the North American Datum of 1929, or latest revision, shall be noted on the plats or plans as a reference on each floor or unit for sale.

At this time, the following information shall be filed with the planning commission's duly authorized representative:

1. Application for Condominium Property Regime Plat Approval: An application form, provided by the commission, shall be submitted at the time of filing for Condominium Property Regime Plat approval.

2. Traverse sheets or other closure certification referenced on the plat: The closure accuracy required shall include a closed traverse of the condominium project boundaries (as per Section 5.0, B.).

3. Condominium Property Regime Plat Fees: Plat review, construction review, and recording fees shall be submitted in accord with the planning commission's by-laws.

C. PROCESSING OF CONDOMINIUM PROPERTY REGIME PLATS: The planning commission's duly authorized representative shall review the condominium property regime plats for conformance to the applicable requirements of Article V, the requirements of this section, other pertinent sections of these regulations, and minimum standards of practice for land surveying in Kentucky. Following the review, the planning commission's duly authorized representative shall recommend one of the following actions: (1) approve the condominium property regime plat; (2) cause to revise the condominium property regime plat, subject to conditions; or (3) disapprove the condominium property regime plat. Should the planning commission's duly authorized representative recommend revision or disapproval of the condominium property regime plat, written notice of such action, including the reasons for revision or disapproval, shall be mailed to the subdivider by the planning commission's duly authorized representative. The action shall be entered in the official records of the planning commission. After final review of the condominium property regime plat, by the planning commission's duly

authorized representative, the subdivider's surveyor, architect, or engineer, where applicable, shall submit two (2) reproducible mylars and six (6) copies of plats to the planning commission's duly authorized representative, for disposition per the requirements of Section 3.11. If approved and signed by the chairman, or other duly authorized officer, of the planning commission, the original condominium property regime plat may be recorded in the county clerk's office per the requirements of Section 3.12.

ARTICLE IV

PRELIMINARY PLAT REQUIREMENTS

SECTION 4.0 SPECIFICATIONS FOR AND CONTENT OF THE PRELIMINARY PLAT: The following information shall be shown on or accompany the preliminary plat:

The subdivider shall file with the planning commission's duly authorized representative fifteen (15) 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).

A. INFORMATION TO BE CONTAINED ON 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.

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 (1/2) mile of the proposed subdivision:

    a. Proposed site indicating location.
    b. Existing and proposed streets.
    c. Other significant features (e.g., streams, lakes, etc.).
    d. Original parent tract, deed book, page, group, and remaining acreage.

7. 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.

8. 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).

9. 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.

10. 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 unsubdivided (for adjacent platted land, refer to subdivision plat by name, plat book, and page).

11. Location and dimensions of all existing easements and rights-of-way within the subdivision.

12. Existing utilities on and adjacent to the subdivision: location and size of water mains, sanitary, storm and/or combined sewers.

13. Existing contours at five (5) foot intervals within the subdivision.

14. 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.

15. Proposals:

    a. 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.
    b. Other rights-of-way or easements: location, width, and purpose.
    c. Lots: lots and blocks numbered.
    d. Water and sewer systems: plan view layout of water lines, storm and sanitary sewer lines, including sizes, to serve the subdivision.

16. Statement of the lot area of the smallest lot in the subdivision (reference shall be made to the lot and block number).

17. 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.

18. Proposed uses for all land in the subdivision.

19. 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.

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

B. ADDITIONAL INFORMATION TO BE SUBMITTED AT TIME OF FILING OF PRELIMINARY PLAT

1. One (1) copy of an application for preliminary plat approval, provided by the commission.

2. Where individual on-site disposal systems have been approved, per applicable zoning ordinance, a copy of the permit to use on-site sewage disposal systems approved by the Northern Kentucky District Health Department shall be required prior to the issuance of a building permit.

3. One (1) copy of applicable board of adjustment action identifying any variances granted, if applicable.

4. In the event the subdivider elects to proceed with 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 to the commission's duly authorized representative for review and approval.

ARTICLE V

FINAL PLAT REQUIREMENTS, INCLUDING IMPROVEMENT DRAWINGS AND SPECIFICATIONS

SECTION 5.0 SPECIFICATIONS FOR AND CONTENT OF THE FINAL PLAT: The subdivider shall file with the planning commission's duly authorized representative, two (2) copies of the final plat for review. Following review, the subdivider shall submit six (6) copies of the final plat for disposition and two (2) sets of original reproducible mylars to the planning commission's duly authorized representative 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.

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 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.

A. INFORMATION TO BE CONTAINED ON THE FINAL PLAT

1. 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".

2. 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.

3. 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.

4. 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.

5. Municipal and county boundaries lines, if applicable.

6. The exact layout of the subdivision showing:

   a. Street and alley centerlines and right-of-way lines shall be graphically shown; street names and bearings and distances along centerlines.
   b. 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.
   c. All easements or other rights-of-way (the limitation of the easement rights shall be stated or referenced on the plat).
   d. All lot lines with dimensions and bearings.

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

8. 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).

9. All permanent monuments set, or to be set, shall be shown on the final plat (see Section 7.10):

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

10. 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.

11. Flood hazard information: elevation and flood profiles shall be shown on the final plat, if required (as determined per Section 6.4 of these regulations).

12. 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.

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

14. North point, approximating true north, written and graphic scale, and date.

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

16. Certification, acknowledgements and descriptions: The following certificates, acknowledgements, and descriptions shall appear on the title sheet of the final plat, unless otherwise stated herein. Representative certificates, acknowledgements, and approvals that shall be used on the final plat appear in Appendix E of these regulations.

    a. 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.
    b. Surveyor's certificate: a certificate shall be signed in original ink and dated by a Registered Land Surveyor, in Kentucky, stating that he/she 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/her seal and registration number and date.
    c. 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.
    d. Other affidavits, etc.: the title sheet shall contain such other affidavits, certificates, acknowledgements, endorsements, and notarial 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.
    e. Certificate of approval by the chairman, or other duly authorized officer, of the planning commission.

f. Certificate of acceptance for recording by the county clerk.

B. ADDITIONAL INFORMATION TO BE SUBMITTED AT TIME OF FILING FINAL PLAT

1. One (1) copy of an application for final plat approval, provided by the commission.

2. Traverse calculations or order closure certification referenced on the plat, resulting from an accurate and compete 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.

3. Improvement drawings and specifications (improvement drawings and specifications will be required if not submitted previously for processing as per Sections 3.5 and 3.6): Drawings, showing typical cross sections, profiles, construction details, and specifications for all required improvements shall be prepared by a registered engineer in conformance with the provisions of Article VII and any other pertinent sections of these regulations.

   a. One (1) copy of the Sanitary Sewerage and Storm System Plans (as per Sections 7.0 and 7.1).
   b. One (1) copy of the Water System Plans (as per Section 7.2).
   c. One (1) copy of the Street Plans and Profiles, including typical cross sections (as per Section 7.3).
   d. One (1) copy of Drainage Report, including computations (as per Section 7.0).
   e. One (1) copy of plans for control of erosion and sedimentation (as per Section 7.12).

4. Record copies of improvement drawings: Where the improvement drawings and plans were previously submitted and approved prior to the submission 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.

5. 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).

6. Final plat and construction review fees: Final plat and construction review fees shall be submitted in accordance with the commission's by-laws.

7. Guarantee: a guarantee, if applicable, per Section 7.16.

8. Recording fees: the subdivider shall pay the recording fee, per requirements of the county clerk.

ARTICLE VI

DESIGN STANDARDS FOR THE LAYOUT OF SUBDIVISIONS

SECTION 6.0 STREETS

A. Conformity to comprehensive plan and/or official map: Whenever a tract of land to be subdivided or resubdivided includes any part of, or is adjacent to, a proposed arterial or collector street, as designated on the comprehensive plan and/or the official map, the subdivider shall meet with the planning commission's duly authorized representative to determine its compliance (e.g., right-of-way width for future widening and pavement widths) and resulting design requirements, of such locations, otherwise such street right-of-way shall be platted by the subdivider in the exact location so designated and at the width indicated in these regulations.

B. STREET EXTENSION

1. Existing streets: 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 planning commission.

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

3. Half streets: Dedication of one-half (1/2) of the rights-of-way (half streets) for streets proposed along the boundaries of land to be subdivided, shall be prohibited.

C. 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 or communities. Arterial streets should not bisect neighborhoods but should act as boundaries between such neighborhoods. Direct access onto the roadway 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 the case of certain commercial development), they shall be designed to provide only secondary access.

D. STREET RIGHTS-OF-WAY

1. Widths and grades of new streets: Street right-of-way widths and grades shall conform to the requirements indicated in Table 6-1.

2. Existing streets: Existing rights-of-way (i.e., public or private) and widths shall be determined from existing deeds or lots of record and other statutes or agencies establishing such widths. Subdivisions platted along existing streets shall dedicate additional right-of-way, if necessary, to meet the minimum street width requirements set forth in Section 6.0, D., 1. of these regulations. Such dedication shall be in accordance with the following:

   a. At least the minimum right-of-way width shall be dedicated where the subdivision is on both sides of an existing street.

   b. When the subdivision is located on only one side of an existing street, one-half (1/2) of the required right-of-way width, measured from the centerline of the right-of-way, shall be dedicated. However, the owner or owners of such property shall not be required to dedicate more than one-half (1/2) of the required rights-of-way width.

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

* Design of arterial streets shall be based on current standards of the Kentucky Department of Transportation.

2. Sight distance: Minimum sight distance shall be as required in Tables 6-2 and 6-3 and Figures 6-1 and 6-2.

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.

4. Vertical curves: The minimum vertical curve length required shall be calculated by multiplying the algebraic difference in grades times a "K" factor. Rounded "K" factors for local, subcollector and collector streets are as follows:*

Local and Subcollector	--	K=15 for crest curves K=15 for sag curves
Collector	--	K=30 for crest curves K=35 for sag curves

* Design of arterial streets shall be based on current standards of the Kentucky Department of Transportation.

F. CUL-DE-SAC AND DEAD-END STREETS: Cul-de-sacs and dead-end streets designed to be dead-end permanently, shall not be longer than 1,200 feet, unless local topographic or other physical conditions are such as to render these provisions impracticable.

G. STREET NAMING AND ADDRESSING

1. Duplication: The name of a new street shall not duplicate existing or platted street names within the county, or approximate such names in spelling, sound or pronunciation. The use of existing street names differentiated by alternate prefixes (i.e., "North", "South", etc.), or suffixes (i.e., "Lane", "Way", etc.) is prohibited. Street names shall be limited to no more than three (3) words including the suffix and contain no more than twenty (20) characters including spaces. Punctuation, such as apostrophes or hyphens, etc., or numerals, including fractions, shall not be used as a part of any street name.

2. Continuation of streets: New street names shall bear the same name of any continuation of, or when in alignment with, an existing or platted street, wherever practicable.

3. Street names: All street names shall be approved and/or reserved by the planning commission's duly authorized representative, prior to approval of improvement drawings and specifications.

4. Addressing: Where new streets are proposed, addressing for building development shall conform to a uniform county system and be assigned by the planning commission's duly authorized representative prior to approval of the final plat. Where improvements are not proposed or required, such addressing shall be assigned prior to approval of a final plat or identification plat. All addressing, including numbers and street names, shall be shown for each lot or unit on Final Plats and Identification Plats for public record and distribution.

H. ALLEYS

1. Alleys shall be prohibited in residential zoning districts, unless otherwise approved by the planning commission.

2. In commercial and industrial areas, adequate alleys shall be provided where the design requires. Alleys shall not serve as part of the required off-street parking, loading and/or unloading space required by the applicable zoning ordinance.

I. PRIVATE STREETS

1. Private streets or alleys shall not be created or extended, except as approved by the planning commission, and existing ones shall, whenever practicable, be dedicated to the public. Private streets, when approved, shall be designed, constructed, and inspected in accord with the same minimum specific standards for public streets, per Section 7.3 and other applicable sections of these regulations.

SECTION 6.1 INTERSECTIONS

A. ANGLE OF INTERSECTION: The centerline of all streets shall intersect as nearly at a ninety (90) degree angle as possible, but in no case shall the angle of intersection be less than seventy-five (75) degrees or greater than one hundred five (105) degrees, unless a special modification is granted by the planning commission due to certain exceptional conditions.

B. CENTERLINE OFFSET OF ADJACENT INTERSECTIONS: Where T-intersections are used, the following minimum centerline offsets of adjacent intersections shall be as follows:

TYPE OF STREET	MINIMUM CENTERLINE OFFSET OF ADJACENT INTERSECTIONS IN FEET
Local - Local	150
Local - Subcollector	150
Subcollector - Collector	150
Collector - Collector	200

C. CORNER RADII: Property lines at street intersections shall be provided from the same radius point necessary to establish the pavement radius. If, because of certain exceptional conditions, a modification is granted permitting an angle of intersection less than seventy-five (75) degrees, or greater than one hundred five (105) degrees, then the minimum radii shall be increased or decreased, respectively.

D. CENTERLINE GRADES WITH INTERSECTIONS: Maximum centerline grades within street intersections shall not exceed the grade for through streets, as identified in Table 6-1 of these regulations, depending on the type of street. The maximum grade of the centerline of the side streets intersecting with the gutter line of the through street shall not exceed four (4) percent for a distance of not less than seventy-five (75) feet from the centerline for local and subcollector streets and one hundred fifty (150) feet for collector streets.

E. DESIGN ADJACENT TO FREEWAYS, EXPRESSWAYS, ARTERIALS, OR COLLECTORS: The following principles shall be used in the design of subdivisions adjacent to freeways, expressways, or arterials:

1. Street design shall have the purpose of making adjacent lots desirable by cushioning the impact of heavy traffic and of minimizing the interference with traffic on such thoroughfares.

2. Collector, subcollector, and local streets shall not be permitted to intersect with freeways or expressways. The number of intersections with arterial streets shall be held to a minimum. Wherever practicable, such intersections shall be spaced not less than six hundred (600) feet apart. In the case of collector streets, intersections with said streets shall be spaced not less than four hundred (400) feet apart and access to driveways shall be spaced at intervals not less than two hundred (200) feet. At those access points where turning vehicles to and from the arterial and collector streets will affect the roadway capacity or safety, reserved turn lanes shall be required, wherever practical. Frontage or service roads shall be used when these spacing requirements cannot be met.

3. Where frontage roads are not required, lots adjacent to such thoroughfares shall, when practical, be served and be accessible only by a street generally paralleling said thoroughfare or by a series of cul-de-sacs or loop streets extending towards said thoroughfare from an internal street system.

SECTION 6.2 EASEMENTS

A. UTILITY EASEMENTS: Public utility easements, at least fifteen (15) feet in total 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. Where deemed necessary by the planning commission's duly authorized representative, an additional easement width shall be provided.

B. WATERCOURSES: The subdivider shall dedicate rights-of-way or provide easements for storm drainage purposes which conform substantially with the lines of any natural watercourses, channels, streams, or creeks which traverse the subdivision or for any new channel which is established to substitute for a natural watercourse, channel, stream, or creek. Such rights-of-way or easements shall be of a width which will provide for the maintenance needs of the channel, as determined by the planning commission's duly authorized representative.

SECTION 6.3 PHYSICAL CONSIDERATIONS

A. NATURAL LAND USE: Wherever practicable, subdivisions shall be planned to take advantage of the natural topography of the land, to economize in the construction of drainage facilities, to reduce the amount of danger, to minimize destruction of trees and topsoil, and to preserve such natural features as watercourses, unusual rock formations, large trees, sites for historical

significance, and other assets which, if preserved, will add attractiveness and value to the subdivision and the community.

SECTION 6.4 FLOOD PROTECTION CONTROLS

A. PROHIBITION OF DEVELOPMENT IN AREAS SUSCEPTIBLE TO FLOODING: 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 or will not result in conditions contrary to the public welfare (e.g., use as open space, extensive recreation use, conservation purposes).

B. Areas of land adjacent to streams, rivers, or bodies of water which have a high degree of susceptibility to flooding shall be limited to development according to the following regulations, notwithstanding any other section of the zoning ordinance or any other ordinance adopted by the city.

1. The limits of the floodplain (areas subject to flooding during the occurrence of a 100-year flood) and floodway, are identified as Flood Protection Control Areas, on the zoning map, pursuant to the Flood Insurance Study prepared by the Federal Insurance Administration.

2. Areas designated as susceptible to flooding during the occurrence of a 100-year flood are further regulated by Article VIII of these regulations.

   Flood data identify the elevation of the 100-year flood level and the width of the floodway are indicated in the zoning ordinance.

   In the case of proposed subdivisions located along other tributaries or bodies of water not covered in the zoning ordinance, stormwater drainage systems are further regulated by Article VII of these regulations.

3. No person, city, county, or other political subdivision of the state shall commence filling of any area with earth, debris, or any other material or raise the level of any area in any manner, or place a building, barrier, or obstruction of any sort on any area, including making any alteration or relocation of a waterway, located within the floodway which would result in any increase in flood levels during the occurrence of a 100-year flood discharge. In those cases where a watercourse is to be altered or relocated, the flood carrying capacity of said portion of the waterway affected must be maintained. Plans and specifications for such work shall be submitted to the planning commission's duly authorized representative for review to determine if said encroachment will meet the requirements of

these regulations. Said plans shall also be submitted to the Kentucky Department of Natural Resources and Environmental Protection, Division of Water Resources, and other applicable agencies, for their review and approval.

4. All land outside the floodway of the bodies of water identified in Paragraph 2, but located within the floodplain, may be used for any purpose for which it is zoned, provided that:

   a. Any new residential construction, including any expansion or substantial improvements of existing residential structures as herein defined, within said floodplain, shall have the lowest floor elevated to or above the level of the 100-year flood. Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. For all new construction and substantial improvement, fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access, or storage, in an area other than a basement, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must be certified by a professional engineer or architect.

   b. Any new non-residential structures, including any expansion or substantial improvements of non-residential structures, within the floodplain area shall have the lowest floor elevated to or above the level of the 100-year flood or together with attendant mechanical, utility, and sanitary facilities shall be designed and floodproofed so that below the 100-year flood level the structure is water tight with walls impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydro-dynamic loads and effects of frequency certified by a professional engineer or architect. For all new construction and substantial improvement of elevated non-residential structures, fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access, or storage in an area other than a basement, and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must be certified by a professional engineer or architect.

5. All streets and utilities constructed to serve the subdivision to be located within the floodplain, but which are outside the floodway, shall be: (a) flood protected; (b) the land filled; or (c) any combination thereof, to a level of not less than the elevation of the 100-year flood level. Where the fill is partially within the floodplain, roadway access and utilities shall be provided from the "dry" side (areas located above the 100-year floodplain).

C. STREAM EASEMENT: If a stream flows through, or is adjacent to, the proposed subdivision, the plat shall provide for a stormwater easement or drainage right-of-way along the stream for a floodway of at least fifteen (15) feet. For the smaller streams, the plat shall provide for channel improvement to enable them to carry all reasonable floods within banks. The floodway easement shall be wide enough to provide for future enlargement of the stream channels as adjacent areas become more highly developed and run-off rates are increased.

D. STREETS: 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 to activities relating to rivers, streams, and recreational activities located along said areas.

SECTION 6.5 BLOCKS

A. ARRANGEMENT: 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, as required by the applicable zoning ordinance.

B. LENGTH: Blocks should not exceed twelve hundred (1,200) feet, except where topographical or exceptional physical conditions exist.

C. WIDTH: The width of blocks should ordinarily be sufficient to allow for two (2) tiers of lots except for double frontage lots, as permitted in Section 6.6 of these regulations.

SECTION 6.6 LOTS

A. CONFORMANCE TO ZONING: All lots shall conform to or exceed the requirements of the applicable zoning ordinance. Each lot shall front at least twenty-five (25) feet onto a publicly dedicated street, other than an alley, or in the case of two contiguous flag lots, said twenty five (25) foot frontage may be

reduced to twelve and one-half (12 1/2) feet of frontage per parcel, provided the contiguous lots share a common unobstructed easement of access to the publicly dedicated street of at least 20 feet in width and further provided said common easement shall be located within said twenty five (25) foot strip. In addition, said common easement of access shall provide for the permanent maintenance of the access way and be recorded in the office of the county clerk. In no case shall more than two flag lots be contiguous to each other at the publicly dedicated street. A minimum of two (2) lots may be served by a common driveway having a minimum width of twelve (12) feet. Three (3) lots up to a maximum of four (4) lots may be served by a common driveway having a minimum width of sixteen (16) feet. Private driveways serving more than four (4) lots shall be designed as a Private Street or Public Street in accord with these regulations. Appendix D includes examples of lot layout sketches including flag lots and common driveway widths which are acceptable and not acceptable in accord with these regulations. Flag lots shall only be used in those locations where, due to geometric, topographic or other physical features, or the lack of economic feasibility in proportion to the development, it would be impractical to extend a publicly dedicated street to serve lots located in said areas, as determined by the planning commission and/or its duly authorized representative.

B. LOT FRONTAGE AND WIDTH

1. Arterial street frontage: No access onto an arterial street shall be permitted from abutting properties, except as provided for in these regulations.

2. Corner lots: Corner lots shall have extra width to permit conformance to the minimum setback from the side street. In no case shall a corner lot be so narrow that minimum zoning requirements cannot be met.

3. Double frontage lots: Lots shall not be laid out so that they have frontage onto more than one (1) street except: (a) when the lots are adjacent to the intersection of two (2) streets; or (b) when the rear of the lot faces an arterial, freeway, expressway, collector street, railroad right-of-way, etc., and the front of the lot faces onto another street.

C. LOT DEPTH

1. Conformance to zoning: Each lot shall conform to all requirements of the applicable zoning ordinance.

2. Maximum depth: The maximum depth of a lot shall not be greater than four (4) times the width of the lot, except for flag lots and lots which contain over five (5) acres of area. Exceptional individual site conditions

may require variation from these requirements, as permitted by the planning commission.

3. Extra depth and width in certain cases: Additional side yard and lot length, as per the applicable zoning ordinance, may be required where a lot in a subdivision abuts an industrial or commercially zoned area.

D. USABLE LOTS

1. Building lots: 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 and geological formations and areas subject to flood prone conditions based on soil survey studies prepared by the U.S. Soil Conservation Service, Geological survey maps prepared by the U.S. Geological Survey, and flood prone information supplied by the U.S. Army Corps of Engineers and the U.S. Geological Survey.

2. Strips, parcels, residuals, remnants, or lot-splits: Except as herein provided, no remnants of property shall be left which do not conform to minimum lot requirements of the zoning district in which the property is located, or which are not required for a private or public utility purpose, or which are not accepted by the legislative body or any other appropriate public body for an appropriate use.

3. Strips, parcels, residuals or remnants of land surveyed for subdivision or record purposes which are less than the minimum lot requirements of the zoning district and do not constitute a devil or spite strip shall be labeled "Not for conveyance or building development by itself but for attachment to adjacent land in the same ownership".

4. Divisions or remnants of land from parent tracts containing an existing residence or other use for occupancy served by on-site sewage disposal systems shall conform to the minimum lot requirements, in accord with Section 7.1 for Individual On-Site Disposal Systems, unless centralized sanitary sewer service is provided, where applicable.

5. Side lot lines: The side lot lines of all lots, whenever practicable, shall be at right angles to the street which the lot faces or radial to the center of curvature, if such street is curved. In the case of cul-de-sac on which the lot faces, side lot lines shall be as nearly radial to the center of the curvature of the cul-de-sac, as practicable.

SECTION 6.7 PEDESTRIAN WAYS: Pedestrian ways shall not exceed a fifteen (15) percent grade, unless steps of an acceptable design, as determined by the planning commission's authorized representative, are to be constructed.

SECTION 6.8 PUBLIC SITES: Where a proposed park, or other recreational area, school site, or other public ground identified in the adopted Comprehensive Plan, is located in whole or in part within the proposed subdivision, the planning commission's duly authorized representative may require a reservation, as a condition precedent to preliminary plat approval, not to exceed one (1) year, for the purchase of such public ground by the applicable public body.

TABLE 6-1

STREET RIGHTS-OF-WAY WIDTH AND GRADE REQUIREMENTS

TYPE OF STREET	MINIMUM RIGHT-OF-WAY WIDTH (feet)***	GRADE (percent)	
		MAX.	MIN.
Arterial	*	*	*
Collector	60	10	.5
Subcollector	50	12	.8
Local, Including Cul-De-Sacs****			
Residential	50	12	.8
Commercial and Industrial	60	10	.8
Court	40	12	.8
Frontage Road	**	**	**
Alley	20	10	.5

* Arterial streets shall be based on current design standards and other pertinent requirements of the Kentucky Department of Transportation and the official Comprehensive Plan.

** Requirements will vary for a frontage road depending on whether the street would serve as a local, subcollector, or collector type street and as such would be designed in accordance with the respective requirements of said streets.

*** Except as may be permitted in Table 7-1 of these regulations.

**** Descending centerline grades approaching the terminus of a cul-de-sac shall be reduced within a vertical curve to a maximum of four (4) percent unless determination is made by the planning commission's duly authorized representative that a steeper grade will provide adequate clearance for vehicles entering ascending driveways.

TABLE 6-2
SIGHT DISTANCE FOR VEHICLES EXITING FROM ACCESS POINTS ONTO ADJACENT ROADS
Ssee Figure 6-1

VEHICLE TYPE	20 MPH				30 MPH				40 MPH				50 MPH				60 MPH			
	2 LANE		4 LANE		2 LANE		4 LANE		2 LANE		4 LANE		2 LANE		4 LANE		2 LANE		4 LANE	
	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR	DL	DR
Passenger Car	225	195	235	205	335	290	355	310	445	385	470	415	555	480	590	515	665	575	710	620

TABLE 6-3
LEFT TURN SIGHT DISTANCE FOR VEHICLES ENTERING ACCESS POINTS
Ssee Figure 6-2

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	165	180	195	245	265	290	325	355	385	405	445	480	490	530	575

Notes:

Intersection controls shown are limited to left and right turns from a stop along a minor roadway and left turns from a stop along a major roadway only. The table values have been calculated and rounded for design based upon sight triangles using AASHTO - Geometric Design of Highways and Streets, 4th Edition, 2001. AASHTO formula for sight distance left (DL) or distance right (DR) = 1.47 x design or prevailing regulatory speed (major road) x time gap. Time gaps designated for passenger cars crossing lanes are as follows: 7.5 seconds for left turn from a stop (Table 6-2); 6.5 seconds for right turn from a stop (Table 6-2); and 5.5 seconds for left turn from a stop (Tabled 6-3). Time gaps are for a stopped vehicle turning left or right onto a two (2) lane roadway with no median and grades of three (3) percent or less. Table values require adjustments as follows: for left turns onto or from multiple lane roadways with more than two (2) lanes, add 0.5 seconds for each additional lane to be crossed by the turning vehicle.

For minor roadways, if the approach grade ascends greater than three (3) percent, add 0.2 seconds for each percent grade for left turns and 0.1 seconds for right turns.

In applying the table, calculated values are for passenger cars. Where substantial volumes of heavy vehicles enter these roadways, the use of other time gap values for single unit and combination trucks must be considered. These values are published in the AASHTO Design Standards.

FIGURE 6-1

SIGHT DISTANCE FOR VEHICLES EXITING FROM ACCESS POINTS
refer to Table 6-2

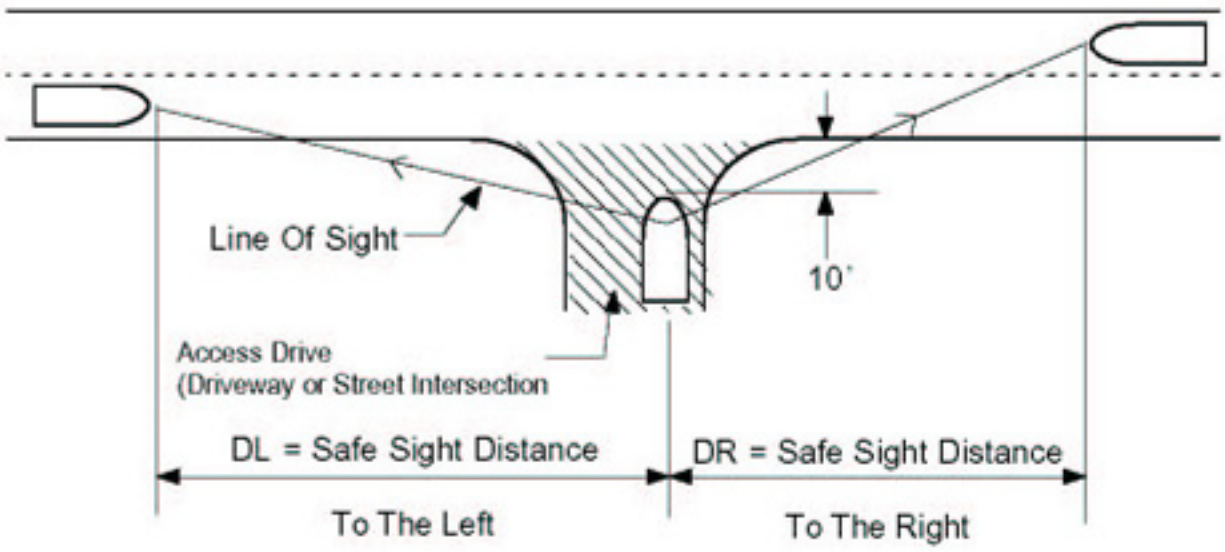
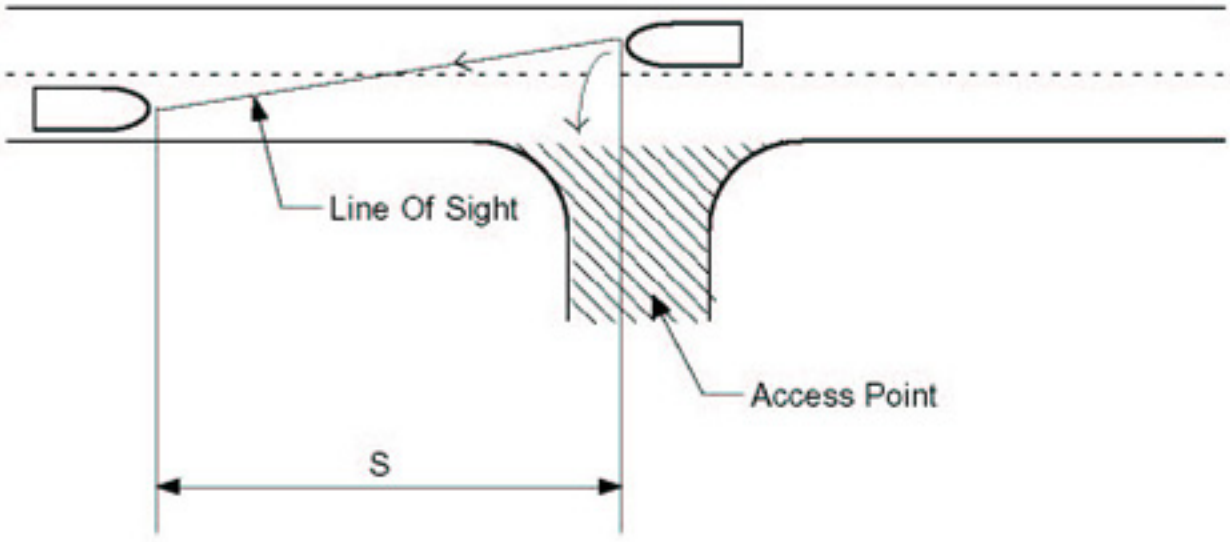


FIGURE 6-2

LEFT TURN SIGHT DISTANCE FOR VEHICLES ENTERING ACCESS POINTS
refer to Table 6-3



ARTICLE VII

INFRASTRUCTURE IMPROVEMENTS

This article establishes standards for the design of improvements for all land uses as a part of subdivisions, or other developments, within the city. Improvements for primary and other infrastructure include stormwater drainage systems, sanitary sewer systems, water systems, streets, driveways and sidewalks, utilities, and other related systems required. All plans for improvements must be designed by a Licensed Professional Engineer, reviewed, approved, constructed, and inspected by the planning commission's duly authorized representative and/or other regulatory agencies, where applicable, in accord with provisions of these regulations.

SECTION 7.0 STORM WATER DRAINAGE SYSTEMS

A. GENERAL

1. Amendments to the Federal Clean Water Act required a Storm Water Program to be implemented within Campbell County. Sanitation District No. 1 has adopted Storm Water Rules and Regulations in cooperation with the planning commission. These Rules and Regulations apply to urbanized areas of Campbell County within a boundary established by Kentucky Division of Water (KYDOW). Under the Storm Water Rules and Regulations, the District will administer the Storm Water Program, review plans for development or redevelopment and issue Land Disturbance Permits within the KYDOW boundary. Except as herein provided, areas outside the KYDOW boundary shall comply with the District's Storm Water Rules and Regulations and be administered by the planning commission's duly authorized representative. The District's Regulations establish the criteria, methodology, and minimum standards for design of all components of a storm drainage systems. Such components may include the following systems: a) open systems (i.e. rivers, streams, creeks, channels, linings, side ditches, inlets, etc.); b) closed systems (i.e. bridges, box culverts, sewer pipe, manholes, junction boxes, etc.); c) impoundments (i.e. lakes, ponds, detention/retention basins, underground vaults, etc.); d) combinations of open and closed systems or impoundments as an internal part of the storm drainage system; or e) water quality best management practices.

2. Design criteria for subdivision development shall apply to all storm drainage systems within areas shown on a Preliminary Plat. Other developments processed through zoning ordinance including Stage I and Stage II Development Plans and Site Plans for all land uses shall also apply.

3. Any development adjacent to other facilities (i,e, floodplain, streams, highways, county roads, etc.) under the jurisdiction of federal, state and/or local governmental agencies must be "Permitted" by these agencies prior to final approval by the planning commission or its duly authorized representative for construction. In these cases, the following approvals must be obtained, where applicable:

   - Application for Permit to construct across or along a Stream (if applicable) from the Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Department for Environmental Protection, Division of Water - Floodplain Management Section - Water Resources Branch.

   - Application for Water Quality Certification (if applicable) from the Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Department for Environmental Protection, Division of Water - Water Quality Branch.

   - Application for Storm Drainage System Encroachment Permit (if applicable) from the Commonwealth of Kentucky, Department for Highways, along State Highways from local district and/or Frankfort offices.

   - Application for Storm Drainage System, Encroachment Permit (if applicable) from the County Road Department along County Roads from the local office.

B. DESIGN FOR STORM SEWERS: Storm sewer systems are designed to collect and convey stormwater runoff from street inlets, runoff control structures, and other locations where the accumulation of stormwater is undesirable. The objective is to remove runoff from an area fast enough to avoid unacceptable amounts of ponding damage and inconvenience. Except as herein provided, design criteria shall be in accord with the Rules and Regulations of Sanitation District No. 1.

1. Manholes (Junction Boxes): Manholes shall be constructed in accord with Standard Construction Drawings as shown in Appendix D.

2. Inlets

   a. Capacity

      (1) The capacity of the grate of on-street inlets should not be less than the quantity of flow tributary to the inlet. Inlets at

low points or sags should have extra capacity as a safeguard for street flooding from flows overtopping the street curb. Curb openings or combination inlets should be used for overflows in the event that the grate is clogged. Special inlets may be required for streets with steep gradients to provide the extra capacity such situations require. Where avoidable, inlets should not be placed along streets where driveways and/or aprons conflict with mountable roll or depressed curbing.

b. Type

(1) On-street combination type inlets (single or double) shall be used and installed in accord with "Standard Construction Drawings" as shown in Appendix D, or approved equal.

(2) Off-street type inlets shall be used and installed in accord with “Standard Construction Drawings” as shown in Appendix D, or approved equal. Where pipe openings are 24 inches and less, types of inlets used shall be those defined as yard drain, sloped and flared box inlets and/or sloped box inlets type 1, or approved equal. Standard and/or wingwalled type headwalls serving pipes 24 inches and smaller are prohibited for use as inlets unless provided with enclosure grates in accord with these regulations. Except for inlets serving temporary silt basins, detention and/or retention basins or pipes or other openings greater than 24 inches, the maximum dimension of opening on all stormwater inlets shall be limited such that a sphere with a diameter of 6 inches cannot pass through any opening.

c. Location

(1) Inlet spacing along streets shall be based upon gutter and inlet capacity, street slope, and contributing drainage area. The spacing of inlets should ensure that street drainage generated along continuous grades or in sags will not damage and flood private properties or residential basements. In general, the spacing of combination inlets shall not exceed the following requirements, unless detailed hydraulic computations indicate otherwise and are submitted with Improvement Drawings and Specifications:

(a) Along continuous grades (less than two percent) - 400 feet maximum;

(b) Along continuous grades (two percent and over) - 600 feet maximum;
(c) At sag locations (draining less than two percent grades) - 400 feet maximum between inlets or from a high point
(d) At sag locations (draining two percent and over grades) - 600 feet maximum between inlets or from a high point;
(e) Inlets shall be placed immediately upstream of pedestrian walkways and designed to intercept 100% percent of the flow;
(f) Inlets placed at locations other than in (5) above shall be designed to intercept 75% of the flow; and
(g) Inlets for drains connected to the combined sewer system or/other systems having known Infiltration/Inflow problems should be designed with flow-throttling capabilities, if required.

d. Special consideration should be given to storm drainage entering cul-de-sacs. Additional inlets shall be required when drainage areas and/or street slopes are excessive. In addition to an inlet provided near the low point within the cul-de-sac, two (2) additional inlets shall be required along each curb prior to the entrance of the cul-de-sac in accord with the following criteria:

(1) for street slopes less than eight (8) percent and draining more than 400 feet of pavement; and
(2) for all street slopes more than eight (8) percent and draining more than 300 feet of pavement.

3. Culverts and Bridges: Culverts and bridges shall be designed in accord with the methods given in the "Manual of Location and Design", published by the Kentucky Department of Highways; except that stormwater quantities to be handled by the culverts and bridges shall be determined on the basis described in Sanitation District No. 1 standards.

4. Headwalls, Safety Guards or Railings

a. Except for driveway entrance pipe, headwalls or other structures shall be constructed at the inlet and outlet of all storm sewers in accord with “Standard Construction Drawings” as shown in Appendix D. Concrete headwalls, per Appendix D for pipe diameters 24 inches and less shall be used for outlets only. Same sized headwalls are prohibited for use as inlets.

b. Safety guards and railings shall be provided along the top and sloped/winged sidewalls on all headwall inlet and outlet structures or other culverts or bridge structures having a vertical drop of 4’-0” or greater. Such guards or railings shall be at least 42 inches in height, measured vertically above the wall. Openings in guards shall have balusters or ornamental patterns that do not provide or create a ladder effect or create an opening such that a sphere with a diameter of four (4) inches cannot pass through any opening, except for the top eight (8) inches. Guards or railings and attachments shall be made of materials that are weather resistant and ultraviolet (UV) light resistant adequate in strength to resist uniform, concentrated, and impact loads in accord with the applicable sections of the Kentucky Building Code, latest version. Guards or railings constructed of wood or chain link shall be prohibited. Other types of landscaping buffers such as trees, bushes or shrubs may supplement but not replace guards and railings for safety.

5. Specifications for Construction and Materials: In all other respects, the design, materials, and construction shall be as specified in Sections 601, 602, 610, 611, 612, 616, 704, 706, 709, 710, 737, "State of Kentucky Standard Specifications for Road and Bridge Construction", and in accord with "Standard Construction Drawings", shown in Appendix D. Non-circular pipe may also be specified.

The following types of pipe shall be specified as a minimum for storm sewers, in accord with the following requirements:

a. Reinforced Concrete Pipe (RCP AASHTO M 170, ASTM C76 and AASHTO M198)

(1) 27" - 120" Class II Wall A, B or C Max.Cover 11 feet;
(2) 18" - 120" Class III Wall A, B or C Max. Cover 22 feet
(3) 12" - 120" Class IV Wall A, B or C Max. Cover 36 feet.

Notes:

(1) Minimum Class III shall be required beneath all street pavements or driveways.
(2) Design and installation shall be in accord with AASHTO Section 17 Soil-Reinforced Concrete Structure Interaction Systems, ASTM C12 or ACPA Design Data 40, where applicable, except that Pipe Bedding and Trench Conditions shall be per Appendix D.

b. Bituminous Coated Galvanized Corrugated (2-2/3" x 1/2") Steel Pipe (AASHTO M36 Type I, AASHTO M218 and AASHTO M190 Type A):

(1) 12" - 36" 16 Gauge
(2) 42" - 54" 14 Gauge
(3) 60" 12 Gauge
(4) 66" - 72" 10 Gauge

c. Bituminous Coated Galvanized Corrugated (3" x 1") Steel Pipe (AASHTO M36 Type 1, AASHTO M218, and AASHTO M190 Type A)

(1) 36" - 90" 16 Gauge
(2) 96" - 102" 14 Gauge
(3) 108" - 120" 12 Gauge

d. Bituminous Coated Galvanized Spiral Rib (3/4" x 3/4" x 7-1/2") Pipe (AASHTO M36 Type I, AASHTO M218, and AASHTO M190 Type A):

(1) 18" - 36" 16 Gauge
(2) 42" - 54" 14 Gauge
(3) 60" - 72" 12 Gauge

Note: Bituminous Coating within items b. through d. shall be quality controlled by the manufacturer. Field coating of any pipe shall be prohibited. Bituminous coating not required for driveway entrance pipe.

e. Aluminized Type 2 Corrugated (2-2/3" x 1/2") Pipe (AASHTO M36 Type 1, AASHTO M274)

(1) 12" - 36" 16 Gauge
(2) 42" - 54" 14 Gauge
(3) 60" 12 Gauge
(4) 66" - 72" 10 Gauge

f. Aluminized Type 2 Spiral Rib (3/4" x 3/4" x 7-1/2") Pipe (AASHTO M36 Type 1, AASHTO M274)

(1) 18" - 36" 16 Gauge
(2) 42" - 54" 14 Gauge
(3) 60" - 72" 12 Gauge

g. Aluminum Spiral Rib (3/4" x 3/4" x 7-1/2") Pipe (AASHTO M196 and M197)

(1) 18" - 30" Gauge 14 Max. Cover 30 feet
(2) 36" - 48" Gauge 12 Max. Cover 30 feet
(3) 54" - 66" Gauge 10 Max. Cover 30 feet.

Notes: All joints for corrugated and spiral rib pipe for items b. through g. shall be special joints having bolt, bar and strap premium '0' Ring Gasket connectors; (2) Design, installation and maximum height of cover (except as stated for item g.) shall be in accord with AASHTO Section 26 Metal Culverts except that Pipe Bedding and Trench Conditions shall be per Appendix D.

h. Polyvinyl Chloride (PVC) Pipe

(1) Smooth Wall:
(a) Pipe/Fittings: ASTM D 3034; ASTM F679; AASHTO M 278
Material: ASTM D 1784
Joint: ASTM D 3212
Sizes: 12" - 27" or other size available
Minimum Pipe Stiffness: 46 @ 5% deflection
Installation: ASTM D 2321.

(2) Ribbed:

(a) Pipe/Fittings: ASTM F794; ASTM F949; AASHTO M304
Material: ASTM D 1784
Joint: ASTM D3212
Sizes: 12" - 48" or other size available
Minimum Pipe Stiffness: 46 @ 5% deflection
Installation: ASTM D 2321

(b) Pipe/Fittings: AASHTO M 304
Material: ASTM D 1784
Joint: ASTM D 3212
Sizes: 18" - 48" or other size available
Minimum Pipe Stiffness: Variable @ 5% deflection
Installation: ASTM D 2321.

i. Polyethylene (HDPE) Pipe

(1) Corrugated:
(a) Pipe/Fittings: AASHTO M294 Type S
Material: ASTM D 3350
Joint: Minimum silt tight including: (a) thermally molded; (b) integral bell; or (c) bell and spigot with built-in gasket coupler assemblies only.
Sizes: 12" - 30" only
Minimum Pipe Stiffness: Variable @ 5% deflection
Installation: ASTM D 2321.

Notes:

(1) Design, installation and maximum height of cover for items h. and i. shall be in accord with AASHTO Section 18 - "Soil - Thermoplastic Pipe Interaction Systems" except that Pipe Bedding and Trench Conditions shall be per Appendix D;
(2) Design engineer shall be required to submit a special design or additional documentation for any variation to minimum standards as stated above. (3) Minimum height of cover for all pipe shall be 12-inches (measured from top of rigid pavement or bottom of flexible pavement) except for aluminum conduits with diameters greater than 48 inches require 24 inches; (4) All pipe installations greater than 30- inches require full-time on-site inspections under the direction of a qualified Geotechnical Engineer or Firm.

C. DESIGN FOR STORMWATER DRAINAGE CHANNELS, WATERCOURSES, AND EROSION CONTROL: Open channels provide many advantages in the management and control of stormwater runoff. Such channels provide for natural infiltration of stormwater into groundwater supply and extend the Time of Concentration (Tc), helping to maintain the runoff rate nearer to that which existed prior to development. The objective of open channel flow design is: (a) to determine a channel slope and size that will have sufficient capacity to prevent undue flooding damage during the anticipated peak runoff period; and (b) to determine the degree of protection based on stream velocity to prevent erosion in the drainage channel. Existing drainage channels, which will remain undisturbed, shall not be required to be reconstructed unless additional capacity and erosion control is required. Except as herein provided, design criteria shall be in accord with the Rules and Regulations of Sanitation District No. 1.

1. Specifications for Construction and Materials: In all other respects, the design, materials, and construction shall be as specified in Sections 204,

210, 212, 601, 703, 709, 710, State of Kentucky Standard Specifications for Road and Bridge Construction and in accord with "Standard Construction Drawings" shown in Appendix D.

2. Lot Grading and Drainage

a. Lot grading shall be accomplished as follows: Except for driveways in transition (higher or lower than the street - See Appendix D) within the limits of the public right-of-way adjacent to street pavements, all final grading for grass strip, driveway and sidewalk, shall comply with minimum and maximum grades in accord with typical sections for streets as shown in Appendix D. For lots that drain toward streets which include curb and gutter sections, the area in the right-of-way within four (4) feet back of the curb shall be graded so that water drains to the street at a minimum grade of 1 inch per foot (approximately 8 percent). In the area reserved for sidewalks and/or driveways (i.e., four (4) to eight (8) feet back of the curb in single or two-family areas or four (4) to nine (9) feet in multi-family or commercial areas), a minimum final grade of 1/4 inch per foot (approximately 2 percent) toward the street is required. For streets with or without curb and gutter or sidewalks which include side ditches, refer to typical section within Appendix D. All grading behind the street shall be done in a fashion that does not allow ponding of water adjacent to the paved street. For lots that drain away from the street, the area in the right-of-way within four (4) feet back of the curb shall be graded so that water drains away from the street at a minimum grade of 1/2 inch per foot (approximately 4 percent).

b. Lot areas outside of the limits of the building structure shall be graded toward or away from a point four (4) feet back of the curb so that water drains away from the building at a minimum grade of 1/4 inch per foot (approximately 2 percent) toward the street or into swales or natural drainage areas.

(1) Top Soil: If grading results in the stripping of top soil, top soil shall be uniformly spread over the lots as grading is finished.

(2) Trees: The preservation and/or removal of trees and vegetation shall meet the requirements of the Cold Spring Tree Ordinance.

c. Swales carry surface runoff from roofs, yards, and other areas to the rear of lots or along common property lines to streets or other drainage areas to prevent ponding of water near building structures

or other portions of the lot. Surface drainage swales shall have a minimum grade of two (2) percent and shall be constructed so that the surface water will drain onto a street, storm inlet, or natural drainage area. Swales for handling lot drainage shall be constructed as a part of final lot grading and be seeded and mulched or sodded as soon as possible to prevent erosion.

d. Roof downspouts, footing, or foundation drains, or sump pumps, shall be discharged onto the same parcel of land from which the water is generated. Roof downspouts shall be piped to natural drainage areas away from the street or onto concrete splash blocks, which direct water away from the building structure into swales or other natural drainage areas. Except as permitted by adopted policy within residential property regimes, downspouts or other subsurface drains constructed toward the street shall be discharged on the surface as far back onto the lot as possible and in no case be closer than 20 feet back from the nearest curb of the street. Roof and subsurface drains shall not be connected through the curb or into the gutter section of the street. Any connection into a storm sewer or catch basin must be approved by the inspector.

D. DESIGN OF STORMWATER RUNOFF CONTROL FACILITIES: Detention/retention storage facilities for developments shall be designed to store accelerated stormwater runoff for a recurrence interval and duration required while allowing discharges for through and local pre-development rates of runoff to pass through uncontrolled. However, such discharges allowed must not exacerbate pre-existing downstream problems and deficiencies resulting in damages of private and other public properties. Except as herein provided, design criteria shall be in accord with the Rules and Regulations of Sanitation District No. 1.

1. Waivers for Stormwater Runoff Control Facilities: In areas outside the KTDOW boundary, certain factors, variations, and/or options will be considered in granting waivers for on-site storage design as part of the review process at the Stage I/Preliminary Plat, Improvement Drawings and Specifications and/or Stage II/Site Plan stages. Waivers granted will be determined from the following:

a. All agricultural uses unless otherwise required by other federal and/or state agencies regarding stormwater regulations as "permitted".

b. All residential rural estate and single-family residential developments having a minimum lot size of at least one (1) acre or greater provided that the increase in runoff calculated using runoff

curve numbers (RCN) or runoff coefficients (C) does not cause problems, deficiencies and damages in the length of channels or reaches downstream determined by a hydrograph based upon the

time of concentration or duration of the design storm required. In any development where a storage design is required credits are prohibited. Post - Development runoff curve numbers (RCN) or runoff coefficients (C) may not be less than pre - development runoff curve numbers (RCN) or coefficients (C).

c. Where increased runoff from a development flows into a pre-existing downstream storage facility and routing channels and storage capacity through such facilities are analyzed and improvements made, where necessary or required.

d. Where mitigation of known on-site or off-site deficiencies are determined, engineered and resolved by the subdivider or developer in cooperation with all applicable jurisdictions impacted as assurance that increased runoff will be adequately handled or dissipated without cause for damage during the design storm required.

e. Where a determination has been made that regional storage design beyond the site in question is necessary, equivalent cost of requirements for on-site detention/retention storage may be substituted for immediate construction in the form of a Regional Facility Fee as calculated based on a policy of the planning commission included within its by-laws.

f. Where off-site/downstream improvements are required to remedy culvert/channel deficiencies determined by runoff calculation methods and/or a hydrograph, such improvements shall be submitted as part of Improvement Drawings and Specifications and approved for construction prior to approval of a Final Plat or Site Plan.

g. Where detention/retention storage design is not appropriate due to result of hydrograph analyses, and peak discharge and runoff volumes do not pose a problem or result in damages within the length of open channel or closed conduit determined by the time of concentration or duration of the design storm required.

h. Buildings and their related parking areas and other structures where less than two (2) acres of land is to be altered by grading, draining, removing existing ground cover or paving; and, of which

1/2 acre or less will be impervious acres such as roofs, walks, and parking areas. However, this waiver is based upon the stipulation that such impervious hard surfaces are an isolated part of drainage area and not a part of the same drainage or watershed area contributing to an accumulated and combined discharge exceeding the downstream discharge/runoff control requirements of these regulations.

SECTION 7.1 SANITARY SEWER SYSTEM: The subdivider shall construct a sanitary sewage collection system designed to serve adequately all lots in his subdivision plus lines adequate in size to facilitate the orderly development of nearby land which is an integral part of the neighborhood service or drainage area (see Section 7.11 of these regulations) and connect said collection system to a centralized sewerage system, or an approved package treatment plant (surface discharge), except as herein provided.

A. PLANS REQUIRED: The subdivider shall submit plans and specifications prepared by a registered professional engineer, showing the proposed sanitary sewerage system and facilities. Said plans show pipe sizes, gradients, type of pipe, invert elevations, location and type of manholes, the location, type and size of all lift or pumping stations, location, type and capacity of all proposed package treatment plants, and all construction details including such other information as required by the planning commission.

B. DESIGN STANDARDS: Where applicable, the design criteria for the sanitary sewerage system shall comply with the following published standards, regulations, or laws, as applicable:

1. "Recommended Standards For Sewage Works", prepared by the Great Lakes - Upper Mississippi River Board of State Sanitary Engineers, Health Education Service, Inc., Albany, New York, 1978.

2. Rules and Regulations of Sanitation District No. 1 of Campbell and Kenton Counties.

3. State Water Laws and Regulations, and other state statutes.

C. MATERIAL AND CONSTRUCTION SPECIFICATIONS: Material and construction specifications, including testing requirements for all sanitary sewer projects shall be in accordance with the Rules and Regulations of the Sanitation District No. 1, except as herein provided.

SECTION 7.2 WATER SYSTEM: It shall be the responsibility of the subdivider to contact the applicable Water District, indicating his proposed layout of the water distribution system, according to the subdivision procedures identified in Article III of these regulations. Except as permitted under Section 7.2, D., the subdivider shall

design and construct a complete water distribution system which shall serve adequately all lots within the proposed subdivision plus coordinated with the applicable Water District, lines adequate in size to facilitate the orderly development of nearby land which is an integral part of the neighborhood service area (see Section 7.11 of these regulations).

A. PLANS REQUIRED: The subdivider shall submit plans and specifications prepared by a registered professional engineer, showing the proposed water system. Said plans shall show location and size of lines, type of pipe, location of hydrants and valves and supply facilities, booster pumps, elevated or ground level storage tanks, if applicable, including all construction details and such other information as may be required by the planning commission.

B. DESIGN STANDARDS: The design criteria for the water distribution system shall be based upon regulations of the applicable Water District and the following requirements:

1. MINIMUM FIRE FLOWS

(a) MINIMUM FIRE FLOWS: The Minimum Fire Flow is the quantity of flow in gpm (gallons per minute) at 20 psi (pounds per square inch) residual pressure required at the source of testing for fire protection for areas of proposed development based upon the following exposure distances between buildings:

EXPOSURE DISTANCES (2)	MINIMUM FIRE FLOW
Over 100 Feet	None (1)
100 Feet or Less	500 gpm

NOTES:

(1) Where a public water system is available, a minimum flow of 250 gpm is required for the installation of fire hydrants. The system supporting this flow shall have the capability of providing this flow for a period of not less than two (2) hours plus consumption at the maximum daily rate. Where a public water system is not available, a minimum of 250 gpm is recommended. The subdivider shall cooperate with the fire department having jurisdiction to provide for adequate water supply access and quantity of water available from other sources such as cisterns, lakes and ponds, dry hydrants, etc.

(2) Minimum distances between buildings using most restrictive side yard distances required by the applicable zoning ordinances.

Minimum fire flow from a source shall be determined from an adequate fire flow test described below within Section 7.2, B., 2. Minimum fire flow will be utilized by the water district, water agency and/or planning commission as a requirement for approval of any proposed Preliminary Plat requiring a public water supply.

(b) ADDITIONAL REQUIREMENTS: The Insurance Services Office (ISO) Guideline Fire Suppression Rating Schedule for safety and consumer protection is recognized as a goal for levels of fire flow in residential subdivisions. Upon determination by the Commission, that it is practicable for the purpose of increasing the fire flow above the minimum required within subparagraph (a) above, based upon economic feasibility in proportion to the development, any of the following can be required as a condition/requirement for approval of any proposed Preliminary Plat requiring a public water supply:

(1) Upsizing or replacement of any existing off-site water system facility or infrastructure; and/or

(2) Construction of circulation or interconnection with another water system; and/or

(3) Providing other alternative water supply sources.

2. FIRE FLOW TESTING: Available fire flow in an area proposed for development shall be determined from an adequate fire flow test performed by the applicable water district, water agency, qualified consultant and/or fire department as a certification to ensure minimum water supply for fire protection. Fire flow testing shall conform to standard procedures as recommended in the National Fire Protection Association (NFPA) Fire Protection Handbook including the following: (a) static and residual pressures in pounds per square inch using a hydrant cap or hose cap drilled for a pressure gauge; (b) internal diameter of flowing hydrant nozzle orifice in inches, discharge coefficient and recorded pressure using a pitot gauge; and (c) available fire flow in gallons per minute at a residual pressure of 20 pounds per square inch.

3. WATER MAIN SIZES: Upsizing of water distribution mains for primary transmission and/or secondary feeders shall be based upon the Cold Spring Comprehensive Plan and the water district or water agency's Master Plan, where applicable.

4. FIRE HYDRANT LOCATION/SPACING: Hydrants shall be spaced so as to be not more than 450 feet between hydrants in residential areas of one and two-family dwellings and not more than 300 feet between hydrants in areas of high volume or high density.

   The location/spacing of fire hydrants relate to lengths along streets, drives, yards, etc., as fire hose is placed. Fire hydrant(s) shall be located a maximum distance of approximately 500 feet from the face of any proposed residential building for occupancy, where practicable. However, all deadend systems are subject to approval by the water district or other water service area.

C. MATERIAL AND CONSTRUCTION REQUIREMENTS: Material and construction specifications, including testing requirements for all water distribution systems, shall be in accord with the rules and regulations of the water district or water agency, where applicable.

D. ON-SITE DISPOSAL SYSTEM/WATER SYSTEM: In those areas where on-site sewage disposal systems are permitted, as provided for in Section 9.13 of the city's zoning ordinance, a connection to the applicable water district's or agency's system shall not be required. However, where existing or proposed development is presently not served by a public sanitary sewer or water system and is located within a reasonable distance of an existing or newly extended system said development shall be required by the planning commission to connect to such public systems, if deemed practicable, based upon economic feasibility in proportion to the development. In such cases, private sewage disposal and/or water supply systems shall be discontinued.

SECTION 7.3 STREETS

A. PLANS REQUIRED: The subdivider shall submit plans and specifications prepared by a registered engineer showing the proposed street system. Said plans shall show the proposed right-of-way width, pavement width, location and the proposed alignment, grade, geometric details, and typical cross-sections of each proposed street, including curbs and gutters and sidewalks (where applicable). Said plans and specifications shall show for each proposed street, design criteria such as street classification, pavement classification and thickness and classification and thickness of base and subbase materials.

   In addition, the following information shall be required:

   1. The plans and profiles of all surrounding streets which are to connect to a street in the proposed subdivision (for a distance of one hundred (100) feet back from the boundary line of the proposed subdivision).

2. All profiles shall be drawn at a scale not to exceed one inch = 50 feet (horizontal) and one inch = 10 feet (vertical).

3. Existing and proposed grade elevations shall be shown at all regular station points including vertical sag P.I.(s), P.C.(s), and P.T.(s) and percent grade between P.I.

4. Elevations shall be tied to a bench mark (U.S.G.S. or other bench marks when available), when, within a reasonable distance (as determined by the planning commission's duly authorized representative) and shall be shown on the improvements drawings and specifications.

5. Details of curb and gutter, sidewalks, street section, and paving shall be shown.

B. PAVEMENT SPECIFICATIONS: All streets shall be paved with Portland Cement concrete or asphalt concrete and constructed in accordance with the specifications in Appendix A or B (whichever is applicable) of these regulations.

C. MINIMUM PAVEMENT WIDTHS: 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 street shall be as shown in Table 7-1 and laid out in the manner indicated by the typical street cross sections shown in Appendix D.

D. CURBS AND GUTTERS: The subdivider shall construct vertical curbs, at least six (6) inches in height or roll curbs four (4) inches in height, for all residential streets (where applicable) as identified in Table 2. For streets to be constructed of asphalt concrete, curb and gutter shall be constructed according to the typical section detail in Appendix D.

All curbs and gutters shall be constructed of Portland Cement concrete and in accordance with the specifications in Appendix A and typical cross sections in Appendix D.

E. CURB RADII: The minimum curb radius at intersections shall be as follows:

TYPE OF STREET* INTERSECTION	MINIMUM CURB RADIUS (IN FEET)
Local - Local or Subcollector	25
Subcollector - Subcollector	25
Subcollector - Collector	30
Collector - Collector	30

Arterial - Arterial **

* In the case of local or collector streets located in commercial or industrial areas, the minimum curb radii shall be increased to fifty (50) feet.

** Shall be based on current design standards of the Kentucky Department of Transportation.

F. SIDEWALKS: Sidewalks shall be required as identified in Table 7-1 of these regulations. The planning commission may grant a modification or waiver to the sidewalk regulation as part of a Preliminary Plat, providing the planning commission shall find: (a) that the plat for development, or other request, includes low densities and contains extremely large rural estate type lots; (b) that the development, or request, will generate low traffic volumes without adversely jeopardizing pedestrian safety; and (c) that the provision for sidewalks abutting existing streets or roadways, or other roadways, is impracticable, unnecessary, or will contribute to an attractive nuisance or other safety hazard. Alternative pedestrian walkways to those identified in Table 7-1 of these regulations may be permitted by the planning commission provided such alternative(s) are determined to constitute an integral pedestrian circulation system equal to, or exceeding the requirement for sidewalks along both sides of a street. Such alternative pedestrian walkways may be within the public right-of-way, outside the public right-of-way within a public pedestrian circulation easement, or combination thereof. Pedestrian walkways within the public right-of-way shall be constructed of Portland Cement concrete in accordance with the specifications of Appendix A of these regulations, at least four (4) inches thick and increased to five (5) inches of thickness when included as part of a driveway. Pedestrian walkways along the street shall be laid out in a manner indicated by the typical cross section shown in Appendix D. Pedestrian walkways outside the public right-of-way determined to be a part of the integral pedestrian circulation system are permitted to be Asphaltic Concrete provided they are in accord with Appendix C, or approved equal, a minimum of five (5) inches thick and proof rolled prior to placement of the Asphaltic Concrete. All pedestrian walkways determined to be a part of the integral pedestrian circulation system shall be constructed with a minimum width of four (4) feet in single-family residential areas, and five (5) feet in multi-family residential, commercial, and industrial areas where pedestrian traffic volume indicates the need for this additional width. Pedestrian walkways outside the public right-of-way determined not to be a part of the integral pedestrian circulation system are not regulated herein, however, such pedestrian walkways may be regulated by other applicable agencies or laws (I.e., Americans with Disabilities Act).

1. Handicap Accessible Curb Ramps

   Where sidewalks along streets are required, handicap accessible curb ramps shall be installed at all new street intersections in conjunction with

construction of the concrete curb and gutters. Curb ramps shall comply with the U.S. department of Justice's regulation of the Americans with Disabilities Act of 1990 and details indicated within Appendix D. All curb ramps shall be designed to prohibit excessive stormwater from flowing onto the ramps potentially causing safety and maintenance problems.

G. PARKING: Parking on any street where pavement width is less than thirty-six (36) feet shall be limited to one side of the street, except as otherwise noted in Table 7-1. Parking lanes shall not be shifted from one side to the other, from block to block, or where the proposed street is the extension of an existing street the parking lane shall extend continuously on the same side of the street. If practicable, the parking lane shall be located on the opposite side of the street where the fire hydrants are located.

H. CUL-DE-SAC AND DEAD-END STREET: Cul-de-sac courts and dead-end streets shall be designed in accordance with the typical design details as per Appendix D of these regulations. However, if conditions warrant, other turn-around designs may be permitted by the planning commission, or its duly authorized representative. If such street is of a temporary nature and a further extension into adjacent land is anticipated, then said turnaround, beyond normal street width, shall be in the nature of an easement of the premises included in said turnaround, as per the typical design in Appendix D. Such easement may be vacated to abutting property owners when said deadend street is legally extended into adjacent land. If such deadend street serves four (4) lots or less, no temporary turnaround will be required.

I. CONSTRUCTION OF REQUIRED PAVEMENT WIDTH ON EXISTING STREETS: When a subdivision is located on only one side of an existing street, and where the pavement width of such existing street is less than that required by these regulations, the subdivider shall be required to construct one-half (1/2) the required pavement width, as per these regulations, along the side fronting his property on such street.

J. INTERCONNECTION/EXTENSION

1. The arrangements of streets in new subdivisions with an existing street or streets or adjacent undeveloped land shall make provision for projection of streets to those adjoining areas in a timely fashion as required with approval of a Preliminary Plat, per Section 3.3 of these regulations.

2. Improvement Drawings and Specifications for interconnection with an existing street or extension to adjoining land shall be submitted for approval and construction when either one of the following conditions exist:

a. At least twenty-five (25) percent of the lots or units approved as a Preliminary Plat or ten (10) lots or units, whichever is less, remain unplatted without construction of improvements and a secondary interconnection or extension to adjoining land; or

b. The terminus or stub of a street constructed in a new subdivision is 300 feet or less from such interconnection or projected terminus at the adjoining land.

Determination of compliance shall be made by the planning commission's duly authorized representative prior to approval of any new phase of Improvement Drawings and Specifications or individual Section of a Final Plat within the subdivision. Zoning and/or building permits shall not be issued within the subdivision by the applicable legislative body until determination of compliance is made by the planning commission's duly authorized representative.

3. Improvement Drawings and Specifications for construction as required per Section 7.3, J., 2., shall include plans for grading, storm and sanitary sewers and water system per Section 3.5 of these regulations.

4. Final Plat for interconnection or extension shall include street right-of-way dedication to public use abutting existing street right-of-way or adjacent undeveloped land. Remnants of land, devil or spite strips are prohibited by Section 6.6, D., 2. of these regulations.

5. Guarantee may be filed with the planning commission's duly authorized representative in lieu of actual installation or completion of the required public improvements per Section 7.16 of these regulations.

SECTION 7.4 DRIVEWAY APPROACHES: Driveways for residential areas shall be provided with a minimum width as follows: one (1) lot or residence - nine (9) feet, or twelve (12) feet when the length of the driveway is two hundred (200) feet or greater; two (2) lots or residences - twelve (12) feet; three (3) or four (4) lots or residences - sixteen (16) feet; each increasing in width by four (4) feet at the curb (i.e., two (2) foot flare or taper on each side of driveway) for court, cul-de-sac, local, subcollector, and collector streets. In areas of heavier traffic volumes, or where special conditions are encountered (multi-family, industrial, commercial areas), increased driveways widths, plus increased minimum radii or flares may be required by the planning commission, or its duly authorized representative. Except for driveways in transition from upward to downward slopes, all driveways within the right-of-way shall be constructed in accordance with the standard construction details within Appendix D and the specifications of Appendix A or B (whichever is applicable) of these regulations. As an alternative to Section 7.3, F., driveways, aprons, and sidewalks within driveway aprons, may be constructed of other building materials including colored concrete stampings,

solid brick, pre-manufactured pavers or other similar hardened materials, provided such construction complies with the same minimum standard specifications for sub-grade, strength, and impermeability. Within the street right-of-way area, grades for upward sloping driveways within four (4) feet of the curb shall not be less than one (1) inch per foot (approximately 8 percent) nor more than two (2) inches per foot (approximately 16 percent). Grades for downward sloping driveways within four (4) feet of the curb shall not be less than one-half (1/2) inch per foot (approximately 4 percent) nor more than two (2) inches per foot. Sidewalks included as part of driveways, or separate therefrom, shall not be less than one-quarter (1/4) inch per foot (approximately 2 percent) nor more than one-half (1/2) inch per foot. Grades for upward or downward sloping driveways between edge of sidewalk and right-of-way line shall not be less than one-quarter (1/4) inch per foot nor more than two (2) inches per foot.

SECTION 7.5 OFF-STREET PARKING AREAS: Off-street parking areas shall be constructed in accordance with the requirements of the applicable zoning ordinance and Appendix C of these regulations, unless additional off-street parking is required as per these regulations.

SECTION 7.6 TELEPHONE AND ELECTRICAL UTILITY LINES: Unless required by the zoning ordinance, all new telephone and electrical utility lines shall be installed underground and be in conformance with the appropriate utility company's policy and requirements.

SECTION 7.7 STREET SIGNS

A. STREET NAME SIGNS: The developer, in conformance with standards established by the applicable legislative body or fiscal court shall be responsible for the installation of street name signs prior to approval of a Final Plat. Street name signs shall conform to minimum standards contained within the “Manual on Uniform Traffic Control Devices”, latest edition. In general, street name signs shall be constructed on a single post located along the right side of the roadway at all intersections approximately two (2) feet from the pavement or curb at a height of seven (7) feet. Lettering on street name signs should be at least four (4) inches high. Suffixes may be in smaller lettering at least two (2) inches high. A temporary sign is permissible until the permanent sign is erected.

B. TRAFFIC CONTROL SIGNS AND DEVICES: It shall be the responsibility of the developer to install traffic control signs and devices. The cost of the installation shall be borne entirely by the developer. The signs and devices shall be in conformance with the "Manual on Uniform Traffic Control Devices" as prepared by the Joint Committee on Traffic Control Devices, U.S. Department of Commerce, Bureau of Public Roads, as amended.

SECTION 7.8 STREET LIGHTS: Any developer or subdivider desiring to subdivide any tract or parcel of land within the City of Cold Spring shall submit to the planning

commission a plan for the installation of street lights in the subdivision. The cost of the installation of the street lights shall be borne entirely by the developer. The planning commission shall approve the submitted plan provided it meets the design criteria for street lighting as set forth in "America Standard Practice for Roadway Lighting" prepared by the American Standards Association, approved Nov. 7, 1963, and as subsequently revised or amended. Final subdivision plat approval shall be made by the planning commission only after the submission and approval of a street lighting plan.

SECTION 7.9 PLANTING SCREEN OR FENCES: The Planning Commission, may require and permit planting screens, fences, or masonry walls, as required by the applicable zoning ordinance.

SECTION 7.10 MONUMENTATION

A. All corners of the boundary survey shall be monumented or witness 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. Wherever possible, monuments shall be made of a permanent material that makes it possible for the monument to be detected by a device capable of finding ferrous or magnetic objects. Types of acceptable monuments include, but are not limited to, iron pipes, iron pins, iron rods, re-bars, chiseled crosses, railroad spikes, mine spikes, P.K. nails and drill holes. Wooden stakes shall not be use as monuments. Each iron pipe, iron rod, iron pin or re-bar monument set by a land surveyor shall bear his registration number on a manufactured cap or identifier.

B. Existing permanent manmade or natural features are acceptable monuments. Where manmade or natural features are subject to change, realignment or misinterpretation, such monuments or features shall be "witness monumented."

C. "Witness monumentation" shall be used when it is not possible or practicable to set the actual corner. Whenever witness monumentation is used, it shall be placed "on line" if possible and shall be shown on plats and called for in descriptions.

D. OTHER MONUMENTS: Other monuments set shall be metal pins of no less than one-half (1/2) inch diameter and no less than twenty-four (24) inches in length. Monuments of this type shall be set at all of the following locations:

1. At every point of intersection of the outer boundary of the subdivision with an existing or created right-of-way line of any street, railroad, or other way.

2. Appropriately identified markings shall also be located at each point along the street curb which intersects with the side lot lines of each lot.

SECTION 7.11 PLANS FOR FUTURE EXPANSION - EXTRA SIZE AND OFF-SITE IMPROVEMENTS: All improvements shall be installed to satisfy the service requirements for the service or drainage area in which the subdivision is located and the improvements shall be of sufficient capacity to handle the expected development of the overall service or drainage area involved.

A. EXTRA-SIZE IMPROVEMENTS: Where the planning commission has determined that improvements in excess of the size needed to serve just the proposed subdivision are required, the subdivider shall be so notified and arrangements for construction shall be agreed upon.

SECTION 7.12 PLANS REQUIRED FOR GRADING AND CONTROL OF EROSION AND SEDIMENTATION: Any developer who intends to make changes in the contour of any land proposed to be subdivided, developed, or changed in use by grading, excavating, or removing the natural topsoil, trees, or other vegetative covering thereon, shall submit a plan for grading and erosion and sedimentation control to the planning commission's duly authorized representative for approval.

Such plans, if required, shall contain adequate grading measures, including the control of erosion and siltation where necessary, using current acceptable guidelines and requirements contained herein.

A. REQUIREMENTS

1. One (1) set of plans for grading and the control of erosion and sedimentation shall be submitted to the planning commission's duly authorized representative, as per the procedures established in Article III.

2. In the event the planning commission's duly authorized representative recommends final plat approval before construction of improvements, as per Section 3.9, A., 2., measures to be taken to control erosion and sedimentation shall be included in the plans above, as provided per these regulations.

3. During the construction phase, further technical assistance may be furnished, if requested, by the planning commission's duly authorized representative, or by the local representative of the Natural Resources Conservation Service. However, the planning commission, or its duly authorized representative, shall enforce compliance with the approved plans.

4. The planning commission's duly authorized representative, shall make periodic inspections of the methods used and the overall effectiveness of the erosion and sedimentation control program.

B. EARTHWORK GRADING AND EROSION CONTROL MEASURES: The following control measures should be used for an effective erosion and sedimentation control plan for the area under development:

1. The smallest practical area of land shall be exposed at any one time during development.

2. When land is exposed during development, the exposure should be kept to the shortest practical period of time.

3. Where necessary, after grading, temporary vegetation and/or mulching should be used to protect areas exposed during development.

4. Sediment basins (debris basins, desilting basins, or silt traps) should be installed and maintained until ground cover has been completed to remove sediment from runoff waters from land undergoing development.

5. On-site provisions should be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development.

6. The permanent final vegetation and structures shall be installed as soon as practical in the development.

7. The development plan should be fitted to the topography and soils so as to create the least erosion potential.

8. Wherever feasible, natural vegetation should be retained and protected.

SECTION 7.13 CONSTRUCTION INSPECTIONS

A. AUTHORITY AND DUTIES OF INSPECTORS: Inspectors, except for inspectors employed by other public agencies including a state highway or plumbing department, county-wide water district and/or sanitation district, or private developers or contractors responsible for specialized inspections under the direction of a qualified Geotechnical Engineer or Firm, are authorized to inspect all work done and all materials furnished. Each inspector shall have one (1) complete set of all plans and specifications with certified approval by the planning commission's duly authorized representative. Such inspection, including final inspection, may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Except for minor deviations, the inspector shall not be authorized to revoke, alter, or waive any requirements of the approved grading plans related to public improvement construction, erosion control plans, and improvement drawings and specifications, but authorized to call to the attention of the contractor, any failure

of the work or materials to conform to the approved grading plans related to public improvements construction, erosion control plans, and improvement drawings and specifications. Contractors shall notify the inspector at least twelve (12) hours prior to the time when the work is to begin on each phase of construction, including erosion control, earthwork related to public improvements, storm sewer systems, sanitary sewer systems, street paving and driveway/sidewalks, including all related testing, where applicable.

The inspector shall begin inspections at the start of construction and continue inspections necessary and appropriate in the circumstance as the work progresses on each phase of the project until all construction is complete. Further, and during construction, any work determined by the inspector not to conform to the requirements of the approved grading plans and improvement drawings and specifications, or other requirements of these regulations, shall be suspended and such construction brought into conformance with plans and standards as approved.

When minor deviations regarding design or construction specifications, as regulated, are observed during on-site inspections, the planning commission's duly authorized representative, has been delegated certain discretionary judgment. However, the planning commission's duly authorized representative's judgment shall include findings that such deviations will not be: a) in conflict with the intent and purpose of these regulations; b) contrary to any adopted Administrative Policy per the By-Laws; c) in dispute with a majority of generally accepted AASHTO or ASTM industry standards or other standards regarding engineering judgment as determined by the planning commission's duly authorized representative, where applicable; and d) detrimental to the public interest. Where such deviations exist, the planning commission's duly authorized representative may require a guarantee or warranty for a time period not to exceed twelve (12) months as satisfactory assurance for the fulfillment of the quality of construction in accord with the regulations as deviated.

When major deviations of the design, as approved, are observed, the design engineer shall be notified and proper and adequate direction given, prior to proceeding with that phase of the project. Any question at issue which cannot be determined to conform with approved grading plans and improvement drawings and specifications, shall be referred to the planning commission's duly authorized representative, who shall inform the contractor, within 24 hours of such referral, what actions are necessary in order to proceed. The planning commission acting through its duly authorized representative, reserves the right to order items removed and replaced and additional testing when work was performed contrary to approved plans and specifications, or without adequate notification for inspection. Following final inspections of improvements, the planning commission's duly authorized representative shall certify, in writing, to the applicable cities and/or fiscal court, that improvements have been constructed

and/or completed in accord with grading plans including, erosion control plans, and Improvement Drawings and Specifications and inspected per these regulations, if such is the case.

SECTION 7.14 CONSTRUCTION RESPONSIBILITIES

A. COOPERATION OF SUBDIVIDER AND/OR CONTRACTOR: The subdivider and/or contractor(s) shall have available on the project, one (1) complete set of all plans and specifications, as approved by the planning commission's duly authorized representative and other local and state government agencies, where "permitted". Contractors shall cooperate with the inspector and with other contractors in every way possible. The subdivider and/or contractor shall, at all times, during actual construction, have a competent superintendent acting as his agent on the project. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and he shall receive instructions from the inspector. The superintendent shall have full authority to execute the orders or directions of the inspector. A superintendent shall be furnished irrespective of the amount of work sublet. Subdividers and contractors are not relieved of other responsibilities and requirements of other state and local agencies relating to zoning, permits, etc., which may be beyond the scope of requirements of the Subdivision Regulations. Satisfactory completion of inspections and certification that improvements have been constructed in accord with grading plans, erosion control plans, and improvement drawings and specifications per these regulations, shall not be a defense in an action for damages against anyone who may be liable by reason of non-compliance with the requirements of these regulations.

SECTION 7.15 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 7.16 AGREEMENTS AND GUARANTEES

A. GUARANTEES: The subdivider may execute and file guarantees with the planning commission's duly authorized representative, in lieu of actual installation or completion of the required improvements, except sidewalks, when requesting approval of the final plat. 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. In the case where sidewalk improvements have not been completed fronting platted, but undeveloped lots, such sidewalk improvements shall be completed by the owner

of the lot(s) in question within twelve (12) months from the date eighty (80) percent of the lots within the final plat are occupied.

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 the planning commission and be acceptable by the planning commission's duly authorized representative and the commission's legal counsel. 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 ten (10) percent contingency plus engineering fees and the fees for plan review and construction review as established by the By-Laws.

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 contingency plus all engineering fees and the fees for plan review and construction review as established by the By-Laws.

Except as required within Section 7.3, J. regarding street interconnection/ extension, 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 planning commission, or its duly authorized representative, shall cause all required work to be done and improvements constructed. The parties executing the guarantee shall be firmly 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.), such instruments, including the engineer's itemized cost estimate plus contingency, type of surety and amount shall be filed and reviewed by the planning commission's duly authorized representative, including the commission's legal counsel, 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, to cause the required work to be done and to withdraw that amount required for payment of all costs therefore.

Following final inspections of improvements guaranteed, the planning commission's duly authorized representative shall so certify in writing to the

surety, or other guarantee holder, regarding such completion to permit the release or return of the guarantee to the subdivider within ten (10) days of such final inspection certification.

TABLE 7-1
IMPROVEMENT REQUIREMENTS BY TYPE OF STREET SERVING SUBDIVISIONS

TYPE OF STREET (F)	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										
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					(B)					
Deadend										
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					(B)					
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					(B)					
Typical	100 -	60	28	Yes	Both Sides	One Side	(A)	(A)	(A)	(G)
Optional	500	40	22	Yes	Both Sides	None	50	4 spaces (E)	100	
COLLECTOR (D)					(B)					
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	

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 as per applicable zoning ordinance regulations.

(B) Sidewalks may be permitted on only one side of the street, providing the minimum front yard depth is 50 feet and the minimum lot width is 100 feet. 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. In the case of local streets serving less than 25 lots, sidewalks may be permitted on one side of the street.

(C) Shoulders and side ditches 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.

(D) Driveway access points along collector streets shall be discouraged, however, if permitted, shall be spaced not less than 200 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.

ARTICLE VIII

ADMINISTRATION AND ENFORCEMENT

SECTION 8.0 ADMINISTRATION: It shall be the responsibility of the planning commission's duly authorized representative to administer these regulations, including performance of all inspections in behalf of the commission, except where specific authority is retained by the planning commission, as provided per these regulations.

SECTION 8.1 FEES FOR PRELIMINARY AND FINAL PLATS; GRADING PLANS; IMPROVEMENT DRAWINGS AND SPECIFICATIONS; INSPECTIONS; AND OTHER PLATS: The schedule of fees, charges, etc. shall be as established by the planning commission's by-laws.

SECTION 8.2 PAYMENT OF FEES: The subdivider shall pay all fees to the planning commission's duly authorized representative at the time of submitting plats, improvement drawings and specifications, and grading plans for approval. Said fees shall be paid by check or money order only, and made payable to the Cold Spring Planning and Zoning Commission.

SECTION 8.3 FEES FOR INSPECTING IMPROVEMENTS AS PER APPROVED GRADING PLANS, IMPROVEMENT DRAWINGS AND SPECIFICATIONS, AND/OR FINAL PLATS: An inspection fee shall be charged to the subdivider for inspections during the construction of the improvements. Said inspection fee shall be based on a unit cost per lineal foot of each item of construction required to be inspected, including storm sewer systems, sanitary sewer systems, and street paving including earthwork related to public improvements construction, erosion control plans, driveways and/or sidewalks, etc., measured from grading plans, improvement drawings and specifications, and/or final plats by the planning commission's duly authorized representative. Inspection fees shall be paid to the planning commission's duly authorized representative and made payable to the Cold Spring Planning and Zoning Commission prior to final approval of grading plans, improvement drawings and specifications, and/or final plats, as required by the commission's by-laws. During construction inspections, the planning commission's duly authorized representative will use collected inspection fees to cover costs for construction inspections.

SECTION 8.4 FEES FOR RECORDING FINAL PLATS IN COUNTY CLERK'S OFFICE: The subdivider shall pay the recording fee, as per the requirements of the County Clerk's office.

SECTION 8.5 MODIFICATIONS: The planning commission may grant a modification or waiver to these regulations, as specified herein, providing the planning commission shall find:

A. That unusual topographical or exceptional physical conditions exist; or

B. That strict compliance with these regulations would create an extraordinary hardship in the face of the exceptional conditions; or

C. That the modifications would provide for innovative design layout of the subdivision; or

D. That strict compliance with any section of these regulations regarding the issue of safety could cause an unsafe situation.

In granting any modification or waiver to these regulations, the planning commission shall find that said modification or waiver will not be detrimental to the public interest nor in conflict with the intent and purpose of these regulations.

The planning commission may require certain conditions to be met, as may be determined necessary, to accomplish the purpose of these regulations, when modified.

SECTION 8.6 ENFORCEMENT

A. PLANNING COMMISSION APPROVAL REQUIRED FOR ALL SUBDIVISIONS: No person or his agent shall subdivide any land, before securing the approval of the planning commission of a plat designating the areas to be subdivided, and no plat of a subdivision of land within the planning unit jurisdiction shall be recorded by the county clerk until the plat has been approved by the commission and the approval entered thereon in writing by the chairman, or other duly authorized officer.

B. SALE OF LAND IN SUBDIVISION: No person owning land composing a subdivision, or his agent, shall transfer or sell or agree to sell any lot or parcel of land located within a subdivision by reference to, or by exhibition, or by any other use of a plat of such subdivision, before such plat has received final approval of the planning commission, signed by the chairman, or other duly authorized officer, of the planning commission and has been recorded. Any such instrument of transfer, sale, or contract shall be void and shall not be subject to be recorded, but all rights of such purchaser to damages are hereby preserved. The description of such lot or parcel by metes and bounds in any contract or instrument of transfer, or other document used in the process of selling or transferring same, shall not exempt the person attempting to transfer from penalties provided or deprive the purchaser of any rights or remedies he may otherwise have.

C. REVISION OF PLAT AFTER APPROVAL: No changes, erasures, modifications, or revisions shall be made in any plat of a subdivision after final approval has been given by the planning commission and an endorsement is made in writing

on the plat, unless the plat is first resubmitted and the changes approved by the planning commission.

D. IMPROVEMENTS IN CONFLICT WITH OFFICIAL MAP: After the city has adopted an official map, no board, public officer, or authority shall accept, lay out, improve, or authorize any improvements to be constructed in any street, including rights-of-way, watercourses, park and playgrounds, public school or other public building sites shown on the official map, except as provided for in KRS 100.293-100.317.

E. ENFORCEMENT BY PLANNING COMMISSION, OR ITS DULY AUTHORIZED REPRESENTATIVE: The planning commission, or its duly authorized representative, shall have a cause of action for all appropriate relief, including injunctions against any governmental bodies or any person who violates any of these regulations.

SECTION 8.7 PENALTIES: Pursuant to KRS 100.991, any person or entity who violates any of these regulations shall, upon conviction, be fined not less than ten (10) dollars but not more than five hundred (500) dollars. Each day of violation shall constitute a separate offense.

SECTION 8.8 SEVERABILITY: If any article, section, subsection, sentence, clause, or phrase of these regulations is, for any reason, held unconstitutional or invalid, such decision or holding shall not affect the validity of the remaining portions hereof, it being the intent to enact each section and portion thereof, individually, and each such section shall stand alone, if necessary, be in force notwithstanding the validity of any other article, section, subsection, sentence, clause, or phrase of these regulations.

SECTION 8.9 APPEALS FROM PLANNING COMMISSION'S DULY AUTHORIZED REPRESENTATIVE: Any subdivider claiming to be aggrieved by any actions by the planning commission's duly authorized representative may appeal such actions to the planning commission.

SECTION 8.10 APPEALS FROM PLANNING COMMISSION: Any appeal from the planning commission's action may be taken in the following manner:

A. Any person or entity claiming to be injured or aggrieved by any final action of the planning commission may appeal from the action to the circuit court of the county in which the land lies. Such appeal shall be taken within thirty (30) consecutive calendar days after the final action of the planning commission. Final action shall not include the commission's recommendation made to other governmental bodies.

B. All appeals shall be taken in the appropriate circuit court within thirty (30) consecutive calendar days after the action or decision of the planning

commission and all decisions which have not been appealed within thirty (30) consecutive calendar days shall become final. After the appeal is taken, the procedure shall be governed by the rules of civil procedure. When an appeal has been filed, the clerk of the circuit court shall issue a summons to all parties, including the planning commission in all cases, and shall cause it to be delivered for service as in any other law action.

SECTION 8.11 CONFLICT: All regulations, resolutions, orders, ordinances, and/or codes in conflict herewith are hereby repealed on the effective date of these regulations; providing, however, that such repeal shall not affect or prevent the prosecution or punishment of any person for any action done or committed in violation of any such subdivision regulations, order, resolutions, and/or amendments thereto, hereby repealed prior to the effective date of these regulations.

ARTICLE IX

ADOPTION, AMENDMENT, AND EFFECTIVE DATE

SECTION 9.0 PUBLIC HEARING: Before adoption of these subdivision regulations, or any amendments thereto, by the planning commission, a public hearing shall be held by the planning commission. A public notice of the time and place of the public hearing shall be published in a newspaper of general circulation in Campbell County, in accordance with Kentucky Revised Statutes Chapter 424.

SECTION 9.1 EFFECTIVE DATE: These subdivision regulations shall take effect and be in force upon their adoption, as provided for in KRS Chapter 100.

ADOPTED BY THE COLD SPRING PLANNING AND ZONING COMMISSION

DATE: June 11, 1997

CHAIRMAN: Gordon Kiser /s/

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.

SECTION 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.

A. EXCAVATIONS: All excavations shall be made to approximate grade or subgrade elevations consistent with approved plans. Except for utility trenches, excavations shall not be steeper than a cut slope of 2.5 horizontal to 1 vertical unless otherwise approved by a qualified/recognized geotechnical engineer.

B. 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

compatible soils as per Item C. 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.

C. 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 comprised of clayey soils including clayey granular soils that exhibit well defined moisture density curves 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 D698-91 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-91 or AASHTO T-180). Clean granular soils that do not exhibit a well defined moisture density curve shall be compacted to at least 75 percent relative density (ASTM D4253-95 and ASTM D4254-91). 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.

D. BACKFILL: Clayey soils or granular soils shall be used to backfill utility trenches within the limits of the right of way or three (3) feet on either side of the pavement, whichever is greater. Under no conditions shall any backfill be flushed with water to obtain compaction.

Clayey backfill soils for trenches within the limits of the public right of way shall be placed in shallow level layers, six (6) to eight (8) inches in thickness, and each lift shall be thoroughly and uniformly compacted with kneading-type compaction equipment such as a sheepsfoot roller or self-propelled compactor. Clayey backfill soils beneath pavements and within three (3) feet of the back of curb along either side of pavements shall be moisture-conditioned to within two (2) percent of the optimum moisture content on the dry side of the curve or three (3) percent of the optimum moisture content on the wet side of the curve, and shall be compacted to densities not less than 95 percent of the standard Proctor maximum dry density (ASTM D698-91), or 87 percent of the modified proctor

maximum dry density (ASTM D1557-91). Clayey backfill soils within the limits of the right of way greater than three (3) feet beyond the back of curb along either side of pavements shall be moisture conditioned to within three (3) percent of the optimum moisture content on the dry side of the curve or seven (7) percent of the optimum moisture content on the wet side of the curve, and shall be compacted to densities not less than 90 percent of the standard Proctor maximum dry density (ASTM D698-91) or 82 percent of the modified Proctor maximum dry density (ASTM D1557-91).

Granular backfill soils for trenches within the public right of way shall be placed in shallow level layers, six (6) to eight (8) inches in thickness, and each lift shall be thoroughly and uniformly compacted with an appropriate type of compaction equipment. Granular backfill which exhibits a well defined moisture density curve shall be moisture conditioned to within two (2) percent of the optimum moisture content on the dry side of the curve or three (3) percent of the optimum moisture content on the wet side of the curve and shall be compacted to 95 percent of the standard Proctor maximum dry density (ASTM D698-91) or 87 percent of the modified Proctor maximum dry density (ASTM D1557-91). Clean granular soils that do not exhibit a well defined moisture density curve shall be compacted to at least 75 percent relative density (ASTM D4253-95 and ASTM D4254-91).

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 by placing backfill in 8 to 12-inch lifts until fluid head resides 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 inplace 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.

Any deviations observed by the inspector in conflict with the above processes shall include adequate findings in accord with Section 7.13, A. of these regulations.

E. 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 C; (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 comprised of clayey soils or granular soils that exhibit a well defined moisture density curve shall be compacted to 95 percent of maximum density as determined by the standard Proctor moisture-density test (ASTM D698-91 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-91 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 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. Clean granular soils that do not exhibit well defined moisture density curves shall be compacted to 75 percent relative density (ASTM D4253-95 and ASTM D4254-91). 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 D698-91). These soils shall be scarified, aerated, and dried in order to obtain the specified percent compaction for sub-grade. 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 D698-91). These soils shall be scarified, aerated, and dried in order to obtain the specified percent compaction for subgrade.

Subgrade Underdrainage Systems - In order to maintain maximum densities of subgrade comprised of clayey soils, granular soils or other clean granular soils, four (4) - inch minimum perforated pipe underdrainage systems shall be installed and connected to approved storm sewer systems at each of the following locations and in accord with details within Appendix "D":

(1) interconnecting street catch basins opposite each other and entrance to cul-de-sacs;
(2) extending from any street catch basin perpendicular for full width beneath street pavement and capped with a clean out;
(3) extending perpendicular from any street catch basin to any utility trench within the limits of the public right of way;
(4) extending from any street catch basin when excavations within subgrade are replaced with clean granular soils; and
(5) extending from any street catch basin to intercept a water table generated from a natural spring or other damaging discharge observed during grading operations.

All connections to street catch basins shall be approved by the inspector. Grout or mortar used shall be in conformance with Section 601 of KYDOT standard specifications.

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 proof roll the compacted subgrade with a piece of heavy rubber tired equipment, such as single axle dump truck having a minimum gross weight of ten (10) tons or 20,000 pounds. The Inspector shall observe the proof rolling for consistency. Areas which are

subject to excessive pumping or rutting shall be reworked and recompacted as described above.

F. EQUIPMENT FOR COMPACTION OF BACKFILL, EMBANKMENT, AND SUB-GRADE: 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.

G. SUBGRADE FOR SIDEWALKS AND DRIVEWAYS: Subgrade for driveways shall comply with Item E. 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 F. For sidewalks between driveways subgrade of cohesive soils shall be uniformly compacted per Item F. 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 F.

H. 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.

I. 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.

J. SOIL DENSITY TESTS: Soil density tests, including moisture-density tests (ASTM D698-91 or ASTM D1557-91) and field density tests (ASTM D1556-90 or ASTM D2922-90 or ASTM D4253-95 and ASTM D4254-91, where applicable) 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. Backfill utility trenches - a minimum of one (1) test for each two (2) feet in elevation per 100 feet, or fraction thereof, of utility trench open cut beneath street subgrade and within the limits of the public right of way; and

   Where depths of trenches are more than (5) feet and worker safety is at risk, the inspector shall observe the compaction process in layers with an appropriate type of compaction equipment and document observations until worker safety is assured when compaction testing, as required, is resumed.

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.

   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, and 1.5 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/recognized geotechnical engineer.

   Any deviations observed by the inspector in conflict with frequency of soil density testing shall include findings in accord with Section 7.13, A. of these regulations.

SECTION 2.0 MATERIALS: Concrete shall be composed of Portland Cement, air-entraining agent, aggregates, and water.

A. 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.

B. 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).

C. ADMIXTURES FOR CONCRETE: Chemical admixture of the type specified shall conform to requirements of the current ASTM specifications for Admixtures of Type A through and Type E (Designation C 494). No pozzolans (Fly Ash) will be allowed as substitute for cement.

D. 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.

E. 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.

F. REINFORCING STEEL: Reinforcing steel, if specified, shall conform to current Standard Specifications of the Kentucky Department of Transportation, Bureau of Highways.

G. JOINTS

1. EXPANSION JOINTS: Expansion joints shall be non-extruding preformed 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. JOINT SEALING COMPOUND: The material used for filling and sealing cracks and/or joints shall conform to the following Standard Designations: (a) Hot-Poured Elastic Type (AASHTO M 301-01; ASTM D 3405); or (b) Silicone Rubber Sealant Type (Non-Sag, Self Leveling or Rapid Cure) conforming to the Kentucky Transportation Cabinet , Department of

Highways Standard Specifications for Road and Bridge Construction, latest editions; or (c) approved equal.

SECTION 3.0 BATCHING: Batching shall conform to Kentucky Department of Transportation, Bureau of Highways Specification 601.08 through 601.18.

A. 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 twenty-eight (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.

B. 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:

AGGREGATE (INCHES)	MAXIMUM SIZE OF AIR CONTENT PERCENT BY VOLUME
1-1/2, 2, 2-1/2	5 + / - 1%
3/4, 1	6 + / - 1%
3/8, ½	7-1/2 = / 1 1%

C. 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).

D. 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.

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.

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.

E. 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.

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.

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

SECTION 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).

SECTION 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.

A. 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.

B. 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.

SECTION 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.

A. COLD WEATHER CONCRETING: All concrete placements shall conform to the American Concrete Institute Specifications ACI 306. Concrete may be placed when the contact surface temperature 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 for mixed and placed slabs (less than 12 inch thickness) is maintained at 55 degrees or higher, and protected (e.g., insulating blankets, etc.), concrete may be placed regardless of the ambient temperature. Concrete placed on non-saturated

subgrade shall be protected from freezing for a period up to three (3) days or until concrete reaches a compressive strength of 500 psi. Concrete placed on saturated subgrade shall be protected from freezing for a period up to three (3) days or until concrete reaches a compressive strength of 3500 psi.

B. 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

SECTION 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.

A. 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.

B. 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.

C. 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.

SECTION 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 D.

SECTION 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.

A. 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.

B. 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.

C. 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.

D. ADJACENT WORK: Grading operations for preparation of subgrade for asphalt streets adjacent to “plastic or green” concrete curb shall be suspended for at least twenty - four (24) hours after initial curing operations have been completed. Extreme caution shall be used with machinery including vibratory equipment in order to prevent chipping or fracture of such new concrete curb pavements. Any damaged sections of curb shall be removed and replaced prior to start of the next phase of work.

SECTION 10.0 PAVEMENT JOINTS (all joints shall be constructed as per details in Appendix D): 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 D and shall be shown or referenced on the Improvements Drawings in accord with the following criteria:

A. EXPANSION JOINTS: Expansion joints shall be Type 1. Filler material shall conform to Item G., 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 one hundred fifty (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 G., 2. of these regulations.

B. CONTRACTION JOINTS: Transverse contraction 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 alternative 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.

If 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.

C. 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.

D. 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.

E. 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 subsections B and C, above.

SECTION 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 D.

SECTION 12.0 JOINT SEALER: Pavement joint sealer shall be as specified in Item G., 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 gauges.

On start up of melter, raise the oil bath temperature, not to exceed 450 degrees (F). Add small quantities of crack filler material to the melter and, while continuously agitating, add additional material as needed. Control material temperature at 380 degrees (F). Do not exceed 400 degrees (F) at start up.

The sealing and filling of joints and/or cracks may be done at air temperature of 40 degrees (F) or higher. For best results, cracks should be filled to a depth of 1/4 inch below the surface. Where necessary to limit the depth of the sealant, use cotton or kraft rope inserted to the correct depth of the cleaned joint or crack.

Small quantities of unused material remaining in the melter may be remelted and used the following day.

SECTION 13.0 STRUCTURES ENCOUNTERED IN THE PAVED AREA

A. MANHOLES AND CATCH BASINS: All manholes and catch basins encountered in the areas to be paved shall be raised or lowered to the surface of the new pavement. Catch basins may be separated from the pavement and curb by boxing out around basin. See Appendix D.

SECTION 14.0 PROTECTION AND OPENING TO TRAFFIC: Traffic shall be excluded from the pavement by erecting and maintaining barricades and signs until the concrete is at least seven (7) days old or has attained a compressive strength of 3,500 pounds per square inch and/or 550 pounds per square inch flexural strength using Type I Normal Cement certified by a qualified/recognized geotechnical engineer. Other protection and opening to traffic decisions on other pavement designs using Type III High Early Strength Cement shall be reviewed per industry standards. This traffic restriction shall apply to the contractor's vehicles, as well as general traffic. As soon as

curing and sealing are completed, the contractor shall clean up the pavement free from all debris.

SECTION 15.0 CURB, GUTTER, SIDEWALK, AND DRIVEWAYS: Construction of curb, gutter, sidewalk, and driveways shall require the same care as the street pavement. The preceding requirements shall apply, where pertinent, to the construction of curb, gutter, sidewalks, and driveways within the right-of-way. In addition, sidewalks or driveways shall be constructed so that the transverse joint spacing shall be equal to the width of the sidewalk or driveway, but in no case shall the transverse joint spacing for driveways exceed twelve (12) feet and not greater than five (5) feet for sidewalk spacing. Sidewalks and driveways, within the right-of-way, shall be constructed with a pavement thickness of at least four (4) inches and increased to five (5) inches when included as a part of a driveway. Driveways shall be a minimum of five (5) inches in thickness within the right-of-way. (see Appendix D for typical section details). Commercial and industrial entrances will require sidewalk thickness conforming to driveway pavement thickness.

SECTION 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.

A. 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.

B. 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 designs in accord with the typical street section details in Appendix D.

** 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.

SECTION 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.

A. EXCAVATIONS: All excavations shall be made to approximate grade or subgrade elevations consistent with approved plans. Except for utility trenches, excavations shall not be steeper than a cut slope of 2.5 horizontal to 1 vertical unless otherwise approved by a qualified/recognized geotechnical engineer.

B. 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

compatible soils as per Item C. 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.

C. 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 comprised of clayey soils including clayey granular soils that exhibit well defined moisture density curves 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 D698-91 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-91 or AASHTO T-180). Clean granular soils that do not exhibit a well defined moisture density curve shall be compacted to at least 75 percent relative density (ASTM D4253-95 and ASTM D4254-91). 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.

D. BACKFILL: Clayey soils or granular soils, shall be used to backfill utility trenches within the limits of the right of way or three (3) feet on either side of the pavement, whichever is greater. Under no conditions shall any backfill be flushed with water to obtain compaction.

Clayey backfill soils for trenches within the limits of the public right of way shall be placed in the shallow level layers, six (6) to eight (8) inches in thickness, and each lift shall be thoroughly and uniformly compacted with kneading-type compaction equipment such as a sheepsfoot roller or self-propelled compactor. Clayey backfill soils beneath pavements and within three (3) feet of the back of curb along either side of pavements shall be moisture-conditioned to within two (2) percent of the optimum moisture content on the dry side of the curve or three (3) percent of the optimum moisture content on the wet side of the curve, and shall be compacted to densities not less than 95 percent of the standard Proctor maximum dry density (ASTM D698-91), or 87 percent of the modified proctor

maximum dry density (ASTM D1557-91). Clayey backfill soils within the limits of the right of way greater than three (3) feet beyond the back of curb along either side of pavements shall be moisture conditioned to within three (3) percent of the optimum moisture content on the dry side of the curve or seven (7) percent of the optimum moisture content on the wet side of the curve, and shall be compacted to densities not less than 90 percent of the standard Proctor maximum dry density (ASTM D698-91) or 82 percent of the modified Proctor maximum dry density (ASTM D1557-91).

Granular backfill soils for trenches within the public right of way shall be placed in shallow level layers, six (6) to eight (8) inches in thickness, and each lift shall be thoroughly and uniformly compacted with an appropriate type of compaction equipment. Granular backfill which exhibits a well defined moisture density curve shall be moisture conditioned to within two (2) percent of the optimum moisture content on the dry side of the curve or three (3) percent of the optimum moisture content on the wet side of the curve and shall be compacted to 95 percent of the standard Proctor maximum dry density (ASTM D698-91) or 87 percent of the modified Proctor maximum dry density (ASTM D1557-91). Clean granular soils that do not exhibit a well defined moisture density curve shall be compacted to at least 75 percent relative density (ASTM D4253-95 and ASTM D4254-91).

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 by placing backfill in 8 to 12-inch lifts until fluid head resides 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 inplace 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.

Any deviation observed by the inspector in conflict with the above processes shall include adequate findings in accord with Section 7.13, A. of these regulations.

E. 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 C; 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 comprised of clayey soils or granular soils that exhibit a well defined moisture density curve shall be compacted to 95 percent of maximum density as determined by the standard Proctor moisture-density test (ASTM D698-91 or AASHTO T-99) or 87 percent of maximum density as determined by the modified Proctor moisture-density test (ASTM D1557-91 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. Clean granular soils that do not exhibit well defined moisture density curves shall be compacted to 75 percent relative density (ASTM D4253-95 and ASTM D4254-91). 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 D698-91). 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 D698-91). These soils shall be scarified, aerated, and dried in order to obtain the specified percent compaction for subgrade.

Subgrade Underdrainage Systems - In order to maintain maximum densities of subgrade comprised of clayey soils, granular soils or other clean granular soils, four (4) - inch minimum perforated pipe underdrainage systems shall be installed and connected to approved storm sewer systems at each of the following locations and in accord with details within Appendix "D":

(1) interconnecting street catch basins opposite each other and entrance to cul-de-sacs;
(2) extending from any street catch basin perpendicular for full width beneath street pavement and capped with a clean out;
(3) extending perpendicular from any street catch basin to any utility trench within the limits of the public right of way;
(4) extending from any street catch basin when excavations within subgrade are replaced with clean granular soils; and
(5) extending from any street catch basin to intercept a water table generated from a natural spring or other damaging discharge observed during grading operations.

All connections to street catch basins shall be approved by the inspector. Grout or mortar used shall be in conformance with Section 601 of KYDOT standard specifications.

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 single axle dump truck having a minimum gross weight of ten (10) tons or 20,000 pounds. 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.

F. EQUIPMENT FOR COMPACTION OF BACKFILL, EMBANKMENT, AND SUB-GRADE: 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.

G. SUBGRADE FOR SIDEWALKS AND DRIVEWAYS: Subgrade for driveways shall comply with Item E 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 F. For sidewalks between driveways, subgrade of cohesive soils shall be uniformly compacted per Item F 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 F.

H. 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.

I. 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.

J. SOIL DENSITY TESTS: Soil density tests, including moisture-density tests (ASTM D698-91 or ASTM D1557-91) and field density tests (ASTM D1556-90 or ASTM D2922-90 or ASTM D4253-95 and ASTM D4254-91, where applicable), 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. Backfill utility trenches - a minimum of one (1) test for each two (2) feet in elevation per 100 feet, or fraction thereof, of utility trench open cut beneath street subgrade and within the limits of the public right of way; and

   Where depths of trenches are more than (5) feet and worker safety is at risk, the inspector shall observe the compaction process in layers with an appropriate type of compaction equipment and document observations until worker safety is assured when compaction testing, as required, is resumed.

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.

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 C, D, and E 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/recognized geotechnical engineer.

Any deviations observed by the inspector in conflict with frequency of soil density testing shall include findings in accord with section 7.13, A. of these regulations.

SECTION 2.0 PREPARATION OF EXISTING GRANULAR BASE COURSES FOR SURFACING

A. 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.

B. 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 4.0, B. of these regulations.

SECTION 3.0 ASPHALT PAVEMENT

A. 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 Section 3.0 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 4.0, 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.

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. In order to prevent unnecessary damage to final asphalt concrete pavement from new building development, bituminous surface course application shall be delayed not less than nine (9) and no more than eighteen (18) months after completion of the asphalt base course unless otherwise approved by the planning commission's duly authorized representative. Prior to final paving, asphalt base course shall be checked for damage and repairs made, where necessary.

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. CRUSHED AGGREGATE BASE COURSE:

   a. 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.

   b. 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.

4. GRANULAR SUBBASE COURSE:

   a. 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.

   b. 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.

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.

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.

SECTION 4.0 DESIGN OF ASPHALT PAVEMENT STRUCTURE

A. 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.

B. 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.

SECTION 5.0 ADJUSTING MANHOLE TOPS

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

SECTION 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 LIMIT FOR BITUMINOUS CONCRETE

SIEVE SIZE	PERCENT PASSING BY WEIGHT		
	BASE	BINDER	SURFACE
1-1/2 inch	100		
1 inch	(2)		
¾ inch	70 – 98	100	
½ 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 Concrete (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 (INCHES)							
	TOTAL MINIMUM THICKNESS (METHOD 1)		TOTAL MINIMUM THICKNESS (METHOD 2)			TOTAL MINIMUM THICKNESS (METHOD 3)		
	SURFACE (INCH)	BASE (INCH)	SURFACE	BASE	BASE UNDER CURB	SURFACE	BASE	GRANULAR SUBBASE
Local (6)	2	2 @ 3-1/2	2	4	3	2	3	9
Subcollector (7)	2	2 @ 4	2	4	4	2	4	10
Collector	2	2 @ 4-1/2	2	4 -1/2	4 -1/2	2	5	11

NOTES:

1. Methods 1, 2 and 3 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 Designations 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 or more than five inches, unless otherwise directed by the inspector.

   Granular base or granular subbase for Method 2 shall conform to composition limits 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 unless otherwise directed by the inspector.

4. Where streets are to serve industrial or commercial areas, the pavement design shall be base 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, 2 or 3) for LOCAL streets include Courts and Cul-de-sacs serving 50 lots or less.

7. Pavement thickness alternatives (Method 1, 2 or 3) for SUB-COLLECTOR streets include LOCAL streets serving more than 50 lots.

APPENDIX C

SPECIFICATIONS FOR PAVING OF OFF-STREET PARKING AND LOADING AND/OR UNLOADING AREAS

All new off-street parking facilities shall be paved with asphalt or portland cement concrete and shall be designed and constructed in accordance with the standards and procedures herein established.

A. ASPHALT CONCRETE PAVEMENT

1. General Design Requirements

a. Asphalt concrete pavements shall consist of specified thickness of asphalt concrete surface course and a base course, or courses, all constructed on prepared subgrade. Required pavement thickness shall be determined from Table C-1 of the appropriate subgrade soil and traffic use.

b. Paved areas shall be so designed and constructed that water will quickly drain from the surface and be conducted away from the area through approved systems. Transverse and/or longitudinal slopes of not less than 5/8 inch in 10 feet shall be provided. For large paved areas, approved catch basins and storm drainage systems shall be provided.

c. When the pavement includes a granular base, and the pavement is not constructed over granular subgrade, perimeter subsurface drainage shall be provided to prevent lateral flow of water into the base course and to provide for removal of seepage water that may enter the base.

d. 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 1/4 inch above adjacent flush construction to permit proper compaction.

2. Construction Materials and Procedures

a. Base courses shall consist of the following materials. Construction procedures shall conform to the requirements applicable to the base course selected.

(1) 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, Sections 401, 403, except as noted herein.

b. Crushed Stone Base Course - Crushed stone base course shall conform to all the current requirements of the Kentucky Department of Transportation, Bureau of Highways, for Dense Graded Aggregate Base Course, Section 303.

c. 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, Type B, State Highway Designation Section 401, 402.

d. Asphalt Prime and Tack Coat

(1) Asphalt Prime shall conform to the Kentucky Department of Transportation, Bureau of Highways' 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 legislative body's engineer or inspector.

(2) Tack Coat (SS-1h) shall meet the requirements of the Kentucky Department of Transportation, Bureau of Highways, as per Section 407. It shall be diluted with equal parts of water, when directed by the inspector. Tack coat shall be applied, upon direction of the legislative body's engineer, to the surface of asphalt courses that have become dusty or dry, at a rate of 0.10 gallons per square yard of the diluted SS-1h before the subsequent course is constructed.

B. CONCRETE PAVING FOR PARKING AND ACCESS DRIVE AREAS

1. General Requirements - Thickness of concrete parking and access drives shall be:

a. A minimum of four (4) inches for driveways and parking areas serving single and two-family dwellings.

b. A minimum of five (5) inches for passenger cars and panel or pickup trucks serving industrial, commercial, and multi-family areas.

c. A minimum of six (6) inches for light trucks serving industrial, commercial, and multi-family residential areas.

d. A minimum of seven (7) inches for heavier commercial or industrial needs.

2. General Requirements - Concrete Paving

a. Minimum Cement Content - 564 lb./cu.yd. of concrete (6 U.S. bags).

b. Maximum Size of Aggregate - 1-1/4 inches.

c. Maximum Water Content - 0.49 lb./1 lb. of cement (5.5 gal./ bag).

d. Maximum Slump - five (5) inches when using hand-finishing techniques, three (3) inches when using a mechanical finishing machine.

e. Strength of Concrete - The concrete shall attain a minimum expected strength of concrete at 28 days of 3,500 pounds per square inch compressive strength and/or 550 pounds per square inch flexural strength "modulus of rupture".

f. Air Entrainment

Maximum Size Aggregate (inches)	Entrained Air (Percent)
1-1/4	5 + 1
3/4, 1	6 + 1
3/8, ½	7-1/2 + 1

3. Construction Procedures

a. All soft and yielding material and other portions of the subgrade which will not compact readily when rolled or taped, shall be removed and replaced with suitable material, placed and compacted. The subgrade shall be thoroughly compacted with

suitable equipment so as to have uniform density at moisture contents of not less than standard optimum (AASHO-T98).

b. Longitudinal joint spacing shall not exceed 15 feet and be designed in accordance with the joint details in Figure C-1.

c. Transverse joint spacings shall be at regular intervals of twenty (20) feet.

d. All transverse construction joints shall be designed in accordance with the joint details in Figure C-1.

e. Form offsets at radius points shall be at least two (2) feet.

f. Pavement joints must be continuous through the curbs.

g. Where curbs are required, they shall be cast integrally.

h. The pavement shall be struck-off, consolidated, and finished, to the grades shown on the plans. All catch basins and manhole castings shall be boxed out and separated from the pavement with expansion joint material. All except premolded or sawed joints shall be edged with a tool having a maximum radius of 1/8 inch. Sawed and formed joints shall be cleaned and sealed before opening to traffic. Final surface texture shall be that obtained with a burlap drag. Curing shall be that obtained with a uniform coverage of white membrane curing compound or by seven-day coverage of white polyethylene or waterproof paper. The completed pavement shall be closed to traffic for at least fourteen (14) days or by the time it has attained a compressive strength of 3,500 pounds per square inch and/or 550 pounds per square inch flexural strength. This traffic restriction shall apply to the contractor's construction equipment and vehicles, as well as general traffic.

TABLE C-1

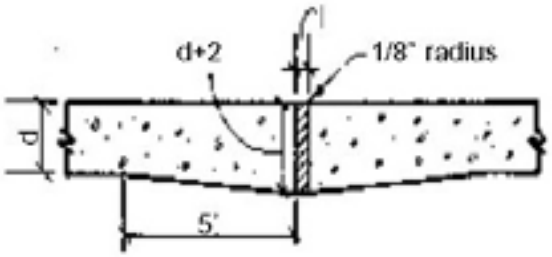
THICKNESS REQUIREMENTS OF SURFACE AND BASE COURSES
FOR AUTOMOBILE AND TRUCK PARKING FACILITY PAVEMENTS

VEHICLE TYPE	FULL DEPTH ASPHALT CONCRETE		ASPHALT CONCRETE WITH GRANULAR SUBBASE			ASPHALT CONCRETE WITH GRANULAR BASE	
	SURFACE KDOT(1) (SEC. 401, 402) TYPE B (INCH)	BASE KDOT(1) (SEC. 401, 403) (INCH)	SURFACE KDOT(1) (SEC. 401, 402) TYPE B (INCH)	BASE KDOT(1) (SEC. 401, 403) (INCH)	GRANULAR SUBBASE KDOT(1) (SEC. 303) (INCH)	SURFACE (KDOT(1) (SEC. 401, 402) TYPE B (INCH)	GRANULAR BASE KDOT(1) (SEC. 303) (INCH)
Auto Parking Facilities	1-1/2	4	1-1/4	2	6	2	9
Truck Parking Facilities	1-1/2	6-1/2	1-1/2	2-1/2	10	N.A.	N.A.

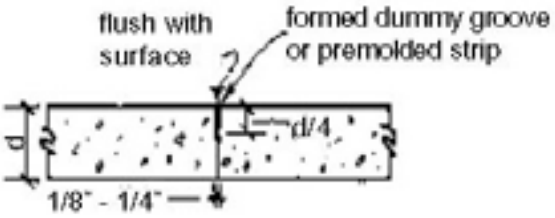
(1) Refers to the Kentucky Department of Transportation (KDOT) Bureau of Highways, Standards and Specifications for Road and Bridge Construction (1976 Edition, or as amended).

FIGURE C-1

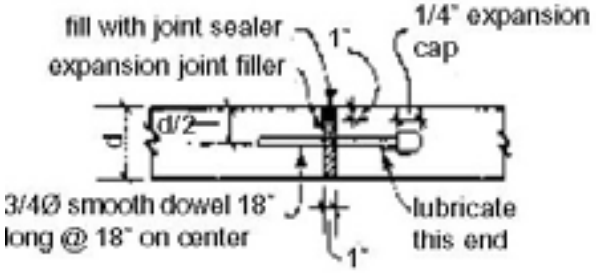
JOINT DETAILS



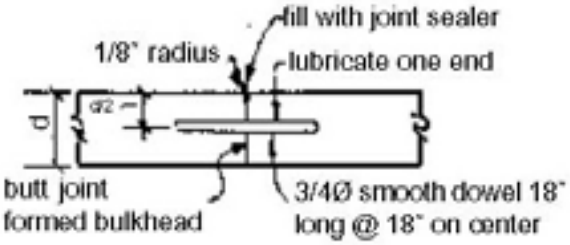
ALTERNATE EXPANSION JOINT



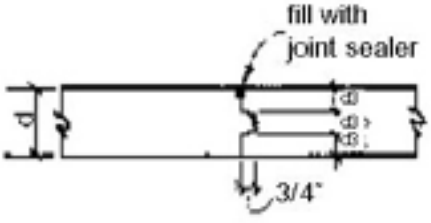
TRANSVERSE CONTRACTION
(SAWED OR PREMOLDED STRIP)



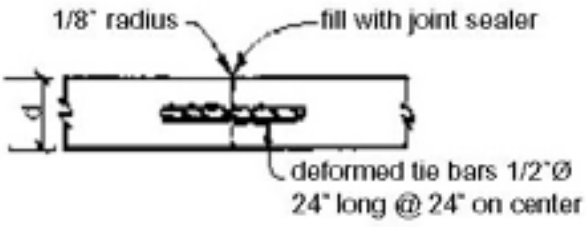
EXPANSION JOINT



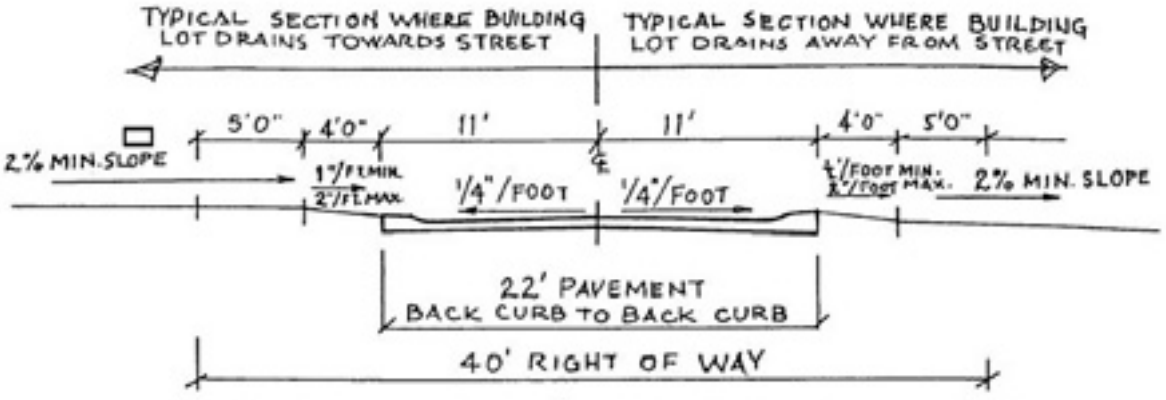
TRANSVERSE CONTRACTION JOINT
(PLANNED - COINCIDE WITH CONTRACTION JOINT)



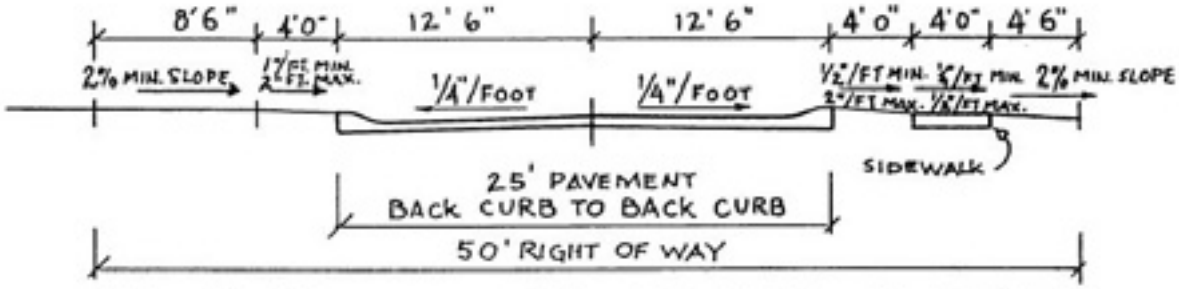
LONGITUDINAL CONSTRUCTION JOINT
KEYWAY



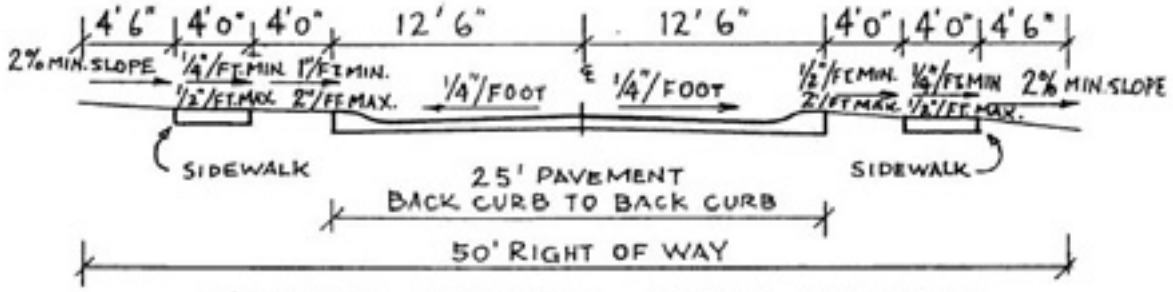
TIED TRANSVERSE CONSTRUCTION JOINT
(EMERGENCY - NOT COINCIDE WITH CONTRACTION JOINT)



TYPICAL SECTION - COURTS - DEADEND

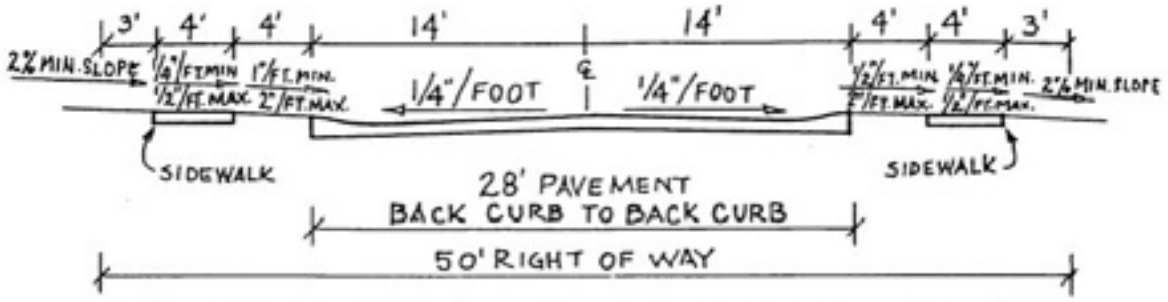


TYPICAL SECTION - CUL-DE-SACS - DEADEND

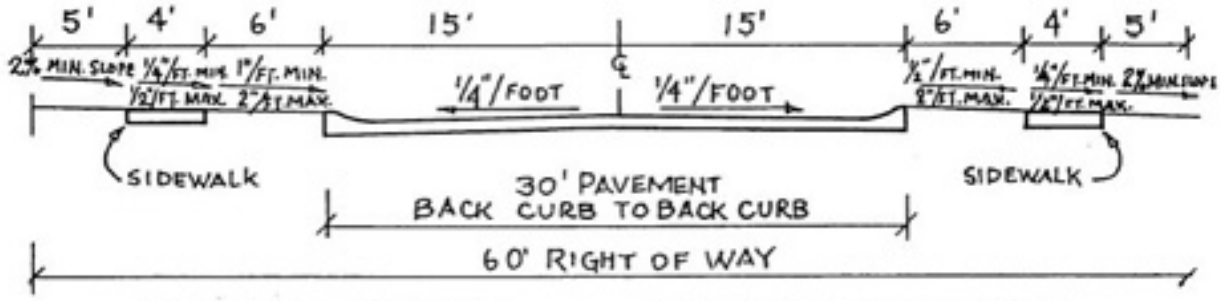


TYPICAL SECTION - LOCAL STREETS

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

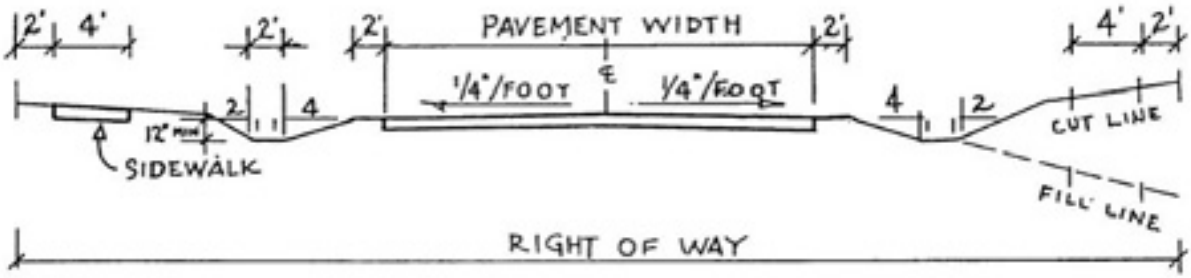


TYPICAL SECTION - SUBCOLLECTOR STREETS



TYPICAL SECTION - COLLECTOR STREETS

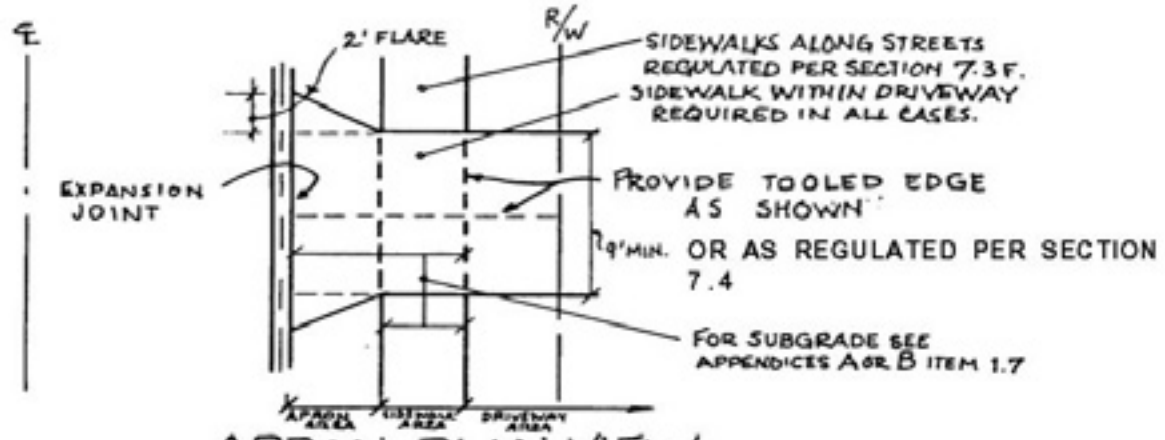
NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES SAME SIDE OF STREETS.



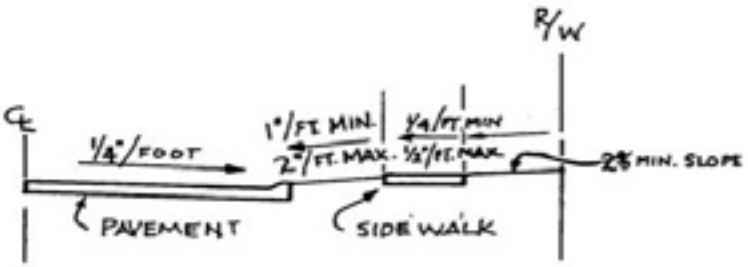
TYPICAL SHOULDER AND DITCH DETAIL

OPTION TO CURB AND GUTTER - ALL STREETS
FRONT YARD DEPTH - 50' MIN. LOT WIDTH - 100' MIN.

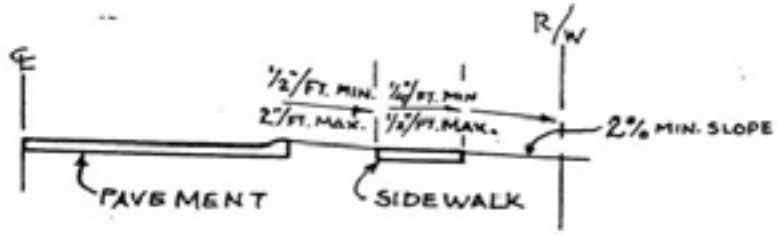
RESIDENTIAL DRIVEWAY APRON DETAILS



APRON PLAN VIEW



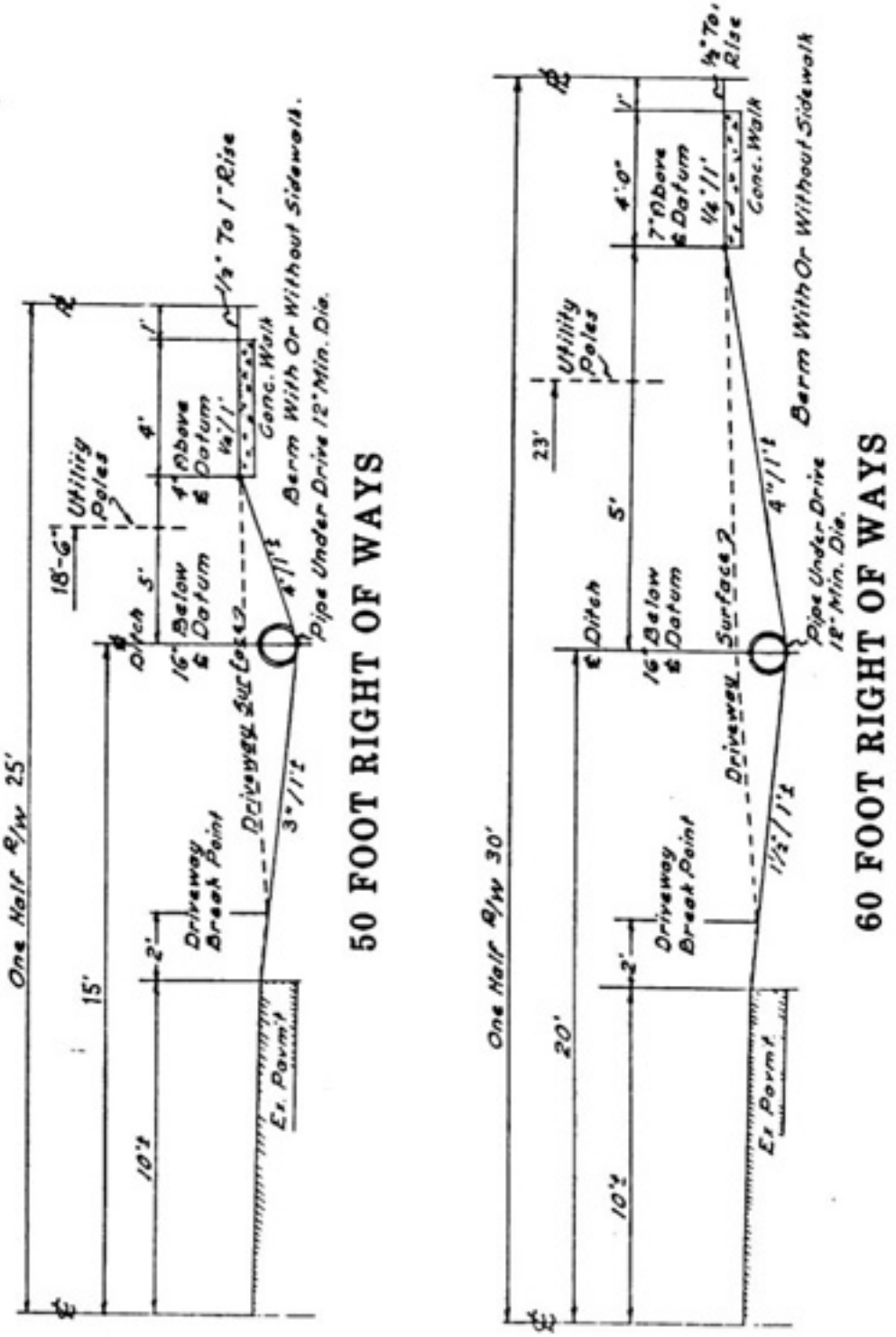
APRON GRADE WHERE LOTS DRAIN TO STREET

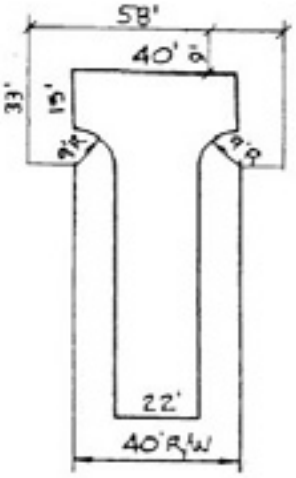


APRON GRADE WHERE LOTS DRAIN AWAY FROM STREET

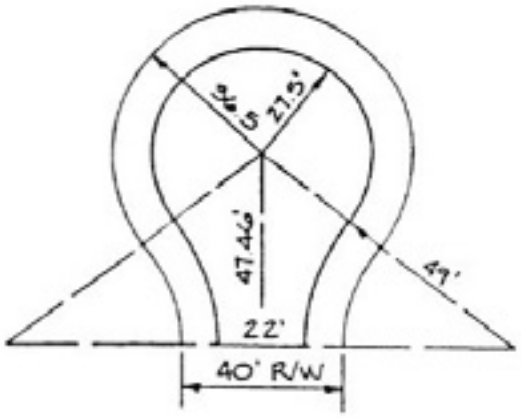
NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES ON SAME SIDE OF STREETS.

TYPICAL SECTION–SIDE DITCH DRAINAGE AT DRIVEWAY

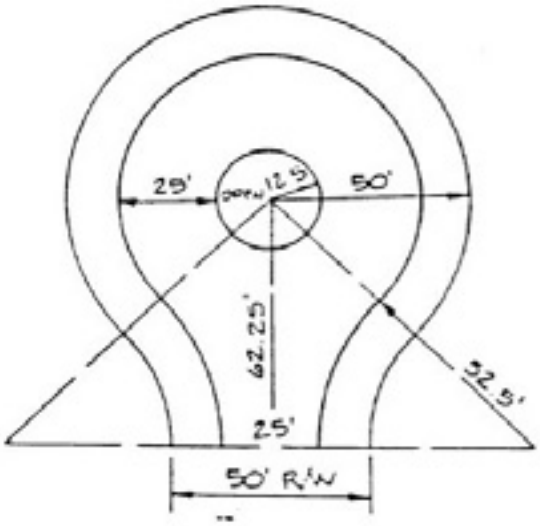




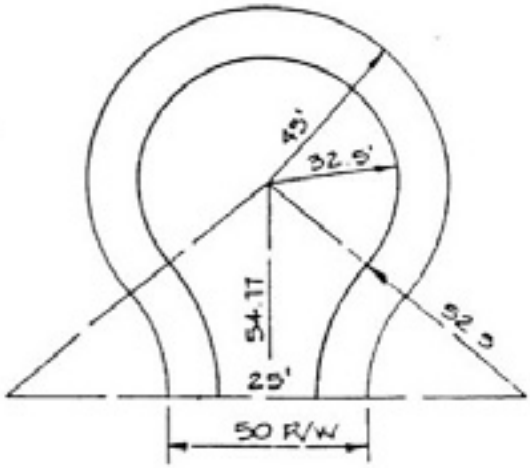
COURT
ALTERNATE T-TYPE



COURT

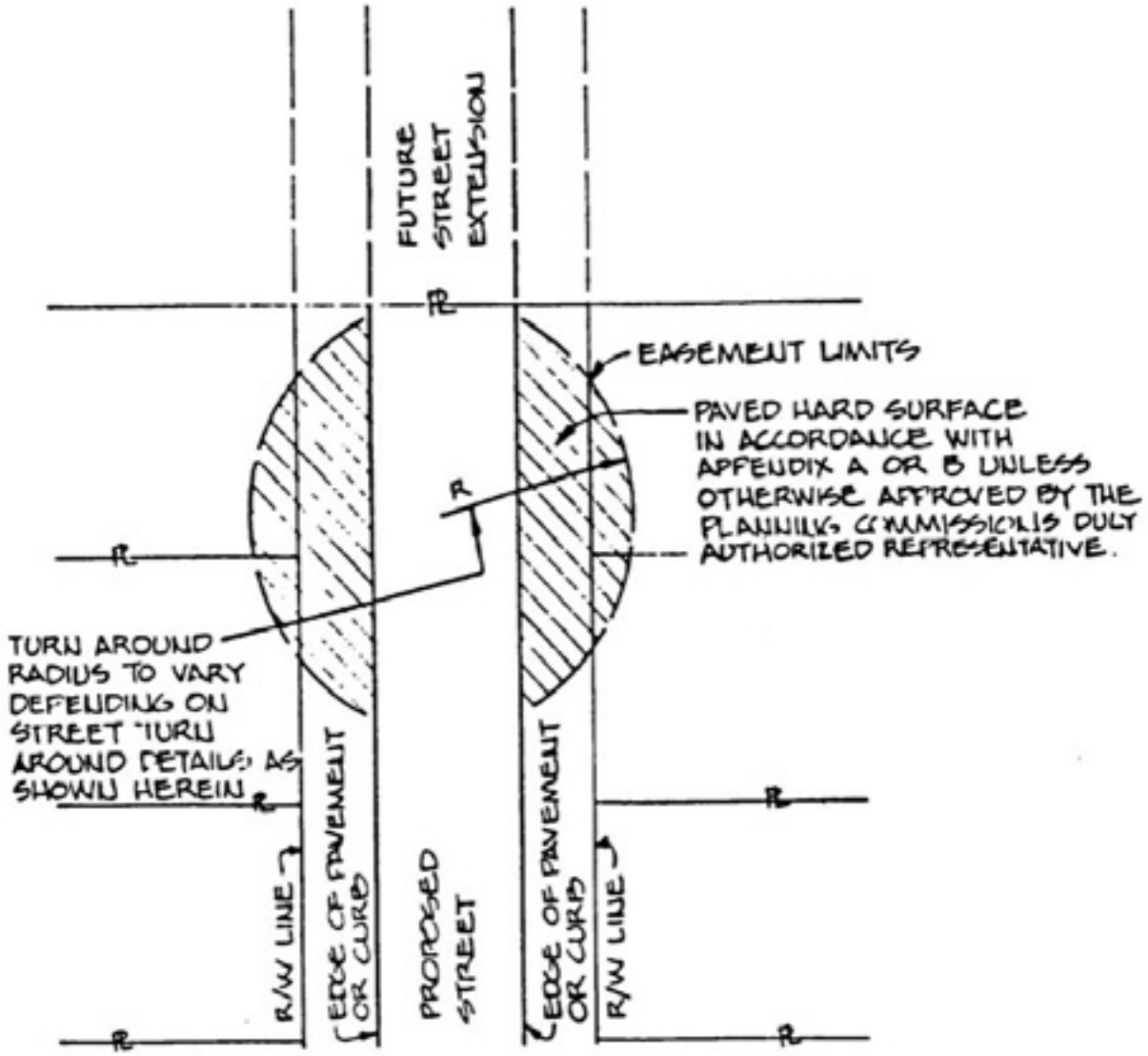


LOCAL



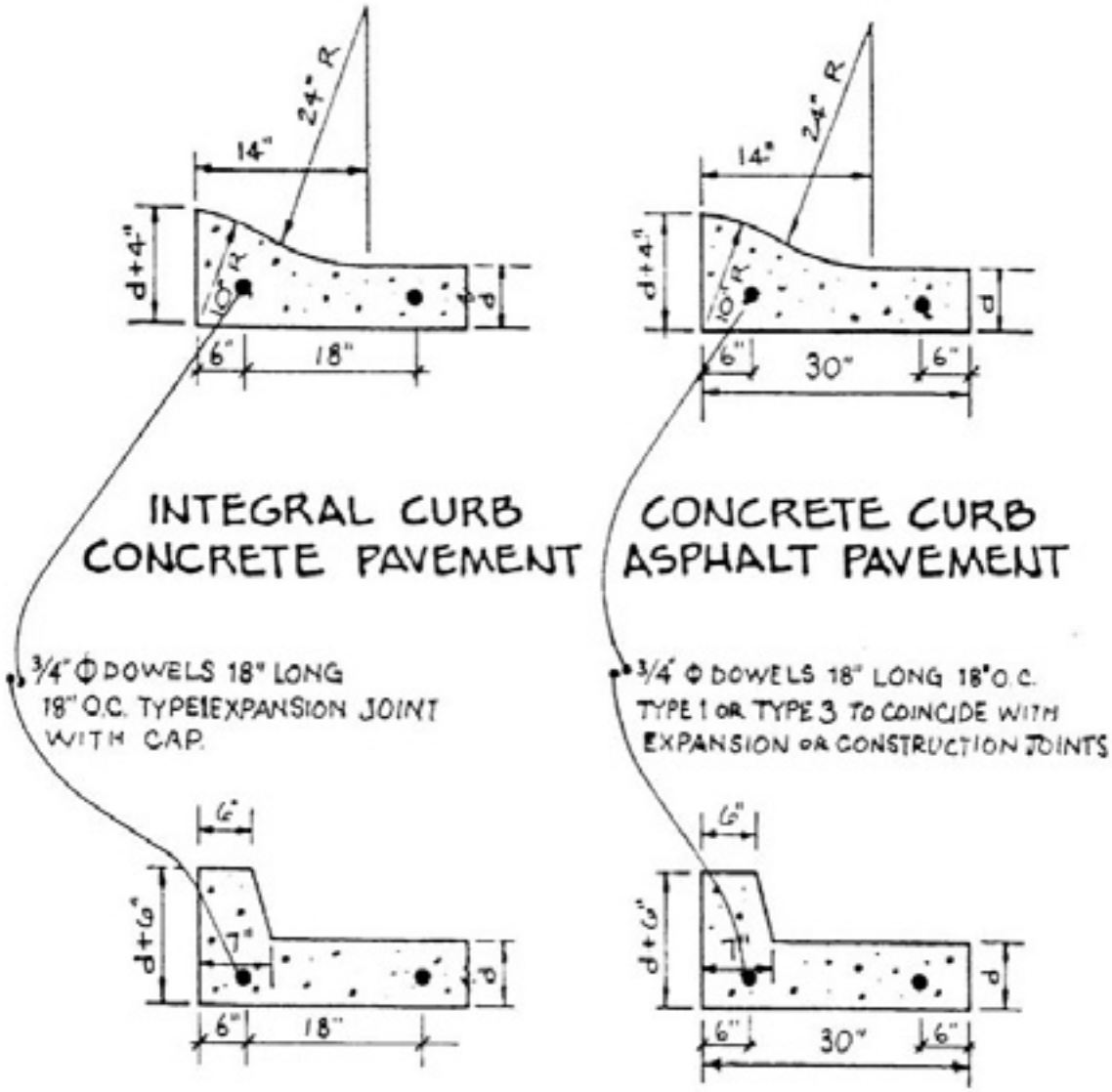
CUL-DE-SAC

TURN AROUND DETAILS
FOR DEADEND STREETS



DETAIL OF TEMPORARY TURNAROUND FOR FUTURE STREET EXTENSION

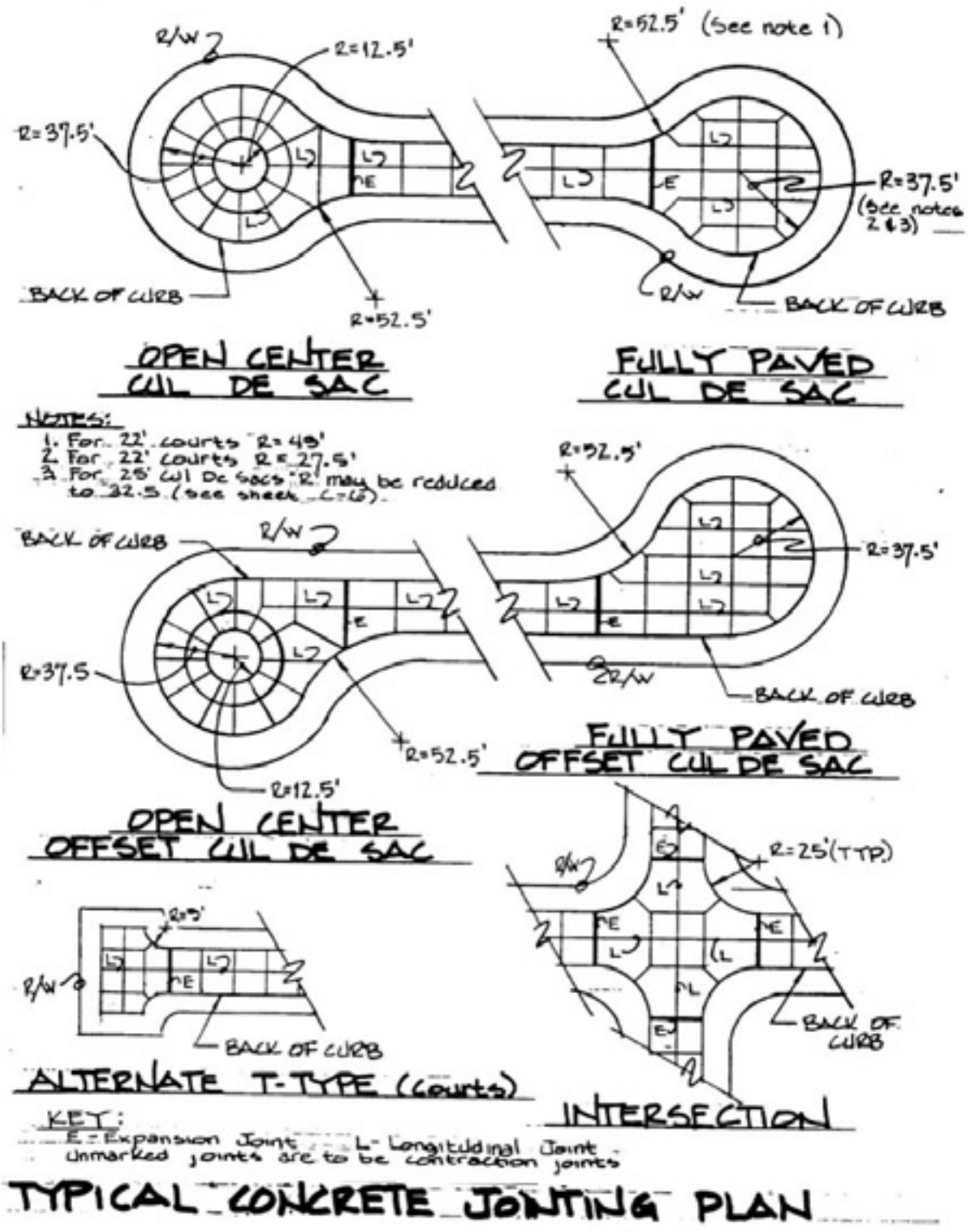
CURB AND GUTTER DETAILS



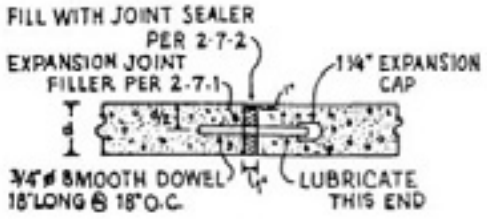
INTEGRAL CURB CONCRETE PAVEMENT

CONCRETE CURB ASPHALT PAVEMENT

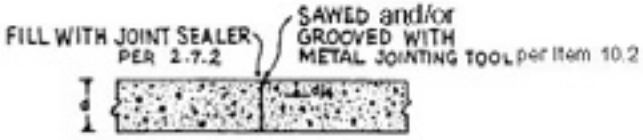
Note: Transverse expansion, contraction, and construction joints shall conform to these regulations


R/W
R=12.5'
R=37.5'
BACK OF CURB
R=52.5'
OPEN CENTER CUL DE SAC
R=52.5' (See note 1)
R=37.5' (See notes 2 & 3)
R/W
BACK OF CURB
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-16).
BACK OF CURB
R/W
R=37.5
R=12.5'
R=52.5'
OPEN CENTER OFFSET CUL DE SAC
R=52.5'
R=37.5'
R/W
BACK OF CURB
FULLY PAVED OFFSET CUL DE SAC
R=25'
R/W
BACK OF CURB
ALTERNATE T-TYPE (Courts)
R=25'(TYP.)
BACK OF CURB
INTERSECTION
KEY:
E = Expansion Joint L = Longitudinal Joint
Unmarked joints are to be contraction joints
TYPICAL CONCRETE JOINTING PLAN

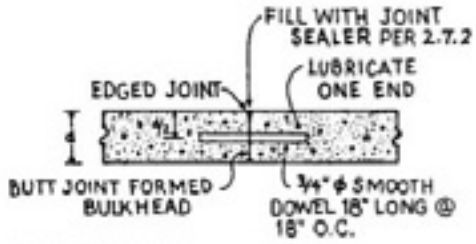
JOINT DETAILS



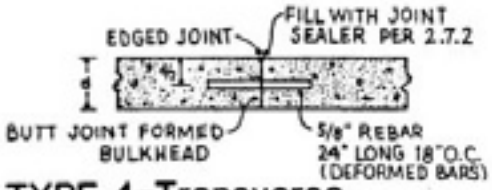
TYPE 1–Expansion Joint



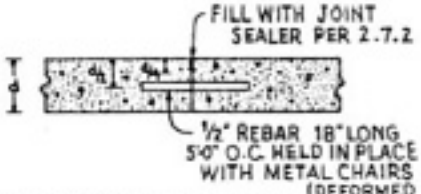
TYPE 2–Transverse Contraction Joint
(sawed or grooved joint)



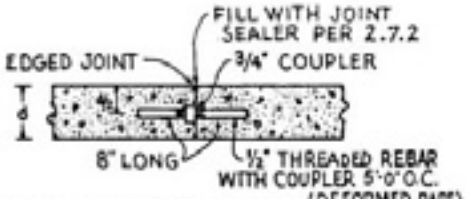
TYPE 3–Transverse Construction Joint
(planned–coincide with contraction joint)



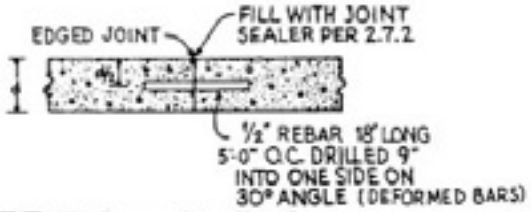
TYPE 4–Transverse Construction Joint
(emergency–not coincide with contraction joint)



TYPE 5–Longitudinal Sawed Joint

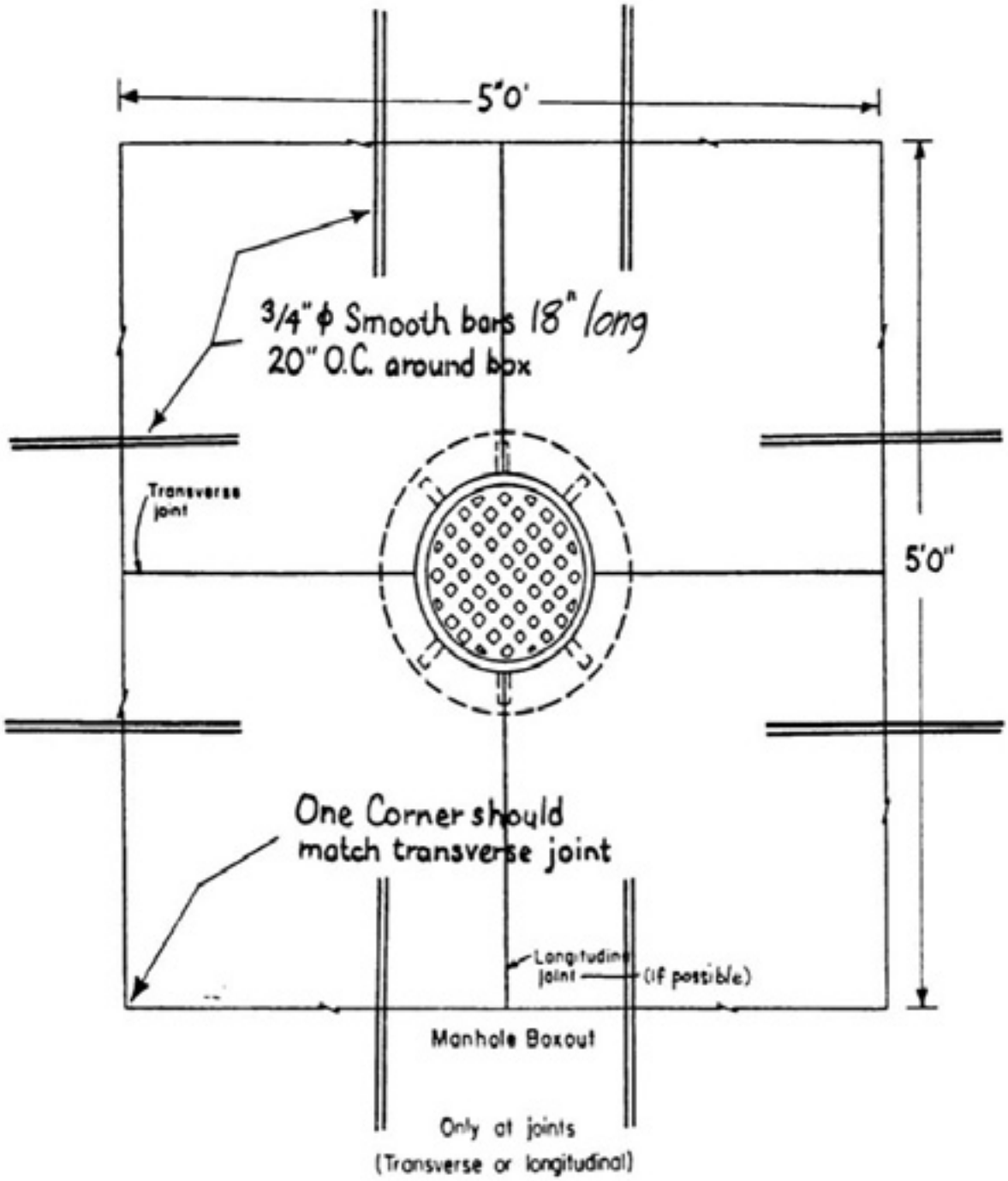


TYPE 6–Longitudinal Construction Joint
(threaded rebar)

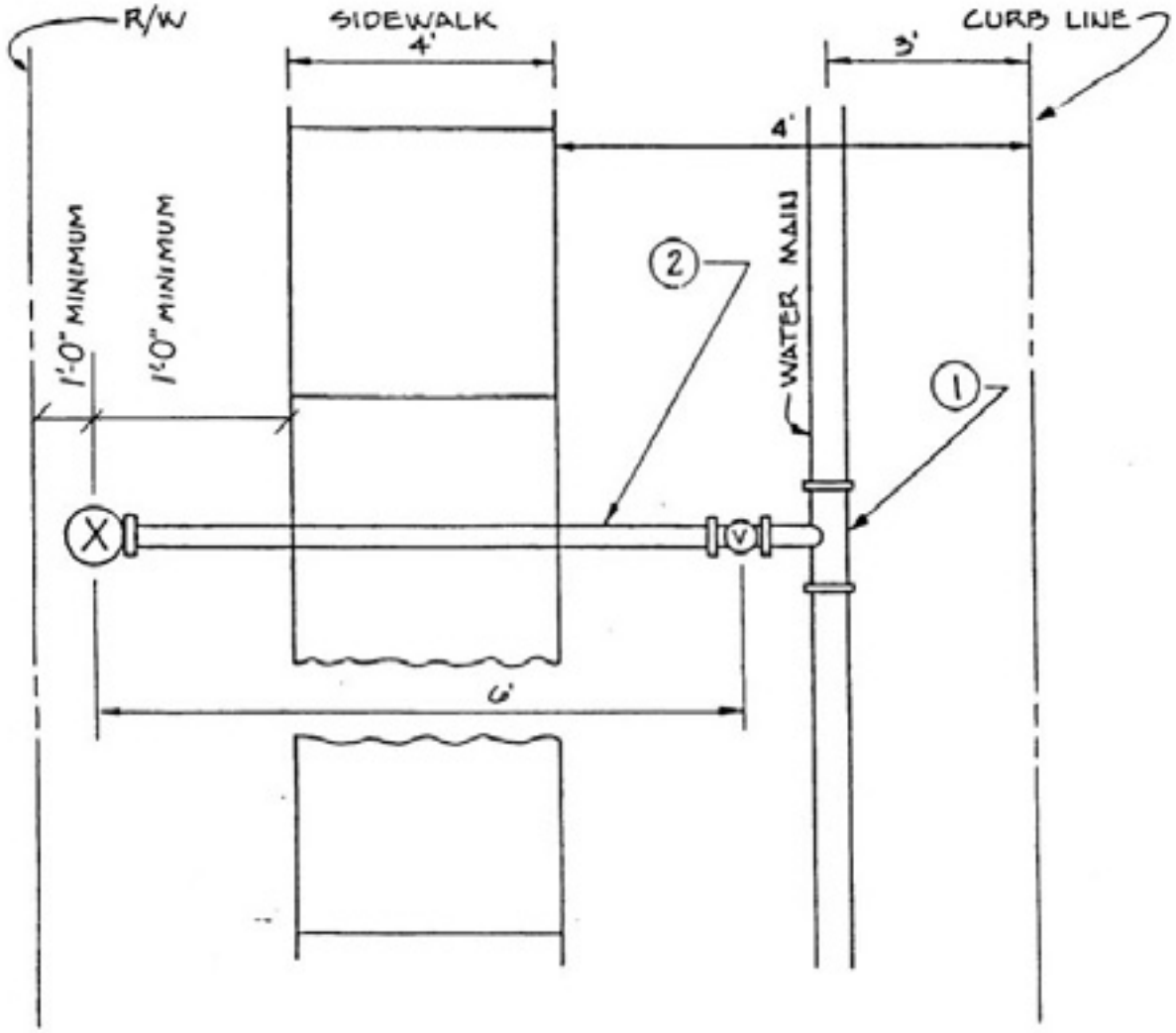


TYPE 7–Longitudinal Construction Joint Alt. (drilled) or per Item 10.4

MANHOLE DETAIL IN CONCRETE PAVEMENT

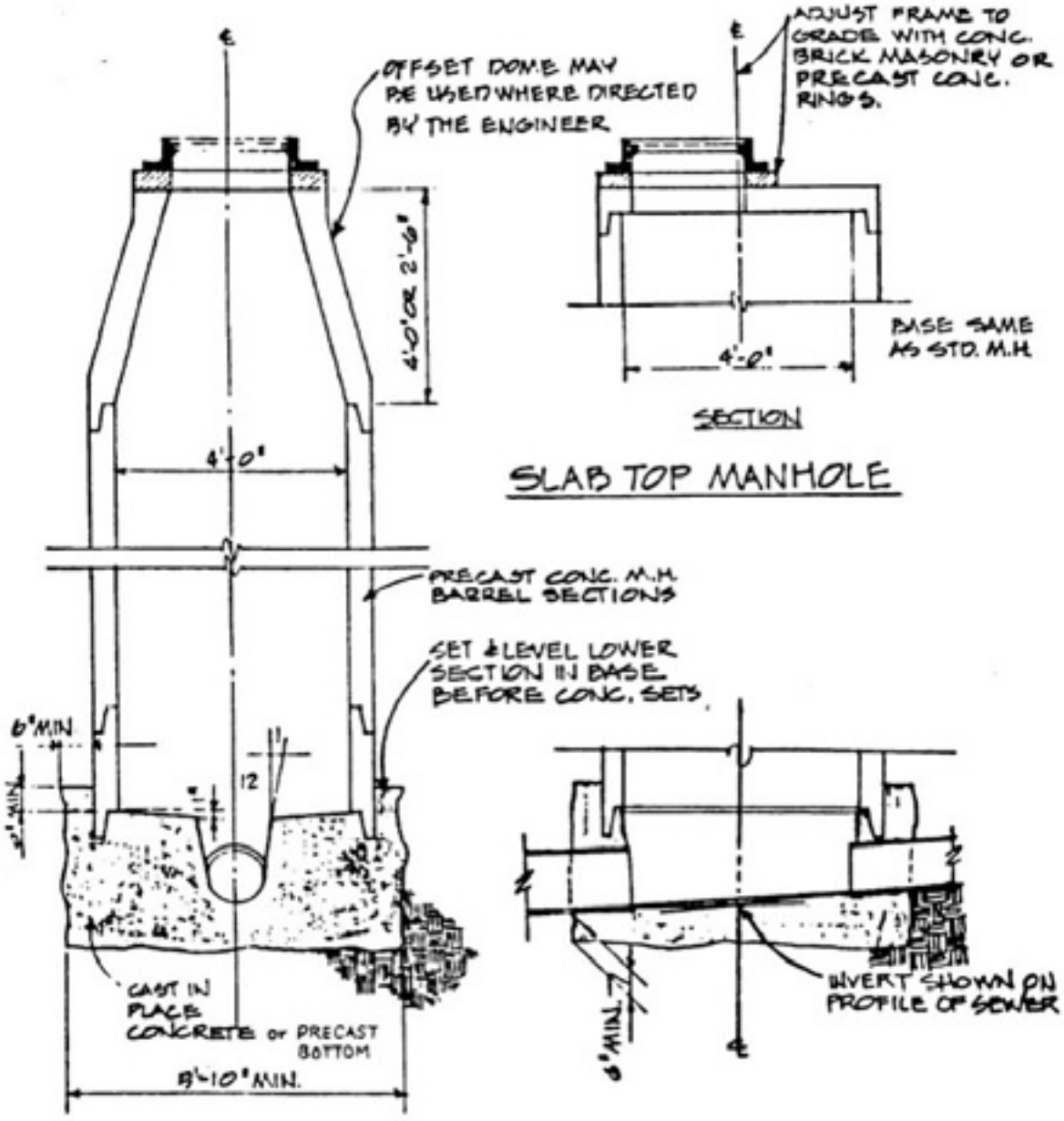


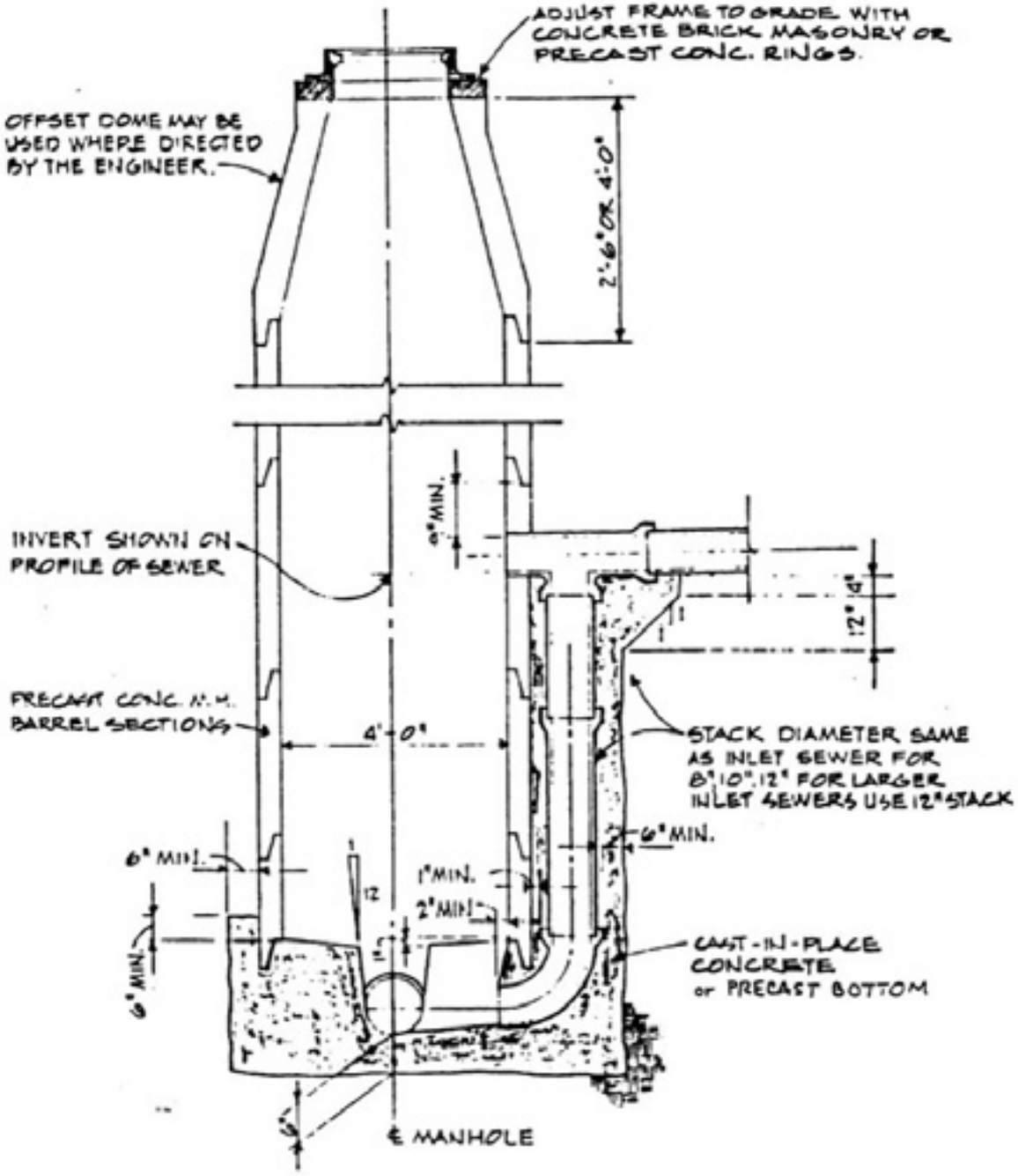
TYPICAL WATER MAIN AND FIRE HYDRANT ASSEMBLY LOCATION FOR ALL STREETS



(1) - ANCHORING TEE - CLOW PART NO. F-1217 OR APPROVED EQUAL

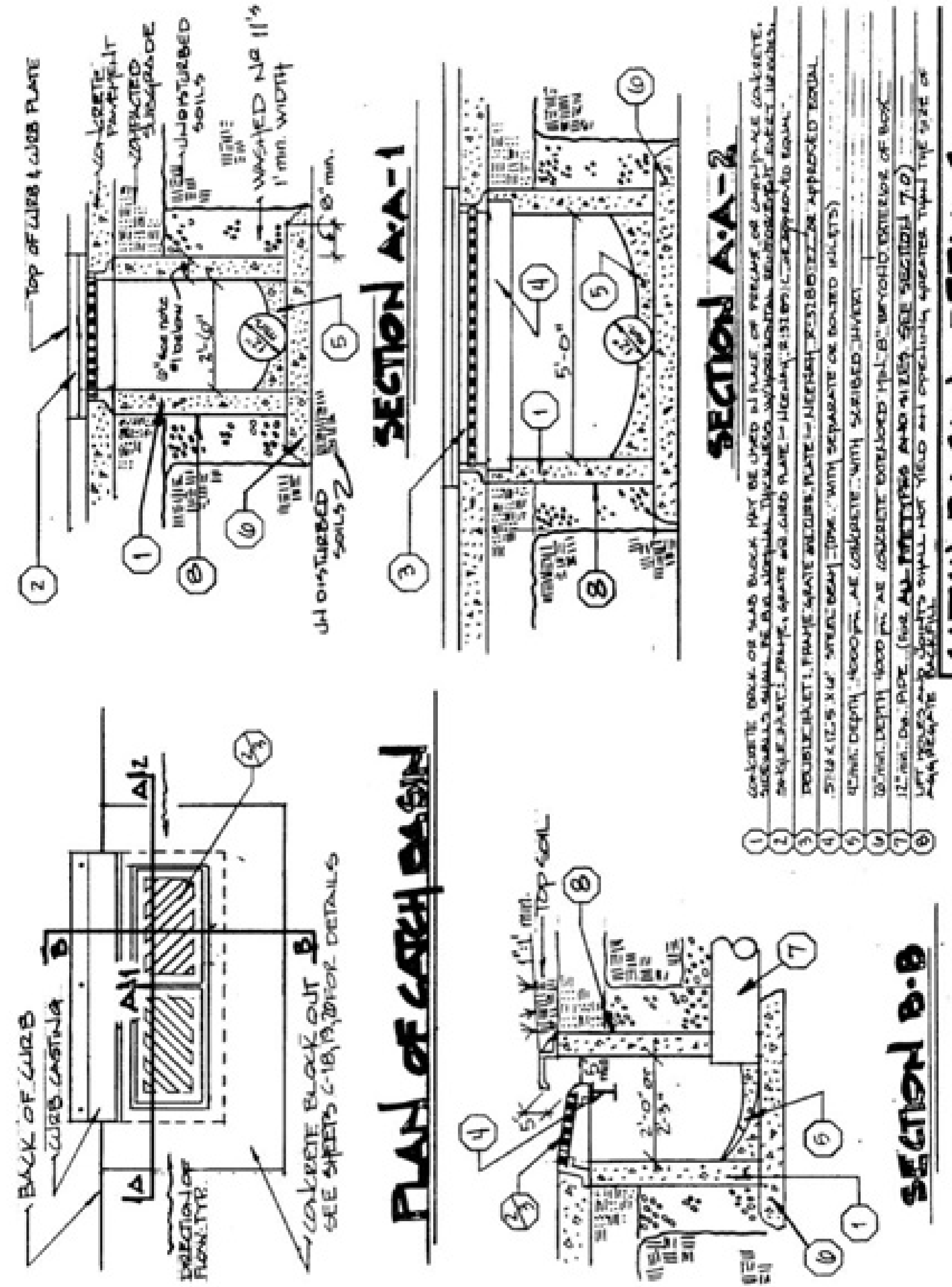
(2) - HYDRANT ADAPTER - WILL BE SOLID X SWIVEL CLOW PART NO. F-1111MS OR APPROVED EQUAL

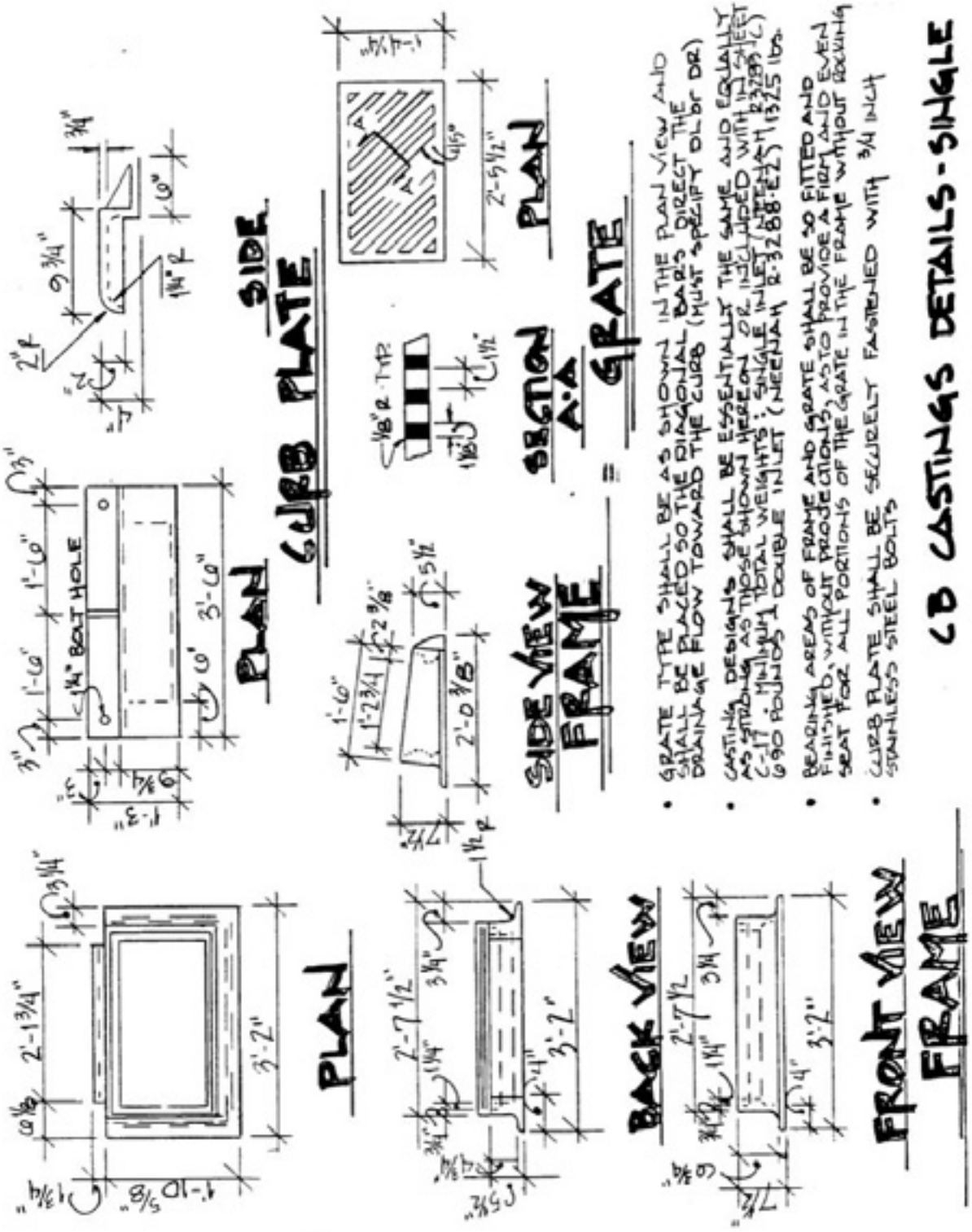

ADJUST FRAME TO GRADE WITH CONC. BRICK MASONRY OR PRECAST CONC. RINGS.
OFFSET DOME MAY BE USED WHERE DIRECTED BY THE ENGINEER
4'-0" OR 2'-6"
4'-0"
BASE SAME AS STD. M.H.
4'-0"
SECTION
SLAB TOP MANHOLE
PRECAST CONC. M.H. BARREL SECTIONS
SET & LEVEL LOWER SECTION IN BASE BEFORE CONC. SETS
6" MIN.
12
CAST IN PLACE CONCRETE or PRECAST BOTTOM
8'-10" MIN.
SECTION
INVERT SHOWN ON PROFILE OF SEWER
6" MIN.
SECTION
STANDARD MANHOLE

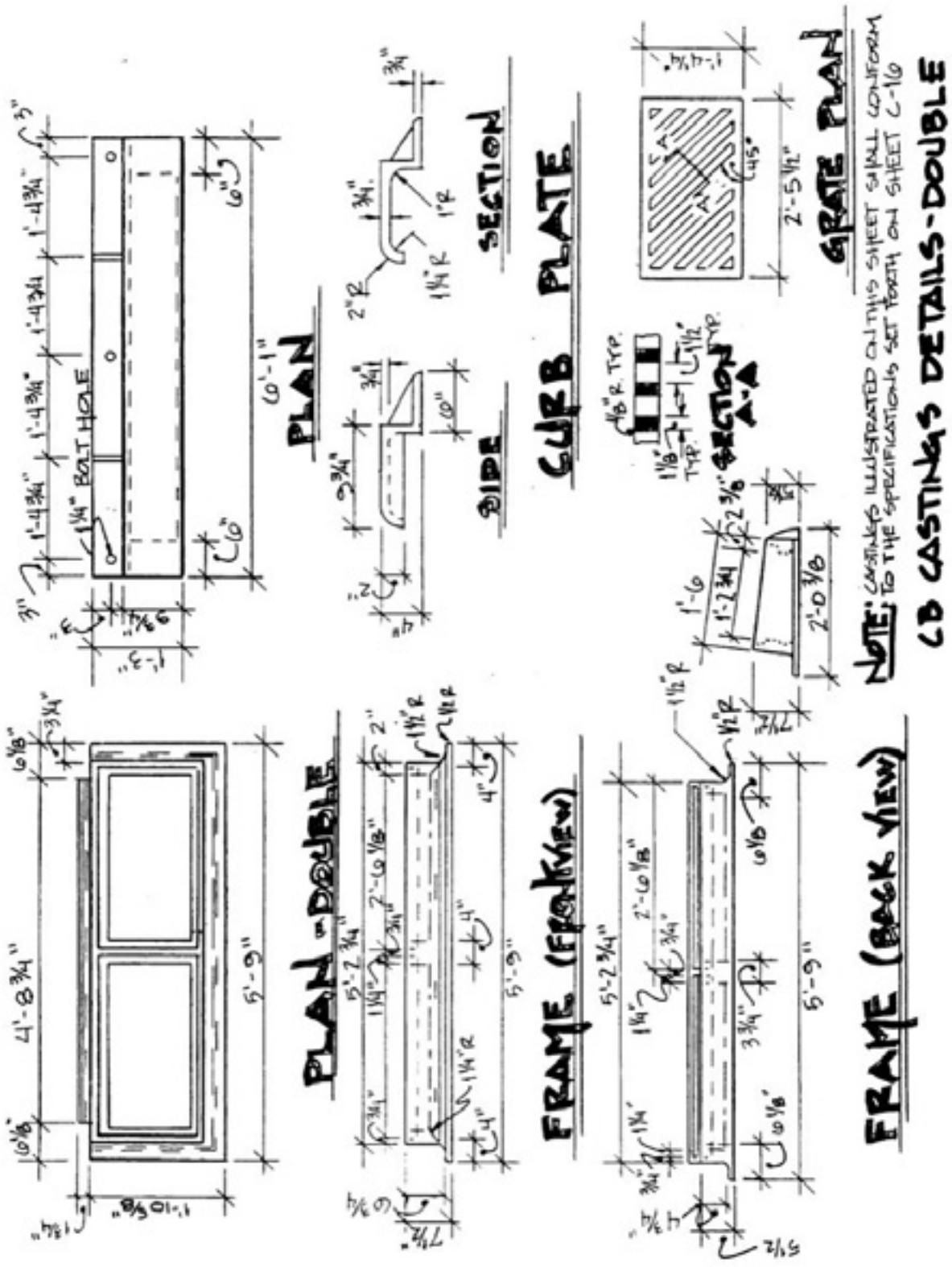


SECTION

STANDARD DROP MANHOLE


SECTION A-A-1
SECTION A-A-2
PLAN OF CATCH BASIN
SECTION B-B
CATCH BASIN - DETAILS

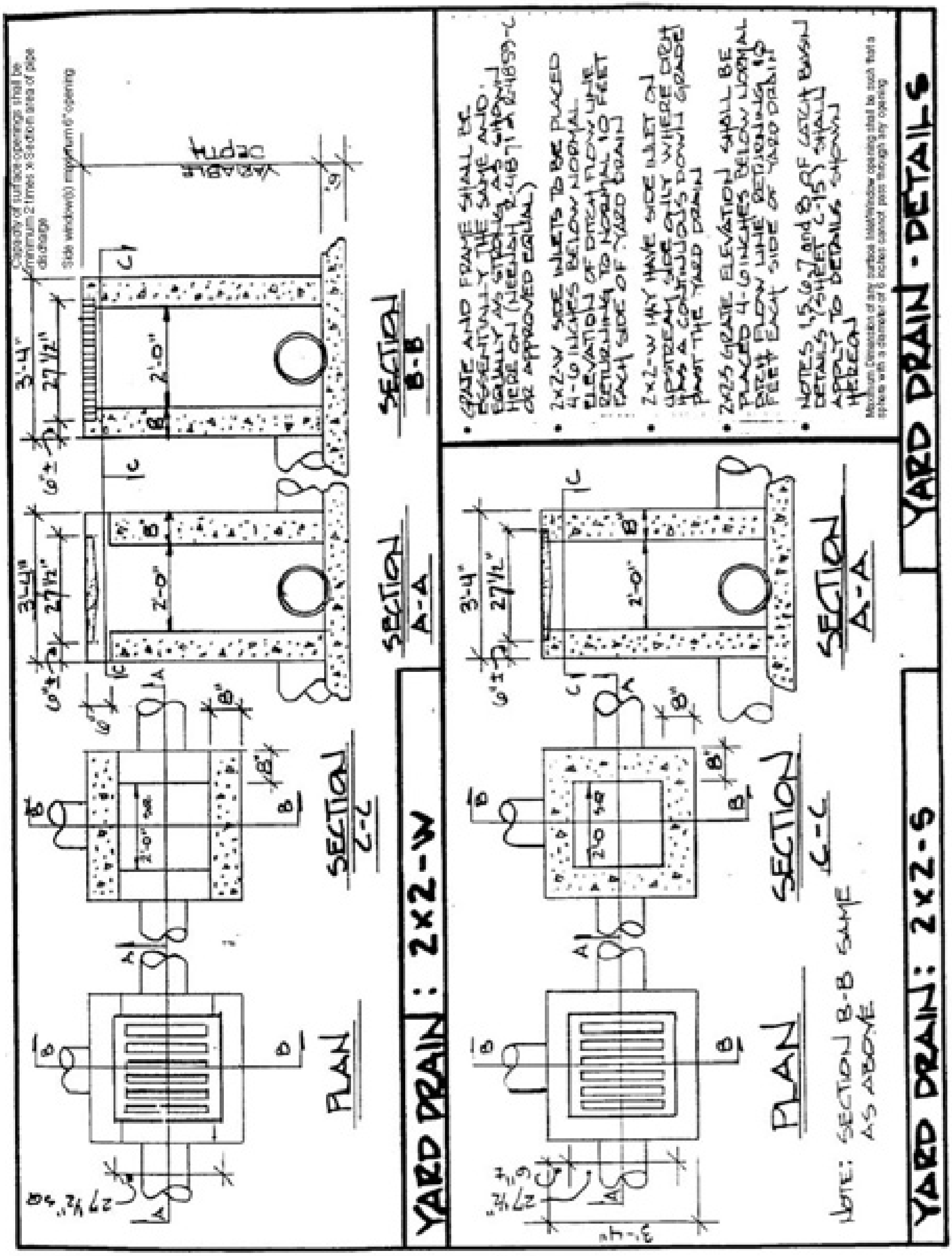

CB CASTINGS DETAILS - SINGLE
FRONT VIEW
FRAME
BACK VIEW
SIDE VIEW
FRAME
SECTION
A-A
GRATE
PLAN
CURB PLATE
SIDE
PLAN
• GRATE TYPE SHALL BE AS SHOWN IN THE PLAN VIEW AND SHALL BE PLACED SO THE DIAGONAL BARS DIRECT THE DRAINAGE FLOW TOWARD THE CURB (MUST SPECIFY DL or DR)
• CASTINGS DESIGNED SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS SATISFACTORY AS THOSE SHOWN HEREON OR INCLUDED WITH IN SHEET C-17 MINIMUM TOTAL WEIGHTS: SINGLE INLET (NEENAH R-3288-E2) 1325 lbs. 690 POUNDS, DOUBLE INLET (NEENAH R-3288-E2) 1325 lbs.
• BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED, WITHOUT PROJECTIONS, AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME WITHOUT ROCKING
• CURB PLATE SHALL BE SECURELY FASTENED WITH 3/4 INCH STAINLESS STEEL BOLTS

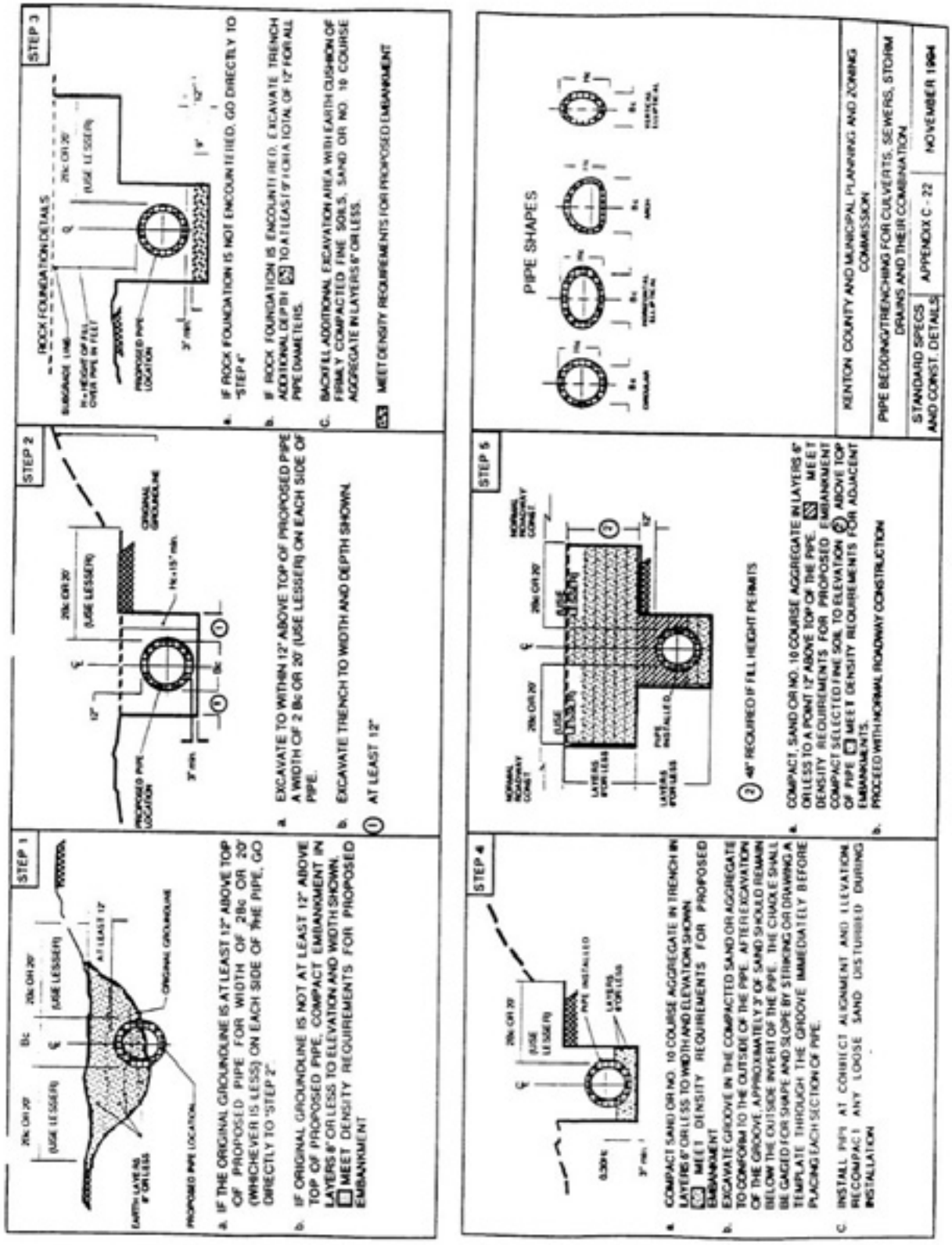

CB CASTINGS DETAILS-DOUBLE
PLAN
SECTION
SIDE
CURB PLATE
GRATE PLAN
SECTION A-A
PLAN - DOUBLE
FRAME (FRONT VIEW)
FRAME (BACK VIEW)
NOTE: CASTINGS ILLUSTRATED ON THIS SHEET SHALL CONFORM TO THE SPECIFICATIONS SET FORTH ON SHEET C-16

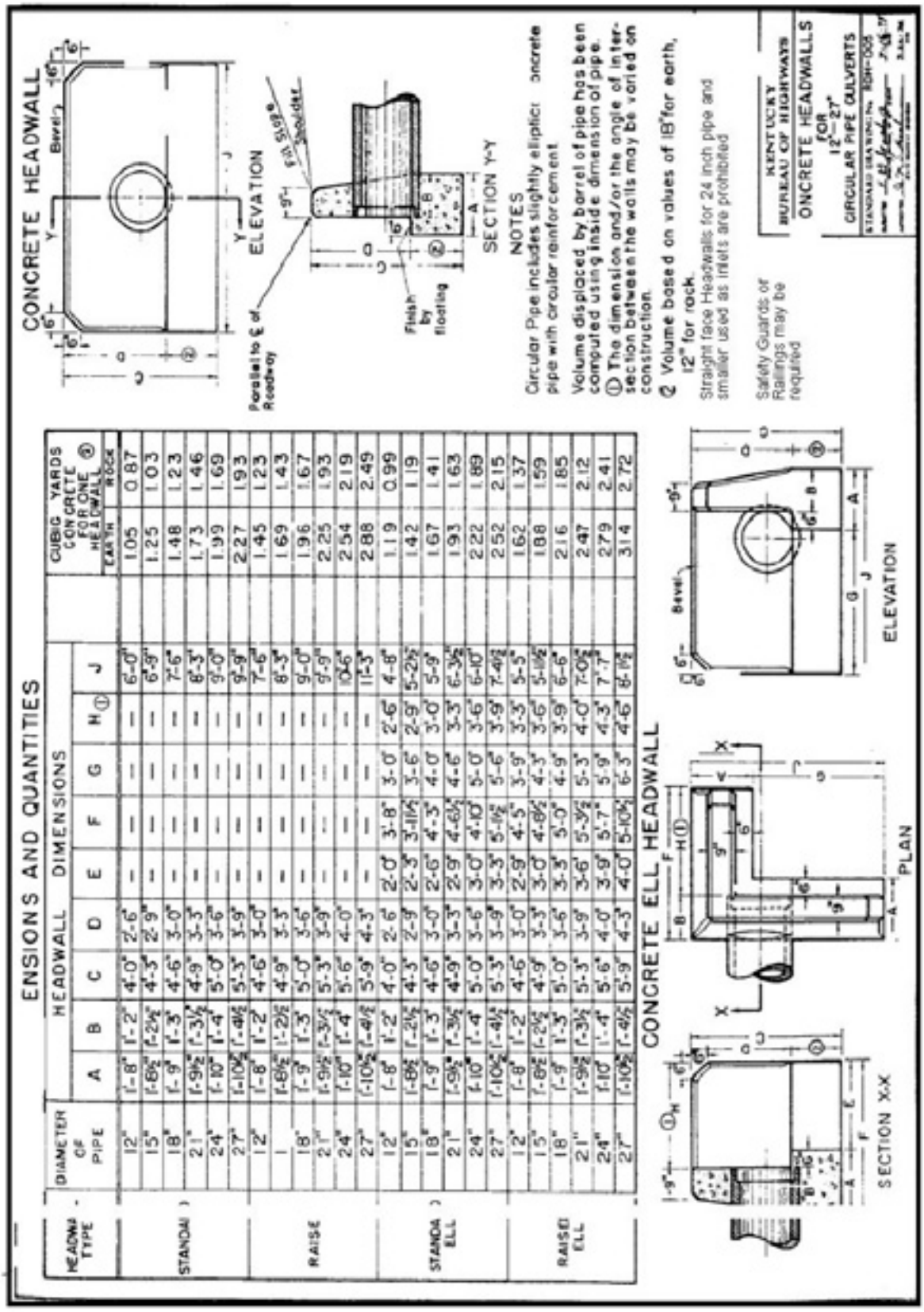
RIGID PAVEMENT BLOCKOUT DETAIL
BACK OF CURB
4'-0"
DEPRESSED PAVEMENT
½" DEFORMED RE-BAR
SECTION B-B
BACK OF CURB
TRANSITION FROM ROLL TO VERTICAL CURB
DIR. OF FLOW
DIR. OF FLOW
¾" SMOOTH DOWELS
2 ½" DEFORMED RE-BAR
2'-6"
5'-0"
2'-6"
10'-0"
PLAN VIEW
¾" SMOOTH DOWEL
DEPRESSED PAVEMENT
TOP OF CURB
SECTION A-A
• BLOCKOUTS SHALL BE FILLED 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
• ¾"x18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT - SEE SHEET C-10 FOR DOWEL DETAILS.
• TWO ½"x18" PIECES OF DEFORMED RE-BAR ARE REQUIRED ALONG BUTT JOINT OF ISOLATION AREA
• PAVEMENT THICKNESS SHALL CONFORM TO THE DELATED STREET CLASSIFICATIONS PER SECTION 7. TABLE 3 OF THESE REGULATIONS

ALTERNATIVE - A
FLEXIBLE PAVEMENT BLOCKOUT DETAIL
SECTION A-A
PLAN VIEW
SECTION B-B
BACK OF CURB
EXPRESS FLEXIBLE PAVEMENT TO MEET EXISTING
TRANSITION FROM ROLL TO VERTICAL CURB
DIR. OF FLOW
3/4" SMOOTH DOWELS
2'-6"
5'-0"
10'-0"
DEPRESSED PAVEMENT
TOP OF CURB
3/4" SMOOTH DOWEL
BLOCKOUTS SHALL BE POURED WITH 4000 P.S.I. 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 TABLE 5 OF THESE REGULATIONS

ALTERNATIVE - B
FLEXIBLE PAVEMENT BLOCKOUT DETAIL
SECTION B-B
FLEXIBLE PAVEMENT
#5 REBAR 1' BEYOND CASTING
30"
BACK OF WALK
TRANSITION FROM FULL TO VERTICAL CURB
DIR. OF FLOW
PLAN VIEW
BACK OF WALK
¾" SMOOTH DOWELS
2'-0"
5'-0"
2'-0"
10'-0"
SECTION A-A
DEPRESSED PAVEMENT
TOP OF WALK
¾" SMOOTH DOWEL
BLOCKOUTS SHALL BE POURED 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
¾ x 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT - SEE SHEET E-10 FOR DOWEL DETAILS.
PAVEMENT THICKNESS SHALL CONFORM TO THE RELATED STREET CLASSIFICATIONS PER SECTION 7 TABLE 5 OF THESE REGULATIONS


YARD DRAIN : 2x2-W
PLAN
SECTION C-C
SECTION A-A
SECTION B-B
YARD DRAIN: 2x2-S
PLAN
SECTION C-C
SECTION A-A
NOTE: SECTION B-B SAME AS ABOVE
YARD DRAIN - DETAILS


STEP 1
STEP 2
STEP 3
STEP 4
STEP 5
ROCK FOUNDATION DETAILS
PIPE SHAPES
KENTON COUNTY AND MUNICIPAL PLANNING AND ZONING COMMISSION
PIPE BEDDING/TRENCHING FOR CULVERTS, SEWERS, STORM DRAINS AND THEIR COMBINATION
STANDARD SPECS AND CONST. DETAILS
APPENDIX C - 22
NOVEMBER 1984



CONCRETE HEADWALL

ELEVATION

SECTION Y-Y

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

KENTUCKY BUREAU OF HIGHWAYS

ONCRETE HEADWALLS FOR 12"-27" CIRCULAR PIPE CULVERTS

ENSIONS AND QUANTITIES

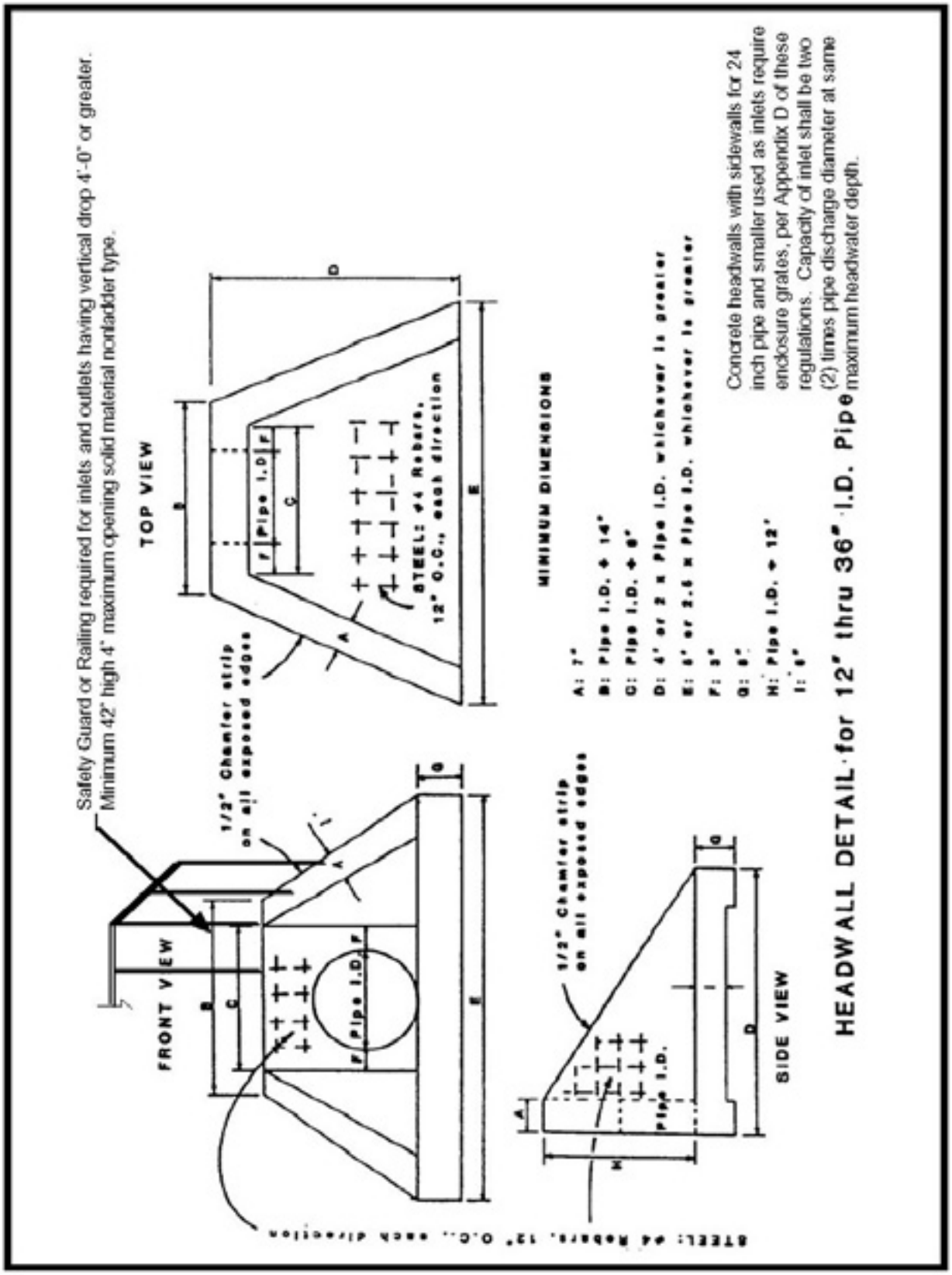
HEADWALL TYPE	DIAMETER OF PIPE	HEADWALL DIMENSIONS A	B	C	D	E	F	G	H ①	J	CUBIC YARDS CONCRETE FOR ONE ② HEADWALL EARTH	ROCK
STANDARD	12"	1'-8"	1'-2"	4'-0"	2'-6"	—	—	—	—	6'-0"	1.05	0.87
	15"	1'-8½"	1'-2½"	4'-3"	2'-9"	—	—	—	—	6'-9"	1.25	1.03
	18"	1'-9"	1'-3"	4'-6"	3'-0"	—	—	—	—	7'-6"	1.48	1.23
	21"	1'-9½"	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
	27"	1'-10½"	1'-4½"	5'-3"	3'-9"	—	—	—	—	9'-9"	2.27	1.93
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
	27"	1'-10½"	1'-4½"	5'-9"	4'-3"	—	—	—	—	11'-3"	2.88	2.49
STANDARD ELL	12"	1'-8"	1'-2"	4'-0"	2'-0"	2'-0"	3'-8"	3'-0"	2'-6"	4'-8"	1.19	0.99
	15"	1'-8½"	1'-2½"	4'-3"	2'-3"	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
	27"	1'-10½"	1'-4½"	5'-3"	3'-9"	3'-3"	5'-1½"	5'-6"	3'-9"	7'-4½"	2.52	2.15
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

CONCRETE ELL HEADWALL

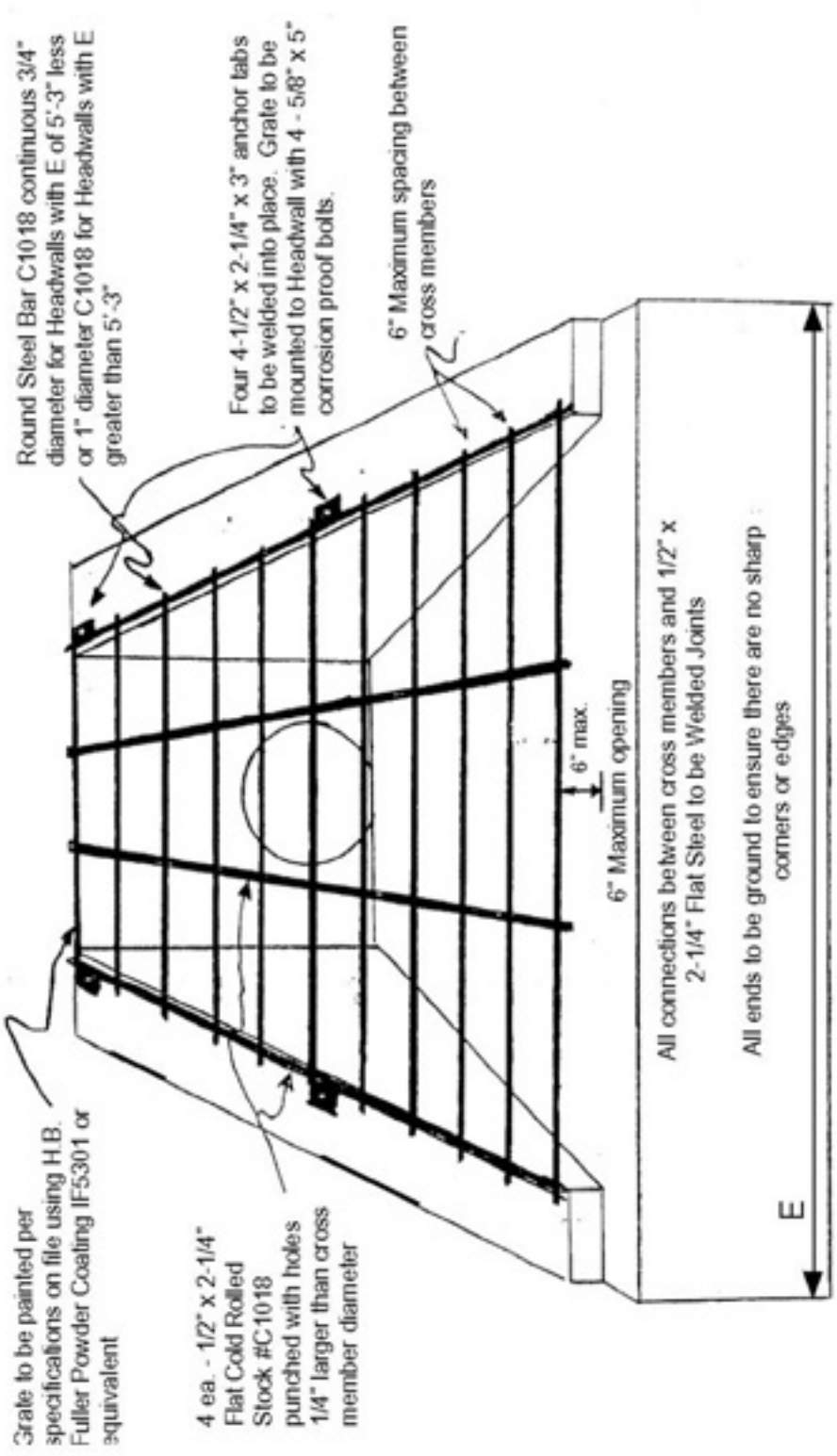
ELEVATION

PLAN

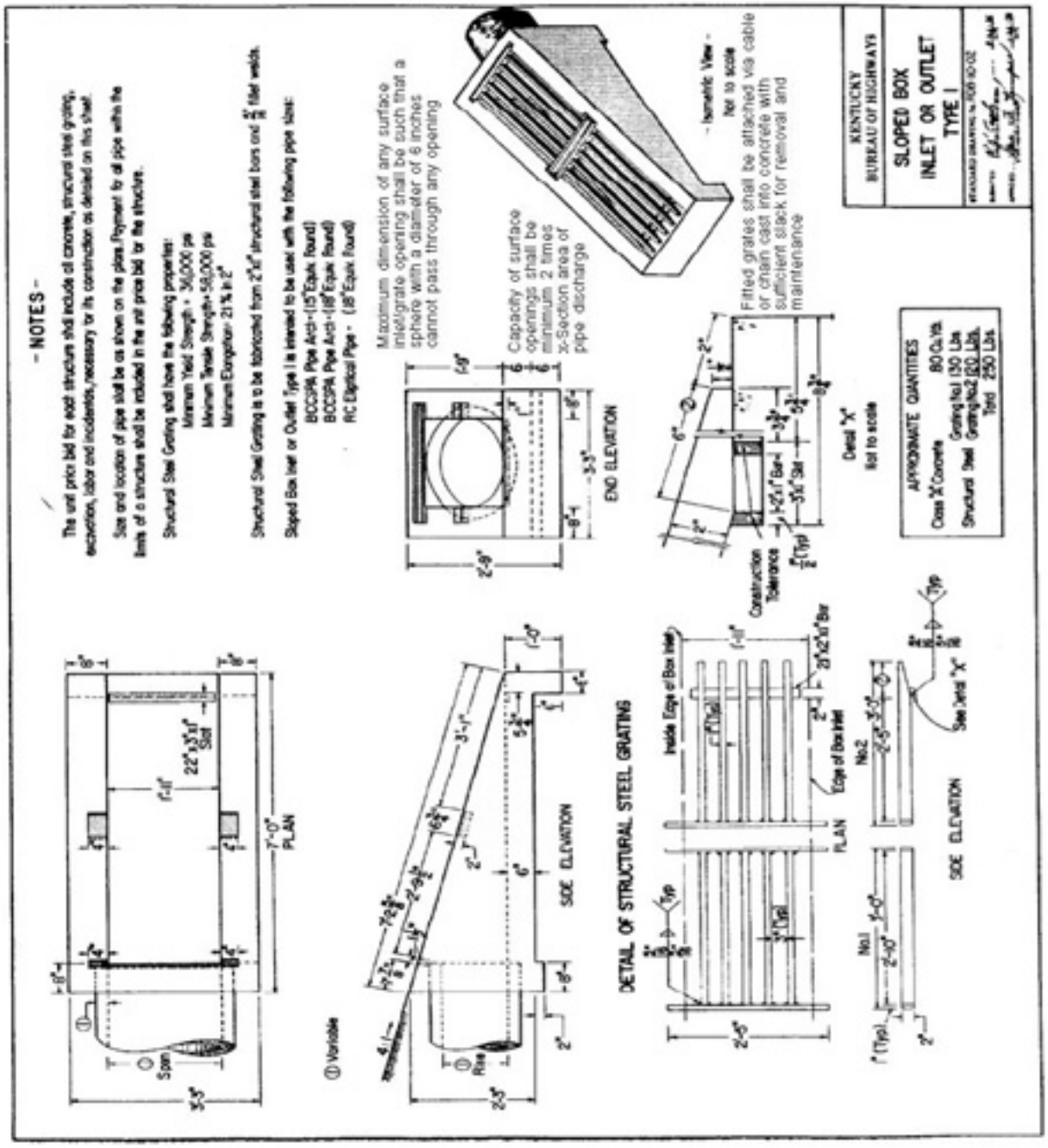
SECTION X-X

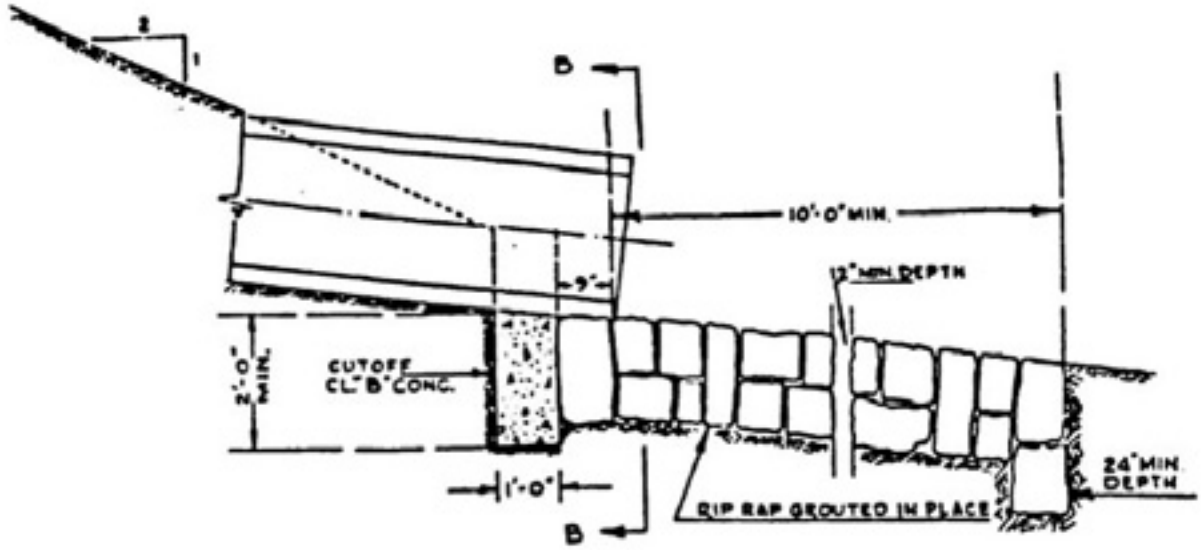

Safety Guard or Railing required for inlets and outlets having vertical drop 4'-0" or greater.
Minimum 42" high 4" maximum opening solid material nonladder type.
TOP VIEW
FRONT VIEW
SIDE VIEW
1/2" Chamfer strip on all exposed edges
STEEL: #4 Rebars, 12" O.C., each direction
MINIMUM DIMENSIONS
A: 7"
B: Pipe I.D. + 14"
C: Pipe I.D. + 8"
D: 4' or 2 x Pipe I.D. whichever is greater
E: 6' or 3.5 x Pipe I.D. whichever is greater
F: 3"
G: 8"
H: Pipe I.D. + 12"
I: 6"
Concrete headwalls with sidewalls for 24 inch pipe and smaller used as inlets require enclosure grates, per Appendix D of these regulations. Capacity of inlet shall be two (2) times pipe discharge diameter at same maximum headwater depth.
HEADWALL DETAIL for 12" thru 36" I.D. Pipe

ENCLOSURE GRATE FOR INLET HEADWALL
24" DIAMETER PIPE OR LESS

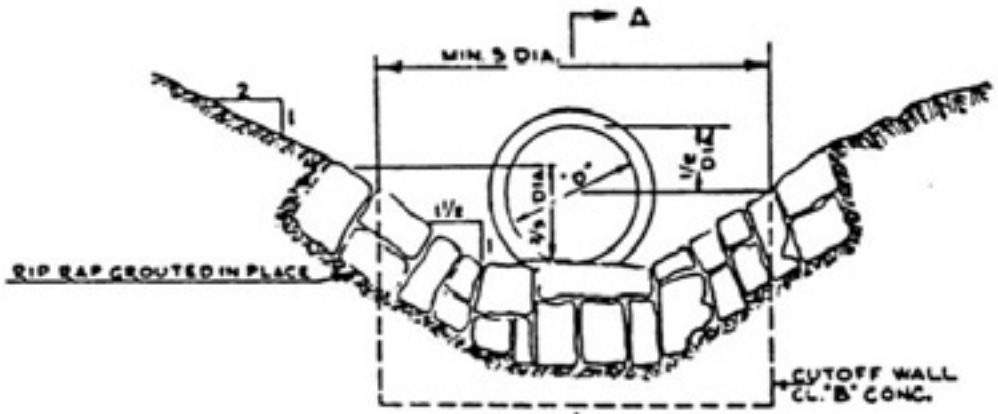


PLAN VEW OF STRUCTURE LOCATIONS
CONDITION NO. 1 - 0° SKEW
CONDITION NO. 2 1° to 30° SKEW
CONDITION NO. 3 GREATER THAN 30° SKEW
Extend Toe of Normal Slope
Toe Of Slope
15° SKEW
30° SKEW
18"-24" TRIMETRIC VIEW
DETAIL SHOWING LOCATION OF SLOTS FOR GRATES
A,B for 2 Grates
A,B,C for 3 Grates
A,B,C,D for 4 Grates
NOTES
The bid item shall be :
"(+) S and F Box Inlet-Outlet"
* Size of Pipe
The minimum requirement for reinforcing steel shall be grade 40. Field bending will be permitted.
① One additional c bar will be required for each 15° skew.
See Current Edition of RDB-106.
Capacity inlet shall be 2 times pipe discharge diameter at same maximum headwater depth
KENTUCKY DEPARTMENT OF HIGHWAYS
SLOPED AND FLARED BOX INLET - OUTLET 18" - 24" - 30" - 36" ALL SKEWS
STANDARD DRAWING No. RDB-105-01
BOTTOM SLOT 2"X4"X4"
INTERMEDIATE SLOT OR SLOTS 2"X6"X4"
TOP SLOT 2"X4"X4"
GRATE NO. 2
GRATE NO. 1
PLAN
ELEVATION
Cut off Toe Wall at rock line when encountered.
Construction Joint Required
4:1 SLOPE
DIMENSIONS
NO. OF GRATES REQ'D
NO. 4 REINFORCEMENT BARS NUMBER - LENGTH AND WEIGHT
LBS.


- NOTES -
The unit price bid for each structure shall include all concrete, structural steel grating, excavation, labor and incidentals, necessary for its construction as detailed on this sheet.
Size and location of pipe shall be as shown on the plans. Payment for all pipe within the limits of a structure shall be included in the unit price bid for the structure.
Structural Steel Grating shall have the following properties:
Minimum Yield Strength - 36,000 psi
Minimum Tensile Strength-58,000 psi
Minimum Elongation- 21% in 2"
Structural Steel Grating is to be fabricated from 2"x2" structural steel bars and 5/16 fillet welds.
Sloped Box Inlet or Outlet Type I is intended to be used with the following pipe sizes:
BCCSPA Pipe Arch-(15"Equiv. Round)
BCCSPA Pipe Arch-(18"Equiv. Round)
RC Elliptical Pipe - (18"Equiv. Round)
Maximum dimension of any surface inlet/grate opening shall be such that a sphere with a diameter of 6 inches cannot pass through any opening
Capacity of surface openings shall be minimum 2 times x-Section area of pipe discharge
- Isometric View -
Not to scale
Fitted grates shall be attached via cable or chain cast into concrete with sufficient slack for removal and maintenance
KENTUCKY BUREAU OF HIGHWAYS
SLOPED BOX INLET OR OUTLET TYPE I
APPROXIMATE QUANTITIES
Class 'A' Concrete 80 Cu.Yds.
Grating No.1 130 Lbs.
Grating No.2 120 Lbs.
Structural Steel Total 250 Lbs.
Detail 'A'
Not to scale
Construction Tolerance
END ELEVATION
SIDE ELEVATION
PLAN
DETAIL OF STRUCTURAL STEEL GRATING
Inside Edge of Box Inlet
Edge of Box Inlet
No.2
No.1
SIDE ELEVATION
PLAN
Variable
Span
Rise
SIDE ELEVATION
PLAN



SECTION A-A

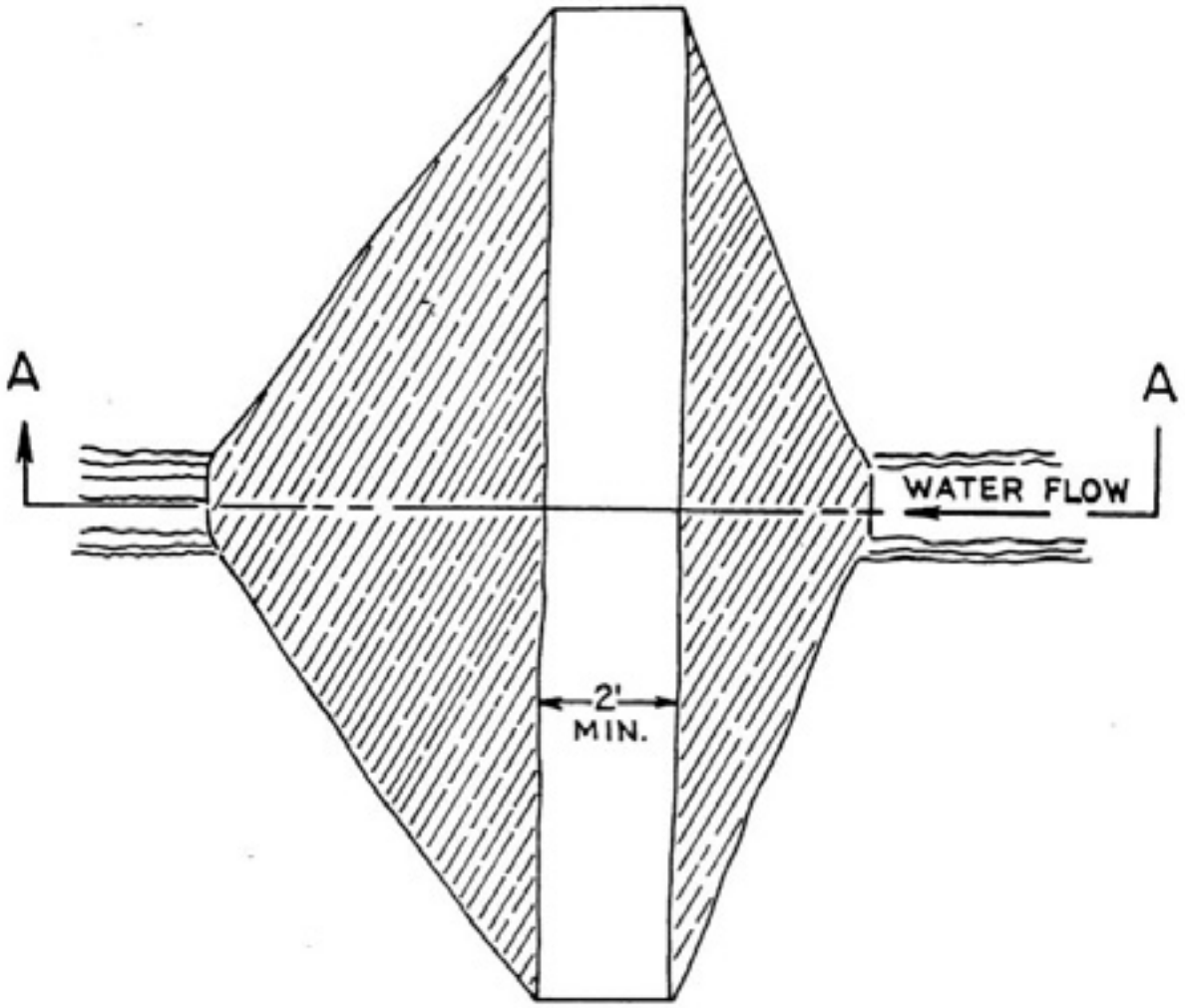


SECTION B-B

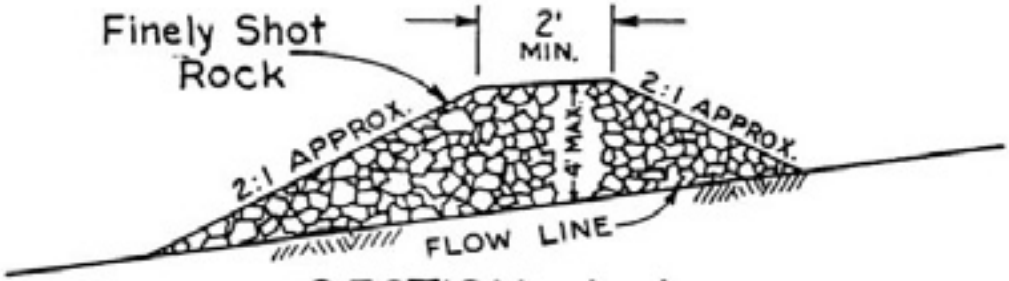
TO BE USED WHERE RIP RAP APRON IS CALLED FOR ON PLANS AND NO DETAIL IS PROVIDED.

RIP RAP APRON AND CUTOFF WALL

SILT CHECK

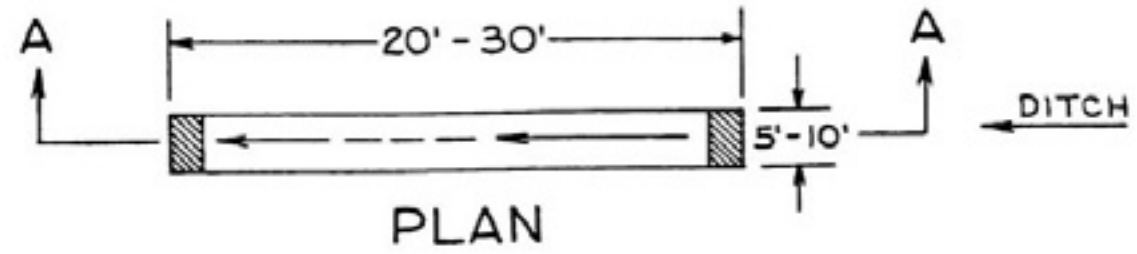


PLAN



SECTION A-A

SILT TRAP TYPE A

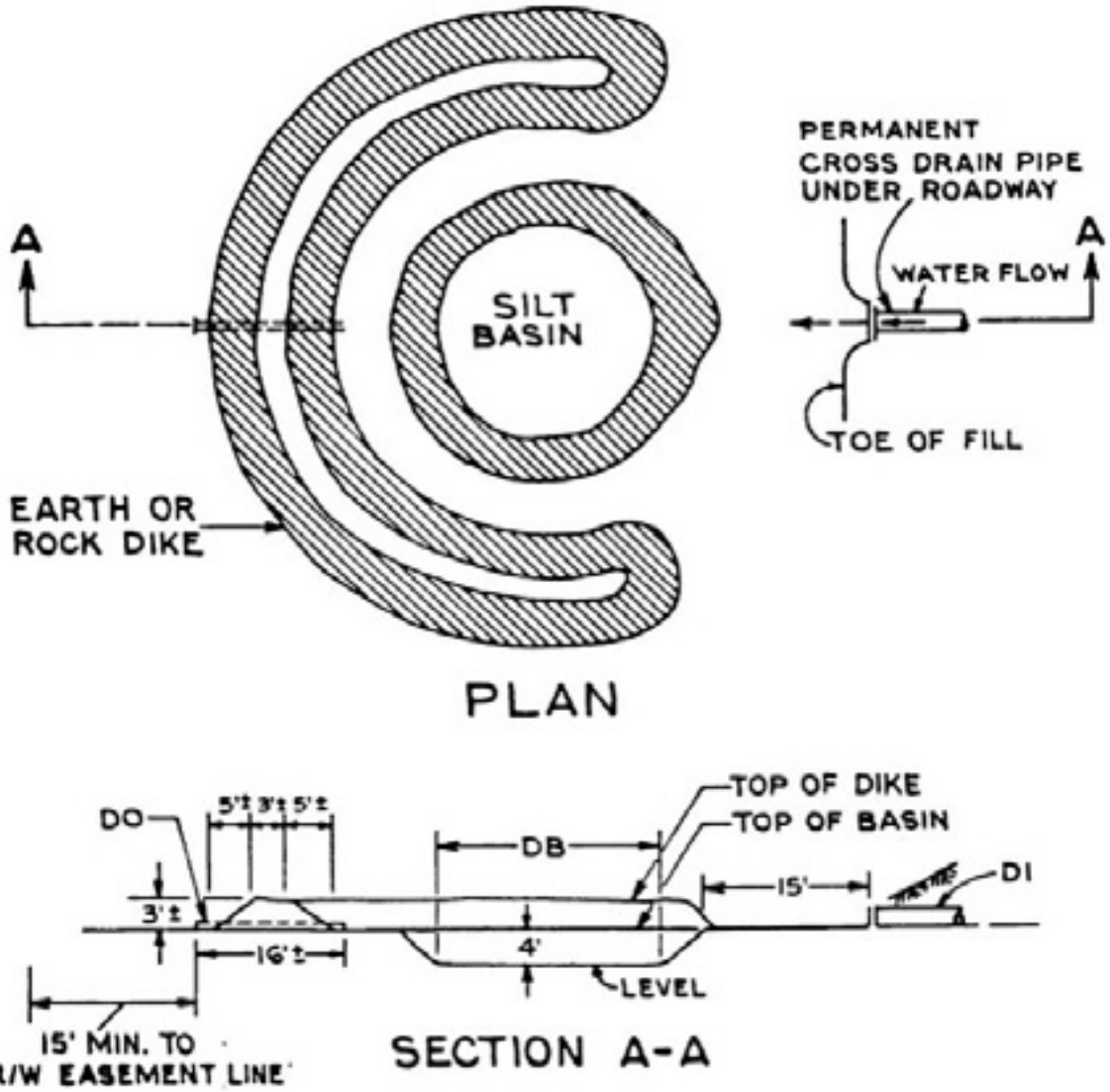


PLAN

SECTION A-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



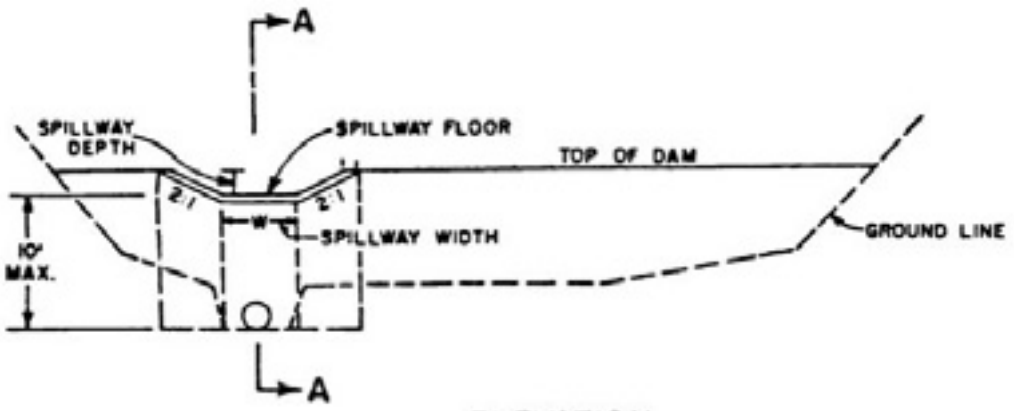
PLAN

SECTION A-A

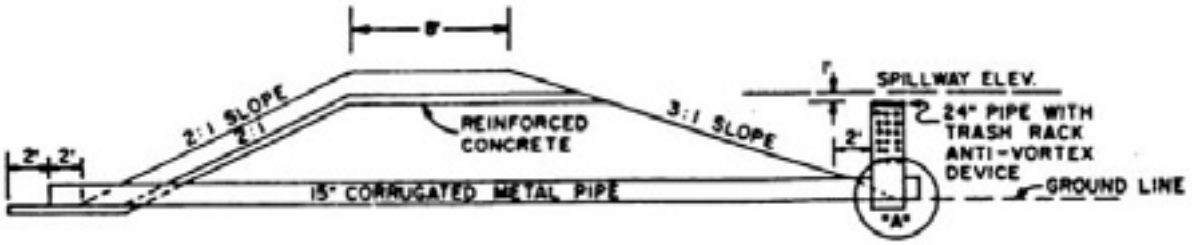
NOTE: ALL DIMENSIONS OF BASIN AND DIKE WILL NOT REQUIRE CONSTRUCTION TO NEAT LINES. THE PLAIN VIEW ABOVE INDICATES THE SILT BASIN IS ROUND, HOWEVER, IT IS DRAWIN IN THIS MANNER FOR ILLUSTRATION PURPOSES ONLY. THE BASIN MAY BE CONSTRUCTED AS LONG AS THE AREA AND DEPTH OF THE BASIN IS AT LEAST AS LARGE 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"

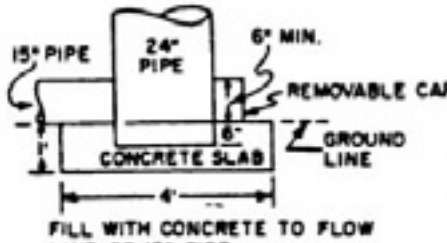
TYPICAL DETAILS FOR SEDIMENTATION BASIN



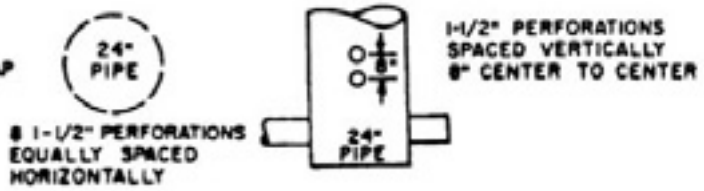
ELEVATION



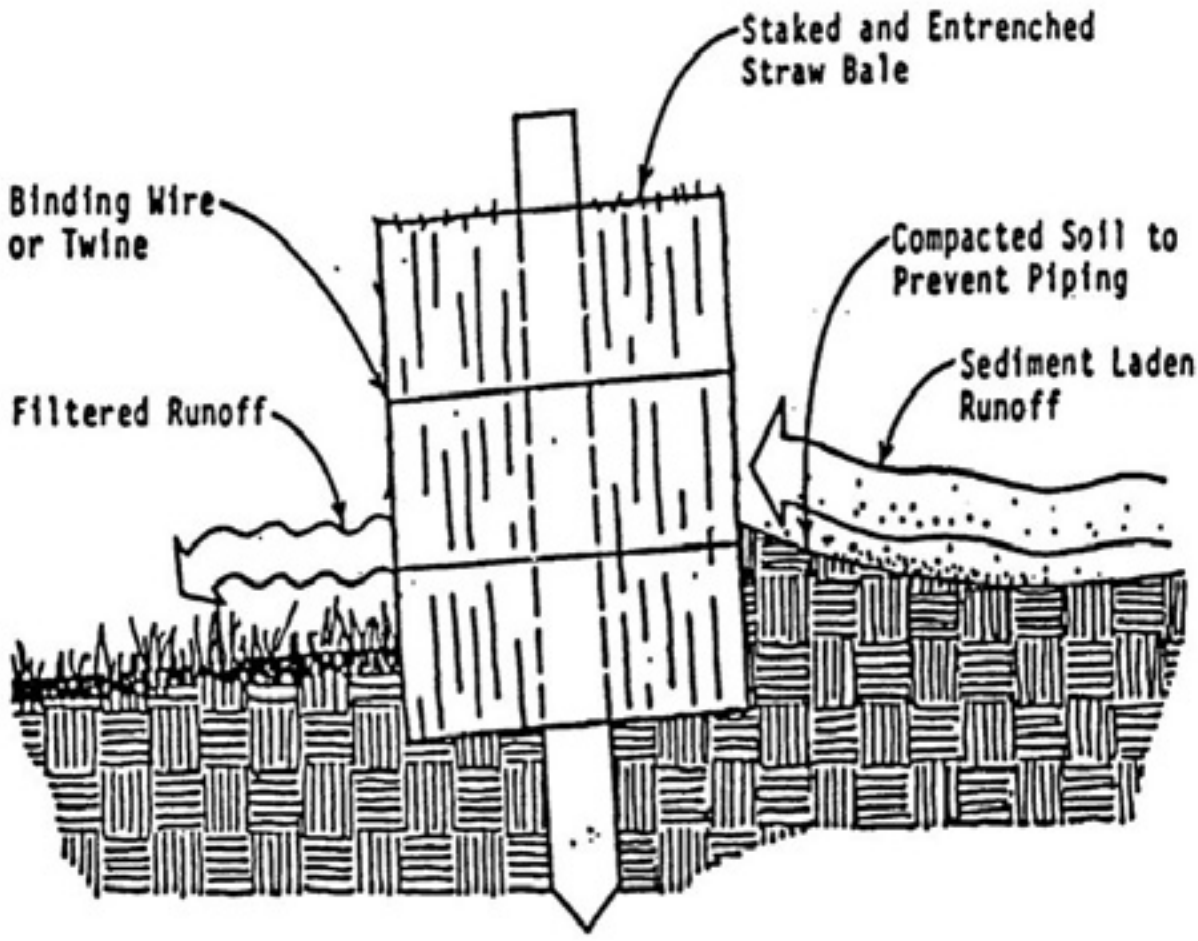
SECTION A–A

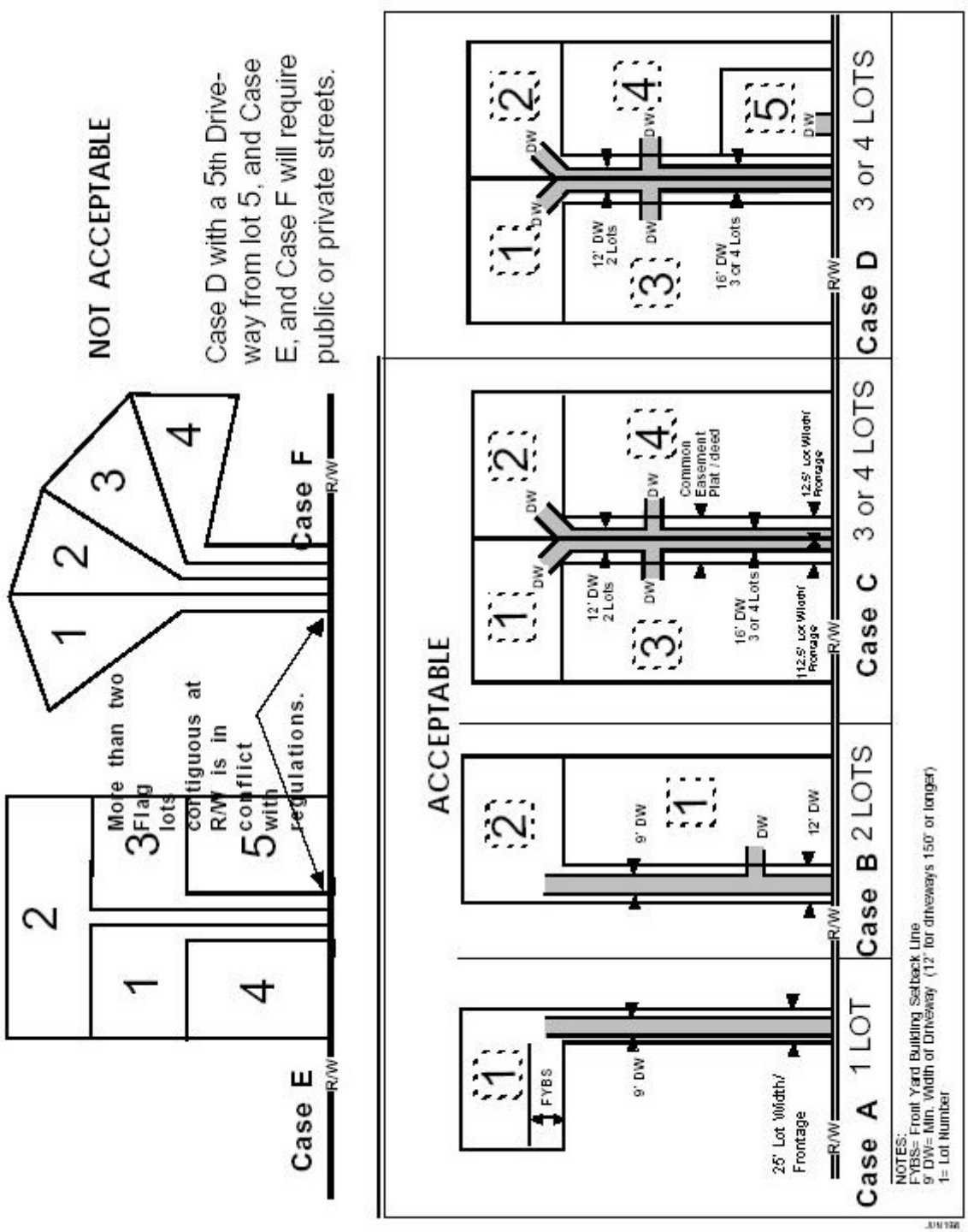


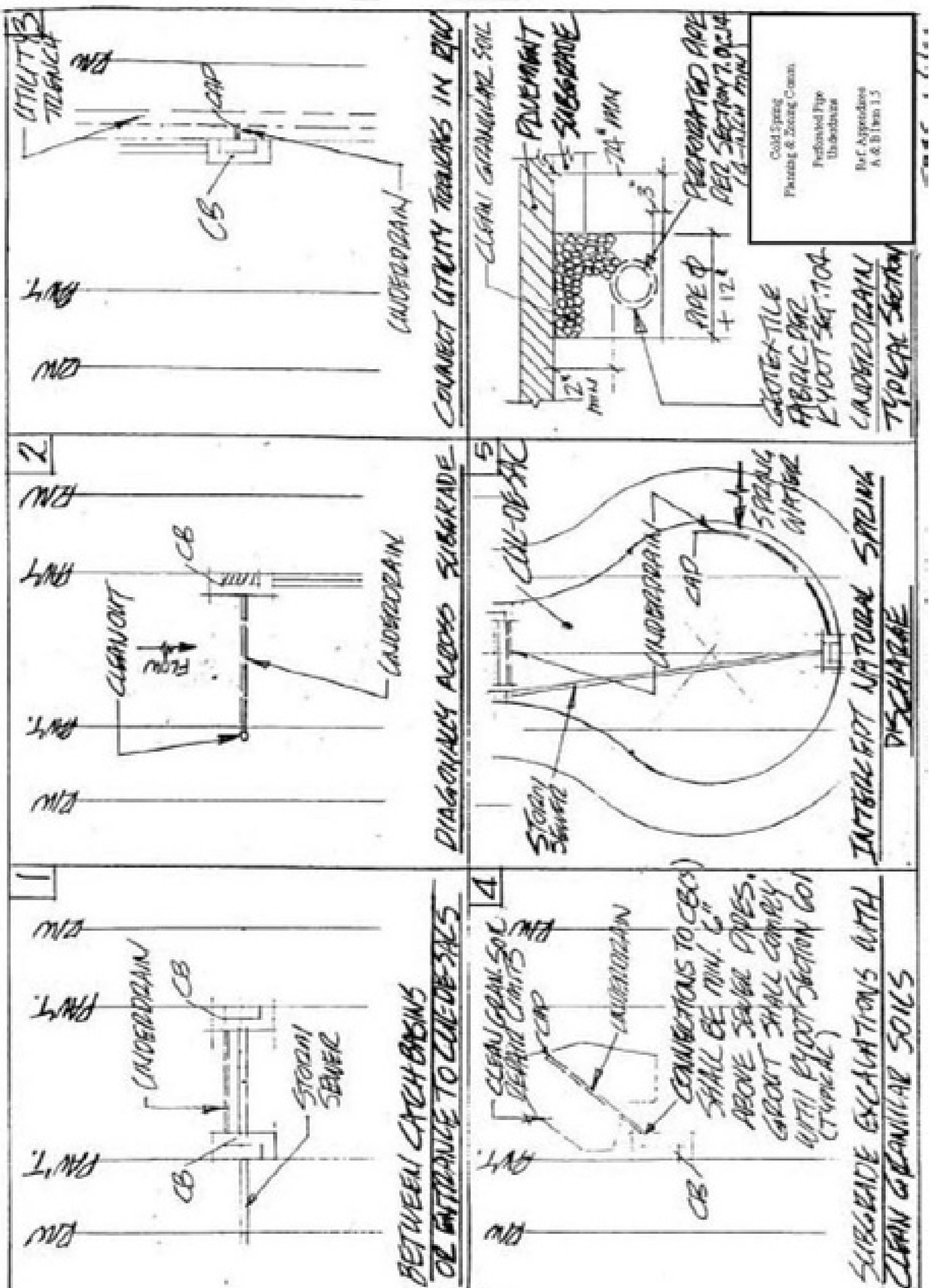
DETAIL "A"



DETAIL SHOWING LOCATION OF PERFORATIONS IN 24" PIPE


Staked and Entrenched
Straw Bale
Binding Wire
or Twine
Compacted Soil to
Prevent Piping
Sediment Laden
Runoff
Filtered Runoff

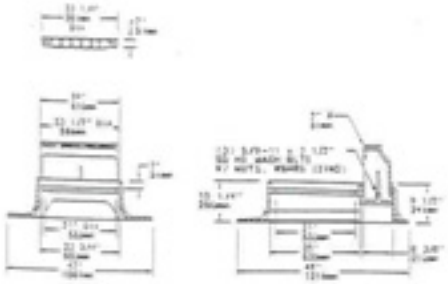

NOT ACCEPTABLE
Case D with a 5th Drive-way from lot 5, and Case E, and Case F will require public or private streets.
More than two Flag lots contiguous at R/W is in conflict with regulations.
Case E
Case F
R/W
ACCEPTABLE
Case A 1 LOT
Case B 2 LOTS
Case C 3 or 4 LOTS
Case D 3 or 4 LOTS
FYBS
9' DW
12' DW
25' Lot Width/ Frontage
12' DW 2 Lots
16' DW 3 or 4 Lots
Common Easement Plat / deed
12.5' Lot Width/ Frontage
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


BETWEEN CATCH BASINS OR ENTRANCE TO CUL-DE-SACS
DIAGONALLY ACROSS SUBGRADE
CONNECT UTILITY TRENCHES IN R/W
SUBGRADE EXCAVATIONS WITH CLEAN GRANULAR SOILS
INTERMITTENT NATURAL SPRING DISCHARGE
UNDERDRAIN TYPICAL SECTION
UNDERDRAIN
STORM SEWER
CB
CLEANOUT
CAP
CUL-DE-SAC
PAVEMENT
SUBGRADE
CLEAN GRANULAR SOIL
GEOTEXTILE FABRIC PAR. KYDOT SECT. 104
PERFORATED PIPE
Cold Spring Planning & Zoning Comm.
Perforated Pipe Underdrain

NOTES:
1. Sidewalk ramps shall be constructed of minimum 4000 psi air-entrained concrete. A broom finish or equal non-skid finish is required.
2. Normal gutter line shall be maintained through the area of the ramp for drainage.
3. Minimum thickness for ramps, shall be 4 inches, same as sidewalks.
4. No free draining granular fill permitted under ramps.
5. Handicap ramps shall meet the requirements of Americans with Disabilities Act of 1990 and contain detectable warnings consisting of raised truncated domes with a diameter of nominal 0.9 in., a height of nominal 0.2 in. and a center-to-center spacing of nominal 2.35 in. that contrast visually with adjoining surfaces, either light-on-dark, or dark-on-light. The material used to provide contrast shall be an integral part of the walking surface. Detectable warnings used on interior surfaces shall differ from adjoining walking surface in resiliency or sound-on-cane contact.
6. Installation along state highways shall be constructed per state highway standards.
7. Wider walks required for other land uses. (see section 7.3 F)
Back of walk concentric to back of curb
Expansion joint
sidewalk
A
B
Plan - Sidewalk Ramp at Intersection
4'-0"
ramp slope 1:12 (1"per foot maximum)
4'-0"
(walk cross-slope 1/2" per foot maximum)
14"
cross-slope 1/4" per foot
Gutter line
No bump permitted
Low point 14" from back of curb
Seal construction joint
Do not use expansion material
see plan view for placement
Section AA
Top of curb
1' 0"
6' 0"
1' 0"
Ramp mouth back of curb
Face of curb rolled or vertical
Paved gutter
No bump permitted
Concrete pavement
1'-0" Curb taper
Section BB
detail at entrance ramp
Cold Spring Planning and Zoning Commission
Typical Installation for Sidewalk Ramps

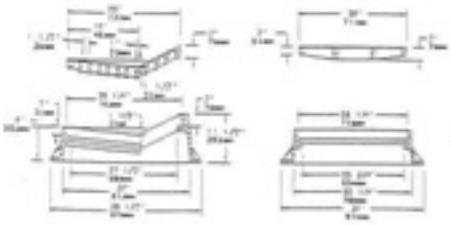
CATCH BASIN CURB INLETS

7380 Catch Basin Curb Inlet

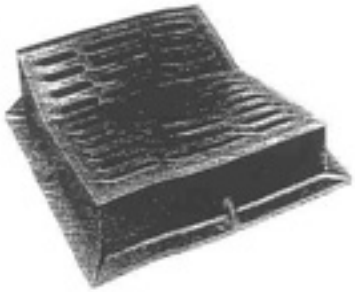


Heavy Duty
770 pounds (349kg) total weight
Approx. 160 sq. in.
of opening

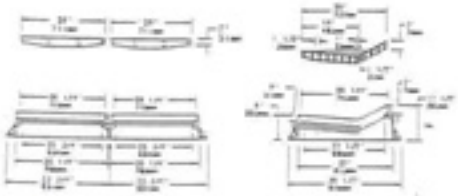
7390 Catch Basin Curb Inlet



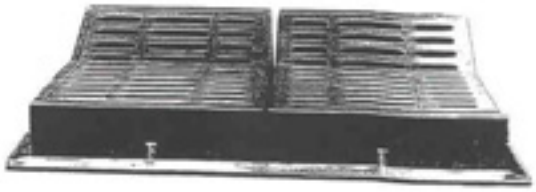
Heavy Duty
635 pounds (288kg)
total weight
Approx. 360 sq. in.
of opening



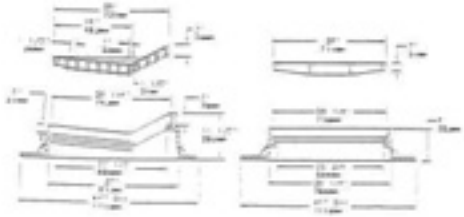
7391 Catch Basin Curb Inlet



Heavy Duty
1180 pounds (535kg) total weight
Approx. 720 sq. in. of opening
Multiple Curb Inlet



7395 Catch Basin Curb Inlet



Heavy Duty
660 pounds (299kg) total weight
Approx. 360 sq. in.
of opening

APPENDIX E

CERTIFICATES, ACKNOWLEDGEMENTS, AND APPROVALS

Appendix E contains representative certificates, acknowledgements, and approvals to be used on final plats, in accordance with Article V of these regulations. These certificates, acknowledgements, and approvals may be modified with the commission's approval. Phrases shown in parentheses, in these certificates, shall be used if pertinent. All signatures must be written with black, waterproof, ink. Provisions shall be made on each signature line for large signatures and dates.

A. REFERENCE TO SECTION 5.0, A., 16., a. OF THESE REGULATIONS

DEDICATION CERTIFICATE

WE THE UNDERSIGNED DO HEREBY ADOPT THIS PLAT AND DEDICATE THE STREETS INCLUDING STORM SEWER AND/OR RUNOFF CONTROL STRUCTURES WITHIN EASEMENTS (OR OTHER PARCELS OF LAND) SHOWN HEREIN TO PUBLIC USE. BEING PART OF THE SAME PROPERTY CONVEYED TO US BY DEED DATED _____ AND RECORDED IN DEED BOOK ____ PAGE ____ OF THE CAMPBELL COUNTY RECORDS AT _____ KENTUCKY.

_____

SIGNATURE OF OWNER

B. REFERENCE TO SECTION 5.0, A., 16., a. OF THESE REGULATIONS

FORMS OF ACKNOWLEDGEMENTS

1. For an individual acting in his own right

State of _____ County of _____

The foregoing instrument was acknowledged before me this (date) by (Name of person acknowledged).

(Signature of person taking acknowledgement)
(Title or Rank)
(Serial Number, if any)

2. For a Corporation

State of _____ County of _____

The foregoing instrument was acknowledged before me this (date) by (Name of officer or agent, title of officer or agent) of (Name of corporation acknowledging) a (state or place of incorporation) corporation, on behalf of the corporation.

(Signature of person taking acknowledgement)
(Title or Rank)
(Serial Number, if any)

3. For a Partnership

State of _____ County of _____

The foregoing instrument was acknowledged before me this (date) by (Name of acknowledging partner or agent, Partner (or agent), on behalf of (name of partnership), a partnership.

(Signature of person taking acknowledgement)
(Title or Rank)
(Serial Number, if any)

4. For an Individual acting as principal by an attorney in fact

State of _____ County of _____

The foregoing instrument was acknowledged before me this (date) by (Name of attorney in fact) as attorney in fact on behalf of (name of principal).

(Signature of person taking acknowledgement)
(Title or Rank)
(Serial Number, if any)

5. By any public officer, trustee, or personal representative

State of _____ County of _____

The foregoing instrument was acknowledged before me this (date) by (Name and title of position).

(Signature of person taking acknowledgement)
(Title or Rank)
(Serial Number, if any)

C. REFERENCE TO SECTION 5.0, A., 16., b. OF THESE REGULATIONS

SURVEYOR'S CERTIFICATE

I, (surveyor's name - printed) a Registered Land Surveyor in the State of Kentucky, do hereby certify that the survey of _____ was made by me (or under my supervision), and that the accompanying plat accurately and properly shows said subdivision and the survey thereof.

_____
(Signature)

_____
(Date)

SURVEYOR'S
SEAL REGISTERED LAND SURVEYOR NO. _____

D. OTHER DOCUMENTS: Such other affidavits, certificates, acknowledgements, endorsements, and notarial seals as are required by law by these regulations, shall be of the form and substance approved by the planning commission.

E. REFERENCE TO SECTION 5.0, A., 16., d., OF THESE REGULATIONS

1. SANITARY SEWER EASEMENTS

The utility easement shown and described on this plat are dedicated to the use and benefit of the named utility. The respective rights, duties and obligations of the individual lot owner and the respective utility are set forth in separate recorded document in the Campbell County Clerk's Office. Terms and conditions of the document listed below are incorporated by reference:

Sanitary Sewers Sanitation District No. 1 Misc. Book 275, Pg. 675

2. WATER MAIN EASEMENT

Court House	Document Location	County
Alexandria	Easement Book 129, Page 145	Campbell
Newport	Easement Book 304, Page 466	Campbell

All Subdivision final plats with water main easements to be granted to the Water District shall contain the following note, depending on the location within Cold Spring, where the final plat is to be filed:

WATER MAIN EASEMENT(S)
The Water Main Easement(s) as shown on this plat are subject to the DECLARATION OF MASTER WATER FACILITY EASEMENT AGREEMENT as set forth in _____ of the _____ County
(Document Location) (County Name)
Clerk's records at _____ , KY.
(Court House)

3. UTILITY EASEMENTS

For valuable consideration, we the undersigned do hereby permanently grant to the Union, Light, Heat & Power Company/Cinergy, and/or the Cincinnati Bell Telephone Company, their successors and assigns, forever, non-exclusive easements, as shown on the within plat and designated as "Utility Easement" for the construction, operation, maintenance, repair or replacement of any and all necessary fixtures for the overhead or underground distribution of gas, electric, telephone, or telecommunications, or other utilities. Said utility companies shall have the right of ingress and egress and also the right to cut, trim and remove any trees, undergrowth or overhanging branches within said easement or adjacent thereto. No buildings or other structures may be built within said easement, nor may the easement area be physically altered so as to (1) reduce clearances of either overhead or underground facilities; (2) impair

the land support of said facilities; (3) impair the ability to maintain the facilities or (4) create a hazard. We acknowledge having full power to convey this easement and will defend the same against all claims.

_____ _____

DATE SIGNATURE OF OWNER

F. REFERENCE TO SECTION 5.0, A., 16., e. OF THESE REGULATIONS

APPROVAL CERTIFICATES

Approved by the Cold Spring Planning and Zoning Commission, Campbell County, Kentucky, this _____ day of _____ , 19____.

_____

CHAIRMAN, OR OTHER DULY AUTHORIZED OFFICER OF THE COMMISSION

G. REFERENCE TO SECTION 5.0, A., 16., f. OF THESE REGULATIONS

CLERK AND RECORDER"S CERTIFICATE

I, _____, CLERK OF CAMPBELL COUNTY, DO HEREBY CERTIFY THAT THIS PLAT WAS THIS DAY PRESENTED TO ME IN MY OFFICE BY _____ AND ACKNOWLEDGED BY THEM TO BE THEIR ACT AND DEED, WAS THIS DAY LEFT FOR RECORD WHERE UPON SAME HAS BEEN RECORDED THIS _____ DAY OF _____ , 19 ____.

_____

SIGNATURE OF COUNTY CLERK OR DEPUTY

APPENDIX F

CONCRETE TESTING REPORTS

A. PROCEDURES: Making and curing compression and flexure test specimens of concrete sampled from concrete being used in construction shall conform to ASTM C-31 by a recognized testing laboratory.

Results of testing per ASTM C-39 shall be reviewed for acceptance by the planning commission's duly authorized representative, the NKAPC staff, prior to approval of a Final Plat unless otherwise guaranteed in accord with Section 7.16 of the regulations.

B. STRENGTH OF CONCRETE: Test cylinders shall attain a minimum expected strength at 28 days of 4,000 psi and/or 570 psi flexural strength "modulus of rupture" except as follows:

- If any cylinder test report representing each 100 cubic yards or portion thereof placed each day certifies unit load 3,900 psi, the minimum allowable tolerance strength, or greater, at 28 days, concrete is acceptable.

- If any cylinder test report representing 100 cubic yards or portion thereof placed each day certifies unit load within the range 3,600 psi - 3,900 psi, additional testing by Core Test (ASTM C-42) or Windsor Probe Test (ASTM C-803) may be permitted.

    - If Windsor Probe test report results in average strength of 3,900 psi or greater, concrete is acceptable.

    - If Windsor Probe test report results in average strength of less than 3,900 psi, additional testing by Core Test is required.

    - If Core test report results in compressive strength of 3,900 psi or greater, concrete is acceptable.

    - If Core test results or average of not more than 12 Core Tests representing 100 cubic yards (e.g., for 50 cubic yards a maximum of 6 cores is allowed) not closer than 30 feet from another Core Test results in average strength of less than 3,900 psi, concrete is deficient in strength.

- If any cylinder test report representing 100 cubic yards or portion thereof placed each day certifies unit load less than 3,600 psi, additional testing by Core Test is required.

    - If Core test report results in compressive strength of 3,900 psi or greater, concrete is acceptable.

    - If Core test results or average of not more than 12 Core Tests representing 100 cubic yards (e.g., for 50 cubic yards a maximum of 6 cores is allowed) not closer than 30 feet from another Core Test results in average strength of less than 3,900 psi, concrete is deficient in strength.

C. DEFICIENCY IN STRENGTH/COSTS: Deficiency in concrete strength determined by Core Testing shall not be less than 50 percent of the specified strength f'c or 2,000 psi at 28 days. When average strength of concrete determined by Core Tests is less than this value, such areas shall be removed and replaced as determined by the inspector. When deficiency in average strength determined by Core Test(s) is within the range 2,000 psi - 3,900 psi, the subdivider shall submit a cost in an amount by certified check for maintenance of deficient areas to the planning commission's duly authorized representative based upon current replacement costs in direct proportion to the deficiency/allowable tolerance strength ratio.

Such deficiency/costs calculated by the planning commission's duly authorized representative shall be forwarded to the applicable city/county legislative body with letter of certification following final inspection of public improvements per Section 7.13 of the regulations.

REPLACEMENT COSTS -- 1992

SCOPE
- 100 cubic yards - (i.e., 372' long 12-1/2' lane -- 7" concrete)
- 4,000 psi expected strength at 28 days on prepared subgrade

CONTACT WITH THE FOLLOWING CONTRACTORS HAVE BEEN ESTIMATED

Alexandria Contractors		
Slab Removal	$4.50/S.Y.	$23.32/C.Y.
Concrete Pavement	$16.00/S.Y.	$82.90/C.Y.
Paul Michels Inc.		
Slab Removal	$5.00/S.Y.	$25.91/C.Y.
Concrete Pavement	$18.00/S.Y.	$93.26/C.Y.
Votel Contractors		
Slab Removal	$11.00/S.Y.	$57.00/C.Y.
Concrete Pavement	$16.50/S.Y.	$85.49/C.Y.
Averages		
Slab Removal	$6.83/S.Y.	$35.41/C.Y.
Concrete Pavement	$16.83/S.Y.	$87.22/C.Y.
Average Replacement Costs (1992)	$23.66/S.Y.	$122.63/C.Y.

Considering variation in removal costs use $120/C.Y.

APPENDIX G

CRITERIA FOR DEFINING PRIVATE STREETS, PARKING AREAS, AND DRIVEWAYS WITHIN RESIDENTIAL PROPERTY REGIMES

NECESSITY AND FUNCTION: To establish criteria for Private Streets to be designed, constructed, and inspected in accord with the same minimum standards as public streets and other applicable regulations administered by the planning commission's duly authorized representative.

SECTION 1: Private streets shall mean a paved roadway which affords direct of primary access to more than four (4) lots or individually owned units or more than eight (8) parking spaces. Minimum design standards and improvements for private streets shall be same as required for public streets and other applicable regulations including primarily minimum pavement widths including curbing (Section 7.3, C.), pavement thickness (Section 7.3, B.), and storm drainage systems (Section 7.0, A. through D.).

Other minimum design standards for public streets including rights-of-way, sight distance, vertical and horizontal curves, centerline offsets, blocks, lots, corner radii, turning radii, turnarounds, centerline crown and cross-slopes, off-street roof and subsurface drains are not required except as follows: (a) sidewalks shall be provided along both sides of streets unless an acceptable alternative pedestrian system to serve the same area is reviewed and approved by the planning commission, or its duly authorized representative; (b) turnarounds having minimum dimensions 12 feet in width and 20 feet in depth shall be provided near the end of streets more than 500 feet in length or serving more than 25 lots, individual units, or 50 parking spaces; (c) where curbs are proposed construction details shall be shown on the plans. Concrete extruded curbs with or without aprons may be reviewed and approved as equal; and (d) storm drainage construction details other than minimum standards shall be shown on the plans and may be reviewed and approved as equal.

Grading, subgrade, pavement specifications, and all related testing for private streets shall be as required within Appendices A and/or B. Construction review fees shall be as required within the By-Laws. Street names for private streets and addresses for development shall be approved and assigned, respectively, by the planning commission's duly authorized representative as part of approval of Improvement Drawings and Specifications or Stage II Development Plans. Perpendicular parking areas along private streets are not included within Section 1 and are defined within Section 2.

SECTION 2: Parking areas including access drives shall mean an open paved area which affords indirect or secondary access to an unlimited number of lots or individually

owned units. Design and layout of off-street parking areas shall be as required within the applicable zoning ordinance. Access drives within parking areas used for direct or primary access to four (4) lots or individually owned units or more than eight (8) parking spaces are defined as private streets within Section 1.

SECTION 3: Driveways shall mean a paved area which may include parking areas and affords primary or secondary access to four (4) or less lots or individually owned units or eight (8) or less parking spaces. Driveways used for indirect or secondary access to an unlimited number of lots, individually owned units, or parking spaces are defined as parking areas within Section 2. Design and layout of off-street driveways shall be as required within the applicable zoning ordinance. Driveways used for direct or primary access to more than four (4) lots or individually owned units or more than eight (8) parking spaces are defined as private streets under Section 1.

APPENDIX H

CRITERIA FOR ACCEPTANCE ONTO THE LIST OF QUALIFIED/RECOGNIZED GEOTECHNICAL ENGINEERS

Necessity and Function: To establish minimum criteria and requirements for acceptance as Recognized Qualified/Geotechnical Engineers or Firms.

The criteria for acceptance onto the list (see attachment for recognized engineers listed) was developed by the City of Cincinnati in conjunction with a committee formed by the local Geotechnical Section of the American Society of Civil Engineers. Geotechnical Engineers from local firms, and a University of Cincinnati Civil (Geotechnical) Engineering Professor, served on that committee. The following criteria, developed by that group and modified applicable to Cold Spring, Kentucky, was developed:

"1. The Engineer must be registered in the State of Kentucky.

2. The Engineer must have a Masters Degree in Civil Engineering with a specialty in Geotechnical Engineering from an ABET accredited University, or at least three years of documented experience as a practicing geotechnical engineer.

3. The Engineer must have a minimum of one year of local geotechnical engineering experience."

Upon individual requests made to the Geotechnical Group - Cincinnati Chapter ASCE c/o its current President, the above criteria and requirements may be used for acceptance onto the list of Qualified/Recognized Geotechnical Engineers as a Professional employed by a Firm. Prior to authorization of performing any geotechnical engineering work required, individual engineers in responsible charge must be included on the list.

Construction review fees charged by the Planning Commission do not include specialized inspections. Special inspections include soil density testing (i.e., embankments, subgrade, utility trenches, etc.), storm sewer installations larger than 30-inch diameter (full time on-site inspections required), and concrete paving (i.e., slump, air content and cylinder tests, etc.) by Qualified/Recognized Geotechnical Engineers. Schedule of Fees for specialized inspections shall be payable to Recognized Geotechnical Engineers/Firms.

APPENDIX I

SUMMARY OF AMENDMENTS

PAGES AFFECTED	DATE OF APPROVAL
Entire Text	6/11/97
Table of Contents, 7-1 through 7-67, D-1 through D-31 E-1 through E-4	8/12/98
Table of Contents, 1-1 through 1-2, 3-1 through 3-14, 6-1 through 6-16, 7-1 through 7-68, 8-1 through 8-4, A-1 through A-19, B1- through B-11, D-1 through D-33, E-1 through E-5, G-1 through G-2	5/12/99
Table Of Contents, Article VII, Appendix A, Appendix B, Appendix D	9/26/01
Table of Contents, Article VI, Article VII	8/1/03
Table of Contents, Article VI, Article VII, Appendix A, Appendix D	10/8/03
Table of Contents, Article VII, Appendix A, Appendix B, Appendix D	2/11/04