APPENDIX A SUBDIVISION REGULATIONS[1]

Subdivision Regulations
City of Brentwood, Tennessee

Subdivision Process Summary

These Subdivision Regulations are written to cover a wide range of activities related to subdivision and/or development of land within the City of Brentwood. Subdivision/development activities can range from a simple subdivision of one lot into two lots, or the development of a large tract into hundreds of lots with new streets, utilities and other related improvements. Because of this variability, it is not practical to write a step-by-step set of regulations that addresses every circumstance. Therefore, it is highly recommended that staff with the Planning and Codes Department be consulted early in the development process to review the requirements and identify potential opportunities or obstacles related to any proposal.

Zoning Ordinance—The Subdivision Regulations are included as Appendix A of the Zoning Ordinance and serve as a companion guide to the important aspects of land development. Generally, the specific zoning applicable to a tract, or lot will dictate the allowable uses, setbacks and landscape buffer requirements, and will address requirements in special overlay protection zones such as those affecting floodplain and hillside properties. The Zoning Ordinance and Subdivision Regulations are intended to work in concert to guide and regulate development in a way that reflects the goals of the community. The proper zoning for the intended use must be in place before beginning the subdivision or development process.

Planning Commission—Though an applicant begins the subdivision process with a member of the city staff, nearly all actions related to subdivision or development require formal approval by the Planning Commission. The Planning Commission is appointed by the Board of Commissioners, and is the governmental body vested with the authority to hear and approve actions under these Regulations. City staff accepts applications, provides guidance, monitors construction, prepares reports, and performs many other functions that aid the Planning Commission and property owners throughout the process.

Process Overview—Subdivision/development actions governed by these Regulations generally fall into one of three categories:

1. A **minor modification** to an existing lot (commercial or residential) is proposed such as a change in the setback or shift in property line between two lots;
2. A **minor subdivision** is proposed where a larger tract is subdivided into two or more lots, and no new infrastructure is required, other than utility tap and service lines; or
3. A **major subdivision** is proposed where a larger tract is subdivided into two or more lots, and new infrastructure (streets, utilities, major drainage systems, etc.) is required.

[1]Editor's note(s)—Amendment of September 7, 2021, amended Appendix A in its entirety to read as herein set out. Former App. A pertained to similar subject matter, and the historical notation has been retained with the amended provisions for reference purposes.

Cross reference(s)—Historic commission, § 2-176 et seq.; buildings and building regulations, ch. 14; fire prevention and protection, ch. 26; health and sanitation, ch. 30; parks and recreation, ch. 46; planning, ch. 50; streets, sidewalks and other public places, ch. 58; traffic and vehicles, ch. 66; utilities, ch. 70; zoning, ch. 78.

The process for gaining approval for each of the three categories above is different. However, all three require preparation of a "final plat" or "revised final plat," and submission to the Planning Commission for review and approval. When new infrastructure such as streets, drainage systems and/or utilities are required the process involves three steps:

1. Approval of a Preliminary Plan by the Planning Commission (a master plan of the development);
2. Approval of detailed construction drawings by staff from the city; and
3. Approval of a Final Plat for the entire project or section by the Planning Commission.

The details of each of these steps are outlined in these Regulations along with the technical and design requirements for new infrastructure and plat preparation.

The categories above are typical of most subdivision actions, but as stated earlier, the steps as well as the timeframe vary depending on the individual proposal. In most cases, a qualified engineer, landscape architect or surveyor licensed to practice in the State of Tennessee must be involved in preparing the necessary documents for a subdivision application. City staff is available to assist and to answer any questions. Additional information along with key documents are available on the city's website (www.brentwoodtn.gov).

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE ONE. GENERAL PROVISIONS

1.1 Title.

These Regulations shall officially be known, cited and referred to as the Subdivision Regulations of the City of Brentwood, Tennessee.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

1.2 Policy and Purpose.

The purpose of these Subdivision Regulations is to provide for the harmonious development of the City of Brentwood and its environs; to secure a coordinated layout with adequate provision for recreation, transportation, water, drainage, sewers, and other sanitary facilities and services; and to promote a distribution of population and traffic intended to create conditions favorable to health, safety, convenience and prosperity. Accordingly, these Subdivision Regulations set forth the procedures and minimum standards adhered to by developers of land for residential and commercial uses and provide a guide for the Planning Commission and other city officials in exercising their duties pertaining to the review, approval and administration of land development within the city of Brentwood.

The Subdivision Regulations are further intended to:

(1) Promote the orderly development of the city in accordance with the goals and objectives of the adopted comprehensive plan and approved updates.

(2) Establish efficient standards for the subdivision of land that further the orderly layout and use of land, and that ensure proper legal description and monumentation of subdivided property.

(3) Protect and conserve the value of land throughout the city and the value of buildings and improvements upon the land, while minimizing the conflicts among the uses of land and buildings.

(4) Provide suitably located streets of sufficient design to accommodate existing and anticipated traffic, affording adequate access for emergency response vehicles and equipment to buildings.

(5) Encourage street design that moderates traffic speeds and reduces primary reliance on arterial streets.

(6) Protect the residential character of the city and minimize the environmental and visual impacts of new development.

(7) Continue to enhance and expand the network of accessible open space throughout the city, preserving unique and sensitive community resources such as groundwater, floodplains, streams, historic sites, steep slopes, woodlands and wildlife habitat.

(8) Prevent the pollution, erosion and sedimentation of streams and drainage facilities through efficient development management practices.

(9) Promote interconnected greenways and corridors throughout the city, particularly in floodplain areas.

(10) Provide a planning horizon to ensure that public facilities and services are available concurrent with new development and will have a sufficient capacity to serve the proposed development.

(11) Ensure that new development will bear its fair share of the costs of supporting the community through legally appropriate developer fees, land donations, and mitigation measures that address the public costs for new facilities and services.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

1.3 Authority.

By authority granted by Tennessee Code Annotated (TCA), Title 13, Chapter 4, these Subdivision Regulations are adopted. The Planning Commission has fulfilled the requirements set forth in these statutes as prerequisite to the adoption of these Regulations, having filed a certified copy of the official Major Thoroughfare Plan of the City of Brentwood in the office of the Register of Williamson County, Tennessee.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

1.4 Jurisdiction.

These Subdivision Regulations shall govern all subdivision of land lying within the corporate limits of the City of Brentwood, Tennessee as now or hereafter established.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE TWO. PROCEDURE FOR SUBDIVISION APPROVAL

2.1 Preliminary Meeting Required.

Prior to the preparation of submissions for subdivision approval, the owner or agent shall meet with staff from the Planning and Codes Department to determine the scope of the proposed action, and possible issues related to the development of the property. More complex projects may be referred to the Development Review Committee (DRC) for detailed review. The initial review shall determine whether the application is a minor or major subdivision action and shall direct the applicant on the proper procedure for official review of the proposal.

The DRC is not intended to replace the formal review process but meant to be the first preliminary review of a project, bringing all affected review agencies, developers and applicants together. The purpose of the DRC is to increase cost efficiency, decrease processing times, improve internal project coordination during the review of development proposals and provide a more general and ongoing review of the planning process.

The DRC shall be composed of members from the various city Departments (Engineering, Fire and Rescue, Planning and Codes, Public Works, and Water Services) charged with reviewing development proposals for complex developments. Additionally, representatives from outside agencies including utility providers (Metropolitan Nashville, Nolensville College Grove Utility District, Mallory Valley Utility District, Harpeth Valley Utilities, Middle Tennessee Electric Members Cooperative, etc.) and other affected State agencies may be included as representatives. The City Manager shall serve as an ex-officio member of the DRC.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

2.2 Application for Formal Consideration.

These Regulations outline the minimum standards for the various documents associated with any application for subdivision approval within the City of Brentwood. The necessary documents shall be accompanied by an official application form submitted prior to deadlines established annually by the Planning Commission. Most subdivision actions are subject to the approval of the Planning Commission. The necessary forms and a calendar of meeting dates can be found on the city's web site— www.brentwoodtn.gov . All subdivision applications shall identify the developer and all persons having any financial interest in the proposed subdivision.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

2.3 Procedural Steps for Subdivision Actions.

Minor subdivision actions usually involve the minor modification of an existing lot (commercial or residential) such as a change in setback, a shift in a property line, or a minor division of property into two or more lots where no new infrastructure is required other than extensions of water and sewer service lines. Major subdivision actions relate to the division of land (commercial or residential) into multiple lots where new infrastructure is required.

The following processes are intended to provide an overview of the necessary steps for the most common subdivision actions. Given the complexity of some subdivision proposals, there may be other actions, approval requirements, and fees that are not detailed here. These include, but are not limited to, off-site improvements, sales offices, impact fees, utility approvals and fees, entrance features, and amenity areas. Because each subdivision is unique, the implications and requirements for each case will be discussed in meetings with city staff, the DRC or the Planning Commission.

Consideration of an application for approval of a preliminary plan shall be subject to the provisions of Section 78-43(b)(4)—Timeline for Approval; Vested Rights, of the Brentwood Zoning Ordinance.

(1) **Minor Subdivision/Plat Revision:**

a. Complete required preliminary meeting with city staff.

b. Prepare a draft of the proposed final plat.

c. Submit a completed application, the required fees and the draft final plat in electronic format to Planning and Codes Department staff for review using the online permitting portal (https://brentwood.onlama.com/). Electronic copies of the proposal shall be in a file format specified by staff.

d. Review and address comments provided by the Planning and Codes Department staff.

e. Make any necessary revisions to the plat, prepare a mylar copy, and circulate to the required outside agencies for signatures.

f. If Planning Commission review and approval are required, the Commission may defer consideration of the item if a representative acting on behalf of the property owner is not in attendance at the meeting.

g. Deliver the signed mylar copy to Planning and Codes Department staff for final approval and signatures.

h. Deliver the signed mylar to the County Register's office for recordation.

i. Provide staff from the Planning and Codes Department a mylar copy of the recorded plat showing the "Recorder's Information" seal on the face of the plat. The mylar copy must be received before building permits will be issued for the project.

j. Provide planning staff with a digital copy of the proposed subdivision section and the entire project. The file shall be in AutoCAD .DWG or .DXF or other compatible file format as specified by staff, and submitted on a CD-ROM or DVD, or other format specified by staff from the Planning and Codes Department. All data shall be based upon the Tennessee State Plane coordinate system, FIPS Zone 4100, NAD 83 datum. Digital copies of the plat must be received by staff before it may be released for recording.

(2) **Major Subdivision:**

a. Attend the required preliminary meeting with city staff.

b. Submit the concept development plan or preliminary plan, where applicable, via the online permitting portal to Planning and Codes Department staff for initial review and comment by the Planning Commission (optional). Refer to Article Three of these Regulations.

c. Submit a completed application, the required fees, and the preliminary plan in electronic format to the Planning and Codes Department for review using the online permitting portal. Electronic copies of the proposal shall be in a file format as specified by staff. The submittal shall include a traffic impact study (TIS), if deemed necessary pursuant to Section 78-21—Traffic and Parking Impacts of the Brentwood Zoning Ordinance.

d. Review and address comments provided by Planning and Codes Department staff.

e. Make any necessary revisions to the preliminary plan and submit the updated plan to the Planning and Codes Department.

k. If Planning Commission review is required, a representative acting on behalf of the property owner must attend the meeting to conduct a presentation and answer questions regarding the proposal.

f. Prepare a full set of construction drawings as specified in these Regulations and submit a plan in electronic format to the Planning and Codes Department for Engineering review using the online permitting portal. Additionally, provide drawings to all applicable utility providers. Refer to Article Four of these Regulations.

g. Receive and address staff comments, resubmit revised construction plans (multiple submissions may be necessary).

h. Schedule Pre-Construction Conference with city staff.

i. Install erosion prevention and sediment control, and tree protection measures and request inspection by staff from the city.

j. Pay the applicable fee and receive the approved grading permit.

k. Begin construction, following approved construction drawings.

l. Prepare a final plat for submission to the Planning Commission, following specifications outlined in these Regulations. A final plat may not be submitted until all streets have been constructed to the sub-grade elevation, and improvements, as required by Article 5.5 of these Regulations have been inspected for compliance. The final plat will not be signed by city staff for recordation until it meets all the requirements of these Regulations. Refer to Article Five of these Regulations.

m. Obtain all required certifications, post the required security, in accordance with Article Eight of these Regulations and record the final plat with the County Register's office.

n. Provide staff from the Planning and Codes Department a mylar copy of the recorded plat showing the "Recorder's Information" seal on the face of the plat. The mylar copy must be received before building permits will be issued for the project.

o. Provide Planning and Codes Department staff with a digital copy of the proposed subdivision section and the entire project. The file shall be in AutoCAD .dwg or .dxf or other compatible file format as specified by staff, and submitted via the online permitting portal, or other format specified by staff from the Planning and Codes Department. All data shall be based upon the Tennessee State Plane coordinate system, FIPS Zone 4100, NAD 83 datum. Digital copies of the plat must be received by staff before it may be released for recording.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE THREE. PRELIMINARY PLAN

3.1 Concept Development Plan.

Prior to formal submission of a detailed preliminary plan, the applicant may submit a concept development plan to the Planning Commission for initial review and comment. The purpose for review of a concept development plan is to provide guidance regarding the design of the proposed project before the applicant makes a significant financial investment in detailed professional design work. Submittal of the plan shall be for informational purposes only and shall be non-binding, except in the case where the subject property is zoned OSRD or OSRD-IP. In no event shall positive guidance from the Planning Commission be construed as official endorsement or approval of the plan.

A concept development plan is not as detailed as a preliminary plan, but it must provide enough information to determine if a proposed project meets the technical requirements of all applicable ordinances for a given tract. city staff will determine the information required based upon the location of the proposed project.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.2 Filing and Review of Preliminary Plan.

Any person proposing to subdivide land shall submit electronic versions of the preliminary plan to the Planning and Codes Department via the online permitting portal. Electronic copies of the submission shall be provided in the format specified by Planning and Codes Department staff. Should the subject property be zoned Open Space Residential Development (OSRD) or Open Space Residential Development - Innovative Project (OSRD-IP) the submitted preliminary plan shall be based upon the OSRD or OSRD-IP Development Plan as approved by the Board of Commissioners.

Review of the proposed preliminary plan shall be scheduled for the first available meeting agenda of the Planning Commission in accordance with the adopted schedule of meetings and submittal deadlines. In accordance

with T.C.A. § 13-4-304, submittal deadlines will be established so that a plan filed as required by this section shall be placed on the Planning Commission's agenda within thirty (30) days of the filing or the next regularly scheduled Planning Commission meeting after the thirty-day period. The applicant may waive this time frame requirement for the appearance of the plat on the agenda. city staff shall verify that any preliminary plan meets the minimum standards of these Regulations prior to its submission for formal Planning Commission consideration. For purposes of this section and T.C.A. § 13-4-304, a preliminary plan shall not be considered to have been "filed" unless it meets the minimum standards of these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.3 Preliminary Plan, Scale and Size.

Preliminary plans shall be drawn to a scale of one (1) inch equals one hundred (100) feet (1"= 100'), on sheets measuring at least twenty-four (24) inches by thirty-six (36) inches (24" × 36"). The use of an appropriate smaller scale for an overall plan sheet is permitted for projects larger than one acre. When more than one sheet is required, an index sheet of the same size shall also be filed showing the entire subdivision with the sheets lettered in alphabetical order as a key.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.4 Dedication of Additional Right-of-Way for Existing Streets.

The developer of a proposed subdivision may be required to dedicate additional right-of-way for that portion of the street frontage necessary to comply with the minimum requirements of the Major Thoroughfare Plan. If a shift of the right-of-way is required to improve the alignment, a greater portion of the right-of-way shall be dedicated. The exact width and configuration of the dedication shall be determined by staff from the city.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.5 Preliminary Plan Contents.

Refer to Article Six of these Regulations for detailed construction design standards. The preliminary plan shall show:

(1) The proposed name of the subdivision, as approved by the city, the address(es) of the owner or owners; and the name of the designer of the plan, who shall be a qualified engineer, landscape architect, or surveyor licensed by the State of Tennessee.

(2) All preliminary plan submittals shall be provided via the online permitting portal and shall show the proposed street names, which shall be submitted for review and approval by the Williamson County Department of Emergency Communications before submission of the preliminary plan for Planning Commission review (also see Article 3.6 of these Regulations regarding street names).

(3) A location map of the subdivision shall be shown on the preliminary plan indicating the area within a 1,000-foot radius of the proposed subdivision boundaries. The location map shall show the relation of the subdivision to well-known streets, railroads and watercourses in all directions. The suggested scale of the location map is one-inch equals 1,000 feet (1" = 1,000').

(4) The date, graphic scale and approximate north arrow, with north at top of the sheet.

(5) The location of existing and platted property lines, existing streets, buildings, watercourses, railroads, cemeteries, sewer lines, bridges, culverts, stormwater pipes, water mains, fire hydrants, streetlights, tree masses, public utility easements.

(6) The location of all significant historic and archeological features and structures located on the affected property or within 500 feet of the boundary of the affected property. Any proposed development plan for the affected tract shall also be guided by the principles and standards contained within the publication, "Saving the Farmstead" (a publication of the Heritage Foundation of Franklin and Williamson County dated December 1996.) Refer to Section 78-15—Historical and Archeological Preservation Requirements of the Zoning Ordinance.

(7) The present zoning classification and zoning overlay district (if any) for the land to be subdivided and on the adjoining land, and the names of the adjoining property owners or subdivisions.

(8) The bearing and distance of one of the corners of the boundary of the subdivision to the nearest intersection of existing streets and to a corner of the original survey of which it is a part.

(9) Plans of proposed utility layouts (sewer lines and manholes, water lines and fire hydrants).

(10) The locations and dimensions of proposed streets, right-of-way dedications, alleys, easements, parks and other open spaces, water quality riparian buffers, reservations, lot lines, building setback lines, utilities, and all required public utility and drainage easements.

(11) In accordance with the requirements of Section 78-21—Traffic and Parking Impacts of the zoning ordinance an applicant may be required to provide a traffic impact study to determine the potential impact of any proposed development on the existing traffic network and/or the effects of traffic system improvements and alterations proposed by the applicant on the existing network. All traffic impact studies shall comply with applicable policies and standards established by the city. Refer to Sections 78-21 and 78-484—General Conditions/Requirements of the Zoning Ordinance.

(12) Topographic contours at vertical intervals of not more than two (2) feet and identification of all natural steep grades, differentiated between those grades from fifteen percent to twenty-five percent (15%-25%) and those grades in excess of twenty-five percent (25%+).

(13) The acreage of the land to be subdivided.

(14) A lot size table and the appropriate open space calculations.

(15) The proposed location and layout of any planned amenities (clubhouse, pool, tennis courts, walking trails, etc.) and/or entrance features for the project. In subdivisions where amenity improvements and/or entrance features have been proposed by the developer/subdivider or approved as a part of an Open Space Residential Development (OSRD) or Open Space Residential Development - Innovative Project (OSRD-IP) project, they shall be shown schematically as part of the preliminary plan, using a separate plan sheet. The plan shall include itemized cost estimates for the improvements to be provided.

(16) Plans setting out the grades or profiles of the streets, the proposed type and character of all improvements, and proposed development phasing.

(17) Subsurface conditions on the tract. The report shall be produced by a qualified geotechnical engineer licensed to practice in the State of Tennessee.

(18) If any portion of the land proposed for subdivision lies within a floodable area (i.e. floodplain or floodway) as determined by an official Flood Study Map or special flood study as required by the Engineering Director or designee, that portion shall be so indicated with its elevation annotated on the preliminary plan. If not within a floodable area, the following note certifying such must be added to the preliminary plan: "The property described on this plan does not lie within an area of Special Flood Hazard as delineated on the current Flood Insurance Rate Map, prepared by the Federal Emergency Management Agency (FEMA), Community Panel Number: _____, revised: _____."

(19) Provide a copy of the Certificate of Availability from the appropriate utility companies (electric, gas, water, sewer etc.) acknowledging that service will be provided to the proposed project.

(20) The approximate size and location of all proposed detention ponds and stormwater control measures (SCMs).

(21) The proposed construction phase boundaries and lot numbering scheme.

(22) Any sinkholes on the subject property as identified by a qualified geo-technical Engineer shall be located and appropriately labeled on the preliminary plan. The plan shall be designed to locate all sinkholes in permanent open space only and not within any buildable lots. Sinkholes in the permanent open space shall be protected from natural and/or man-made debris.

(23) The preliminary plan for a proposed subdivision shall identify all areas affected by the Hillside Protection Overlay District as detailed within Division 14 of the Zoning Ordinance.

(24) Special designations, encumbrances and/or restrictions for all lots, including but not limited to the Lowest Floor Elevation (LFE), grinder pump requirement (GP), Hillside Protection Overlay (HP), transitional lot designation (*), and floodway/floodway fringe areas.

(25) The locations of all Cluster Box Units (CBU'S) as required by the United States Postal Service.

(26) The location of all streams, wet weather conveyances, and wetlands on the property. A copy of the corresponding hydraulic determination report should also be provided.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.6 Approval or Disapproval of a Preliminary Plan.

Within sixty (60) days after initial consideration of the preliminary plan, the Planning Commission will indicate approval, disapproval or approval subject to some modification; otherwise, the preliminary plan shall be deemed approved and a certificate to that effect shall be issued by the Planning Commission, on demand. If a preliminary plan is disapproved, reasons for such disapproval shall be stated in writing. The applicant for a preliminary plan approval may waive the time requirement set in this section and consent to an extension or extensions of the applicable time period. Furthermore, the time requirement set in this section may be adjusted for holidays or unexpected interceding events that close city offices as provided for in T.C.A. § 13-4-304. Any revised preliminary plans approved by the Planning Commission shall supersede any previously approved plans. Approval of a preliminary plan shall be subject to all conditions of approval established by the Planning Commission.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.7 As-approved Copies of the Preliminary Plan.

If the Planning Commission's approval of a preliminary plan requires that changes be made to the submitted plan, copies of the modified plan addressing all conditions of approval and showing any other necessary revisions shall be provided to staff of the Planning and Codes Department via the online permitting portal within 30 days of the Planning Commission action.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.8 Approval Not to Constitute Approval of the Final Plat.

The approval of the preliminary plan by the Planning Commission shall not constitute acceptance of the final plat. A final plat based upon the approved preliminary plan shall be submitted for review and approval separately.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.9 Duration of Approval.

Approval of a preliminary plan shall become effective upon the date the Planning Commission votes to approve the plan. A preliminary plan for a subdivision shall be vested for a period of three years from the date of approval. Thereafter, the vesting period may be extended as provided in Section 78-43 of the Brentwood Zoning Ordinance.

Upon the expiration of a vesting period for a preliminary plan, construction may not proceed unless a new preliminary plan is approved. Any new preliminary plan submitted under this subsection shall meet all development standards then in effect for those portions of the project not already constructed or under construction. Alternatively, the Planning Commission may extend the vesting period for any or all of the vested rights applicable to a preliminary plan if it determines, in writing, that it is in the best interest of the community to allow the development to proceed without terminating the vested property right(s).

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.10 Effect of Denial.

When approval of a preliminary plan has been denied by the Planning Commission, the same plan or a substantially similar plan may be resubmitted only after one year has passed since the denial; or when the reasons for the denial have been resolved by adopted changes to the Zoning Ordinance, these Regulations or other applicable laws or regulations; or when the Planning Commission directs the Planning and Codes Director to accept a new application. Also refer to Section 78-41—Planning Commission Approval, within the Zoning Ordinance

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

3.11 Revisions to Approved Plans.

If the subdivider desires to modify an approved preliminary plan, a revised preliminary plan must be submitted for consideration by the Planning Commission. Consideration of an application for approval of a revised preliminary plan shall be subject to the provisions of Section 78-43(b)(4) of the Zoning Ordinance.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE FOUR. CONSTRUCTION DRAWINGS/AS-BUILT DRAWINGS

4.1 Construction Drawings—Generally.

The design and preparation of construction drawings for new infrastructure within residential or commercial subdivisions shall be completed following approval of the preliminary plan. Construction drawings must be prepared by a licensed engineer (see Appendix Two for detailed requirements and typical checklist for construction drawings). All new infrastructure proposed shall comply with the technical requirements of this section unless an exception is granted by the Planning Commission. The city shall coordinate the review and approval of construction drawings. Please note that a final plat for a subdivision cannot be submitted until the construction

drawings are approved, and construction has progressed to a point where all streets are at the design sub-grade elevation. Refer to Article Five of these Regulations for detailed requirements for submitting a final plat.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

4.2 Submission of Construction Drawings and Construction of Infrastructure.

Because every site is unique, the developer shall meet with staff from the city prior to beginning detailed design. Issues such as the location of detention areas or SCMs, requirements for any off-site improvements, construction traffic routing, construction sequence, protection of non-disturbance or water quality riparian buffer areas, and other special concerns will be discussed and addressed in advance.

The following outline identifies the primary steps in the construction drawing approval process, and the initiation of construction:

(1) Schedule a preliminary meeting prior to drafting the construction drawings with city staff.

(2) Prepare a draft set of construction drawings and submit an electronic version to the Planning and Codes Department via the online permitting portal (grading permit section) for city review, following the requirements of these Regulations.

(3) Address comments relative to the construction drawings as provided by staff from the city (multiple submissions may be necessary).

(4) Concurrent with the engineering review, coordinate review of the utilities design with the appropriate utility providers.

(5) Prior to the start of construction, the developer or his agent shall contact city staff to schedule a pre-construction meeting. Representatives of the developer, contractor and certified erosion control inspector must be present. At this meeting, the developer shall submit all required Federal, State, and local permits to begin construction for streets and utilities. Non-compliance with this notification requirement may be sufficient cause for rejection of any work performed.

(6) Install erosion prevention and sediment control per the approved erosion prevention and sediment control plan; install the construction entrance, tree protection (if applicable) and stream buffer or non-disturb area protection.

(7) Request inspection of the erosion prevention and sediment control measures from staff of the city.

(8) Pay grading permit fee and receive grading permit.

(9) Commence active construction in accordance with the approved construction drawings (note that approval by the city does not constitute approval of the utility design). Refer to Article Seven of these Regulations, regarding Construction Standards.

(10) City inspectors will routinely be on-site throughout construction; refer to Article 7.8 of these Regulations for detailed information on construction monitoring and inspections.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

4.3 Construction Etiquette.

The contractor shall properly plan and coordinate all construction activities. Building operations, construction hours and routes shall be planned to minimize disturbance to the adjacent residences and businesses. Building operations must occur only within the hours permitted under Section 42-137—Construction Operations of the Municipal Code.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

4.4 Revisions of Construction Drawings after Commencing Construction.

Unexpected conditions and changes in subdivision layout and infrastructure are common. When changes to the approved drawings are necessary or desired, the developer shall consult with staff from the city prior to making any such changes. Failure to do so can result in additional cost, disapproval or extended review times. Any changes to approved construction plans may require review and approval by the Planning Commission and/or the Board of Commissioners.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

4.5 As-Built Drawings.

The developer is responsible for the submittal of the as-built drawings of the subdivision infrastructure improvements, including:

(1) Stormwater drainage (including inlets, culverts, bridges, channels, detention ponds etc.).

(2) SCMs.

(2) Water and fire hydrants.

(3) Sanitary sewer lines and manholes.

(4) Streets.

(5) Above ground electrical facilities.

(6) Street lighting.

(7) Floodway and Floodway Fringe areas.

(8) Sinkhole alterations.

The as-built drawings shall be submitted to the city upon completion of work and prior to the recordation of the final plat. The drawings shall be provided in Adobe .pdf, as well as AutoCAD.dwg or .dxf or another compatible file format as specified by staff and submitted via the online permitting portal. All data shall be based upon the Tennessee State Plane coordinate system, FIPS Zone 4100, NAD 83 (2011) datum.

Within 90 days of installation of SCMs, a Tennessee registered engineer shall submit to the city a certification letter stating that the site has been inspected and the SCMs have been installed per the design specifications. This must be completed prior to the issuance of a Certificate of Occupancy or the full release of the security for a development or for any structure in a development.

To ensure the adequacy of stormwater quantity detention facilities, SCMs, and public infrastructure, the certification submittal shall also include as-built drawings showing final topographic features of all these facilities. This shall include invert elevations of outlet control structures and as-built elevations/depths for SCMs. Hydrologic and hydraulic calculations may be required for as-built conditions if significant deviations from approved construction plans are noted in the as-built survey. Cut and fill balance certification should also be included for floodplain and sinkhole alterations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE FIVE. FINAL PLAT

5.1 Final Plat—General.

The final plat shall conform substantially to the approved preliminary plan. Developers of phased subdivision projects with projected future lots in excess of ten (10) lots are required to submit sections of the project which contain a minimum of ten (10) lots or a greater number for approval at a time. If in the opinion of the Planning Commission and the public good warrants, a larger section to accommodate proper layout of streets, utilities, drainage, and other public improvements, a section containing more than ten lots will be considered. Further, water mains, storm sewers, stormwater detention facilities, surface drainage features, trunk sewers, and any sewage treatment plants shall be designed and built to serve the entire area owned by the subdivider or designed and built in a manner that they can easily be expanded or extended to serve the entire area. Sections must be identified numerically following the name of the subdivision as initially submitted or as approved on the preliminary plan. The final plat shall be prepared by a land surveyor registered by the State of Tennessee.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.2 Submission Deadline and Provided Copies.

The subdivider shall submit electronic versions, via the online permitting portal of the proposed final plat following the submission deadline schedule published by the Planning and Codes Department. Electronic copies of the submission shall be provided in a format as specified by staff from the Planning and Codes Department. The final plat shall be accompanied by an application form, which shall identify the developer and all persons having any financial interest in the proposed subdivision, and the required review fees. The Planning and Codes Director shall verify that any final plat meets the minimum standards of these Regulations prior to its submission for formal consideration by the Planning Commission. The necessary forms and a calendar of meeting dates can be found on the city's web site— www.brentwoodtn.gov .

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.3 Time Limit for Approval or Disapproval; Duration of Approval.

Within sixty (60) days after initial consideration of the final plat, the Planning Commission will indicate approval, disapproval or approval subject to some modification; otherwise, the final plat shall be deemed approved and a certificate to that effect shall be issued by the Planning Commission on demand. If a final plat is disapproved, reasons for such disapproval shall be stated in writing. The applicant for a final plat approval may waive the time requirement set in this section and consent to an extension or extensions of the applicable time period. Furthermore, the time requirement set in this section may be adjusted for holidays or unexpected interceding events that close city offices as provided for in T.C.A. § 13-4-304.

Approval of a final plat by the Planning Commission shall become effective upon the date of the last signature of approval required on the plat for recording. If all necessary permits have been secured, site preparation has commenced and approval of a final plat has been obtained within the three-year vesting period following approval of the preliminary plan, then the vesting period shall be extended an additional two years beyond the expiration of the initial three-year vesting period. Thereafter, the vesting period may be extended as provided in Section 78-43 of the Brentwood Zoning Ordinance.

If the vesting period has expired, the vested rights applicable to the preliminary plan and final plat shall no longer be in effect, unless the Planning Commission extends the vesting period pursuant to Article 3.10 of these Regulations. Notwithstanding the foregoing, if the development standards applicable to the subdivision have not

changed since approval of the preliminary plan, development of the subdivision may continue as shown on the final plat.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.4 Approval Not to Constitute Acceptance of Streets.

Approval of the final plat by the Planning Commission shall not be deemed to constitute or imply the acceptance by the Board of Commissioners of any public rights-of-way as shown on the final plat.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.5 Improvements Required Before Recordation of the Final Pat.

The following improvements shall be completed within each subdivision or section thereof before the approved final plat may be signed for recording.

(1) Grade and improve all lots, streets and alleys per the approved construction plans.

(2) Installation of the street base per the requirements of these Regulations.

(3) Installation of all curbs and gutters, per the requirements of Article 7.4(3) of these Regulations.

(4) Installation of the binder course, per the requirements of these Regulations.

(5) Installation of all required drainage/stormwater infrastructure, as shown on the approved construction plans.

(6) Installation of all sewer and water infrastructure, per City of Brentwood construction specifications.

(7) Installation of all required monuments.

(8) Any conditions of approval as required as part of the approval granted by the Planning Commission.

(9) Installation of temporary or permanent street name and other traffic regulatory signage and/or markings.

(10) Installation of bikeways, pedestrian accessways, walking paths, or other improvements approved by the city as part of a preliminary plan that are adjacent to or behind lots included in the section or phase proposed for platting. This requirement does not apply to sidewalks in the right-of-way (or adjacent to the right-of-way) that the future home builder will be required to construct before issuance of a certificate of occupancy.

Satisfactory completion of the above improvements must be verified and approved by staff from the Engineering and Water Services Departments.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.6 Amenities and Entrance Features.

Site plans for all proposed amenity and entrance feature improvements for a subdivision shall be submitted to the Planning Commission for its consideration in conjunction with approval and recording of the final plat for the first section of the subdivision. All such improvements are to be completed by the developer or the developer's successor in interest, unless otherwise approved by the Planning Commission. As a condition of approval for the plat, the Planning Commission may establish a timetable for completion of such improvements. Unless otherwise approved by the Planning Commission, all amenity and entrance feature improvements shall be completed before

building construction is completed on fifty percent (50%) of the total building lots in the subdivision. In addition, before the plat for the first section of the subdivision is recorded, the developer shall provide adequate security, in a form acceptable to the city, to cover the cost of such improvements. See Article Eight, of these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.7 Final Plat Specifications.

The approved final plat shall be drawn at a scale of one (1) inch equals one hundred (100) feet (1" = 100') on paper sheets measuring eighteen (18) inches by twenty-four (24) inches (18" × 24"). The use of an appropriate alternate scale is permitted for projects larger than one acre. When more than one sheet is required, an index sheet of the same size shall also be filed showing the entire subdivision, with the sheets numbered in numerical order as a key and referencing the appropriate project information. Alternate scales may be submitted for review in advance of submission for approval by Planning and Codes Department staff.

The final plat shall show:

(1) The date, title, name and location of the subject subdivision, graphic scale, and true north point.

(2) The lines of all streets and rights-of-way; the size and location of any water mains, hydrants, sewer mains, manholes and other improvements; storm drains, catch basins, and other stormwater detention facilities; reservations for sidewalks, easements, and any areas to be dedicated to public use; alley lines, lot lines, building setback lines, and a building setback table; lots numbered in numerical order with individual address blocks; and any sites for other than residential use with notes stating their purpose and any limitations.

(3) Sufficient data to determine readily and identify on-site the location, bearing, and length of every street line, lot line, boundary line, block line, and building line whether curved or straight. This shall include the radius, central angle, chord length, and tangent distance for the centerline of curved streets and curved property lines.

(4) All dimensions shall be to the nearest one one-hundredth (1/100) of a foot and angles to the nearest degree, minute, and second.

(5) The location and description of survey markers, benchmarks, and elevations.

(6) The names, locations, and zoning classifications of adjoining subdivisions and streets, and the location and ownership of adjoining unsubdivided property.

(7) A vicinity map showing the site in relation to an area within a 1,000-foot radius of the proposed subdivision boundaries.

(8) If any portion of the land being subdivided lies within a floodable area (i.e., Floodway/Floodway Fringe) as determined by an official Flood Study Map, or special flood study as required by the Engineering Director or designee, that portion shall be so indicated with its elevation annotated on the plan. If not within a floodable area, the following note certifying such must be added to the final plat: "The property described on this final plat does not lie within an area of Special Flood Hazard as delineated on the current Flood Insurance Rate Map, prepared by the Federal Emergency Management Agency (FEMA), Community Panel Number _____ , revised: _____."

(9) The LFE (Lowest Floor Elevation) for any lots shown to be within a flood hazard area as determined by a special flood study as required by the Engineering Director or designee.

(10) Street names as approved by the Williamson County Department of Emergency Communications (also see Appendix Seven regarding street names).

(11) Special designations, encumbrances and/or restrictions for all lots, including but not limited to the Lowest Floor Elevation LFE, grinder pump requirement (GP), hillside protection (HP), transitional lot designation (*), and floodway/floodway fringe areas.

(12) A reference to the performance agreement(s) applicable to the project, the date of said agreement(s) and the location of said agreement(s) within the public records.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.8 Accompanying Certificates.

The following certificates shall be included as part of the final plat:

(1) **Certificate of Ownership and Dedication**—Showing that applicant is the landowner and dedicates streets, rights-of-way, and any sites for public use (Appendix Three, Form 1).

(2) **Certificate of Approval of Street Names**—Certifying that the Williamson County Office of Emergency Communications has approved the proposed street names (Appendix Three, Form 2).

(3) **Certificate of Approval of Subdivision Name**—Certifying approval of subdivision names by the City of Brentwood (Appendix Three, Form 3).

(4) **Certificate of Accuracy**—Signed by a surveyor licensed to practice in the State of Tennessee and certifying the accuracy of the survey and final plat and placement of monuments (Appendix Three, Form 4).

(5) **Certificate of Approval of Water and Sewer Systems**—Signed by an authorized official verifying that the utilities, private or otherwise, have been installed in accordance with system requirements (Appendix Three, Form 5).

(6) **Certificate of Provision of Electrical Service**—Certifying that the franchised electric provider has agreed to provide electrical service to the project (Appendix Three, Form 6).

(7) **Certificate of Approval of Streets**—Signed by the appropriate official, certifying that the subdivider has complied with one of the following alternatives:

a. Installation of all improvements in accordance with the requirements of these Regulations (Appendix Three, Form 7), or

b. Posting of security acceptable by the city in sufficient form and amount to assure such completion of all required improvements.

(8) **Certificate of Approval for Recording**—Signed by the Secretary of the Planning Commission or the Planning and Codes Director (Appendix Three, Form 8).

(9) **Certificate of Approval of Addresses**—Signed by the appropriate official, certifying that the subdivider has obtained the appropriate address assignments from the City of Brentwood (Appendix Three, Form 9).

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.9 Additional Plat Notes.

A plat of subdivision that divides a tract into no more than two lots and is approved pursuant to section 78-42(a) herein shall be vested as provided by Section 78-43. Approval of such a plat shall become effective upon the

date of the last signature of approval required on the plat for recording. The following note shall be added to all final subdivision plats.

This final plat is subject to a vesting period, during which the development standards in effect on the date of approval will remain the standards applicable to this plan. Upon expiration of the vesting period, development of the property shown on this plat may be subject to standards other than those that were applicable during the vesting period. The vesting period for this plat expires on, _____(Insert date)_____ unless extended by the City of Brentwood. Persons relying on this plat after said date should contact the City of Brentwood to determine if development may continue as depicted on the plan.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.10 Security.

Security in a form and amount acceptable to city staff to ensure the completion of the remaining improvements shall be provided with the recording of the final plat in accordance with Article Eight of these Regulations. The required security shall be submitted to Planning and Codes Department staff when the approved final plat is submitted for signatures. The security shall be in the amount determined by city staff to assure completion of all required improvements as shown on the approved preliminary plans and construction plans.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.11 Disposition of Original Copy.

The approved final plat shall be produced by the subdivider on four (4) mil reproducible mylar film for acquisition of the required certification signatures and filing with the Williamson County Register of Deeds as the official final plat of record. The property owner or developer shall be responsible for recording the approved final plat, upon receipt of all required signatures.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

5.12 Acceptance of Streets and Associated Infrastructure.

Dedication of public rights-of-way, land, and improvements to the City of Brentwood shall be accomplished via recordation of a final plat, unless city staff determines that a separate legal instrument is appropriate. Acceptance of completed street improvements shall be accomplished by resolution of the Board of Commissioners, after review and recommendation by staff from the city.

Initial acceptance of completed street improvements by the Board of Commissioners shall not occur until after the final topping is applied on the internal streets within a given project. A maintenance period shall begin with this acceptance. The final acceptance of all improvements by the city shall not occur until the maintenance period concludes and follow-up inspections have been performed by city staff or an authorized representative of the city to ensure that the improvements comply with the approved construction documents. Upon completion of the required maintenance period, correction of any identified deficiencies, and re-inspection by city staff, all improvements other than streets shall be considered officially accepted for maintenance by the city. Upon passage of the follow-up inspection(s) the city will officially release all securities being held for the improvements Refer to Article Seven of these Regulations for infrastructure requirements that must be completed before final acceptance of the streets within a subdivision or section thereof.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE SIX. DESIGN STANDARDS

6.1 Streets—Generally.

The layout of streets in a subdivision shall conform to existing regulations and policies, and shall be based on a thorough consideration of:

(1) Topography and drainage.

(2) All new streets shall be constructed a minimum of one-foot above the base flood or 100-year floodplain elevation.

(3) Public convenience and safety.

(4) Existing street pattern and future development of adjacent tracts.

(5) Proposed uses of land being subdivided.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.2 Street Design.

The following design requirements shall apply to all publicly and privately maintained streets.

(1) *Crowns.* All pavement surfaces shall drain adequately. If the pavement surface is not super elevated, the crown shall be a minimum two percent (2%) cross slope measured from the roadway centerline to the edge of pavement.

(2) *Grades.*

a. Grades on arterial streets shall not exceed seven (7) percent.

b. Grades on collector streets may exceed seven (7) percent, but not more than nine (9) percent for up to four hundred (400) feet in length measured in the location where the maximum grade is exceeded.

c. Grades on local streets may exceed seven (7) percent, but not more than twelve (12) percent for up to four hundred (400) feet in length and thirteen (13) percent for up to two hundred (200) feet in length.

d. For proper drainage, the minimum grade on any street shall be one (1) percent.

e. On local streets, the Planning Commission may grant a variance in grades (up to a maximum of 15% for 200 feet) consistent with the intent of this section for environmental considerations including but not limited to tree protection and minimization of site disturbance provided that in the opinion of staff from the city, such grade does not pose a safety problem for the public.

(3) *Horizontal and Vertical Curves.* Horizontal and vertical curves shall comply with the design standards set for in the American Association of State Highway Transportation Officials' (AASHTO) Policy for the Geometric Design of Highway Systems, latest edition. Arterial streets and highways except through residential subdivisions should meet a calculated 40 mile per hour (mph) minimum design speed. Designated arterial streets in residential subdivisions, collector and commercial/service institution streets should meet a calculated 35 mile per hour (mph) minimum design speed. Minor residential, marginal access and dead-end streets shall meet a calculated 30 mile per hour (mph) design speed.

Generally, a horizontal curve in a street sixty (60) feet in width shall have a centerline radius of curvature of not less than three hundred (300) feet: on other streets, not less than one hundred (100) feet.

Vertical curves shall be designated with the following K-values, for a 30-mph design speed, crest vertical curve K-value of 30; sag vertical curve, K-value of 40. The city may allow lower K-values when justified for environmental considerations including but not limited to tree protection and minimization of site disturbance provided that in the opinion of the city Engineer, such grade does not pose a safety problem for the public; however, the city will not allow K-values less than 24 for crest curves and 31 for sag vertical curves.

(4) *Intersections.* All streets shall intersect at a ninety (90) degree angle. The minimum length of the intersecting streets at a 90-degree angle shall be 100 feet for local streets and 300 feet for arterial, collector, and commercial/service institution streets. Property line radii at street intersections shall not be less than twenty-five (25) feet.

The subdivision developer shall clear a sufficient area at each intersection to ensure adequate vehicle sight distance of not less than two hundred (200) feet on local streets and two hundred seventy-five (275) feet on all collector and arterial streets.

(5) *Tangents.* A tangent of at least one hundred (100) feet in length shall be introduced between reverse curves on arterial and collector streets.

(6) *Street Jogs.* Street jogs with centerline offsets of less than one hundred twenty-five (125) feet shall not be allowed.

(7) *Traffic Calming.* Traffic calming should be an important consideration when designing residential streets. The design should seek to inherently calm traffic by incorporating curves, intersections and avoiding long straight sections of roadway. When inherent design is not adequate the designer may choose to or be required to incorporate other traffic calming features such as roundabouts (refer to Section 6.6 of these Regulations), speed humps (meeting the city's policy), speed tables or central islands. When no specific guidance is presented herein for a planned traffic calming measure the city will rely on other widely accepted industry standards. The specifications for all traffic calming measures shall comply with applicable standards as established by the city. Refer to the currently adopted policies regarding the installation of speed humps as adopted via Resolutions 95-35 and 97-14 or later subsequent adoptions.

In commercial areas the street layout should consider accessibility by larger vehicles such as tractor-trailers and other vehicles requiring longer turning radii.

(8) *Blocks.*

a. *Length.* Blocks shall not be less than six hundred (600) feet nor more than one thousand two hundred (1,200) feet in length, except as the Planning Commission considers necessary due to the topography of the land or desired features of street pattern. On streets with long block length, the Planning Commission may require pedestrian cross walks or bikeways to link adjoining or parallel roads with dedicated easements or right-of-way dedication at locations deemed necessary to ensure safe and efficient movement of people within the subdivision.

b. *Width.* Blocks shall be wide enough to allow two (2) rows of lots, except where reverse frontage on major thoroughfares is provided or where prevented by topographical conditions or size of the property; in which case the Planning Commission may approve a single row of lots of minimum depth.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.3 Street Right-of-Way Widths.

The vehicle access control regulations of the Zoning Ordinance and the Major Thoroughfare Plan identify all collector and arterial streets within the city. All streets formally accepted for perpetual maintenance by the city and not designated as an arterial or collector street shall be considered local streets.

(1) **Minimum pavement thickness designs:**

TABLE ONE
PAVEMENT SECTION DESIGNS

Street Designation	Material Aggregate Base (Inches)	Bituminous Plant Mix Base (Inches)	Asphaltic Concrete Wearing Surface (Inches)
Arterial Streets & Highways	8.0	5.0*	2.0
Collector Streets	8.0	3.0	2.0
Local Residential Streets	8.0	3.0	2.0
Commercial or Service Institution Streets	8.0	5.0*	2.0

* To be placed in a minimum 3-inch lift

The minimum width of the right-of-way as measured from lot line to lot line shall be no less than as follows:

(2) **Arterial Streets**—The minimum width of the right-of-way is 90 feet. Additional right-of-way may be required for turn lanes, deceleration lanes, medians, sidewalks, and bikeways. Public utility and drainage easements are required outside the right-of-way limits for the extension of utilities and drainage infrastructure.

(3) **Collector Streets**—The minimum width of right-of-way is 60 feet. Public utility and drainage easements are required outside the right-of-way limits for the extension of utilities and drainage infrastructure.

(4) **Local Streets**—The minimum width of the right-of-way is 50 feet. Public utility and drainage easements are required outside the right-of-way limits for the extension of utilities and drainage infrastructure.

(5) **Dead-End Streets (Cul-de-Sac)-Residential**—The minimum radius of the right-of-way is 50 feet, and the radius of the edge of pavement is 35 feet, or 37 feet to face of curb. The maximum length of a dead-end street shall be 1,000 feet, as measured from the end of the cul-de-sac to the radius return of the curb line of the last intersecting street. Public utility and drainage easements are required outside the right-of-way limits for the extension of utilities and drainage infrastructure. If a landscaped island is proposed within a cul-de-sac the overall diameter of the cul-de-sac and the central island must meet the requirements for roundabouts (refer to Article 6.6 of these Regulations).

(6) **Dead-End Streets (Cul-de-Sac)-Commercial/Service Institution**—The minimum radius of the right-of-way is 60 feet, and the radius of the edge of pavement is 40 feet. Public utility and drainage easements are required outside of right-of-way limits for the extension of utilities and drainage infrastructure. If a landscaped island is proposed within a cul-de-sac the overall diameter of the cul-de-sac and the central island must meet the requirements for roundabouts (refer to Article 6.6 of these Regulations).

(7) **Commercial/Service Institution Streets**—The minimum width of the right-of-way is 60 feet. Public utilities and drainage easements are required outside the right-of-way limits for the extension of utilities and drainage infrastructure.

(8) **Open Space Residential Development**—Innovative Project (OSRD-IP) - Refer to Article 6.12 of these Regulations for specific standards regarding streets within this zoning district.

(9) **Historic Rural Development Standards**—Please refer to Article 6.13 of these Regulations for specific standards regarding streets within these designated areas.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.4 Street Pavement Sections.

Minimum pavement widths shall be as follows. All stated widths do not include the width of the required curb and gutter.

(1) **Arterial Streets**—Widths will vary based upon the standards set forth in the Major Thoroughfare Plan.

(2) **Collector Streets.**

a. **Residential**—30 feet wide, provided that the width of a residential collector street connection to an arterial street at the tie-in point shall be 36 feet for a minimum length of 75 feet, plus an additional 75-foot transition pavement width back to the standard pavement section of 30 feet. The radius of the curb returns shall be a minimum of 30 feet to provide adequate turning movements. When a residential collector street connects to an existing street that incorporates a bike route or the new street is deemed to provide a desirable bike route connection the developer may be required to stripe the new collector with a centerline, edge lines establishing 11' driving lanes and 4' bike lanes on each side.

b. **Commercial**—36 feet wide.

c. **Service Institution**—36 feet wide.

(3) **Local Streets**—22 feet wide.

(4) **Dead-End Streets, Residential (Cul-de-Sac)**—35-foot radius.

(5) **Dead-End Streets, Commercial (Cul-de-Sac)**—40-foot radius.

(6) **OSRD-IP Sections**—Refer to Article 6.12 of these Regulations.

(7) **Historic Rural Development Sections**—Refer to Article 6.13 of these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.5 Curbs and Gutters.

Within all developments, the developer shall provide six-inch concrete curb with a 24-inch concrete gutter, and under drains shall be required (refer Appendix Two, Drawings 6 and 7). A four-inch perforated plastic drainpipe shall be installed under any curb and gutter located in cut sections to ensure proper drainage. The drain shall be backfilled with stone and encased with fiber cloth. The drainage pipe shall connect to the storm drain at each box/catch basin. All internal islands shall have a mountable curb (refer to Appendix Two, Drawing 29). To allow water to enter catch basins during the construction phase of a subdivision, catch basins are to be set level with the binder at the time of construction and raised to finish elevation when the final asphalt work is completed.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.6 Roundabouts.

(1) **General.** Roundabouts meeting specific design criteria are allowed in residential and commercial subdivisions in the city. Roundabouts are intended to provide a safe means to control traffic at intersections and serve as a traffic calming measure. The design requirements for roundabouts vary, depending on the street classification and whether it is desirable to have landscaping or other features within the central island. Design standards for each type of roundabout relate to key characteristics and dimensions as provided in Appendix Two, Drawing 26. There are three types of roundabouts allowed with the city:

a. **Compact.** Roundabouts along local streets are compact roundabouts. The entire raised central island is mountable at low speeds.

b. **Urban.** Roundabouts along collector streets or at intersections of collector and local streets are urban roundabouts. The apron portion of the central island is mountable by larger vehicles at low speeds. Landscaping or other features may be placed in the central island.

c. **Arterial/Commercial.** Roundabouts along or at the intersection of arterial streets or within a commercial subdivision are arterial/commercial roundabouts.

The following subsections provide detailed specifications and geometric requirements for each roundabout type.

(2) **Compact Roundabouts.** No features, signage, lighting or obstructions of any kind shall be placed within the central island/apron of a compact roundabout. The entire central island/apron shall be fully mountable at low speeds by larger vehicles and shall be six inches high at the highest point and sloped two percent to six percent for proper drainage. The central island shall be stamped concrete or other approved textured finish in a color contrasting with the street. The design vehicle for compact roundabouts is a large semitrailer (WB-55, as outlined in the AASHTO publication, A Policy on Geometric Design of Highways and Streets). The size, configuration and layout of radii, splitter islands, and any other aspect of the roundabout that are not specified in this document shall be designed in accordance with accepted industry standards such as the Federal Highway Administration Publication No. FHWA-RD-00-06, Roundabouts: An Informational Guide - Second Edition or later subsequent editions.

TABLE TWO
COMPACT ROUNDABOUT STANDARDS

Central Island Diameter (ft.)	Apron Diameter (ft.)	Circulatory Street Width** (ft.)	Inscribed Circle Diameter* (ft.)
30	N/A	19	72
32	N/A	19	74
34	N/A	19	76

* Measured inside of curb to inside of curb, includes 24" wide gutter pans

** Pavement width

(3) **Urban Roundabouts.** The design vehicle for urban roundabouts is a large semitrailer (WB-55, as outlined in the AASHTO publication, A Policy on Geometric Design of Highways and Streets. The size, configuration and layout of radii, splitter islands, and any other aspect of the roundabout that are not specified in the document shall be designed in accordance with accepted industry standards such as the Federal Highway Administration Publication No. FHWA-RD-00-06, Roundabouts: An Informational Guide - Second Edition, or later subsequent editions.

TABLE THREE
URBAN ROUNDABOUT STANDARDS

Central Island Diameter (ft) Includes Apron	Apron Width (ft)	Circulatory Street Width** (ft)	Inscribed Circle Diameter* (ft)
52	21	18	92
55	16	18	94
58	14.5	18	98
61	13	18	101
65	11.5	18	105
69	10	18	109
74	9	18	114
78	8	18	118

* Measured inside of curb to inside of curb, includes 24" wide gutter pans

** Pavement width

(4) **Arterial/Commercial Roundabouts.** Generally, roundabouts along or at intersections of arterial streets or in commercial subdivisions must be designed in accordance with accepted industry standards such as the Federal Highway Administration Publication No. FHWA-RD-00-067, Roundabouts: An Informational Guide - Second Edition, or later subsequent editions. However, the design and acceptability of roundabouts of this type are subject to evaluation on a case-by-case basis. The design vehicle for roundabouts in this category shall be an interstate highway semitrailer (WB-20, as outlined in the AASHTO, A Policy on Geometric Design of Highways and Streets), or the largest vehicle expected to use the street whichever is larger. Evaluation and final determination is subject to the approval of the Engineering Director or designee.

(5) **Standard Requirements for Roundabouts**—The following requirements apply to all roundabouts within the city.

a. Signage for all roundabouts shall comply with the Manual on Uniform Traffic Control Devices (MUTCD).

b. Street lighting shall be placed at all approaches to roundabouts and in the central island of urban and arterial/commercial roundabouts. The lighting plan must be approved by the Engineering Director, or designee.

c. All approaches to all roundabouts shall include raised, fully mountable splitter islands. All splitter islands shall be six-inch high concrete (at the highest point) and a contrasting color to the street.

d. Aprons of urban roundabouts and the entire central island of compact roundabouts must include fully mountable curbing adjacent to the street and the horizontal surface sloped at two to six percent. The surface of all aprons shall be a contrasting color and texture to the street. The materials used must be of suitable strength and design to support heavy traffic. Aprons constructed of individual pavers or other "loose" forms of surface materials are not allowed.

e. The 'inscribed circle diameter' for all types of roundabouts is measured inside of curb to inside of curb, including the 24" wide gutter pans.

f. All roundabouts shall include a standard 30-inch curb and gutter on the outside circumference of the roundabout and be fully mountable curbing on the inside circumference (refer to Appendix Two, Drawing 29 of these regulations).

g. Where sidewalks are incorporated into the subdivision design, crosswalks shall be provided at each approach to the roundabout. All crosswalks, ramps, markings, and signage shall comply with applicable ADA requirements.

h. Where unusual topographic conditions or other factors exist that could impact the functional characteristics of a roundabout, the Engineering Director may require review and recommendation by a third-party traffic engineer. If it is determined by the third-party traffic engineer and/or the Engineering Director that a specific location is not a good application for a roundabout, the roundabout will not be approved. Where specific design changes are recommended by the third-party engineer and/or the Engineering Director, the design will be modified accordingly.

i. On State routes, comply with the Tennessee Department of Transportation (TDOT) requirements and standard drawings, subject to TDOT staff approval.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.7 Sidewalks.

With the submission of a new preliminary subdivision plan and/or site development plan, the following sidewalk requirements shall apply (refer to Appendix Two, Drawings 4 and 18 of these Regulations):

(1) **Location of Public Sidewalks.**

(a) Sidewalks are required on both sides of all streets except Interstate 65, public alleys, and historically significant streets.

(b) In addition to any internal public streets within a new development, sidewalks shall be required along the development side of any exterior public street adjacent to the development. The Planning Commission may grant an exemption of this requirement if the following conditions exist:

i. There are no sidewalks adjacent to or within 500 feet on the same side of the street as the proposed development.

ii. If further than 500 feet, the area adjacent to the exterior public street shall be graded to accommodate the future construction of the sidewalk.

iii. The development is not located within one-half mile of a school, park, or other community gathering facility, or

iv. Obstacles exist that are impracticable to remove or relocate, preservation of natural features or other circumstances as identified by the Planning Commission.

(c) In new residential and commercial development, sidewalks shall be set back a minimum two (2) feet from the back of the curb, unless street trees are proposed.

(d) In areas where redevelopment is proposed, installation of sidewalks shall be consistent with the existing design, subject to the approval of the Planning Commission.

(e) Sidewalks shall be located to avoid conflicts with existing or proposed fire hydrants, utility poles, utility meter, utility manholes, etc.

(2) **Minimum Width.** Sidewalks along public streets shall meet the following minimum width standards:

(a) A sidewalk located within a public street-right-of-way along local streets within a residential zoning district shall have a minimum width of five feet.

(b) A sidewalk located within a public street right-of-way along a designated arterial or collector street shall have a minimum width of six feet.

(c) A sidewalk abutting property zoned commercial or service institution shall have a minimum width of six feet.

(d) Sidewalks designed to function as multi-use trails shall have a minimum width of ten (10) feet. The width may be reduced to eight (8) feet in portions of the path to minimize disturbance to existing vegetation or other environmental constraints.

(e) An additional shy distance of two (2) feet shall be maintained adjacent to vertical barriers (walls, structures, etc.) that extend to a height of greater than three and one-half (3.5) feet above the surface of the sidewalk and/or extends more than four (4) feet in length, parallel to the sidewalk.

(3) **Connection to Existing Sidewalks**—When sidewalks are required in a subdivision adjoining a developed area with sidewalks, the new sidewalks shall be connected by the subdivision developer.

(4) **Multi-use Trail**—In lieu of standard sidewalks within the public right-of-way, multi-use trails within public access easements may be installed in accordance with the adopted standards of these Regulations (see Article 7.4(9)) if deemed acceptable by the Planning Commission for the safe and effective movement of pedestrians. Multi-use trails approved in lieu of sidewalks must be located within the development so that they serve the purpose of providing direct bike and pedestrian connectivity with existing or planned bike or pedestrian facilities on adjacent properties.

(5) **Private Streets**—Private street subdivisions shall provide sidewalks as shown on the approved preliminary plan with the minimum widths as provided in this section.

(6) **Exemptions**—The installation of sidewalks may be delayed in locations where street improvements are scheduled in the city's officially adopted capital improvements program, subject to the developer providing a cash equivalent contribution to the city for future sidewalk installation. Such exemptions shall be subject to the review and recommendation of the Engineering Director or designee, and approval of the Planning Commission.

(7) **Acceptable Surfaces**—Sidewalks shall be constructed of white limestone concrete, four inches thick with a broom brush finish, using six-foot by six-foot squares or five-foot by five-foot squares (for narrower width requirement) with grooved expansion joints.

(8) **Disability Design Standards**—All sidewalks, ramps, and pedestrian crossings shall comply with the latest versions of the Americans with Disabilities Act (ADA) and Public Rights-of-Way Accessibility Guidelines (PROWAG). Where an existing driveway or public street will serve the site, and curb ramps that do not meet current ADA requirements or are non-existent compliant curb ramps shall be improved or installed.

(9) **Site Preparation for Future Sidewalk Installation**—If the installation of sidewalks is delayed or exempted as provided for in this section, the developer shall work with city staff to design the frontage of the development in such a way that the grades and entrance improvements will facilitate future installation of a sidewalk as planned with the street improvements.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.8 Street Extensions to/into Adjoining Properties.

Where future street access to an adjoining property is required, the following standards shall apply.

(1) **Specifications**—If the terminus of the dead-end street is less than 250 feet in length, the pavement section shall match the typical width of the street and will not require a temporary turnaround. If the terminus of the dead-end street exceeds 250 feet, a temporary turnaround will be required to facilitate the turning movement of larger vehicles. The radius of the pavement section shall be 35 feet. A temporary public easement shall be identified on the adjoining lot for any portion of the turnaround that extends past the normal right-of-way. The final plat shall state that all such easements will be automatically terminated when the street is extended to the adjacent tract. The bulb of the turnaround shall include the standard depth of stone and binder course. The curbing section for the temporary portion shall be extruded concrete curb. No driveway connections to the temporary cul-de-sac shall be permitted without approval by the Planning Commission. When no driveway to the temporary cul-de-sac connection exists, no final topping shall be installed on the bulb of the cul-de-sac.

(2) **Notice Signage**—When a street is approved by the Planning Commission as a temporary dead-end for future extension into an adjoining tract of land, a sign shall be erected by the developer upon the construction of the temporary dead-end street. The sign shall be of high-intensity reflectivity, measuring 12-inch by 30-inch (12" × 30") with the following text, "Temporary Dead-End Street, to be Extended with Future Development of the Adjoining Tract."

(3) **Future Completion of Connections**—At such time as the permanent street is extended into the adjoining property and the temporary cul-de-sac is to be abandoned, the developer of the adjacent tract shall be required to properly connect this section of the existing street with the new street. This shall include, but is not limited to, removal of excess asphalt in the turning radius, installation of curb and gutter, drainage improvements, driveway connections, final application of the asphaltic concrete wearing surface, and restoration of the adjoining area with topsoil and seed.

(4) **Security**—Refer to Article Eight of these Regulations for detailed information regarding securities for required improvements.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.9 Private Streets and Gated Subdivisions.

The design, construction, and inspection of all streets, curbing, drainage, street lighting, utilities, and traffic control devices in a private street subdivision shall conform to the same design and engineering standards as applied to typical development under these Regulations. In addition, the Planning Commission may impose additional requirements for private streets and gated subdivisions as may be necessary to carry out the intent of these Regulations contained herein and within the Brentwood Municipal Code. The following provisions shall apply to private street subdivisions.

(1) **Subdivision of Land.** Each preliminary plan, final plat, or revised final plat for a private street subdivision as provided for in this article shall require the approval of the Planning Commission. All private streets within a subdivision shall be identified on the final plat as access easements for the benefit of all lots in the subdivisions. All property within the access easements shall be owned and maintained by the property owner's association. All public utility and drainage easements within a private street subdivision shall be formally dedicated on the final plat at locations and widths acceptable to the Public Works, Engineering, and Water Services Departments, as well as other affected utilities. The plat shall further provide that employees of the city and all utilities providing service to the subdivision, when acting in the course of their employment, shall have the right to enter such easements and all vehicle access easements, and to maintain all public utilities and facilities lying therein.

(2) **Conflicts with the Existing Transportation Network.** A private street subdivision shall not cross any existing collector or arterial street as designated on the city's current Major Thoroughfare Plan, nor prevent the construction of such future streets as identified on the plan. No private street or gated subdivision shall be permitted in a location that would prevent vehicular access to future subdivisions on tracts adjacent to the site if such tracts, in the determination of the Planning Commission, lack sufficient alternative access. In addition, a private street or gated subdivision shall not disrupt nor prevent the reasonable establishment of public pedestrian and bikeway connections between adjacent subdivisions, public streets, parks and other facilities used by the public.

(3) **Minimum Access Provisions.** A private street subdivision having more than 150 dwelling units, but less than 300 dwelling units shall provide at least two vehicle access points. If the subdivision includes 300 or more dwelling units a minimum of three vehicle access points are required.

(4) **Public Facilities.** No school, park, or other public facility shall be located within a gated subdivision unless it is fully accessible to the general public from a public right-of-way.

(5) **Design of Access Gates.** No gates, structures, or guardhouses for a private street subdivision shall be placed on public right-of-way. All gates and guardhouses shall be located at least 50 feet from the public right-of-way. Guardhouses and gate structures shall be approved by staff from the Engineering Department, the Police Chief, and the Fire Chief, and shall include a standard system, acceptable to the city, for gate operation, and access to the subdivision. At a minimum, gates shall provide the ability to be opened by emergency personnel using mobile radios. Finally, gates shall be constructed to permit opening in emergencies or when electrical power is unavailable by bolt-cutters or breakaway panels. Under no circumstances shall the city or emergency services providers be responsible for the repair of damage to the gates or structures associated with an emergency response into the subdivision.

(6) **Security for Completion of Improvements.** Upon approval of the final plat of a private street or gated subdivision by the Planning Commission, security in a form acceptable to the city shall be prepared and submitted to staff with the Planning and Codes Department with the recording of the final plat. The security shall be in an amount determined by city staff to assure completion of all required improvements, including streets and infrastructure, amenity and landscaping work as shown on the approved construction plans (Refer to Article Eight of these Regulations for additional standards).

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.10 Storm Drainage.

(1) **Purpose.** The purpose of this section is to provide criteria for drainage system design that accomplishes the following:

a. Accounts for both off-site and on-site stormwater flows.

b. Protects downstream properties.

c. Maintains natural topographic and watershed divides.

d. Conveys stormwater to a stream, natural channel, or other existing facility in a manner that does not cause flooding or erosion.

e. Discharges stormwater into the natural channel by connecting the channel at natural elevations, or by discharging the stormwater into an existing facility of sufficient capacity to receive it, or by discharging into an approved drainage swale.

f. Provides stormwater quantity control for new development and redevelopment sites as stipulated in these Regulations and Chapter 56 of the Brentwood Municipal Code.

g. Treats stormwater quality consistently on new development and redevelopment sites as stipulated in these Regulations and Chapter 56 of the Brentwood Municipal Code.

h. Complies with the City of Brentwood and FEMA requirements, whichever are more stringent (Refer to Chapter 56 of the Brentwood Municipal Code regarding development of properties within the floodplain).

(2) **Method.**

a. A consideration of peak runoff rates for design conditions is generally adequate for conveyance systems such as storm sewers or open channels. However, if the design includes flood routing (e.g., detention basins or complex conveyance networks and timing of peak runoff), a volumetric flood hydrograph analysis utilizing the NRCS/SCS TR-55 method is generally required.

b. Acceptable methods include, but are not limited to:

1. The Rational Method (Drainage Areas less than 100 acres).

2. The NRCS/SCS TR-55 (1986) graphical and tabular methods.

3. U.S. Geological Survey (USGS) regional regression equations for cross-drain analysis (if drainage areas are within acceptable limits of the equations stated by USGS or StreamStats), and

4. Computer modeling with hydrologic flood routing capability, such as HEC-HMS, PondPack, HydroCAD, HydraFlow, EPA-SWMM, etc.

c. The developer or the developer's engineer shall understand the limitations of the chosen methodology and select the appropriate analysis method for determining flows and design of the drainage system for both water quantity and water quality requirements.

d. The developer or the developer's engineer shall be prepared to substantiate the basis for any proposed alternative method, which shall be submitted and approved by the city staff prior to submission of stormwater calculations.

(3) **Technical guidelines.**

a. **Drainage system.** The overall drainage network is divided into two components, the minor system, and the major system.

b. **Minor system-description.** The minor system of a stormwater management network is sometimes termed the "initial system," consists of a wide variety of drainage appurtenances ranging from inlets, manholes, street gutters, street side ditches, storm sewers less than 54-inch diameter or equivalent and swales to small channels or pipes. This system serves to collect the initial stormwater runoff and convey it to a proper outfall within the major system.

c. **Major system-description.** The major system primarily consists of natural channels, “Waters of the State”, large storm sewers (54-inch diameter or equivalent and greater), major culverts, bridges, and large water impoundments. In addition, the major system includes some less obvious drainage ways such as overland relief swales, infrequent temporary ponding at storm sewer inlets, and floodplain storage. The major system includes not only the trunk line conveyance which receives the water from the minor system, but also the natural flow path that functions in case of overflow from or failure of the minor system. Properly designed overland relief will not flood or damage homes, businesses, or

other property. A major system will function as a drainage basin, whether or not it has been planned and designed, and whether or not development is situated wisely in respect to it.

d. **Minor system design.** The design of the minor stormwater drainage system shall be based on the criterion for each conveyance type as discussed in this section. However, if the 10-year design storm peak flow for an open channel system is greater than 100 cubic feet per second (cfs), then the open or closed system shall be capable of passing the 100-year design storm peak flow within the drainage easement or pipe. Systems relying on sinkholes or drainage wells for discharge shall be capable of passing the 100-year design flow within the drainage easement, assuming plugged conditions (0 cfs drawdown) for the sinkhole. In residential developments where the average lot size is less than 20,000 square feet, the following general guidelines shall be observed in the design of the minor system:

   1. Design surface runoff across lots shall not have erosive velocities.

   2. Quantities of surface runoff greater than 4 cfs that flow through lots shall be collected and conveyed in a system of open channels, closed conduits, or a combination of both and shown on the construction drawings.

   3. Lots should generally be graded in such a manner that surface runoff does not cross more than three (3) lots before it is collected in a system of open channels, closed conduits, or a combination of both. However, runoff will be permitted to cross more than three (3) lots before it is collected if the system is designed to achieve stormwater quality benefits and does not pose a risk to erosion or other damage to public or private property.

e. **Major System design.** Wherever possible, streams serving the major system shall remain undisturbed. Detention may be required to avoid discharges that exceed the capacity of streams and floodplains. Modifications to streams are discouraged and require authorization from the Tennessee Department of Environment and Conservation (TDEC). Improvements to natural open channels that are to function primarily as the major system shall be designed to pass the 100-year design storm peak flow without damage to the channel. Man-made channels designed to function as the major system shall be capable of carrying a 100-year design storm peak flow. Where man-made channels are necessary, the channels should be located as far away from buildings or structures as possible and preferably in established open space or other conservation corridors. Closed major systems should be capable of containing the 100-year design storm peak flow within the system. The onsite major system should provide relief such that no building will be flooded during the discharge of a 100-year design flow event, even if the minor system is exceeded. The 100-year design storm peak flow shall be used to compute runoff for the design of the onsite major stormwater management system. The following requirements pertain to design of the onsite major stormwater management system:

   1. Areas shall be graded in such a manner, or buildings located or constructed in such a manner that if the capacity of the minor system is exceeded, no building will be flooded by the design flow. Critical areas to consider are sumps, relatively flat areas, and areas where buildings are located below streets or parking lots.

   2. The 100-year frequency storm for the duration equivalent to the time of concentration shall be used to compute runoff for the major stormwater management system.

   3. For the first trial, the same time of concentration values shall be used that were used in designing the minor stormwater management system and the minor system should be assumed to be completely inoperable. If no building will be flooded based on these assumptions, then the analysis can be considered complete.

4. If buildings will be flooded based on the assumptions used in the preceding item, more precise hydrologic and hydraulic computations are required. The minor system, overland relief swales, or surface storage shall be designed so that no building will be damaged by flooding.

5. In general, the minor stormwater management system should not be oversized as a basis for providing major system capacity. The major stormwater management system should be in the form of area grading or the location and construction of buildings in such a manner that overland relief swales or surface storage will provide adequate flood protection. The major stormwater management system shall be evident on the drainage plan, including overland relief swales and areas that may be affected by surface storage for a 100-year design storm. Calculations performed for major system design shall be submitted with the drainage plan.

f. **Open channels.** Open channels shall be designed to the same storm frequency as culverts, except in the case where these channels are considered part of the major drainage system. Open channels that are adjacent to streets and roads shall be designed to contain design storm flows below the road subgrade. Open channels shall be designed to prevent erosion. Erosion prevention and sediment control measures shall be in accordance with the Tennessee Erosion and Sediment Control Handbook utilized by the city. Ditches with a velocity of greater than three ft./sec. shall be lined with appropriately designed materials approved by city staff in accordance with guidance from TDOT Design Division Drainage Manual for maximum velocities and permissible shear stresses of various channel linings.

1. **Channel Capacity.** Open channel capacity shall be determined by Manning's equation. Appropriate Manning's n values shall be used for design and are subject to approval from city.

2. **Lined Channels.** Open channels may be designed as hard-armored, geo-synthetic or soil bioengineering lined channels. Geo-synthetic and soil bio-engineering techniques are described in the city-adopted manuals used by the city. Channel lining shall be required when the design velocity exceeds the allowable, non-erosive velocity for a given channel reach and no other erosion prevention measures provide adequate protection, per the city-adopted manuals. The use of rip-rap as a channel lining is discouraged and must be approved by the city.

3. **Grassed Channels.** The design of grassed channels shall consider the variable degree of flow resistance generated by different types of ground covers. Temporary erosion prevention and sediment control shall be utilized during non-growing seasons and during grass cover establishment. The engineer shall note on the drawings or in the specifications that "All grassed channels must be in a well-stabilized condition and show no sign of erosion at the time of final acceptance by the City of Brentwood."

4. **Easement Width.** All open channels shall be located within a public utility and drainage easement. Minimum easement width shall be determined from Table Four.

TABLE FOUR
MINIMUM EASEMENT WIDTHS FOR OPEN CHANNELS

CHANNEL WIDTH	REQUIRED EASEMENT WIDTH
Less than 5 feet	10 feet
5—20 feet	10 feet greater than width at top of bank
Greater than 20 feet	15 feet greater than width at top of bank

g. **Storm Pipes and Culverts.**

1. **Pipe Capacity.** Closed pipe shall be designed for the total flow intercepted by the inlets during the design storm event. The minimum diameter for all storm drains shall be 18 inches and the minimum slope for all storm drains shall be 0.50%.

2. **Easement Width.** Minimum allowable easement width for stormwater pipes and culverts shall be determined from Table Six. In the event that easement width requirements change after plans have been approved, plans showing the corrected easement width must be submitted to the city for review and approval.

3. **Drainage structures under public streets.** Drainage structures under streets which are to be dedicated to the city shall safely pass the calculated flows of the post-development storm based on the design year, as shown in Table Five.

TABLE FIVE
DRAINAGE STRUCTURE DESIGN FOR STREETS

Street Classification	Design Year	Allowable Spread Width
Local Residential	10 Year	½ traveled way plus gutter
Collector-Commercial/Service Institution	25 Year	½ traveled way plus gutter
Arterial Streets and Highways	50 Year	½ traveled way plus gutter

Spread shall not be allowed to overtop the curb. The maximum inlet spacing is generally 300 feet unless proven otherwise by computations. Inlets should be located at uphill corners of each street intersection to prevent sheet flow of stormwater across the intersections. In addition, inlets shall be flush with curb and pavement surface.

Methodology in the latest version of FHWA's HEC-22 document shall be followed for closed systems, including the placement of flanking structures at low points in the roadway.

4. **Culverts.** Culverts shall be sized based on inlet and outlet control conditions. Headwater (HW) created by the worst condition shall neither overtop the bottom of the roadway subgrade nor cause unduly large impoundment of water behind the culvert. All culverts shall be checked for the effects of the 100-year storm. No flooding of buildings should result from the 100-year design flow. The maximum allowable HW/D for culverts shall be 1.5 for design year storms. All piping underneath public streets shall be reinforced concrete pipe, (RCP). Typical wall thickness for RCP is type "B" for pipes up to 42" and wall type "C" for larger pipes shown in AASHTO Designation M-170. The minimum pipe diameter shall be 18 inches. A Manning's "n" value of 0.012 shall be used for the design value of the concrete pipe. Drainage pipes that are routed along property lines shall be extended to the rear property line at a minimum. In addition to RCP, the city will allow corrugated metal pipe (CMP), aluminized coated meeting AASHTO-M-274, 14-gauge minimum thickness and high-density polyethylene pipe (HDPE) meeting AASHTO designation M-294-02 for driveway culverts only. A Manning's "n" value of 0.024 should be used for CMP driveway culverts. A Manning's "n" value of 0.013 shall be used for HDPE driveway culverts. Installation and maintenance of driveway culverts shall be the responsibility of the owner, lessee or other lawful holder of the property to be served, unless necessitated by a city roadway, utility or drainage improvement project.

TABLE SIX
MINIMUM EASEMENT WIDTHS FOR STORM DRAIN CONDUITS

Equivalent pipe Diameter	Invert Depth (Feet)	Minimum Easement Width (Feet)
18 inches	0 to 5	15
	6 to 10	20
	11 to 15	35
	16 to 20	45
24 to 30 inches	0 to 5	15
	6 to 10	20
	11 to 15	35
	16 to 20	45
36 to 48 inches	0 to 5	20
	6 to 10	25
	11 to 15	40
	16 to 20	50
54 to 72 inches	0 to 5	N/A
	6 to 10	30
	11 to 15	40
	16 to 20	50

5. **Private Inlets.** Inlets that will not be dedicated to the city shall be designed to receive the 10-year design storm event.

6. **Outlet Protection.** The outlet ends of discharging pipes shall not result in velocities that equal or exceed the erosive velocity of the receiving channel, unless energy dissipation and permanent erosion protection measures are placed at the outlet. Energy dissipation and erosion prevention and sediment control devices shall have no overfall at the terminal end and shall discharge onto a stable section. The terminal section shall be considered stable if the terminal section design velocity is less than the erosive velocity. Refer to TDOT Design Division Drainage Manual and/FHWA HEC-14 guidance for additional information on the design of energy dissipators. Rip-rap is not allowed at the inlet or outlet ends of culverts for velocity control unless approved by the city. Timber outfall treatments or level spreaders shall not be used. Sufficient space downstream of discharge locations or outlet headwalls shall be provided to properly design and construct outlet protection devices within required drainage easements.

7. **Bridges.** All bridges shall be designed with a minimum of one (1) foot of freeboard between the minimum low chord elevation and the 100-year, 24-hour storm event. The design flow shall consider runoff from the total tributary area and will require stream channel routing, as appropriate.

8. **Retention/detention ponds—General.** Retention and detention ponds shall be designed to limit the rate of runoff from the site and temporarily store the excess volume. The maximum allowable rate of discharge from the developed site shall be no more than would have occurred from a storm of specified frequency prior to site development. This allowable design storm frequency varies in accordance with the drainage area above the point of discharge as tabulated in Table Seven.

a. **Retention/detention facilities—Location.** Retention and detention facilities shall not be located on any residential lot and shall only be located within designated open space areas, maintained by a homeowner's association. Detention/Retention facilities shall also not be located within any required arterial street buffer, as defined within Section 78-184—OSRD Technical Standards of the Brentwood Municipal Code. Reasonable and practical access shall be provided to retention and detention facilities to allow for proper maintenance. The access location shall be clearly indicated on the proposed grading plan.

   Exceptions to the pond locations may be considered when the topography dictates drainage patterns. The pond elevation in relation to adjacent streets and properties will be a factor in the consideration of exceptions.

b. **Design requirements.** Drainage calculations submitted in support of proposed developments within the city shall include an analysis of both on-site and off-site watersheds as a system with an appropriate hydrologic and hydraulic routing software program, taking into consideration the off-site/bypass drainage areas and properly accounting for timing of onsite/offsite watersheds. Peak flow runoff rates for proposed developments shall be reduced to pre-development conditions for the 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year, 24-hour design storms as defined by NOAA Atlas 14 for each site outfall. The analysis point(s) for proposed developments shall be located at minimum the following locations: each onsite detention pond outfall, at confluence(s) with offsite/bypass flows, and at an overall common outfall point that captures both the onsite and offsite total combined discharges. A summary table comparing pre-developed and post-developed discharges for all design storms at all analysis points shall be provided. Detention facilities and the upgradient storm drainage system shall be design to safely pass the runoff produced by the 100-year, 24-hour design storm under post-development conditions.

c. **Design development.** Highly visible basins include locations at development entrances, adjacent to primary or secondary roads or directly behind proposed homes. Retaining walls will not be permitted to be used as part of the detention pond design in these locations. The maximum storage depth of the detention pond shall not exceed 5 feet with a minimum 1-foot freeboard and side slope not steeper than 3:1 for safety and vegetative purposes. Turf reinforcement matting shall be installed on all detention pond slopes for erosion prevention purposes. A minimum of one (1) foot of freeboard must be provided, measured from the top of the water surface elevation for the 100-year storm, to the lowest point of the dam embankment, not counting the emergency spillway. Exemptions will be considered on a case-by-case basis.

d. **Design requirements.** Areas above the normal high-water elevation of detention/retention facilities should be sloped at a minimum of 5 percent toward the facilities to allow positive drainage and to prevent standing water, except in areas designed to control flow such as swales, SCMs, etc..

   The bottom area of dry detention/retention facilities should be graded toward the outlet to prevent standing water conditions. A minimum two (2) percent bottom slope is recommended. Concrete lined low flow or pilot channels constructed across the facility bottom from the inlet to the outlet are not preferred. Low flows should be distributed evenly into sheet flow across the bottom of the facility.

A low flow outlet should be sized considering the control of more frequent storm events, such as the 2-year-24-hour storm. The drawdown time of the pond must be greater than 24 hours and not exceed 72 hours preceded by no measurable rainfall.

TABLE SEVEN
MINIMUM DESIGN STORM FREQUENCIES

Drainage Area (Acres)	Required Design Storm Frequency (years)	Storage Design Storm Frequency (years)
50 or less	2	25
Greater than 50	5	50

8. **Stormwater quality.** The design of stormwater quality control practices shall include SCMs and shall be designed in accordance with the following criteria and design guidance provided in the Metro Water Services Low Impact Development Manual Volume 5 or the Tennessee Permanent Stormwater Management and Design Manual.

   a. There shall be no distinctly visible floating scum, oil or other matter contained in the stormwater discharge.

   b. The stormwater discharge must not cause an objectionable odor in the receiving stream.

   c. The design storm for water quality treatment design shall be the 1-year, 24-hour design storm event.

   d. All roof runoff is presumed to be contaminated and, therefore, is to be included within the water quality treatment volume (WQTV)

   e. The WQTV is the portion of the runoff generated from impervious surfaces at a new development or redevelopment project from the design storm. SCMs must be designed, at a minimum to achieve an overall treatment efficiency of eighty percent (80%) TSS removal from the WQTV. The quantity of the WQTV that must be provided from a new development or redevelopment depends on the type of treatment provided, as established in the following table:

TABLE EIGHT
WATER QUALITY TREATMENT VOLUME

Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm		
SCM Treatment Type	WQTV	Notes
Infiltration, evaporation, transpiration, and/or reuse	Runoff generated from the first 1 inch of the design storm	Examples include, but are not limited to, bioretention, stormwater wetlands, and infiltration systems.
Biologically active filtration, with an underdrain	Runoff generation from the first 1.25 inches of the design storm	To achieve biologically active filtration, SCMs must provide minimum of 12 inches of internal water storage.
Sand or gravel filtration, settling ponds, extended detention ponds, and wet ponds	Runoff generated from the first 2.5 inches of the design storm or the design or the first 75% of the design storm, whichever is less	Examples include, but are not limited to, sand filters, permeable pavers, and underground gravel detention systems. Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing regional ponds are not subject to the forebay requirement.
Hydrodynamic separation, baffle box settling, other flow-through manufactured treatment devices (MTDs), and treatment trains using MTDs	Maximum runoff generated from the entire design storm	Flow-through MTDs must provide an overall treatment efficiency of at least 80% TSS reduction.

f. Treatment trains using MTDs shall use the following calculation:

R = A + B – (A x B) / 100

Where:

R = total TSS percent removal from the application of both SCMs

A = the TSS percent removal rate applicable to the first SCM

B = the TSS percent removal rate applicable to the second SCM

TSS removal rates for MTDs must be evaluated using industry-wide standards.

TSS removal rates for other SCMs must be from published reference literature.

g. Treatment trains using infiltration, evaporation, transpiration, reuse, or biologically active filtration followed by sand or gravel filtration, settling ponds, extended detention ponds, or wet ponds may subtract the treated WQTV of the upstream SCMs from the WQTV of the downstream SCMs.

h. Geotechnical tests should be conducted to determine the infiltration rates and other subsurface properties of the soils underlying proposed infiltration facilities. If the site is on

karst topography, an alternative practice or combination of practices should be employed, if possible. Some facility designs, if used in karst, require the inclusion of an impermeable clay or (preferably) geosynthetic liner.

i. SCMs must be designed to provide full treatment capacity within 72-hours following the end of the preceding rain event for the life of the development or redevelopment.

j. Incentive Standard: The following types of developments or redevelopments shall receive a twenty percent (20%) reduction in the WQTV for any one of the following conditions:

(1) Redevelopment projects (including, but not limited to, brownfield redevelopment); and

(2) Vertical density (floor to area ratio of at least 2, or at least 18 units per acre).

h. No land disturbance activities, whether by private or public action, shall be performed in a manner that will negatively impact stormwater quality whether by flow restrictions, increased runoff, or by diminishing channel or floodplain storage capacity. Acceleration of erosion or sedimentation, or transport of other pollutants or forms of pollution, due to various land development activities must be controlled.

i. Developments or redevelopments per Chapter 56-11(a) of the Municipal Code must adhere to the water quality requirements in this section. Calculations and plans shall be submitted as part of the grading permit review and approval process.

j. If changes to the site and/or approved plan are made subsequent to the initial approval or the original design does not appear to meet the intent of the stormwater regulations, the stormwater management plans should be revised to reflect the necessary changes and resubmitted for approval. Refer to Chapter 56-19(b) of the Municipal Code.

k. SCMs shall not be located on any residential lot and shall only be located within designated open space areas, maintained by a homeowner's association. SCMs shall also not be located within any required arterial street buffer, as defined within Section 78-184—OSRD Technical Standards of the Brentwood Municipal Code. Reasonable and practical access shall be provided to SCMs to allow for proper maintenance. The access location shall be clearly indicated on the proposed grading plan.

9. **Offsite improvements.** Certain areas may provide opportunities to construct downstream improvements in lieu of on-site storage facilities. Downstream improvements will require written permission of all affected property owners, including both property owners who are affected by physical improvements and those affected by increased run-offs.

10. **Previously developed sites.** The city reserves the right to require drainage calculations to be based on historical or pre-existing conditions for developed sites where development or redevelopment is being proposed. Historical instances of downstream flooding will be the basis for requiring these calculations.

11. **Drainage calculations.** All submittals shall include drainage calculations and detailed hydraulic analysis of detention ponds. All detention facilities must be designed in accordance with the with the Metro Water Services Best Management Practices Manual, Volume 2, or later subsequent editions utilized by the city. Copies are available from city staff. Submittals must clearly show how all values were derived. A stormwater submittal checklist will be made available upon request from the city. Submittals found to be incomplete will be rejected and required to be resubmitted, potentially resulting in a missed Planning Commission deadline.

12. **Headwalls.** All headwalls shall be constructed of reinforced concrete and include wing walls, unless otherwise approved by the staff from the city. A toe shall be added to the headwall if the flow is in excess of ten cfs. Energy dissipaters shall be added to the outlet headwall if the velocity exceeds five ft./sec., if no other form of erosion prevention is provided.

13. **Drainage pipe outside street.** All piping within Public Utility and Drainage Easements shall be reinforced concrete pipe, RCP or high-density polyethylene pipe, HDPE. Typical wall thickness for RCP is type "B" for pipes up to 42" and wall type "C" for larger pipes shown in AASHTO Designation M-170. The minimum pipe diameter shall be 18 inches. A Manning's "n" value of 0.012 shall be used for the design value of the concrete pipe. A Manning's "n" value of 0.013 shall be used for the design value of the HDPE pipe. HDPE pipe shall meet AASHTO designation M-294-02. The minimum pipe diameter shall be 18 inches and the maximum pipe diameter for HDPE pipe is 60 inches. The minimum cover over HDPE pipe shall be based on construction loads. Due to joint integrity concerns, HDPE should not be used for broken back alignments. This includes both new construction, and proposed extensions. In general, existing HDPE pipe will not be permitted to be extended or used to extend different material pipe. HDPE pipe is permitted to a maximum fill height of 16 feet. Refer to Table Six for easement requirements.

14. **Sinkholes.** Special precautions must be taken when the natural drainage of an area within a proposed development is found to be served by a sinkhole. The sinkhole cannot be located within a lot or area proposed for any amenity and must be noted on the final plat. If any portion of the drainage basin served by the sinkhole is planned to be developed a special study must be conducted to ensure the preservation of the sinkhole and/or the methods for managing stormwater from this area. The study must be conducted by a civil or geotechnical engineer licensed to practice in the State of Tennessee.

15. **Downstream Analysis.** The effect of each subdivision on existing downstream drainage facilities outside the area of the subdivision shall be determined. Where it is anticipated that the additional runoff incident to the development of the subdivision will overload existing downstream drainage facilities, provisions should be made for improvement of such drainage facilities or inclusion of detention or retention facilities within the proposed development. Generally, the developer's responsibility for downstream improvements shall not extend beyond the second downstream road/driveway crossing structure.

    The "ten percent" rule shall be applied to determine downstream impacts. This rule recognizes that in addition to controlling the peak discharge from the outlet of a detention facility, a detention facility could potentially change the timing of the entire outflow hydrograph for the stream or river in question. Where required, channel routing calculations must proceed downstream to a confluence point where the drainage area being analyzed represents approximately ten percent of the total drainage area. At this point, if the effect of the hydrograph routed through the proposed storage facility on the downstream hydrograph is assessed and shown not to increase flows in downstream conveyance systems, detention can be waived. If increased flows are found at the downstream comparison point, then backwater calculations and determination of flood elevations for the areas impacted by increased flows, if any, must be prepared. Where downstream increases in peak flows or flood elevations are shown, detention will be required on site to attenuate storm flows, in accordance with detention requirements included in Section 8.

    Individual projects shall be evaluated for consistency with any stormwater management master plans, if available, for the major watershed or watersheds within which the project site is located. The individual project evaluation will determine if stormwater quantity and quality management practices can adequately serve the property and limit impacts to downstream public and private properties. The

presence of a regional facility or regional facilities will be considered in determining the extent to which quantity and/or quality controls will be necessary.

16. **Site Runoff Control Exceptions.** To minimize adverse stormwater quantity impacts, all new developments must be evaluated for adverse impacts on downstream properties. This requirement is mandatory for all developments that are not served by an adequately sized regional stormwater management facility. Because detention in downstream areas of a large watershed can cause increased peak flows in downstream channels, the city reserves the right to alter the detention criteria and to prohibit it where it would cause adverse impacts. This decision shall be based on sound engineering judgment along with supporting data and studies. In all cases where detention facilities are required, the location and design must comply with any stormwater master plans that may have been adopted.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.11 Community Assets and Public Use/Service Areas.

Due consideration shall be given to the allocation of areas suitably located and of adequate size for playgrounds, parks, and open space for public use and services. In all subdivisions, due regard shall be shown for all natural features such as large trees and water courses, and for historically significant sites and similar community assets which, if preserved, will add attractiveness and value to the property and the community. Any property preserved as directed by the Planning Commission for community benefit must be identified on the final plat. The execution of deeds or easements to facilitate or monitor a community asset may be required as a condition of approval of the final plat.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.12 OSRD-IP Open Space Residential Development—Innovative Project Zoning District—Design Standards.

Special land use regulations have been enacted to guide innovative projects within the OSRD zoning district to encourage a wider range of housing options for the community and greater preservation of open space, while at the same time maintaining the fundamental density standard of one dwelling unit per acre. This section provides special standards for OSRD-IP developments, which shall supersede the general design standards outlined in these Regulations.

(1) **Street and Circulation Standards.** The circulation system shall include an interconnected network of streets designed to provide adequate traffic capacity, provide connected pedestrian and bicycle routes, minimize through-traffic volumes, minimize vehicular speeds, provide access to emergency vehicles, and provide for safe mobility. In addition:

a. The vehicular circulation system shall be designed to minimize conflicts between pedestrians and bicyclists.

b. In order to reduce traffic speeds, traffic calming features such as narrow lanes, medians, curb extensions, roundabouts, traffic circles, and textured pavement crosswalks shall be integrated into the design of the subdivision.

c. Curvilinear street alignment shall also be used where possible to reduce traffic speeds.

d. Sidewalks, bikeways, and multi-use trails are an integral part of the OSRD-IP design. To the greatest extent possible, sidewalks and multi-use trails should connect to adjacent neighborhoods, schools, civic uses, and commercial areas.

(2) **Street Hierarchy.** Streets within an OSRD-IP zoning district shall be classified according to the following standards. (Refer to the standard drawings contained within Appendix Two of these Regulations.)

a. IP collector streets shall meet the following standards:

1. The minimum right-of-way width shall be 98 feet with median or 62 feet without median.

2. The IP collector street is a low-speed public street intended to provide the primary access between streets within an OSRD-IP development, and the city's arterial and collector street system. Frontage for lots may be provided by an IP collector.

3. No direct driveway access shall be provided to the IP collector. Lot driveway access shall be provided through a rear service lane.

4. The IP collector may be constructed without lot frontage. Where lot frontage is not provided, the Planning Commission may allow an alternate cross-section for the IP collector which consists of a two-lane street with bike lanes on each side, and ADA compliant sidewalks on both sides of the street. The sidewalks shall be separated from the street by an 8-foot-wide planting strip. When lot frontage is absent, the Planning Commission may allow a multi-use trails to provide pedestrian and bicycle access in lieu of sidewalks required for the IP collector.

5. Where lot frontage is provided, the IP collector shall be a median divided street, with one travel lane in each direction. In addition, bike lanes and on-street parking shall be provided on both sides of the street. ADA compliant sidewalks are to be provided on both sides of the street. The sidewalks shall be separated from the street by an 8-foot-wide planting strip.

b. IP local streets shall meet the following standards:

1. The minimum right-of-way width shall be 55 feet.

2. The IP local street is a low-speed public street intended to provide access between the residences and the IP collector streets, and other IP local streets and IP cul-de-sacs. The IP local street provides frontage for the lots in the subdivision.

3. The IP local street shall have one travel lane in each direction with on-street parking on one side of the street. ADA compliant sidewalks shall be provided on both sides of the street, and the sidewalks shall be separated from the street by an 8-foot-wide planting strip.

c. IP cul-de-sacs shall meet the following standards:

1. The minimum right-of-way width shall be 92 feet.

2. The IP cul-de-sac is a low-speed public street terminus intended to provide access between residences and IP local streets. The IP cul-de-sac provides frontage for lots.

3. The IP cul-de-sac shall be a median divided street with one-way counterclockwise travel flow on either side of the median. ADA compliant sidewalks are to be provided on both sides of the street and the sidewalks shall be separated from the street by an 8-foot-wide planting strip.

4. The maximum length of an IP cul-de-sac shall be 300 feet, as measured from the end of the radius return to the end of the pavement of the cul-de-sac.

d. IP rear service lane.

1. The minimum right-of-way width shall be 27 feet.
2. The IP rear service lane is a low-speed public street intended to provide access to the rear of the property. Refer to Section 78-198 of the Brentwood Zoning Ordinance regarding access to lots zoned OSRD-IP.

(3) **Additional IP Design Criteria.**

a. **Sidewalks.**

1. Sidewalks shall be provided on both sides of all IP collector, local, and cul-de-sac streets that have lot frontage. Sidewalks shall be at least five feet wide. All sidewalks and street ramps shall be ADA compliant.
2. In lieu of sidewalks, the Planning Commission may approve a multi-use trail to provide pedestrian connectivity.

b. **Bicycle Use Accommodation.**

1. On IP local and cul-de-sac streets, bicyclists shall be considered a normal part of the mix of vehicles on the street.
2. On IP collector streets, bicycle lanes shall be provided.
3. Off-street multi-use paths are encouraged to provide connectivity within the development and to the city's bikeway and pedestrian trail system. Multi-use trails shall be designed to AASHTO standards and shall be at least five feet from the edge of the travelway.

c. **On-Street Parking.**

1. Informal parking, which is parking that is allowed along streets, but is not specifically signed or marked, shall be provided on IP collector, local, and cul-de-sac streets.
2. On-street parallel parking shall be provided along both sides of IP collector streets that have lot frontage.
3. On-street parallel parking shall be provided along one side of IP local streets.
4. For IP cul-de-sacs, on-street parking shall be provided within the median.

d. **Planting Strips.**

1. Planting strips which include street trees shall be provided between the curb and the sidewalk along all IP collector, local, and cul-de-sac streets.
2. Planting strips shall be eight feet wide, unless the width is reduced by the Planning Commission.

(4) **Curb Radii.** The curb radii at intersections shall be as shown in Table Eight:

TABLE NINE
CURB RADII

Intersection Type	Curb Radius
IP Collector to Arterial or Collector	25 feet
IP Collector to IP Collector	15 feet
IP Collector to IP Local	10 feet
IP Collector to Rear Service Lane	10 feet
IP Local to IP Local	10 feet
IP Local to Rear Service Lane	10 feet

(5) **Design Speed.** Design speed shall closely match the street type, vehicle use, and the proposed speed limit. The desired upper limit of design speeds for IP collector and IP local streets is 20 mph. The desired upper limit of design speeds for IP cul-de-sacs streets and rear service lanes is 10 mph.

(6) **Minimum Centerline Radii.** Minimum centerline radii shall conform to the design speed for the particular street. Minimum centerline radii for specific design speeds are as follows:

TABLE TEN
MINIMUM CENTER RADII

Design Speed (MPH)	Minimum Centerline Radius
10 mph	25 feet
15 mph	50 feet
20 mph	90 feet

(7) **Stopping Sight Distances.** Minimum stopping sight distances shall conform to the design speed for the particular street and shall account for wet pavement conditions. A sufficient area at each intersection shall be kept clear of vegetation and other obstructions to ensure adequate vehicle sight distance. Stopping distances for specific design speeds are as follows:

TABLE ELEVEN
STOPPING SIGHT DISTANCES

Design Speed (MPH)	Stopping Sight Distance
10 mph	45 feet
15 mph	75 feet
20 mph	110 feet

(8) **Utility Plan.** The layout of all utilities shall be determined in advance of construction. All providers shall be involved in the initial design. Utility easements shall be established according to standards depicted by standard drawings contained within Appendix Two of these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.13 Historic Rural Development Standards.

Special rural street construction standards may be approved by the Planning Commission for limited subdivision developments that include structures officially designated as historic sites by the Board of

Commissioners. Eligible developments containing the special rural street construction design are limited to a minimum of 25 acres in size. Lots created within such developments must possess an average size of three acres, but in no case shall lots be less than one acre in size.

(1) **Deed Restrictions.**

a. Developments implementing the special rural street construction design shall provide detailed deed restrictions for all affected lots, guaranteeing the lot size and residential density of the subject property in perpetuity.

b. Deed restrictions shall be enforceable by each owner of the affected lots and by the city and shall be subject to review and approval by the City Attorney in advance of formal subdivision approval.

(2) **Street Standards.** The special rural street construction standard is limited in application to local streets only. This street type shall not be applied to collector or arterial streets, or to streets affording connectivity between adjoining subdivisions or developments. Local streets constructed under this standards shall meet the following technical standards:

a. **Right-of-Way Widths.** The standard right-of-way width shall be 40 feet. Outside the limits of the right-of-way on either side, a minimum width of 15 feet shall be dedicated for public utilities and drainage easements.

b. **Pavement Width and Compacted Stabilized Shoulders.** The minimum pavement widths shall be 22 feet with improved shoulders along each side. The shoulder width shall be a minimum of three feet. This pavement section will not require a curb and gutter section for surface drainage purposes. The drainage design will require streetside ditches to handle the stormwater flows from the street and lots. All driveway culverts shall be designed during the preparation of the subdivision construction plans for future installation by the property owner or builder.

c. **Pavement Section Design.** The pavement design is specified in Section 7.4 of these Regulations for local residential streets. The minimum depth of stone for the shoulders shall be six inches.

d. **Sidewalks.** No sidewalks are required within subdivisions using the Historic Rural Development standards.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.14 Lots.

Every platted lot shall contain sufficient area as defined by the Zoning Ordinance for the applicable zoning district. Whenever there is a discrepancy between the minimum requirements noted within these Regulations, and those contained in other official regulations, the highest standard shall apply. The size, shape, and orientation of lots shall be such as the Planning Commission deems appropriate for the type of development and use contemplated. The Planning Commission shall ensure that the following provisions are met for new lots created under this authority:

(1) **Arrangement.** Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines.

a. **Frontage.** Except as provided for in these Regulations, all lots shall have at least 50 feet of frontage on an arterial street, collector street, local street, or approved private street permitted under Chapter 58, article IV of the Municipal Code. Lots fronting on a permanent cul-de-sac and located within an Open Space Residential Development (OSRD) zoning district may have frontage of not less than 35 feet, if approved by the Planning Commission.

b. **Waiver of Frontage Requirement.** The Planning Commission may waive the lot frontage requirement for lots within a planned commercial development that do not front on an arterial street, collector street, or local street, if a permanent private access easement is established to serve such lots. The location of any such easement must be approved by the Planning Commission and identified on the master plan for the development, and the final plat for the lot(s). The minimum width for any such easement shall be 30 feet, provided that the Planning Commission may, in its discretion, require a wider easement in order to prevent traffic congestion and safety hazards. Provisions for repairs and maintenance of the easement shall be clearly established to the satisfaction of the Planning Commission. The Planning Commission may withhold its approval of any lots not fronting a public street if such satisfactory provisions have not been established, or if the Planning Commission determines that the creation of such lots is not in the public interest.

(2) **Building Envelope.** Every platted lot shall contain sufficient building area (building envelope) as defined by building setback lines established by the City of Brentwood's Zoning Ordinance for the applicable zoning district. No portion of a newly created lot in Open Space Residential Development (OSRD) zoning district shall be encumbered by the Federal Emergency Management Agency (FEMA) 100-year floodplain area. Additionally, in other zoning districts, no portion of the 100-year floodplain area shall not be closer than 30 feet to any portion of the building envelope.

(3) **Lots with Steep Topography.** Lots containing existing ground slopes of fifteen percent (15%) or greater, anywhere on the lot shall be designated as a "transitional lot." No residence shall be built on a transitional lot without a detailed site plan prepared by a professional engineer or landscape architect licensed by the State of Tennessee (also refer to the Brentwood Zoning Ordinance for additional site plan requirements for transitional lots).

(4) **Substantial Rebuild Lots.** A lot on which modifications to existing structures or the lot itself including but not limited to residential additions, swimming pools, or other accessory buildings or structures such that the increase in impervious surface is greater than or equal to 800 square feet.

(5) **Permit Requirements.** Prior to the issuance of a building permit for a transitional residential lot or a substantial-rebuild lot, a site development plan shall be prepared by a licensed professional engineer or licensed landscape architect for review and approval by the city showing the following:

- Existing topographic information from field run survey data.
- Boundary and setback lines.
- Public utility and drainage easements.
- Proposed city-owned utilities.
- Existing and proposed drainage pipes (including gutter downspouts if extended more than 10 feet from the structure).
- Drainage features such as ditches and swales to be connected to public drainage lines and/or to direct or redirect stormwater run-off.
- Location of retaining walls; the proposed building footprint and driveway plan, including finished floor elevations and finished grades of pavement and ground lines.
- Identification of existing trees in excess of four-inch caliper and trees to be preserved, and
- The location and timing of installation of erosion prevention and sediment control features.

(6) **Water and Sewer Service.** Where public water and sanitary sewer systems are reasonably accessible, the developer shall connect with such systems and provide a service connection, or connections to each lot, in accordance with Water Services Department Construction Standards. Where public sewer is not accessible, an alternate method of sewage disposal may be used if it is authorized by the Williamson County Health Department and is also approved by the Board of Commissioners. Where a public water supply is not accessible, a water well or other source may be used upon approval of the Board of Commissioners.

(7) **Vehicle Access.** The Planning Commission may impose conditions or limitations pertaining to access to any lots created within a subdivision, including but not limited to private frontage streets, rear access streets, or other shared easements, where based upon commonly accepted and applicable traffic engineering principles, such conditions are necessary to ensure the safe and efficient flow of traffic upon public streets. Where such conditions or limitations are warranted, but not acceptable or feasible, the Planning Commission may disapprove the proposed subdivision or resubdivision.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.15 Flag Lots.

Residential flag lots shall not be permitted. The Planning Commission may grant an exception if all of the following conditions are met:

a. There is limited area for access on a street due to severe topography, floodplain or other unique site conditions.

b. The minimum technical standards of the underlying zoning district are met.

c. The "flagpole" portion of the lot shall not be used to satisfy the minimum lot area requirements for the underlying zoning district.

d. The width shall be consistent along the entire length of the "flagpole" portion of the lot

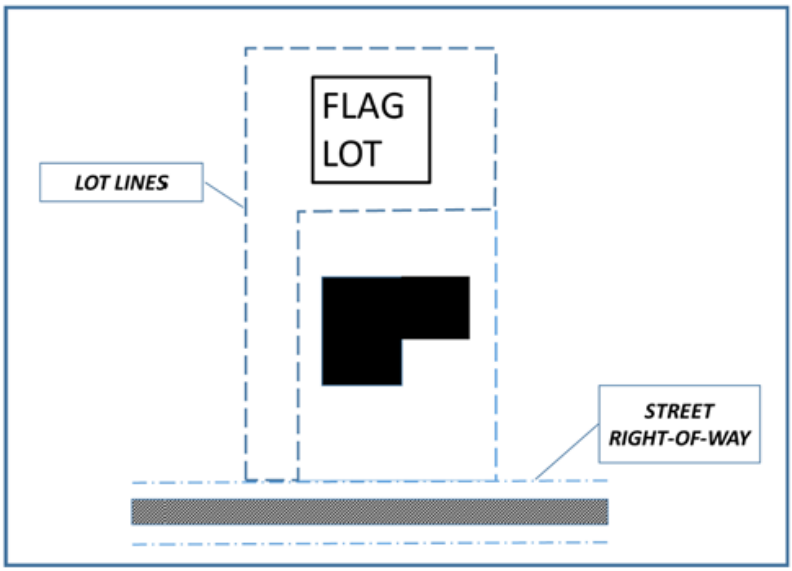
e. No more than three (3) flag lots are proposed to be created from the original tract.

f. The maximum length of the "flagpole" portion of the lot shall be no more than 250 feet.

g. Any occupied building on a flag lot must be within 500 feet of a fire hydrant unless the structure has an approved residential sprinkler system as provided for in Section 26-68 of the Municipal Code. Additionally, development on Flag Lots shall comply with the residential driveway standards provided for in Section 78-486—Design Criteria of the Zoning Ordinance. The distance shall be measured along the street, then along the "flagpole" portion of the lot, then in a straight line to the building location.

h. The front yard setback for the rear lot shall be measured from the rear line of the lot that separates the "Flag" portion of the lot from the street. Where additional setback width requirements for property fronting an arterial street, in the R-2 zoning district the setback shall be 75 feet.

Figure One
Flag Lots



All Flag lots that serve as private shared access easements shall be paved for their entire length.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.16 Easements.

Easements for stormwater drainage, poles, wires, conduits, sanitary sewer, gas, and water mains or other utility lines along the front, rear, and side lot lines, as necessary or advisable to properly serve the subdivision or provide access through a subdivision shall be required.

a. **Special Utility Easements.** Easements of the same or greater width may be required along the boundary lines of or across lots, where necessary for the extension of existing or planned utilities.

b. **Stream Protection.** Whenever any stream is located in an area that is being subdivided, the developer shall provide a Water Quality Riparian Buffer along each side of the stream for the purpose of protecting the stream, (refer to Chapter 56—Stormwater Management and Erosion Control of the Brentwood Municipal Code).

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.17 Large Tracts or Parcels.

When land is subdivided into parcels in excess of one acre, such parcels shall be arranged to allow for the opening of streets in the future at the locations where topographic conditions permit safe and efficient connection of future streets, and for logical further resubdivision.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.18 Suitability of Land.

The Planning Commission shall not approve the subdivision of land if, from adequate investigations conducted by all public agencies concerned, it has been determined that the site is not suitable for platting and development purposes of the kind proposed. Land subject to flooding and land deemed to be topographically

unsuitable for development shall not be platted for residential, commercial, and/or service institution uses, or for any other uses that may increase flood hazard, endanger life, health, or property.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.19 Dedications.

Land determined unsuitable for development per the preceding subsection, or which in the judgment of the Planning Commission should be maintained as public use areas for greenways, recreation, or access corridors, may be dedicated for public use, provided that acceptance of such land dedication by the City of Brentwood is subject to the approval of the Board of Commissioners.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

6.20 Street Lights, Signage and Sign Posts.

The construction design package shall include a street lighting and signage plan per Article Seven of these Regulations. The street lighting and signage plans shall be consistent throughout all sections of a subdivision when the same materials are available unless otherwise approved in writing by the city.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE SEVEN. CONSTRUCTION STANDARDS

7.1 Purpose.

The following standards provide information for the installation and construction of public improvements within a proposed development. (Refer to Appendix Two for Construction drawings and field practices.)

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.2 Required Improvements.

(1) Every developer of a major subdivision shall be required to construct streets, lighting, signage and pavement markings, public sanitary sewer lines and services, stormwater systems, public water mains and service lines, fire hydrants, sidewalks, and bikeways, and to establish monumentation for right-of-way points and lot property corners, all in accordance with the approved plan, the conditions of approval and these Regulations.

(2) As each section or subdivision is platted, all public improvements, including, but not limited to streets, bikeways or pedestrian accessways, utilities, and drainage, shall be installed by the subdivision developer to the property line of the next phase of development and/or to any other property abutting the subdivision (refer to Section 5.5 of these Regulations regarding improvements that must be completed before recordation of the final plat).

(3) The Planning Commission may require the upgrade or extension of off-site public utilities to provide service to the development.

(4) The Planning Commission may waive the extension of certain public improvements when deemed in the public interest to do so and an alternative method for future completion of such improvements is determined and documented.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.3 Grading.

(1) **Clearing and grubbing.**

a. Clearing and grubbing includes the removal and disposal of all vegetation, topsoil and deleterious or unstable materials within the proposed areas of the rights-of-way, slopes and easements and other areas as shown on the site grading plans unless certain areas or objects are noted to remain undisturbed.

b. Erosion prevention and sediment controls and tree protection shall be installed prior to the clearing and grubbing operation.

c. The methods of disposal available to the contractor may include burning, clipping or haul-off. A burn permit issued by staff from the Brentwood Fire and Rescue Department may be required.

d. Roots larger than one inch in diameter must be grubbed out and removed.

e. Land disturbance shall only occur in areas as shown on the site grading plans.

f. Prior to beginning any clearing and grubbing operations, ensure the clearing limits are clearly staked.

(2) **Topsoil Stripping and Stockpiling.**

a. Topsoil stripping includes the removal of topsoil material from the limits of the right-of-way areas or other areas designated on the site grading plans.

b. Topsoil removal is dependent upon the depth and types of soil and elevations of rock outcroppings.

c. The areas for stockpiling shall be neatly dressed designated on the construction plans and shall be in areas that do not conflict with other construction activities, outside of flood plain areas, Water Quality Riparian Buffer, or areas designated as tree protection areas or required buffers. If a stockpile area remains for more than 14 days, then the contractor must provide erosion prevention and sediment control measures such as seeding, mulching and silt fencing around the perimeter of the stockpile area.

(3) **Street Fill Material.**

a. Fill material must consist of soil, rock, or an approved soil/rock mixture free from roots, wood, organic matter, rubble, and any other deleterious material.

b. Soil fills must be free of rock fragments over six inches in maximum dimension and must have a minimum dry density, when compacted of 95 pounds per cubic foot. Soil fill must be placed in maximum lifts of 8 inches and compacted to at least 95 percent of its maximum dry density as determined by ASTM D-698 (Standard Proctor). Soil fill must be stable after compaction, regardless of compaction percentage. Adequate compaction will be verified by in-place density tests performed by staff from the city.

c. Rock fill shall consist of durable, clean, well-graded "shot rock" or crushed stone. The maximum dimension of rock fragments used in the rock fill shall be 12 inches and there shall be less than 15 percent fines (soil and rock fragments passing a U.S. No. 200 sieve) in the mass. Rock fill shall be placed in lifts not to exceed 30 inches and shall be compacted with heavy steel-wheeled or tracked vehicles. Adequate compaction will be judged in the field by staff from the city, based on stability of the fill in place.

d. An approved soil-rock mixture shall consist of soil interspersed in a well-graded mixture of rock fragments no larger than 12 inches in maximum dimension. The soil-rock mixture shall be placed in lifts not exceeding 12 inches in maximum thickness and compacted with tamping rollers until the soil

portion of the mass is compacted to at least 95 percent of its maximum dry density as determined by ASTM D-698. The soil portion of the mass shall be within +/- two percent of its optimum moisture content during placement. Compaction will be verified by in-place density tests where possible, but if excessive rock fragments prevent density tests, adequate compaction will be judged by staff from the city based on the stability of the mass under the weight of heavy construction equipment.

e. If fill material is to be transported from an off-site source the contractor shall furnish samples suitable for determining moisture-density relationship of all soil types to be used in fills. These samples shall be furnished at least one week in advance of their use on the project. The contractor shall contact staff from the city to allow inspection of the sampling procedures.

f. Immediately before beginning fill placement, and before applying the aggregate base in cut areas, the subgrade must be proof-rolled using a heavily loaded pneumatic-tired vehicle such as a loaded dump truck. This proof rolling must be observed by staff from the city. Any soft or unstable areas delineated thereby must be undercut to stable ground and backfilled with approved fill material.

(4) **Street Excavation.**

a. Excavation is the removal of earth from a street subgrade, trench or slope. The means of excavation can be blasting or mechanical means such as a scraper or hoe-ram. The type of materials removed from a mass area or trench is dependent upon the depths of cut and soil types.

b. The materials recovered in an excavated area may be suitable for use in fill areas. The suitability of the material will be dependent upon testing and approval by a geotechnical engineer. The placement of the material shall meet the compacted requirements established in section 7.2 (3) of these Regulations.

c. If excavations are left exposed to the weather for extended periods of time after they are brought to grade, and/or if deterioration of the sub-grade has occurred by either wetting or drying, appropriate corrective actions must be taken. Corrective actions shall consist of scarifying and re-compacting the subgrade or by use of other measures as deemed appropriate by staff from the city.

d. Materials that are classified as unsuitable shall be hauled off.

e. Stockpile areas shall be designated areas shown on the construction plans or areas approved by the design engineer.

f. Geologic hazards: Any areas which present geologic hazards must be investigated by a registered geotechnical engineer. If there is a potential for instability, design measures shall be included to minimize the risk.

(5) **Backfilling of Trenches.**

a. The material used for backfilling in a utility trench must be suitable material as monitored and approved by staff from the city.

b. The depth of the bedding material in the trench shall be a minimum of 6 inches of #67 stone and brought to level of 12 inches over the top of the pipe.

c. The width of the trench is determined by size of the pipe or culvert.

d. Trenches located in streets shall be backfilled with #67 stone and compacted to a depth below the street subgrade elevation.

e. Trenches located outside of a street can be backfilled with an approved suitable soil mixture and compacted in 8-inch depths as directed by staff from the city.

f. Where an unusually wide trench is necessary, such as where blasting of the trench is required and/or multiple utilities must be accommodated in a single trench, staff from the city may allow backfilling with soil to a specified depth, topped off with stone. Prior approval by staff from the city is required and specific construction techniques and/or materials may be specified.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.4 Vertical Wall Requirements.

Construction specifications for vertical walls including pre-split walls on commercial sites and in residential subdivisions are necessary for the health and safety of residents. These regulations provide for catchment zones at the foot of vertical walls, establish goals for the slope or angle of the walls and provide general criteria for the final aesthetics of vertical walls. These requirements apply to vertical walls that are 48 inches or taller.

a. The slope of vertical walls is dictated by the geology or topography of the site or the amount of area available for development. Therefore, the slope will be determined by the designer, but is subject to review and approval by city staff.

b. For engineered walls, the catchment zone, if any, will be determined by the designer of the wall. The city reserves the right to require adjustments to the catchment zone if the wall presents a sight distance concern or a functional concern relative to the uses proposed in areas adjacent to the wall.

c. The catchment zones for pre-split walls are governed by the requirements of this section. The preferred slope of all pre-split walls is vertical. In cases where the face of the wall is sloped less than vertical, the width of the catchment zone will be increased due to the potential for falling objects or debris to be propelled further from the face of the wall.

(1) **Catchment Zone.**

a. The catchment zone width for pre-split walls depends upon two factors: 1) Wall height; 2) Slope of the face of the wall.

b. Face of Wall Vertical +/- 0.25%. The catchment zone width must be at least 40% of the wall height for walls up to ten feet in height. For walls over ten feet in height, add two additional feet of width for each ten feet of additional height (round to nearest multiple of 10). Example: Wall is 26 feet in height and the slope is vertical: Catchment zone width = (10 × .4) + 4 = 8 feet.

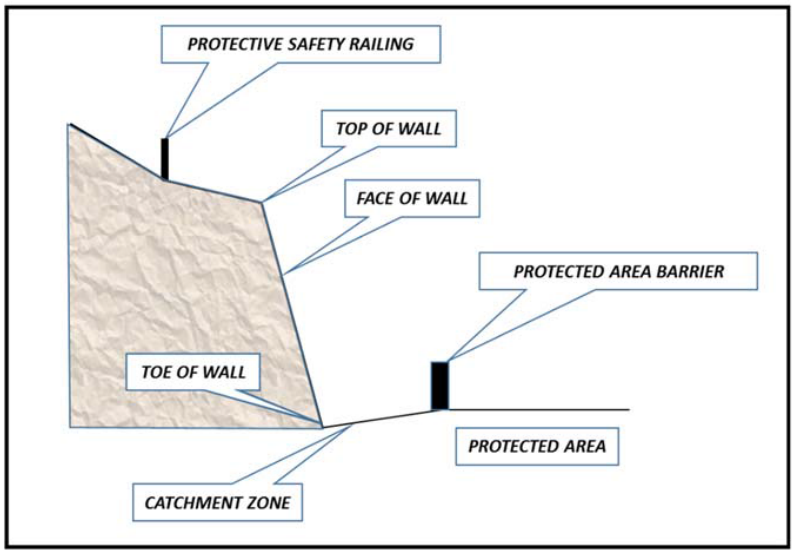
c. Face of Wall 1:1 to 1:0.75. The catchment zone width must be at least 60% of the wall height for walls up to ten feet in height. For walls over ten feet in height, add three additional feet of width for each ten feet of additional height (round to nearest multiple of 10). Example: Wall is 26 feet in height and the slope is 1:1: Catchment zone width = (10 × 0.60) + 6 = 12 feet.

d. The width of the catchment zone can be reduced by the addition of a protective barrier at the line between the catchment zone and the protected area. Where the vertical wall height is 20 feet or less, the catchment zone can be reduced by 50% by adding protective barrier that is at least 3 feet high. The protective barrier must be designed by a licensed professional engineer and be located at the common line between the catchment zone and the protected area.

e. The catchment zone must be flat or sloped to the toe of the wall. The catchment zone is not permitted to slope toward the protected area unless a retaining wall, fence or other approved protective barrier is provided. Where a protective barrier is used, the catchment zone is permitted to be reduced as noted above.

f. See the following Figure 2 for an illustration of the terminology used in these regulations.

Figure 2
Wall Terminology



(2) **Wall Aesthetics—Engineered Walls.**

a. The aesthetics of engineered vertical walls will be determined by the designer, provided that a sample of the material, in the selected color, must be submitted to the city for approval. The sample must be provided in conjunction with submission of the proposed plan for staff and Planning Commission review, where applicable. If the wall is part of a project that does not require Planning Commission approval, then the sample will be submitted at the time a building permit is requested.

b. Landscaping in the catchment zone and/or at the top of the wall may be required, depending on the height and location of the wall. In cases where the city requires the wall be landscaped, a landscape plan prepared by a licensed landscape architect must be submitted to the city for approval.

(3) **Wall Aesthetics—Pre-split Walls.**

a. The aesthetics of pre-split vertical walls will be determined on a case-by-case basis. The determination will depend on the geology of the site, the height of the wall and whether the wall is visible from areas accessible by the public.

b. Where the wall is ten (10) feet in height or less, landscape screening will be required if the wall is visible from adjacent properties or the adjacent street right-of-way.

c. When the wall is more than ten feet tall, the aesthetic treatment will be determined using a two-step process.

1. The first step involves pre-split blasting of the wall. After the pre-split has taken place and all loose material removed from the face and the blasting debris has been removed, a visual assessment will be performed by city staff to determine the treatment method to be required.

2. Step two will be to determine the treatment method, which will vary based on the stability of the final state of the wall; the amount, if any, of weathered material along the face; and the general consistency and visual features of the wall. Depending on these factors, landscaping, structural safety fencing, in-fill of weathered areas and/or voids, construction of a veneer of stone, brick or other material along the face may be required. In cases where there are concerns of stability or

evidence of significant voids and/or weathered areas in the face of the wall, the city may require the treatment to be determined by a licensed geo-technical engineer or structural engineer.

(4) **Protective Safety Railing/Barriers:** Where the area at the top of wall is accessible by the public or adjacent property owners, or where other concerns exist that a fall hazard is present a permanent protective barrier, permanent guardrail or heavy landscaping shall be required along the top of the wall. Where landscaping is the proposed safety measure, it shall be designed by a licensed landscape architect in conformance with the requirements of Section 14-68(7) regarding Building Code Amendments of the Municipal Code.

(5) **Safety:** If OSHA regulations require shoring, the designer of the wall shall submit computations and drawings showing the basis for the shoring design with the construction drawings.

(6) **Security:** In cases where the city determines that a time period is needed to ensure that the wall is stable or additional time is needed to monitor the stability or for landscaping to mature, a letter of credit or other acceptable security will be required to secure the estimated additional work as may be necessary. The Engineering Director or designee will determine the amount of any required security. Any required securities must meet the requirements of Article Eight of these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.5 Street Construction.

(1) **Mineral Aggregate Base Course.**

a. The subgrade must be approved by staff from the city before placement of the base course.

b. The mineral aggregate base shall consist of hard, durable crushed limestone. The gradation for mineral aggregate base shall be: Class A aggregate, Grading D, as specified by the Tennessee Department of Transportation's "Standard Specifications for Street and Bridge Construction," latest edition or other approved material. In no case shall the weight of material passing the U.S. No. 200 sieve (wet method) exceed 15 percent of the mass by weight.

c. The mineral aggregate base shall be spread by a mechanical spreader or other approved method which will prevent segregation. The material shall be blended full depth and width to achieve sufficient moisture content throughout the lift. The mineral aggregate shall be spread in layers no greater than six inches in thickness and compacted by appropriate means to at least 95 percent of its maximum dry density as determined by ASTM D-1557.

d. Any damage to the base course during construction, including raveling, contamination with silt, loss of density, or loss of material due to construction traffic, shall be repaired by replacing and re-compacting the base.

(2) **Concrete Curb and Gutter.**

a. The curb and gutter section shall include a 6-inch-tall post curb with a 24-inch gutter, per Appendix Two, Drawing 6. Concrete for the curb and gutter shall be Class "A" concrete, with a compressive strength of 4,000 p.s.i. Mountable curbs shall be constructed of Class "A" concrete with a compressive strength of 4,000 p.s.i. (refer to Appendix Two, Drawing 29).

b. Expansion joints shall be placed at intervals no greater than 100 feet using preformed filler, ½ inch thick.

c. Contraction joints shall be sawed every 10 feet at a minimum depth of ¼ inch.

d. Under-drains shall be required along the curb line when the final grade of the ground slopes toward the street, unless exempted in writing by staff from the city. A four-inch perforated drainpipe shall be installed under the centerline of the curb and gutter in accordance with Appendix Two, Drawing 7, to ensure proper drainage. The drain shall be backfilled with stone and encased with geo-technical fiber cloth. The drainage pipe shall connect to the storm drain at each box/catch basin.

e. The developer shall assume the responsibility for all curb and gutter damage. All identified damage shall be replaced before placement of the final asphaltic topping.

f. It is recommended that the developer/contractor document any existing driveway or damage adjacent to work areas via photos or other means prior to beginning curb/gutter replacement. The developer/contractor is responsible for any damage attributed to curb/gutter replacement operations.

(3) **Prime Coat.**

a. Prime coat shall be emulsified asphalt, Grade AE-P, or an approved equal.

b. A bituminous prime coat shall be applied uniformly on a clean surface of the base, free of ruts, corrugations or other irregularities, at a minimum rate of 0.3 to 0.4 gallons per square yard.

(4) **Asphaltic Binder Course.**

a. Asphaltic binder course shall comply with the Tennessee Department of Transportation "Standard Specifications for Street and Bridge Construction," or later subsequent editions.

b. The binder course shall not be placed in compacted layers in excess of three inches.

c. The contractor shall provide all necessary equipment for the proper installation of the asphalt surface treatments as outlined in the Tennessee Department of Transportation Standard Specifications for Street and Bridge Construction," or later subsequent editions.

(5) **Tack coat.**

a. The tack coat shall be cut-back asphalt, Grade RC-70 or emulsified asphalt, SS-1.

b. The bituminous tack coat shall be applied uniformly on the power cleaned surface at a rate of 0.03 to 0.05 gallons per square yard.

(6) **Asphaltic Concrete Wearing Surface.**

a. The asphalt wearing (surface) course shall not be placed for a minimum of one year or until 75 percent (75%) of the building construction has been completed or as determined by the Engineering Director.

b. Bituminous plant mix base (hot mix): The bituminous plant mix base shall comply with section 903.08 of the Tennessee Department of Transportation "Standard Specifications for Street and Bridge Construction," latest edition.

c. The pavement surface course shall consist of asphaltic concrete surface (hot mix) Grading "411-E" in compliance with the Tennessee Department of Transportation Standard Specifications for Street and Bridge Construction," later subsequent editions. Grading "D" may be used where the vertical grades exceed ten percent (10%).

d. Asphaltic concrete layers shall not be placed in excess of two inches per layer.

e. The asphaltic surface course shall be placed with an electronic paving machine with a 40-foot ski, unless otherwise approved by staff from the city.

f. The contractor shall provide all necessary equipment for the proper installation of the asphalt surface treatments as outlined in the Tennessee Department of Transportation Standard Specifications for Street and Bridge Construction," later subsequent editions.

g. The driving surface must be smooth and comply with the Tennessee Department of Transportation, Section 407.18 Surface Requirements.

h. Alternative pavement sections must be approved by the Planning Commission.

(7) **Sidewalks.**

a. The contractor shall provide for a compacted subgrade for the installation of sidewalks.

b. The minimum depth of the stone base shall be 4 inches.

c. Sidewalks shall be constructed of white limestone concrete, four inches thick with a broom brush finish, using six-foot by six-foot squares or five-foot by five-foot squares (for narrower width requirement) with grooved expansion joints.

Refer to Section 6.7 regarding sidewalk width requirements based upon street designations.

d. Concrete shall be Class A with a compressive strength of 4,000 p.s.i.

e. Cross slopes for the sidewalks should not exceed two percent (2%) grade. Longitudinal slopes shall not exceed eight percent (8%) grade.

f. When installed adjacent to a curb and gutter section, a fiber expansion joint shall be installed between curb and sidewalk.

g. All sidewalks shall be located within the non-vehicular portion of the right-of-way, or within a dedicated sidewalk easement on the abutting private property. The specific location for sidewalks shall be coordinated with utility and other public improvements.

h. Sidewalks along lot frontages shall be installed concurrent with the construction of building improvements on the individual lot and prior to the issuance of the certificate of occupancy.

i. At such time that 75 percent (75%) of the platted lots are developed and/or 75 percent (75%) of the sections of required sidewalks are installed within a subdivision or section thereof, staff from the city may require the developer to complete the remaining sidewalk sections in advance of building improvements on the remaining vacant lots. It shall be the developer's responsibility for completing all required sidewalks within a subdivision or section thereof.

j. All sidewalk sections shall be completed before staff from the city will authorize the installation of the final asphaltic topping.

k. Sidewalk ramps shall be designed in accordance with the guidelines of the ADA, Public Law 101-336 (refer to Appendix Two, Drawings 4 and 18).

(8) **Bikeways/Bike Lanes/Bike Routes.**

a. Streets and highways designated as bike routes by the city or constructed with bike lanes shall be appropriately marked and signed by the developer of the subdivision.

b. Design and construction of off-street bikeways shall be in accordance with the alignment and classification denoted on the Bike Route Plan, or Long-Range Plan and standards set forth in the AASHTO Guide for the Development of Bicycle Facilities, current edition. The minimum width of all bikeways shall be eight (8) feet. Bikeways located in a public access easement shall be a minimum of ten (10) feet wide. In some cases, additional widths may be required.

c. The minimum pavement design for a bikeway will be 6 inches of stone base and 2 inches asphaltic wearing surface.

d. Bikeway ramps shall be designed in accordance with the guidelines of the ADA, Public Law 101-336.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.6 Street Lighting.

(1) A complete street lighting system shall be designed and approved with the appropriate electric utility. The style and type of the streetlights shall be determined through consultation with the electric provider and city staff. The same style poles and lighting fixtures shall be used in all phases of a subdivision when the same units are available, unless otherwise approved in writing by the city.

(2) The illumination pattern must be sufficient to ensure safe and adequate pedestrian and vehicular lighting conditions. In general, light poles installed in residential areas should be no greater than 300 feet apart and located at street intersections and at the terminus of all permanent cul-de-sacs.

(3) Light poles in commercial and service institution districts should be no greater than 250 feet apart and located at every street intersection.

(4) Other design aspects, such as spacing of poles, height of poles, type of lighting fixture, distribution of the illumination pattern, intensity of illumination, etc., must be in accordance with the Illuminating Engineering Society (IES), and all applicable electrical codes. A copy of all design data shall be submitted for the review and approval by staff from the city.

(5) The complete lighting system shall be designed using underground conduit with metal light poles and installed in such a manner that the system will be accepted for perpetual maintenance by the electric utility. The lighting system must be installed and fully operable prior to 50 percent completion of the proposed structures within a platted section of the subdivision.

(6) All material furnished and all work performed shall be in strict accordance with the latest revision of the National Electric Code, the National Electrical Safety Code, and the codes, regulations, and rules applicable in the area in which the work is being performed.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.7 Traffic Control, Street Markers and Warning Signage.

(1) All traffic regulatory signage shall conform to the requirements of the MUTCD, latest edition, and shall be installed within the limits of the public right-of-way or approved private access easement.

(2) The edge of the sign shall be placed a minimum of 2 feet from the street, measured from the face of curb and 3 feet (edge of sign) if the street has no curb. The height of the sign shall be a minimum of 6 feet tall, measured from the top of the curb to the bottom of the sign. If the street has no curb, the height shall be measured from the edge of pavement to the bottom of the sign.

(3) The designated speed limit for all streets shall be as provided in the Brentwood Municipal Code or as otherwise established by resolution and approved by the Board of Commissioners.

(4) All street name signs, and traffic regulatory signs shall be of high-intensity reflectivity conforming to the MUTCD retroreflectivity requirements.

(5) Temporary signs may be installed and maintained in lieu of permanent signs until the final asphalt topping has been installed. Temporary signs must meet the same requirements for mounting height, size, and legibility as permanent signs but may be mounted on temporary structures.

(6) The installation of temporary (or permanent) signs in accordance with these standards must be approved by staff from the city before building permits can be issued.

(7) The homeowners or property owner's association within a subdivision shall retain maintenance responsibilities for any decorative street name signs or regulatory signs and decorative posts. The city shall not be responsible for maintenance of any decorative signs or posts. All decorative signs must comply with the requirements as detailed within the MUTCD. All decorative signage must be reviewed and approved by staff from the city. The same style and type of signs and posts must be used in all phases of a subdivision if available unless otherwise approved in writing by the City.

(8) Where arterial or collector streets intersect arterial streets, provide pavement markings and stripping per the requirements as detailed within the MUTCD.

(9) During construction of the subdivision and until at least 75% of all of the building construction has been completed or as determined by the Engineering Director, the developer shall install "no parking" signs in the areas where construction is ongoing, on one side of all designated local streets. The required signage shall comply with the requirements as detailed within the MUTCD. The signs may be removed upon recommendation of the Engineering Director or designee.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.8 Driveways.

A driveway is a connection or an access point that connects a lot or tract of land to a public right-of-way (i.e., street or street) or an approved private ingress/egress easement. A driveway is typically constructed after the infrastructure is completed for a subdivision and therefore, will require modifications to an existing curb and gutter or curb to construct the improvement. Also, a portion of the work to construct a driveway occurs in the public right-of-way and may impact utilities and easements in the ground and/or a sidewalk.

(1) **Residential driveways.**

a. A driveway shall be constructed to provide a connection to the curb line that does not obstruct or divert flow out of the gutter line. For a driveway that accesses downhill from the street the elevation of the driveway at the right-of-way must achieve a minimum elevation equal to that at the top of the curb. The connection point shall provide an elevated apron to keep surface runoff in the gutter and not allow overflow to discharge into the driveway onto private property.

b. The maximum width of the curb cut at the driveway connection point, at the street or curb and gutter or edge of pavement, where applicable shall be 20 feet, or in conformance with the specifications of Section 78-486 of the Municipal Code, unless otherwise approved by staff from the city.

c. If the driveway crosses a sidewalk, then the maximum cross slope allowed within the width of the sidewalk area is two percent (2%). Approval and design of driveway cuts into the curbs shall conform to the construction specifications in these Regulations and all applicable standards established in Chapter 78, Article VII of the Zoning Ordinance —"Vehicle Access Control."

d. The maximum slope of any residential driveway shall be twenty percent (20%). Refer to Section 78-486 of the Zoning Ordinance.

(2) **Commercial/Service Institution driveways.**

a. Driveway connections for sites in commercial or service institution zoning districts may vary depending on location, number and use.

b. The maximum grades on driveway accesses shall not exceed eight percent (8%). All curb cuts must have the prior approval of the Planning Commission, or as established by the Zoning Ordinance for individual districts.

c. If the driveway crosses a sidewalk, then the maximum cross slope allowed within the width of the sidewalk area is two percent (2.0%).

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.9 Inspection/Testing of Streets and Infrastructure.

(1) Staff from the Engineering and Public Works Departments shall periodically inspect the proposed improvements during construction to ensure their satisfactory completion.

(2) The applicant shall pay the city all inspection fees, which shall be based upon the hourly cost of field inspecting for qualified personnel, or as established in the city's annual budget.

(3) If it is determined by inspection that any of the required improvements have not been constructed in accordance with the city's construction standards and specifications, the applicant shall be responsible for the correction of all deficiencies in workmanship or materials to complete the proposed improvements.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.10 Utility Systems.

(1) **General.** There are several providers that furnish utility services to developments in Brentwood. The utility that will provide service to a particular development is determined by the "service area" of the provider. When it is not clear who the provider will be, it is recommended that staff from the City of Brentwood Water Services Department be contacted for direction. A map of the service areas for water and sewer providers is available on the city's website. In some cases, there may be several providers for a given tract. For example, it is not unusual for a development to have different utility providers for each type of utility such as water, sewer, electrical, gas, phone and cable. Therefore, coordination of utilities is a critical part of the subdivision process.

Each utility has different requirements for design, construction, approval, fees, security deposits and inspections. It is the developer's responsibility to coordinate with the appropriate utility providers including the City Water Services Department. It is important to be aware that approval by the city's Planning Commission does not constitute approval of the utility services or the availability of utilities.

(2) **Water System.**

a. Distribution lines properly connected with the public water supply system or with an alternate supply approved by the Board of Commissioners and the Tennessee Department of Environment and Conservation (TDEC) shall be constructed in such a manner as to adequately serve both domestic use and fire flow requirements, all lots as shown on the subdivision plat.

b. The applicant shall submit a water availability request to staff from the Water Services Department prior to the start of the project and receive confirmation of availability before the approval of the preliminary plan.

c. All distribution lines shall be constructed of Ductile Iron Pipe (DIP).

d. Distribution lines of less than six inches in diameter shall not be installed, unless dual supply water lines are installed to serve the development.

e. The distribution system shall be designed as a "loop" system that provides two directions of supply with a minimum of dead ends.

f. Fire hydrants shall be placed in locations acceptable to the Fire Chief, or designee, to ensure that adequate fire protection to all structures can be provided and that the hydrants will be accessible, will be protected from traffic hazards, and will not obstruct walkways, streets, or parking facilities. Fire hydrants shall be placed no greater than 500 feet apart.

g. For each new platted lot in a subdivision, connections to the water system shall be installed so that future connections will not require digging up or tunneling under streets or interruption of service to other connections on the system.

h. All fire hydrants and distribution lines shall be installed, tested and operational prior to the start of combustible construction.

i. For purposes of these Regulations, flows and pressures shall be measured at the point of private connection to the distribution system. Should topography dictate, pressures may require augmentation by use of private pressure reducing or pressure boosting devices. Pressure reducing valves will be required if the residual pressure is above 80 psi measured at the water meter.

j. All design and construction shall be in accordance with these Regulations, the city's standard water specifications, and the requirements of the TDEC, Drinking Water Section. In cases of conflict, the more stringent requirement shall apply.

k. The more stringent requirement of domestic use or fire flow shall apply.

(3) **Fire flow requirements.**

a. "Fire flow" means the amount of water required to extinguish a fire or stabilize a hazardous incident. Minimum needed fire flow requirements shall be 1,000 gpm with a residual pressure of 20 psi.

b. In areas where the minimum needed fire flow cannot be achieved, automatic fire sprinklers shall be installed in accordance with National Fire Protection Association (NFPA) requirements.

(4) **Sanitary sewer and septic tanks.**

a. The applicant shall submit a sewer availability request to staff from the Water Services Department prior to the start of the project and receive confirmation of availability before approval of the preliminary plan by the Planning Commission.

b. Where the Board of Commissioners determines that a subdivision is not required to connect to an existing public sewage system, such lots shall not be platted until approval for alternative systems is granted in writing by the county health officer, or an authorized representative.

c. Sanitary sewer service lines to individual lots shall not be less than six inches in diameter; and may be larger, depending on anticipated flow. The size shall be determined by staff from the Water Services Department.

d. Sewer service to a development shall be provided by a gravity flow system. Sewer lift stations and/or pressure systems must be approved by staff from the Water Services Department.

(5) **Accessibility of sewer and/or water supply system.**

a. When a proposed subdivision is not directly adjacent to an area served by a public sewer or water supply system, city staff, shall determine how the subdivider must make connections. If off-site extensions of sewer and water improvements are required of the developer, then the developer may be eligible for credits toward payment of future tap fees in accordance with current city ordinances.

b. If the development is outside the Brentwood water and sewer service area, the utility providing service will determine requirements for connections to public utility lines.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

7.11 Suspended Construction.

When construction of a subdivision is halted for 60 days or more the site shall be stabilized per Chapter 56 of the Municipal Code, the entrances shall be securely and safely blocked, and signs must be posted at any road connections indicating the road(s) is/are closed. During suspended construction the vegetation on the site must be maintained in accordance with Chapter 30, Article II of the Municipal Code. The city reserves the right to make periodic inspections of the site during the suspended period and require the developer to correct deficiencies that are a deemed a nuisance to surrounding properties or public areas.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE EIGHT. COMPLETION AND MAINTENANCE OF IMPROVEMENTS

8.1 Guarantee in Lieu of Completed Improvements.

Before a final subdivision plat may be recorded, all improvements required under Section 5.5 of these Regulations shall be constructed in a satisfactory manner and approved by the city. The applicant shall post a security in an amount equal to 110% of the estimated cost of the remaining required improvements, based upon the amount of work completed and the amount determined by city staff as sufficient to secure the satisfactory construction, installation and dedication of the required remaining improvements. The amount of the security must be sufficient to guarantee that improvements will be made and utilities installed without cost to the city in the event of default of the subdivider. The security instrument shall comply with all statutory requirements and shall be satisfactory to the city Attorney as to form, sufficiency and manner of execution as set forth in these Regulations. It shall be the developer's responsibility to ensure that the submitted security remains current. Should a security instrument expire before the required improvements are completed, it shall be the developer's responsibility to replace the security instrument.

The following requirements shall apply to any security posted with the city pursuant to this article:

(1) **General.** Before a final plat of a subdivision which requires streets and other infrastructure improvements can be recorded, the owner or developer must enter into a performance agreement with the city, in accordance with these Subdivision Regulations. (See Appendix Five.) A separate performance agreement shall be required for any amenities which have not yet been completed but have been approved for the subdivision. (See Appendix Six.) Each performance agreement shall reference the related security, and shall stipulate the work to be performed by general categories and the estimated value or cost of each category. Each performance agreement shall also stipulate a completion date for all of the work to be performed. Any changes or extensions to the timeframe or other stipulations as detailed within a performance agreement must be reviewed and approved by the Planning Commission. The related security instrument shall remain in force in its full-face amount, subject to any reductions permitted hereunder, until all required improvements are completed and accepted for maintenance.

(2) **State of Tennessee Bank Collateral Pool.** The security shall be issued by a financial institution, which is currently a member of the State of Tennessee Bank Collateral Pool, as administered by the State of Tennessee Department of Treasury.

(3) **Form of Security.** The security instrument shall express the value of the improvements to be completed in a total amount equaling the sum of all work categories, and shall be in one of the following forms:

I. *Irrevocable Standby Letter of Credit.* Issued by or confirmed by a financial institution, which is a member of the Tennessee Bank Collateral Pool and has an office located in the State of Tennessee, and meeting the criteria set forth below:

1. The letter of credit shall name the City of Brentwood as beneficiary.
2. The initial term of the letter of credit shall be for a minimum of two (2) years from date of issuance of the security.
3. The letter of credit shall include an automatic renewal clause under which the term is renewed until written authorization to release the letter of credit is received from the city, provided that with at least 90 days advance notice, the issuing financial institution may notify the Planning and Codes Director of its decision not to extend the document's expiration date.
4. If the expiration date would otherwise fall on a weekend day or a holiday observed by the City of Brentwood or the issuing financial institution, it will be extended until the next day on which the City of Brentwood and the financial institution are open for business.
5. The letter of credit must include a statement identifying the improvements for which it is issued.
6. The following language (or substantially similar language acceptable to the city) shall be included on all letters of credit. The blanks shall be completed appropriately.

   We hereby issue this Irrevocable Standby Letter of Credit in your favor which is available at sight by drafts on(Name of Bank), bearing the clause "Drawn under Irrevocable Standby Letter of Credit Number _____", accompanied by:

   Beneficiary's statement signed by one of its officials stating"(Name of the developer)has failed to complete certain improvements and/or has failed to obtain written authorizations for release from all affected agencies for the development project known as(Name of the project)."
7. Partial drawings shall be permitted.
8. Presentation of drafts drawn on the letter of credit and accompanying statements shall be allowed by hand delivery at a place physically located within a 60-mile radius of the city limits of Brentwood, Tennessee; by registered or certified mail or courier service (such as Federal Express); and/or by facsimile or other electronic means.
9. Letters of credit provided under this section must be substantially in the form shown in Appendix Four, provided that city staff may allow minor modifications that are consistent with the intent of these Regulations.

II. *Cashier's or Certified Check.* Issued by a financial institution, which is a member of the Tennessee Bank Collateral Pool and shall be non-expiring. All Cashier's checks accepted by the city shall be deposited into a special NON-INTEREST BEARING escrow account, which will be used to complete

the required improvements within a specified project (residential or commercial) should the developer fail to complete the required improvements. Upon completion of all required improvements, a follow-up inspection and completion of the required maintenance period, if applicable, the remaining amount, less any necessary draws shall be returned to the developer.

(4) **Issuing Bank Rating.** Any security provided to the city under this Article must be issued by a financial institution having a "C" or better rating as shown in the latest edition of the Kroll Bond Rating Agency, Inc., or its successors. An alternate rating issued by Standard & Poor's (S&P), Moody's Investor Service or Fitch Ratings may also be accepted by the city. Should the developer/subdivider elect to rely on an alternate rating, the issuing financial institution shall have a minimum credit rating of "A" at the time of the submittal of the surety to Planning and Codes Department staff. The subdivider shall furnish applicable ratings data for the issuing financial institution with the submittal of the final subdivision plat. At the discretion of city staff, additional documentation detailing the issuing financial institution's stability may be required as part of the submittal in order to assure that completion of required improvements is sufficiently guaranteed. All applicable costs associated with providing the rating and stability documentation shall be borne by the developer/subdivider. Approval of the security instrument by city staff shall be required before the subdivision plat may be recorded.

(5) **Rating Changes.** Should the Kroll rating of the issuing financial institution fall below a "C" and/or the alternative credit rating from S & P, Moody's or Fitch fall below an "A" or when other reports are published that indicate the strength of the issuing financial institution is at risk, city staff shall have authority to:

a. Provide written notification to the developer/subdivider, requiring a new instrument that meets the requirements of these Regulations within 90 days of the date of the notification. If a new instrument is not in place within 90 days of the city's notification, the city shall immediately process a draw on the security, or

Require a confirmation from a second financial institution, stating that a line of credit has been secured from the confirming financial institution. All documents presented by the confirming bank shall conform to the requirements of the original letter of credit and shall acknowledge the obligation of the confirming bank to assume the same responsibilities as the issuing bank, including the obligation to pay against presented documents. Payment from the confirming bank must be guaranteed, regardless of the stability of the issuing bank.

(6) **Inspections/Reductions.** The progress of the improvements shall be reviewed at least once a year by city staff, at which time the amount and/or term of the security may be increased, reduced or extended, or the security may be released in recognition of significant work having been completed. If a reduction in the amount of the security is requested at any other time during the year by the applicant, a five-hundred-dollar ($500.00) fee will be charged to defray inspection, processing and administrative costs. If for any reason, the security is not renewed or extended as required by the Planning Commission within thirty (30) days prior to the expiration date, or if a replacement security is not submitted in accordance with the requirements set forth herein, then the security will be considered in default and the drawing on the security in its full amount may be completed by city staff.

city staff shall be authorized to approve partial reductions in the amount of the security, provided:

a. No more than one (1) partial reduction shall be approved in the amount of the performance security instrument during the construction of the subdivision or section thereof. Partial reductions shall be authorized upon completion of an inspection by staff from the applicable city departments and only if significant work has been completed since

the initial submittal of the security. Partial reductions may be requested by the developer or property owner when 50% of the required work has been completed.

b. In no event shall the amount of the security instrument be reduced to a level which, in the opinion of staff from the city, would not allow for completion the subdivision, or affected section.

(7) **Amendments.** Any amendments to a performance agreement or letter of credit shall comply with all applicable requirements of this Article. All letter of credit amendments shall include a term of two years and shall extend the required automatic renewal clause. All other terms and conditions included as part of the original document shall remain unchanged. Should the financial institution have previously issued a notice of non-renewal, the amendment shall also rescind said notice. If the lending institution fails to rescind any previously issued notices of non-renewal, staff shall immediately issue a draw on the letter of credit.

(8) **Erosion Control.** In addition to any other security instruments required under this Article, an initial security for erosion prevention and sediment control measures and off-site drainage improvements shall be provided by the developer if applicable. This security shall conform to all standards included within these Regulations. Erosion prevention and sediment control and off-site drainage security instruments shall be provided at an amount as calculated by city staff. The security instrument must be in place before a grading permit will be issued. The security will remain in place, with no reductions, until such time as the Engineering Director or designee determines that erosion prevention and sediment control is no longer needed. At any time, should the erosion prevention and sediment control or off-site drainage be determined by the Engineering Director or the Director's designee to be ineffective, or in need of remediation, the developer shall be notified and given 48 hours to take the necessary corrective action. If such corrective action is not completed by the developer, or if the erosion prevention and sediment control measures or off-site drainage continue to be ineffective or in need of remediation, the city may select a contractor to correct the deficiencies without prior notification to the developer. Costs for the corrections will be drawn from the posted security and will be the responsibility of the developer. If, at any time, the amount of the security instrument falls below the current estimate of the cost to complete the work, the developer shall post new or additional security in the amounts required by the Engineering Director or designee. Failure to post a security instrument in the required amount will result in the withholding of additional permits and/or approvals, including certificates of occupancy.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

8.2 Failure to Complete Improvements.

In cases where a security instrument has been posted and required improvements have not been completed within the terms of such security instrument, the performance agreement or the requirements of these Subdivision Regulations, city staff may declare the security to be in default and require that all the improvements be installed, regardless of the extent of the building development, or the expiration date of the security instrument, at the time the security is declared to be in default. The funds from the security shall be used to complete the improvements and/or to reimburse the city for any and all expenses that may be incurred to complete the improvements. In the event the security instrument does not adequately cover the costs incurred by the city to complete the improvements, the Planning and Codes Director may place a hold on the issuance of building permits for those lots within the development which have not had permits issued for construction until such time as the developer has reimbursed the city for the total cost of the improvements, including legal and administrative costs as provided in the performance agreement.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

8.3 Completion of Approved Facilities within Designated Open Space Areas.

All facilities and improvements proposed for construction or installation by the developer in any designated open space areas, including subdivision amenities and entrance feature improvements, shall be completed by the developer or the developer's successor in interest, unless otherwise approved by the Planning Commission. Prior to the recording of the first platted section of the subdivision, the developer shall provide a letter of credit or other security meeting the requirements of this Article. The security shall ensure completion in accordance with the approved development plan and the performance agreement and within the overall timetable for such improvements established pursuant to Article Five of these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

8.4 Inspection/Testing of Improvements.

If it is determined by inspection that any required improvements have not been constructed in accordance with the city's construction standards and specifications, the applicant shall be responsible for completing the required improvements in accordance with such standards and specifications. When the cost of improvements is covered by a security instrument, the security instrument will not be released until the improvements comply with the approved standards and specifications.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

8.5 Maintenance Security.

Upon reduction of a security instrument guaranteeing completion of the improvements, to maintenance levels, the city shall consider the original security as a maintenance security in an amount as determined by staff from the appropriate city departments. Said maintenance security shall remain valid for a period of at least one year as stipulated within the performance agreement and shall be subject to the standards established in this Article.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

8.6 Maintenance of Improvements.

The developer shall be required to maintain all infrastructure improvements, including all lot improvements, until acceptance of the public improvements by the city or other appropriate entity.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE NINE. ADMINISTRATION

9.1 Interpretation, Conflict and Separability.

(1) **Interpretation.** In the interpretation and application of the Subdivision Regulations, the provisions of these Regulations shall be held to be adopted for the health, safety, and general welfare of the citizens of the City of Brentwood.

(2) **Conflict.** These Regulations are not intended to interfere with, abrogate, or annul any other resolution, ordinance, rule or regulation, statute, or other provision of law. Where any provision of these Regulations

imposes restrictions different from those imposed by any other provision of these Regulations or any other resolution, rule or regulation, or other provision of law, the provisions that are more restrictive or impose higher standards shall control.

(3) **Private Provisions.** These Regulations are not intended to abrogate any easement, covenant or any other private agreement or restriction, provided that where the provisions of these Regulations are more restrictive or impose higher standards or regulations than such easement, covenant, or other private agreement or restriction, the requirements of these Regulations shall govern. Where the provisions of any easement, covenant, or private agreement or restriction impose duties and obligations more restrictive or standards that are higher than the requirements of these Regulations, or the determinations of the Planning Commission or the city in approving a subdivision or in enforcing these Regulations, and the private provisions are not inconsistent with these Regulations, then the private provisions shall be operative and supplemental to these Regulations and the determinations made under these Regulations.

(4) **Severability.** If any part or provision of these Regulations or application thereof to any person or circumstances is adjudged invalid by any court or competent jurisdiction, such judgment shall be confined in its operation to the part, provision, or application directly involved in the controversy in which such judgment shall have been rendered and shall not affect or impair the validity of the remainder of these Regulations or the application thereof to any other person or circumstances. The Planning Commission hereby declares that it would have enacted the remainder of these Regulations even without such part, provision, or application.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.2 Saving Provision.

These Regulations shall not be construed as abating any action now pending under, or by virtue of prior existing Subdivision Regulations, or as waiving any section or provision existing at the time of adoption of these Regulations or amendments, or as vacating or annulling any rights obtained by any person, firm, or corporation by lawful action of the city, except as shall be expressly provided for in these Regulations.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.3 Vacation of Plats.

(1) **General.** The vacation of a plat means that the plat is being destroyed and all public rights in the streets, alleys, public grounds, and all dedications laid out or described in the plat are being divested. A plat or any part of a plat may be vacated by the owner of the property, only as set forth in this section.

(2) **Procedure.** No plat may be vacated unless the vacation is approved by the Planning Commission. Any vacation which abridges or destroys any public rights to the use of any property, or any completed streets, alleys or other improvements shall also be submitted to the Board of Commissioners for approval.

(3) **Recordation.** An instrument evidencing the vacation of the plat shall be executed by the owners, acknowledged by a notary public and approved, by the city; and recorded in like manner as plats of subdivisions; and being duly recorded shall operate to destroy the force and effect of the recording of the plat so vacated, and to destroy all public rights in the streets, alleys, and public grounds, and all dedications laid out or described in such plat, except as may be reserved in such instrument.

(4) **Vacating Transferred Lots.** When lots have been sold, the plat may be vacated in the manner established herein, provided that all the owners of lots in such plat shall join in the execution of the instrument evidencing the vacation.

(5) **Refund of Fees or Donations.** Regardless of the disposition of the plat vacation petition, the developer or the developer's successors will have no right to a refund of any monies, fees, or charges paid to the city nor to the return of any property or consideration dedicated to or delivered to the city except as may have previously been agreed to by the city and the developer.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.4 Enforcement.

(1) **General.** The enforcement of these Regulations and penalties for the unapproved subdivision of land are authorized by public acts of the State of Tennessee. The Planning and Codes Director or designee shall be responsible for investigating violations of these Regulations and may refer violations to the city Attorney for legal action.

(2) **Submission of Subdivision Plat for Approval.** No plat or plan for the subdivision of land into two (2) or more lots or tracts within the City of Brentwood shall be admitted to the land records of Williamson County or recorded by the county register of deeds until said plat or plan has received final approval in writing by the Planning Commission as provided in T.C.A. § 13-4-302.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.5 Penalties.

(1) **Transferring Lots in Unapproved Subdivisions.** Per T.C.A. § 13-4-306, the owner or the agent of the owner of any land shall not close the sale of the land by reference to, exhibition of, or by other use of a subdivision plat without first submitting a final subdivision plat to the Planning Commission and receiving the Planning Commission's approval and before the final plat is recorded in the Williamson County Register's Office. Further, an owner or agent of the owner of any land may not falsely represent to a prospective purchaser of the land that roads or streets will be constructed by the city or other political subdivision. The description by metes and bounds in the instrument of transfer or other document used in the transfer does not exempt the transaction from a violation of this law.

(2) The city, through the city Attorney or other official designated by the Board of Commissioners, may seek injunctive relief for any violation of this section.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.6 Amendments.

For the purpose of providing for the public health, safety, and general welfare, the Planning Commission may amend the provisions imposed by these Subdivision Regulations. The Planning Commission shall hold public hearings on all proposed amendments as required by State law.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.7 Variances.

(1) **General.** Where the Planning Commission finds that extraordinary hardships or practical difficulties may result from strict compliance with these Regulations, and the purposes of these Regulations may be served to a greater extent by an alternative proposal, it may approve variances to the Subdivision Regulations so that substantial justice may be done and the public interest secured. A variance shall not have the effect of

nullifying the intent and purposes of these Regulations, and the Planning Commission shall not approve a variance unless it shall make findings, based upon the evidence presented to it in each specific case, that:

a. The granting of the variance will not be detrimental to the public safety, health, or welfare, or injurious to other property or improvements in the surrounding area.

b. The conditions upon which the request for a variance is sought, and are not applicable generally to other property.

c. Because of the particular physical surroundings, shape or topographic conditions of the specific property involved, or because of other extraordinary conditions specific to the property, a particular hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these Regulations is carried out, and

d. The variance will not in any manner vary the provisions of the Zoning Ordinance, comprehensive plan, or official Zoning map.

(2) **Conditions.** In approving variances, the Planning Commission may require such conditions as will, in its judgment, secure substantially the objectives, standards, and requirements of these Regulations.

(3) **Procedures.** A separate written request for any such variance shall be submitted along with the initial filing of the related subdivision action for consideration by the Planning Commission. The written request shall state fully the grounds for the variance, and all facts relied upon by the applicant.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

9.8 Appeals.

For matters falling within the scope of the regulation powers granted to the Planning Commission by T.C.A., Title 13, Chapter 4, any person or persons, or any entity aggrieved by any decision, finding or interpretation of the Planning Commission may seek review by the appropriate court of record of such decision, finding or interpretation, in the manner provided by the laws of the State of Tennessee. Administrative appeals of staff interpretations regarding the general application of regulations and standards contained herein may be submitted to the Planning Commission.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

ARTICLE TEN. ADOPTION AND EFFECTIVE DATE

10.1. Generally.

(1) Before adoption of these subdivision regulations, a public hearing as required by T.C.A. § 13-4-303, was held on August 2, 2021, September 7, 2021, and on August 5, 2024.

(2) These rules and regulations shall be in full force and effect from and after their adoption and effective date.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021; Amend. of 9-1-2024)

APPENDIX ONE. DEFINITIONS AND ACRONYMS

Usage.

For the purpose of these Regulations certain numbers, abbreviations, terms, and words shall be used, interpreted, and defined as set forth in this Article.

Unless the context clearly indicates to the contrary, words used in the present tense include the future tense and words used in the plural include the singular.

Words and Terms Defined.

AASHTO. The American Association of State Highway and Transportation Officials.

ADA. The Americans with Disabilities Act.

Alley. A public or private right-of-way primarily designed to serve as secondary access to the side or rear of those properties whose principal frontage is on some other street.

Applicant. The owner of land proposed to be subdivided or their representatives who shall have express written authority to act on behalf of the owner. Consent shall be required from the legal owner of the premises.

Arterial Street. A continuous highway or system of highways, carrying heavy and relatively fast traffic, which connects cities and currently absorbs collector traffic, as shown on the major thoroughfare plan of the city.

As-built means a set of drawings and documents that delineate and describe the as-built condition of stormwater control measures and stormwater management facilities as actually constructed, including but not limited to elevation, size, type, slope, location, etc.

ASTM. The American Society for Testing and Materials.

AutoCAD. A commercial computer-aided design and drafting software

Base Flood. The flood elevation having a one percent chance of being equaled or exceeded in any given year. This term is also referred to as the 100-year flood or the one percent annual chance flood.

Best Management Practices. Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state. BMPs also include treatment requirements, operating procedures; and practices to control plant site runoff, spillage, leaks, sludge, or waste disposal, or drainage from raw material storage. BMPs include source control practices (non-structural BMPs) and engineered structures designed to treat runoff. Structural BMPs are facilities that help prevent pollutants in stormwater runoff from leaving the site. Non-structural BMPs are techniques, activities, and processes that reduce pollutants at the source.

Bike Route Plan. A plan, developed by the city identifying the location and alignment of all bikeways, bike routes and other trail systems.

Bikeway. Any path or roadway facility that is intended for and suitable for bicycle use.

Building Envelope. The area formed by the front, sides and rear building setback lines of a lot within which the principal buildings or other structures must be located.

Catchment Zone. An area adjacent to a vertical wall where no structures or public ways such as parking lots, drive aisles, sidewalks or any facilities expected to be occupied by the public under normal use are allowed. The catchment zone is measured from the toe of the wall.

Certify. Whenever these Regulations require that an agency or official certify the existence of some fact or circumstance, the municipality by administrative rule may require that such certification be made in any manner, oral or written, which provides reasonable assurance of the accuracy of the certification.

CFS. Cubic Feet per Second.

CIP. Capital Improvements Plan, being a plan of proposed capital outlay appropriations and a means of financing them.

City Attorney. The licensed attorney designated by the city to furnish legal assistance for the administration of these Regulations.

Collector Street. An urban street, which collects traffic from minor streets and feeds it into arterial streets; includes the principal entrance streets of a residential development and streets for major circulation within the development as shown on the major thoroughfare plan of the city.

Commercial and Service Institution streets. Streets designed to provide access to a platted commercial development consisting of more than one business, industry or commercial establishment or service institution use (as designated by the Zoning Ordinance).

Common Ownership. Ownership by the same person, corporation, firm, entity, partnership, or unincorporated association; or ownership by different corporations, firms, partnerships, entities, or unincorporated associations, in which a stockbroker, partner, or associate, or a member of the family owns an interest in each corporation, firm, partnership, entity, or unincorporated association

Concept Development Plan. A generalized plan indicating the boundaries of a tract of tracts under common ownership, and identifying proposed land use, land use intensity and thoroughfare alignment to enable the Subdivider to save time and expense in reaching general agreement with the Planning Commission as to the form of the plan and the objectives of these Regulations.

Construction Plan. The maps or drawings accompanying a subdivision plan or plat and showing the specific location and design of improvements to be installed in the subdivision in accordance with the requirements of the Planning Commission as a condition of the approval of the plat.

Conventional Lot. Lots or property with less than 15 percent (15%) grade and not located in a legally designated floodway overlay district.

Cul-de-Sac. A local street with only one outlet that terminates in a vehicular turnaround for the safe and convenient reversal of traffic movement.

Dead-end street. A permanent terminus of a local street, and the design shall facilitate turning movement of larger vehicles such as a school bus or fire truck.

Design Storm is a storm event as defined by Precipitation-Frequency Atlas of the United States. Atlas 14. Volume 2. Version 3.0. U.S. Department of Commerce. National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Springs, Maryland or its digital product equivalent. The estimated design rainfall amounts, for any return period interval (i.e., 1-year, 2-year, 5-year, 10-year, 25-year, etc.) in terms of either 24-hour depths or intensities for any duration.

Developer. The owner of land proposed to be subdivided or a representative who is responsible for any undertaking that requires review and/or approval under these Regulations. See Subdivider.

DIP. Ductile Iron Pipe

DRC. Development Review Committee

DXF. Drawing Exchange Format, in ASCII format created in AutoCAD

Easement. Authorization by a property owner for another to use the owner's property for a specified purpose.

Engineered Wall. A manmade wall designed by a Tennessee licensed professional engineer. The design of the wall must be submitted as part of the plan review process.

FEMA. The Federal Emergency Management Agency.

FIPS. Federal Information Processing Standards.

Flag Lot. A parcel of land in which the front line abuts one or more rear or side lot lines of adjacent lots and the primary access is by a private or privately shared drive leading to the publicly maintained street right-of-way.

Front yard. The yard extending across the entire width of a lot between the right-of-way line of a public street and the front elevation of a principal structure, including covered porches, canopies and carports.

Frontage. That side of a lot abutting on a street or way and ordinarily regarded as the front of the lot; but it shall not be considered as the ordinary side of a corner lot.

GIS. Geographic Information System.

GPM. Gallons Per Minute.

Grade. The slope as specified in terms of percentage.

HDPE. High-Density Polyethylene (pipe).

Health Safety or General Welfare. The purpose for which municipalities may adopt and enforce land use regulations for the prevention of harm or promotion of public benefit to the community; commonly referred to as police power.

Hillside Protection Overlay. An overlay zoning district established to meet the challenges of development in the higher elevation areas of the city. The district shall include all areas with an elevation of 850 feet or greater. Any development or land disturbance within this area shall comply with the technical and development standards of Division 14 of the Zoning Ordinance and the associated requirements of the underlying zoning district.

Homeowners Association or HOA. An incorporated nonprofit organization operating under recorded land agreements in which individual property owners share common interests and maintenance responsibilities for open space, landscaping or amenity improvements.

IES. Illuminating Engineering Society

Individual Sewage Disposal System. A septic tank, seepage tile sewage disposal system, or any other approved sewage treatment device.

JPG/JPEG. A compressed image file in a format standardized by the Joint Photographic Experts Group.

LFE. Means the lowest floor of the lowest enclosed area (including basement). The lowest floor of a deck shall be the top of the lowest finished surface.

Landscape Buffer. A naturally vegetated area or vegetated area along the exterior boundaries, of an entire development processed in accordance with a multi-phase or phased subdivision application, which is landscaped and maintained as open space in order to eliminate or minimize conflicts between such development and adjacent land uses.

Local Government. The municipality of Brentwood.

Local (Minor) Street. A street whose principal function is to provide access to abutting properties rather than move large volumes of traffic.

Lot. A tract, plot, or portion of a subdivision or other parcel of land intended as a unit for the purpose, whether immediate or future, of transfer of ownership, or possession, or for building development.

Lot Improvement. Any building, structure, place, or other object situated on a lot constituting a physical betterment of real property.

Major Subdivision. The division of land either commercial or residential into multiple lots, where new infrastructure is required.

Major Thoroughfare Plan. The street map adopted by the city, pursuant to law, showing the configuration and classification of existing and proposed streets, and highways.

Minor Subdivision. A minor modification of an existing lot either commercial or residential such as a change in setback or a shift in property line, or a minor division of property into two or more lots where no new infrastructure is required.

MPH. The rate of speed measured in miles traveled per hour.

MSAG. Master Street Address Guide, a data set containing the street names and their associated address ranges within a governmental entity.

Multi Use Trail or ***Path.*** A paved trail, being at least ten (10) feet wide and designed to support more than one use.

MUTCD. Manual for Uniform Traffic Control Devices.

NAD. North American Datum.

NAVD. North American Vertical Datum, 1988.

New Development. A project involving the construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure; or any use or extension of land, which requires either the approval of a plat pursuant to these Regulations, the issuance of a building permit, or connection to the City's water or sanitary sewer system.

NFPA. National Fire Protection Association.

Non-Residential Subdivision. A subdivision whose intended use is other than residential, such as commercial or industrial.

Off-Site. Any premises not located within the area of the property to be subdivided, whether or not in the common ownership if the applicant for subdivision approval.

Ordinance. Any legislative action, however denominated, of a local government, which has the force of law, including any amendment or repeal of any ordinance.

OSRD. A City of Brentwood zoning district—Open Space Residential Development.

OSRD-IP. A City of Brentwood zoning district—Open Space Residential Development—Innovative Project.

Owner. The person who holds the fee simple title to the property, and the person or persons who have acquired any interest in the property by contract, or purchase or otherwise.

PDF. Portable Document Format

Person. Any individual or group of individuals; or any corporation, general or limited partnership, or other business entity; or any joint venture, unincorporated association, or any other group or organization acting as a unit.

Performance Agreement. A contract entered into by the applicant by which the applicant promises to complete required improvements within the subdivision in a specified time period following final subdivision plat approval.

Planned Commercial Development. An interrelated development adhering to a master development plan and located on a single tract of land, or on two or more tracts of land which may be separated only by a street or

other right-of-way. A planned development may be characterized by two or more adjoined structures in separate ownership and having zero-foot side setbacks on internal lot lines or by two or more tracts in separate ownership and with separate structures.

Preliminary Plan. The preliminary drawing or drawings, described in these Regulations, developed to identify the location and general relationship between sections, in a phased development, land uses, improvements, structures, circulation systems, landscaping and design elements.

Pre-Split Wall. A wall created by controlled blasting, typically in a rock formation, and subsequent removal of the material blasted from the face.

Private Street. Any street that is not publicly owned and maintained and used for access by the occupants of a specific development, property owners, their guests and the general public.

Property Owners Association (Homeowners Association). An association or organization, whether or not incorporated, which operates under and pursuant to recorded covenants or deed restrictions, through which each owner of a portion of a subdivision (whether a lot, parcel site, unit plot, condominium, or any other interest) is automatically a member as a condition of ownership and each such member is subject to a charge or assessment for a pro-rated share of expense of the association which may become a lien against the lot, parcel, unit, condominium, or other interest of the member.

Protected Area. Areas near a vertical wall, usually adjacent to the catchment zones, that are intended to be protected from wall failure and/or debris falling from the wall by the catchment zone. These could include buildings, sidewalks, parking lots, driveways bikeways or other areas the public may use or occupy under the normal use of the facility or land in question.

Protected Area Barrier. A structural wall, designed by a licensed professional engineer, that protects the "protected area" from falling or rolling debris that may result from a wall failure or material falling from the top or face of the wall.

Protective Safety Railing or Barrier. A fence, rail, or heavy landscaping at the top of a vertical wall to prevent accidental falls.

PROWAG. Public Rights-of-Way Accessibility Guidelines

PSI. Pounds per Square Inch.

Public Improvement. Any drainage ditch, street, parkway, sidewalk, pedestrian way, tree, lawn, off-street parking area, lot improvement, or other facility for the local government may ultimately assume the responsibility for maintenance and operation, or which may affect an improvement for which local government responsibility is established.

Public Meeting. A meeting of the Planning Commission or Governing Body proceeded by notice, open to the public and at which the public may, at the discretion of the body holding the public meeting is heard.

R-2. A City of Brentwood zoning district—Suburban Residential

Rear yard. The yard extending across the entire width of the lot between the rear lot line and the rear elevation of the principal building, including covered porches, canopies and carports.

Registered Architect. An individual registered in the State of Tennessee to practice in the field of architecture.

Registered Engineer/Professional Engineer. An engineer properly licensed and registered in the State of Tennessee.

Registered Landscape Architect. An individual registered in the State of Tennessee to practice in the field of landscape architecture.

Registered Land Surveyor. A land surveyor properly licensed and registered in the State of Tennessee.

Resubdivision. Any change in a map of an approved or recorded subdivision plat that affects any street layout, any area reserved for public use, 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 strip of land acquired by reservation, dedication or condemnation and intended to be occupied by a public road and other public utilities, (Also referred to as Street Right-of-Way width.)

Roundabout. A circular intersection with a raised island that is usually landscaped and located at the intersection of two street legs used to reduce traffic speeds and accidents without diverting traffic onto adjacent residential streets.

Screening. A method of visually shielding or obscuring one abutting or nearby structure or use from another by fencing, walls, berms, or densely planted vegetation.

SCS. The United States Soil Conservation Service (also known as the NRCS or Natural Resources Conservation Service).

Security Instrument. An Irrevocable Standby Letter of Credit or Cashier's check, that meets the requirements of Article Eight of these Regulations submitted to ensure the completion of required improvements, within residential, commercial and service institution projects.

Setback. The minimum distance by which any building or structure must be separated from a street right-of-way or lot line.

Side yard. A yard extending along the side lot line from the front yard to the rear yard and lying between the side lot line and the side elevation of the principal building, including covered porches, canopies and carports.

Sinkhole. A hole or irregularly shaped depression usually formed in rock or soil by the action of water that is connected to an underground passage or hollow area.

Site-related facility. An improvement or facility, which is for the primary use or benefit of a new development and/or which is for the primary purpose of safe and adequate provision of [identify categories of public facilities for which an impact fee is to be charged] to serve the new development, and which is not included in the capital improvements program and for which the developer or property owner solely responsible under subdivision or other applicable regulations.

Splitter Island. A raised, mountable, triangular island meant to guide traffic and separate the opposing lanes of each street where it intersects a roundabout.

Steep Lots. Lots or property with 25 percent (25%) grade or greater.

Stormwater Control Measure (SCM) means permanent practices and measures designed to reduce the discharge of pollutants from new development projects or redevelopment projects.

Stream. is a surface water that is not a wet weather conveyance. This includes lakes, wetlands, and other non-linear surface waters.

Street Classification. For the purpose of providing for the development of the streets, highways and rights-of-way in the governmental unit, and for their future improvement, reconstruction, realignment, and necessary widening, including provision for curbs and sidewalks, each existing street, highway, street, and right-of-way-way, and those located on approved and filed plats, have been designated on the Major Thoroughfare Plan of the city and classified therein. The classification of each street, highway, street, and right-of-way is based upon its location

in the respective zoning districts of the local government and its present and estimated future traffic volume and its relative importance and function as specified in the Master Plan of the local government. The required improvements shall be measured as set forth for each street classification on the Major Thoroughfare Plan.

Subdivide. The act or process of creating a subdivision.

Subdivider. Any person who (1) having an interest in Land, causes it, directly or indirectly, to be divided into a subdivision or who (2) directly or indirectly, sells, leases, or develops, or offers to sell, lease, or develop, or advertises to sell, lease, or develop, any interest, lot, parcel site, unit, or plat in a subdivision, or, who (3) engages directly or through an agent in the business of selling, leasing, developing, or offering for sale, lease, or development a subdivision or any interest, lot, parcel site, unit, or plat in a subdivision, and who (4) is directly or indirectly controlled by, or under direct or indirect common control with any of the foregoing.

Subdivision. The division of a tract or parcel of land into two or more lots, sites, or other divisions requiring new street or utility construction, or any division of less than five acres, for the purpose, whether immediate or future, of sale or building development, and includes resubdivision and when appropriate to the context, relates to the process of re-subdividing or to the land or area subdivided. In the event the definition of "subdivision" contained within T.C.A. § 13-4-301(4)(B) is amended or replaced, or any other statute hereafter makes another definition of "subdivision" applicable to the city, then such newly adopted definition shall supersede the definition set forth herein.

Subdivision Plat. The final map or drawing, described in these Regulations on which the subdivider's plan of subdivision is presented and approved by the Planning Commission for approval and which, if approved, may be submitted to the County Clerk or Recorder of Deeds for filing, (Also referred to as a Final Subdivision Plat).

Substantial Rebuild Lot. A lot on which modifications to existing structures or the lot itself including but not limited to residential additions, swimming pools, or other accessory buildings or structures such that the increase in impervious surface is greater than or equal to 800 square feet.

TCA. The Tennessee Code Annotated

TDEC. The Tennessee Department of Environment and Conservation.

TDOT. The Tennessee Department of Transportation.

Temporary Improvement. An improvement built and maintained by a subdivider during construction of the subdivision and prior to release of the required security.

TMDL. Total Maximum Daily Loads.

Traffic Impact Study. An analysis of the effect of traffic generated by a development on the capacity operations and safety of the public street and highway system.

Transitional Lot. Lots or property having a grade of at least 15 percent (15%), but less than 25 percent (25%) grade.

Travelway. An area intended for traffic, including highways, local streets, private roads, and trafficways within private property area that have some form of traffic control.

Treatment Train. is a technique for progressively selecting various stormwater control measures to address water quality, by which groups of practices may be used to achieve a treatment goal while optimizing effectiveness, maintenance needs, and space.

TSS. Total Suspended Solids.

USGS. The United States Geological Survey.

USPS. The United States Postal Service.

Vertical Wall. A wall, whether man-made or natural, constructed of earth or masonry products or pre-split by blasting where the slope of the face of the wall is 1:1 or greater.

Wall Height. The height of a wall as measured from the toe of the wall vertically to a line projected from the face of the slope at a point where the slope is no greater than 1:1.

Water Quality Riparian Buffer (formerly Waterway Natural Area). is a permanent strip of natural perennial vegetation, adjacent to a stream, river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purpose of a water quality riparian buffer is to maintain existing water quality by minimizing risk of any potential sediments, nutrients or other pollutants reaching adjacent surface waters and to further precent negative water quality impacts by providing canopy over adjacent waters.

Wet Weather Conveyance. are man-made or natural watercourses, including natural water courses that have been modified by channelization, that meet the following:

a) The conveyance carries flow only in direct response to precipitation runoff in its immediate locality.

b) The conveyance's channels are at all times above the groundwater table.

c) The flow carried by the conveyance is not suitable for drinking water supplies.

d) Hydrological and biological analyses indicate that, due to naturally occurring ephemeral or low flow under normal weather conditions, that is not sufficient water to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months. (Tennessee Rules, Chapter 0400-40-3-.04(3)).

Yard. The entire area of the lot including front, side and rear yards. The buildable or usable area of the yard is subject to restrictions on the location and placement of structures through the establishment of minimum separation requirements (setbacks) from the adjoining lots and right-of-way and by the recording of public utility and drainage easements.

Zoning Ordinance. Chapter 78 of the City of Brentwood Municipal Code.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

APPENDIX TWO. CONSTRUCTION DRAWINGS—CHECKLIST AND STANDARD DRAWINGS

The developer shall submit to both the city three (3) sets of construction drawings and applicable engineering calculations stamped by a civil engineer licensed to practice in the State of Tennessee. Upon the initial review by these departments, all comments and corrections will be sent to the developer for correction. Once all the comments are addressed to the satisfaction of the city, the developer will re-submit six (6) sets of plans to be stamped approved for construction.

The following list of plans is an overview of a typical set of construction drawings for submittal purposes:

(1) Cover Sheet.

a. Name of the project.

b. Section number or phase of the project.

c. Vicinity map—scale to be determined by the applicant.

d. Name, address, and phone number of the engineering company.

e. Name, address, and phone number of the developer.

f. List of sheet titles and sheet numbers contained in the construction drawings.

g. Date of submittal and list of revision or addendum dates.

(2) Preliminary Plan. Copy of the current approved preliminary plan as a reference plan.

(3) Overall Site Grading and Drainage Plan.

a. Boundary data of the project area; bearing and distances shall be based on Tennessee State Plane Coordinate System, 4100 ADS Zone: 5301 UTM Zones: 16 and 17, North American Datum (NAD) 83 datum.

b. North arrow to specify horizontal datum.

c. Topographic data showing two-foot contour intervals and based upon North American Vertical Datum (NAVD) 1988.

d. Extend contour information a minimum of 100 feet outside of the boundary of the project.

e. Scale shall be a minimum of one-inch equals 100 feet.

f. Benchmark elevations and locations.

g. Lot line bearings and distances; curve data shall include the delta angle in degrees, minutes and seconds, length of curve, tangent length, chord length, and bearing.

h. Street centerline bearings and distances; curve data shall include the delta angle in degrees, minutes and seconds, length of curve, tangent length, chord length, and bearing.

i. Area of each lot.

j. Minimum building setback lines.

k. Public utility and drainage easements along rights-of-way and lot lines.

l. Label transitional lots (lots containing 15 percent and greater slopes existing and proposed ground slopes).

m. Label all open space areas (if applicable).

n. Label all notable features such as tree masses, cemeteries, fence rows, sinkholes, and ponds.

o. All wetlands and streams and provide classification of stream types.

p. Location of all water quality riparian buffers and label widths of no-disturbance areas.

q. 100-year floodplain from the most recently adopted Flood Insurance Rate Map (F.I.R.M.) or calculated floodplain from a flood study by an engineer licensed in the State of Tennessee; differentiate the floodway and floodway fringe on the drawings.

r. Label 850-foot and 930-foot contour elevation lines (if applicable).

s. Location and description of any encroachments on the subject property.

t. Grading plan, showing the finished grade elevations of streets and lots.

u. Grading plan for all stormwater quantity and quality control features.

v. Drainage inlets and piping system.

w. Drainage schedule of proposed structures including material type, size of pipe, type of grate, inverts of structures, length of pipe and slope.

x. Location and description of off-site drainage structures and easements including size of pipe, invert elevations, and length of pipe.

y. Sidewalk locations.

z. Bike path locations.

aa. Streetlight locations, details of post and fixture type, the type shall be the same as other sections.

bb. Drainage schedule table.

cc. Entrance features including walls, fences, and landscaped areas.

dd. Location of all tree protection measures.

(4) Plan and Profile Sheets.

a. Plan scale shall be a minimum of one-inch equals 50 feet.

b. Profile scale shall be a minimum horizontal one-inch equals 50 feet and vertical one-inch equals five feet.

c. Plan view area and profile area.

d. North arrow.

e. Centerline and stationing of the street.

f. Label beginning of vertical curve, point of intersection of slope change, and the end of the curve.

g. Calculate the K-value of each curve based upon design speed.

h. Profile the location of any drainage, sanitary sewer, or waterline crossings to verify minimum cover requirements.

i. Existing ground elevation and finished pavement grade elevation at every 50-foot station on the profile view.

j. Low point and high point station and elevation of each vertical curve.

(5) Construction Details.

a. Street typical section.

b. Curb and gutter section.

c. Pavement section.

d. Sidewalk detail.

e. Underdrain detail.

f. Drainage inlet and grates detail.

g. Utility trenches within pavement areas and outside paved areas.

h. Headwalls.

i. Stone rip-rap aprons.

j. Erosion prevention and sediment controls.

k. Tree protection measures.

l. Detail of SCMs and stormwater quantity control features.

(6) Erosion Prevention and Sediment Control Plans.

a. Prepare Pre-Construction site plan of controls and measures to be installed in the initial phase of construction including sedimentation basins, diversion ditches, silt fences, grassed swales, and construction exits.

b. Provide information to the contractor and owner pertaining to the maintenance and inspection schedule for each control measure as required by the Notice of Coverage.

c. Prepare During-Construction site plan showing the relocation of erosion prevention and sediment control measures and additional measures to be installed during various phases of construction.

d. Post-Construction site plan.

e. Additional measures required for sedimentation controls.

(7) Traffic Signage Plans.

a. Location of stop signs, street name signs, dead-end signs, speed limit signs, and notice signage at the end of temporary turnarounds.

b. Detail of the size of sign, size of lettering, typical dimension of the height of sign and post, and distance from the curb.

(10) Water and Sanitary Sewer Plans.

a. Refer to the latest adopted water and sewer specifications of the City of Brentwood.

STANDARD DRAWINGS.

(1) General: The purpose of this section is to include drawings of details for construction. These drawings are to be used in conjunction with the specifications. Details concerning the construction of sewer and service lines shall be referenced to the "Standard Specifications for Collector Sewers, Service Lines and House Connections for the City of Brentwood, Tennessee." Any special construction problems or conditions not covered by the Specifications or Drawings shall be submitted to the city for approval.

(2) List of Drawings:

1. The following Standard Drawings are included in this section.

Drawing 1—Reinforced Concrete Headwall

Drawing 2—Straight Endwall for Pipe Arch

Drawing 3—Straight Endwall for Circular Pipe

Drawing 4—Standard Concrete Sidewalk

Drawing 5—Standard Driveway Ramps

Drawing 6—Standard Curbs and Gutter

Drawing 7—Underdrain Details

Drawing 8—Standard Catch Basin

Drawing 9—Typical Roadway Section

Drawing 10—Details of Single Inlet Precast

Drawing 11—Area Drain

Drawing 12—Details of Double Inlet Precast

Drawing 13—RESERVED

Drawing 14—Detail of Standard Ladder Bars

Drawing 15—Combination Manhole Inlet Shallow Type

Drawing 16—Combination Manhole—Inlet

Drawing 17—Concrete Protection

Drawing 18—Handicap Ramp Detail

Drawing 19—IP Collector with Median-Plan View

Drawing 20—IP Collector with Median-Cross Section

Drawing 21—IP Collector Without Median-Plan View

Drawing 22—IP Collector Without Median-Cross Section

Drawing 23—IP Local-Plan View

Drawing 24—IP Local-Cross Section

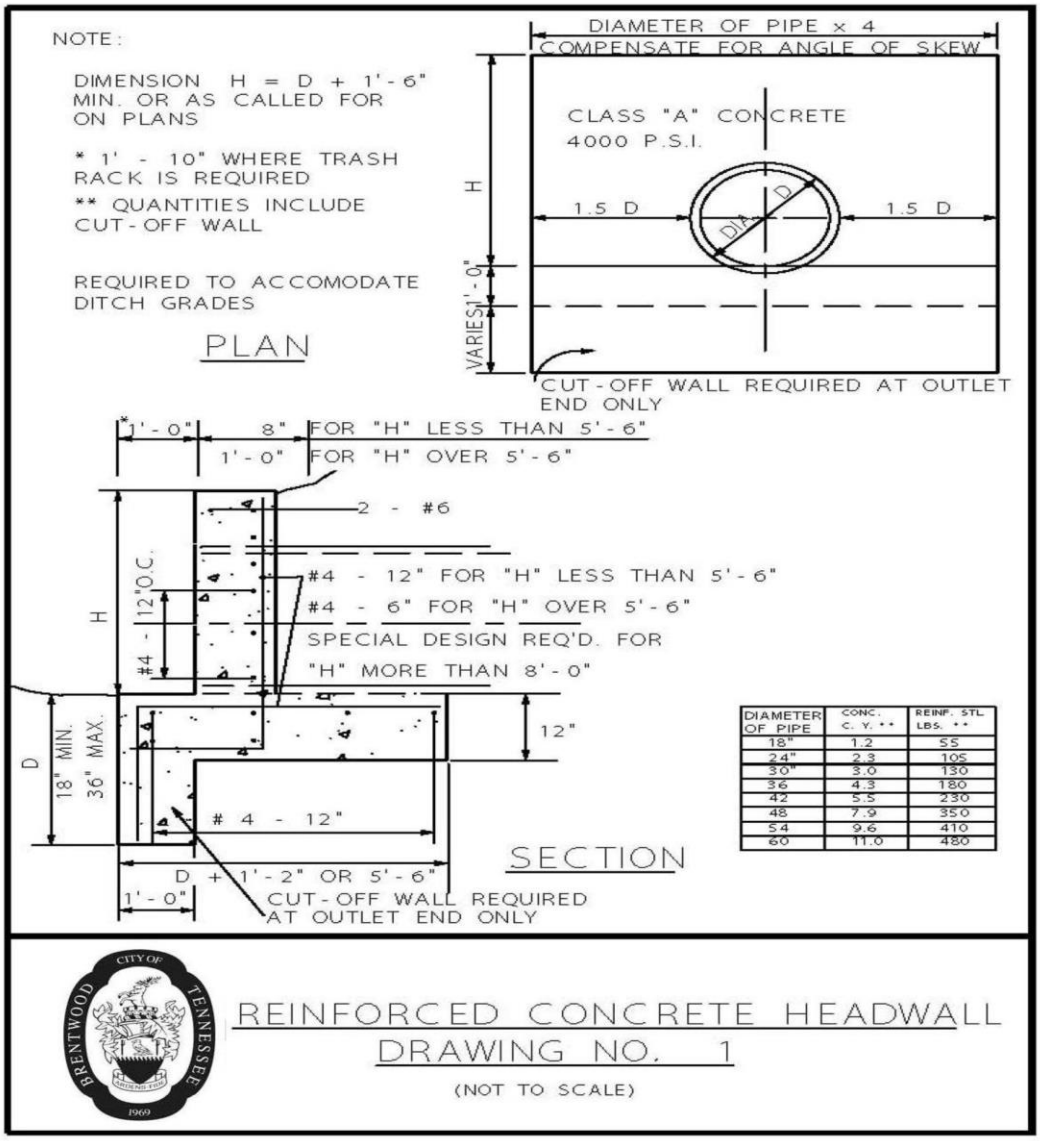
Drawing 25—IP Local (Abutting Open Space)—Plan View

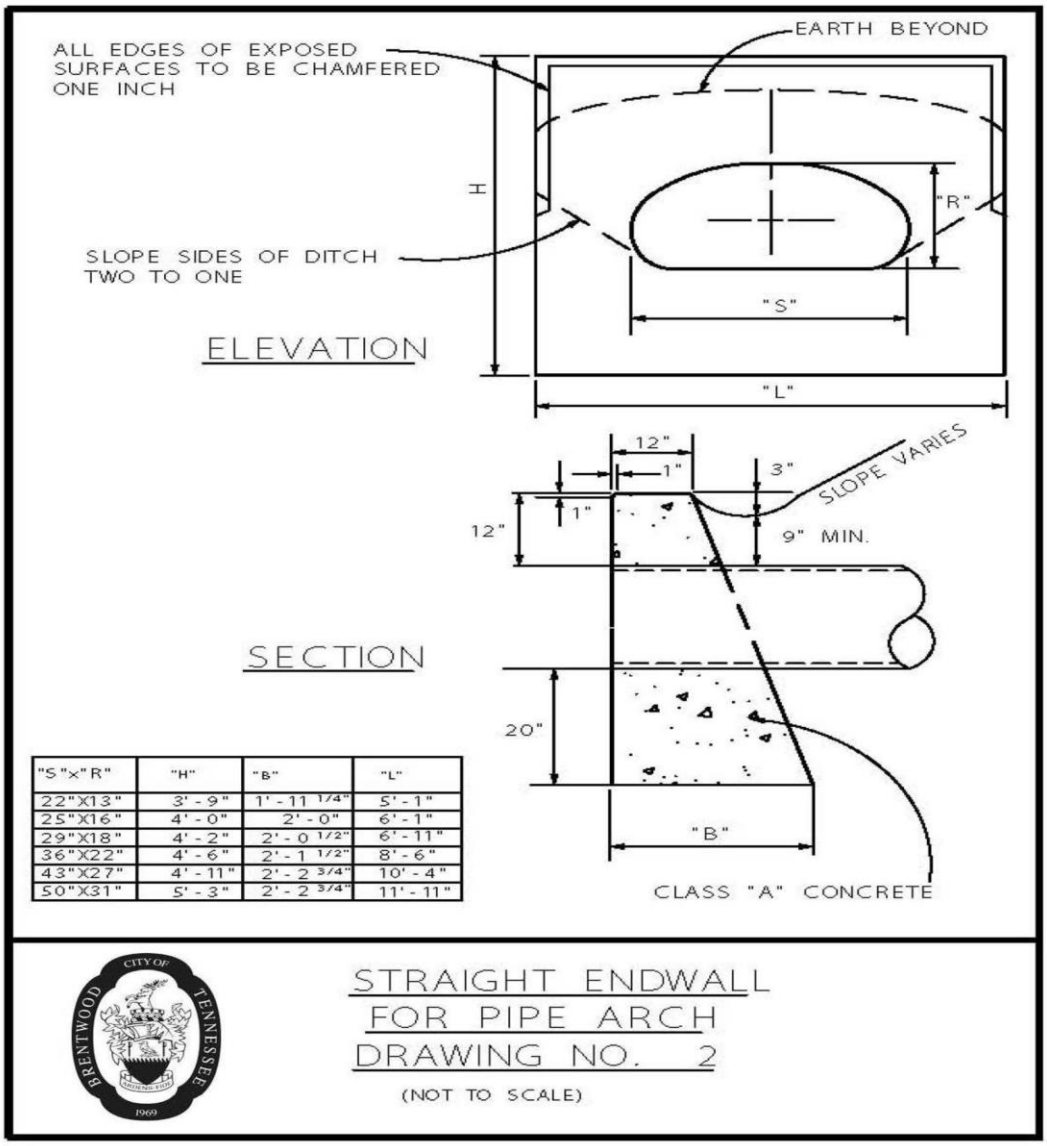
Drawing 26—Roundabout Details

Drawing 27—IP Cul-De-Sac—Plan View

Drawing 28—IP Rear Service Lane—Cross Section

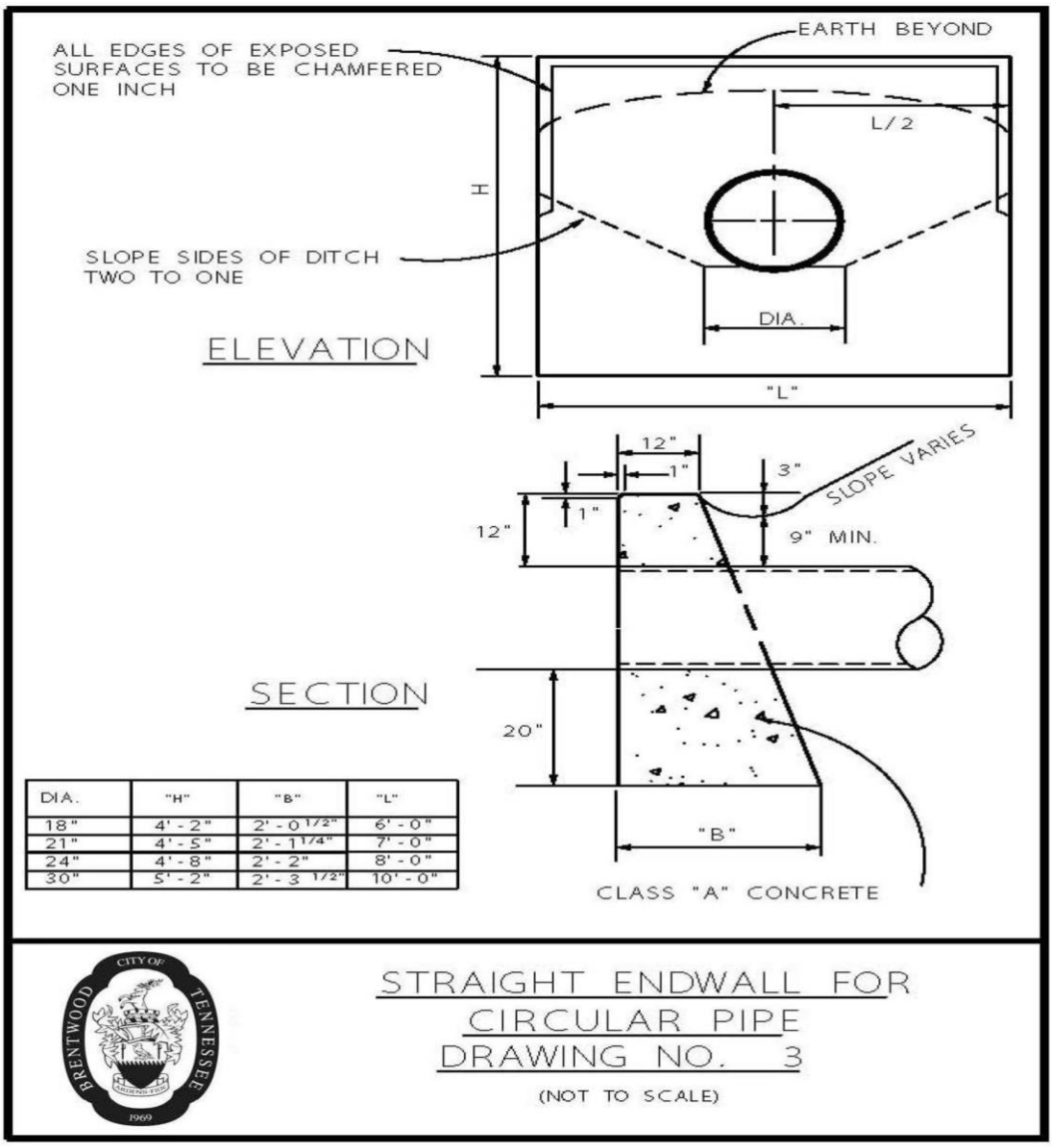
Drawing 29—Extruded and Ribbon Curb


NOTE:
DIMENSION H = D + 1'-6" MIN. OR AS CALLED FOR ON PLANS
* 1' - 10" WHERE TRASH RACK IS REQUIRED
** QUANTITIES INCLUDE CUT-OFF WALL
REQUIRED TO ACCOMODATE DITCH GRADES
PLAN
DIAMETER OF PIPE x 4
COMPENSATE FOR ANGLE OF SKEW
CLASS "A" CONCRETE
4000 P.S.I.
1.5 D
DIA. D
1.5 D
H
VARIES 1'-0"
CUT-OFF WALL REQUIRED AT OUTLET END ONLY
1'-0"
8" FOR "H" LESS THAN 5'-6"
1'-0" FOR "H" OVER 5'-6"
2 - #6
#4 - 12" FOR "H" LESS THAN 5'-6"
#4 - 6" FOR "H" OVER 5'-6"
SPECIAL DESIGN REQ'D. FOR "H" MORE THAN 8'-0"
#4 - 12" O.C.
H
D
18" MIN.
36" MAX.
12"
4 - 12"
D + 1'-2" OR 5'-6"
1'-0"
CUT-OFF WALL REQUIRED AT OUTLET END ONLY
SECTION
DIAMETER OF PIPE | CONC. C. Y. ** | REINF. STL. LBS. **
18" | 1.2 | 55
24" | 2.3 | 105
30" | 3.0 | 130
36 | 4.3 | 180
42 | 5.5 | 230
48 | 7.9 | 350
54 | 9.6 | 410
60 | 11.0 | 480
CITY OF BRENTWOOD TENNESSEE 1969
REINFORCED CONCRETE HEADWALL
DRAWING NO. 1
(NOT TO SCALE)



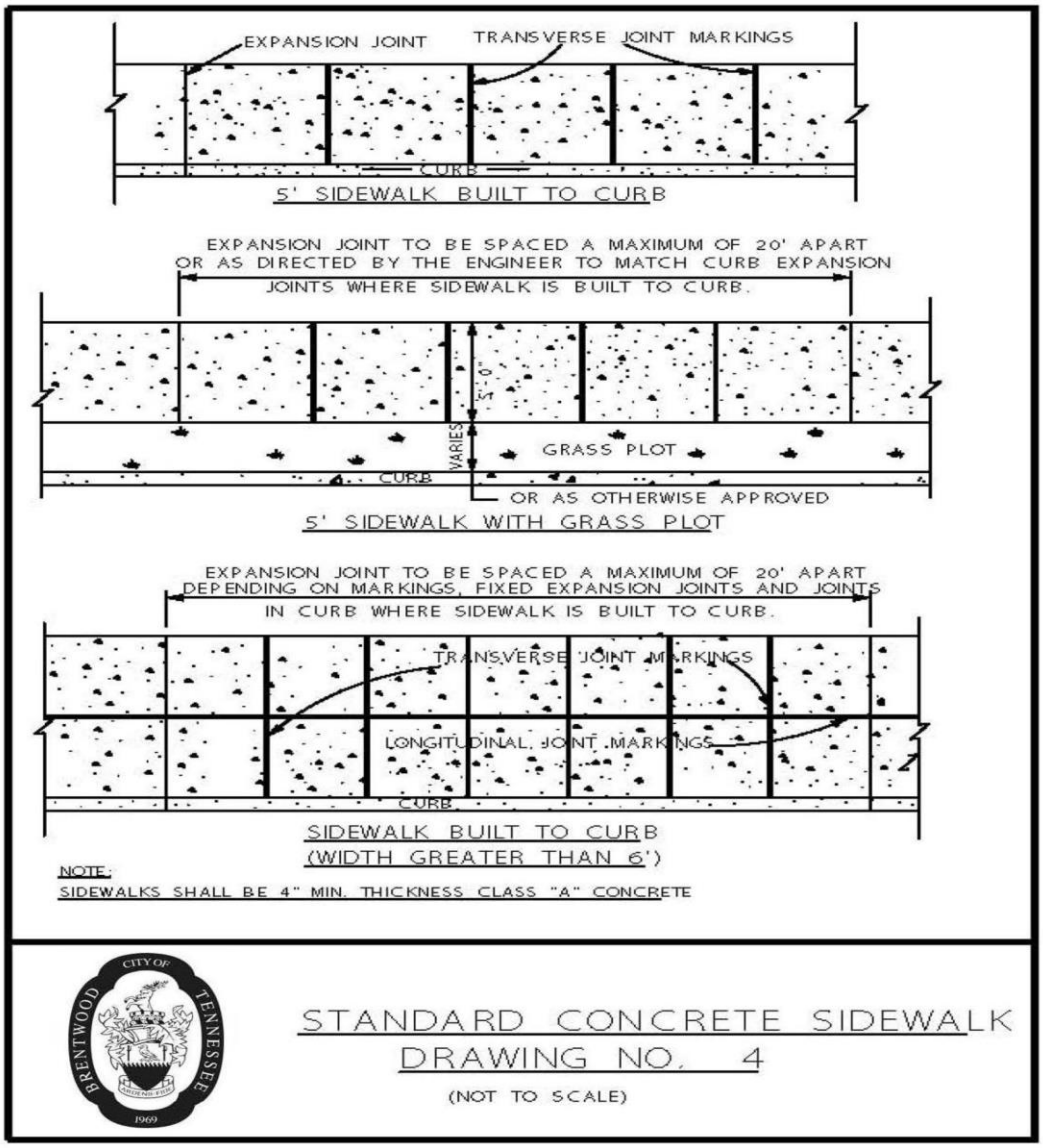
"S"x"R"	"H"	"B"	"L"
22"X13"	3' - 9"	1' - 11 1/4"	5' - 1"
25"X16"	4' - 0"	2' - 0"	6' - 1"
29"X18"	4' - 2"	2' - 0 1/2"	6' - 11"
36"X22"	4' - 6"	2' - 1 1/2"	8' - 6"
43"X27"	4' - 11"	2' - 2 3/4"	10' - 4"
50"X31"	5' - 3"	2' - 2 3/4"	11' - 11"

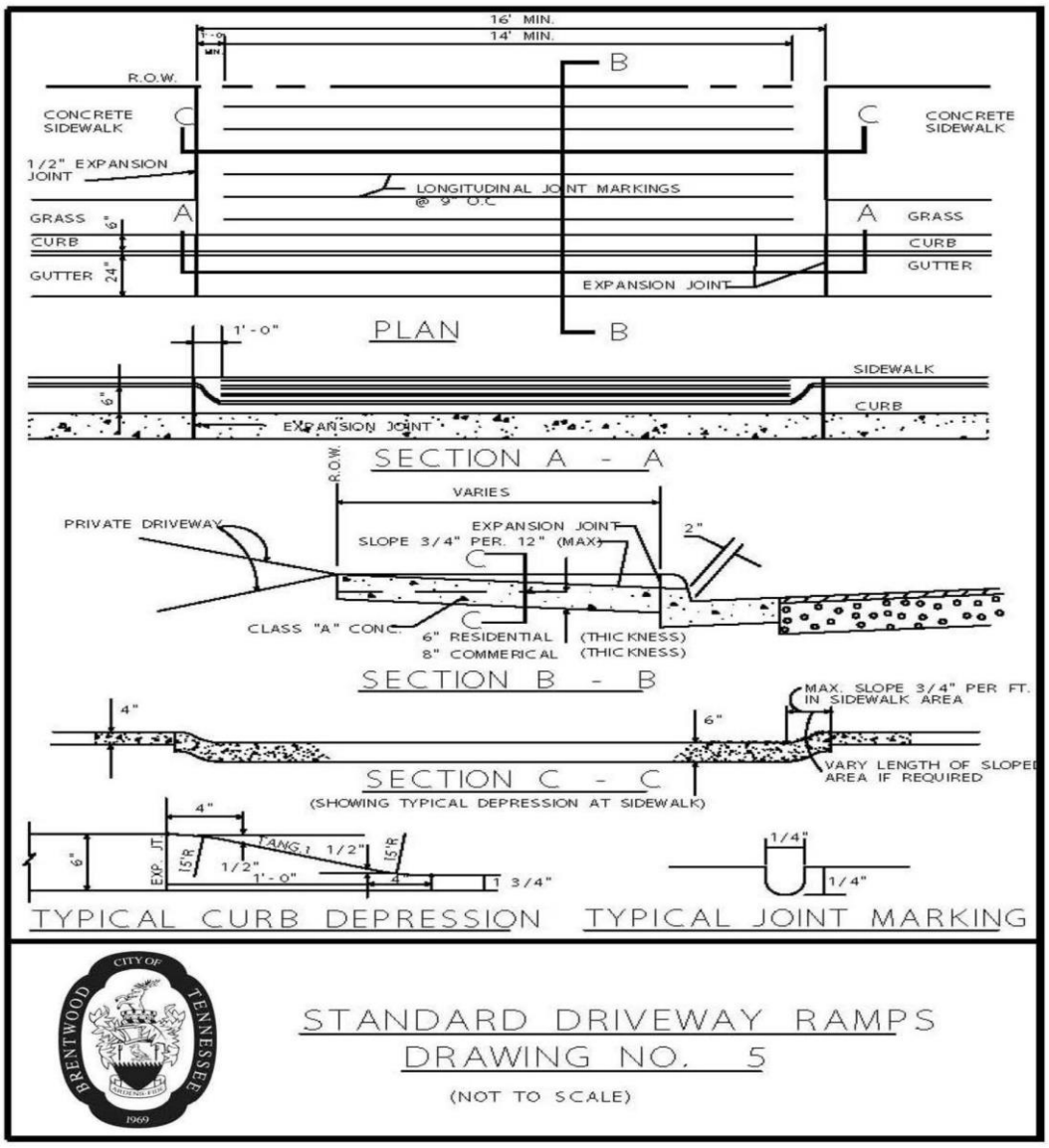
STRAIGHT ENDWALL
FOR PIPE ARCH
DRAWING NO. 2
(NOT TO SCALE)

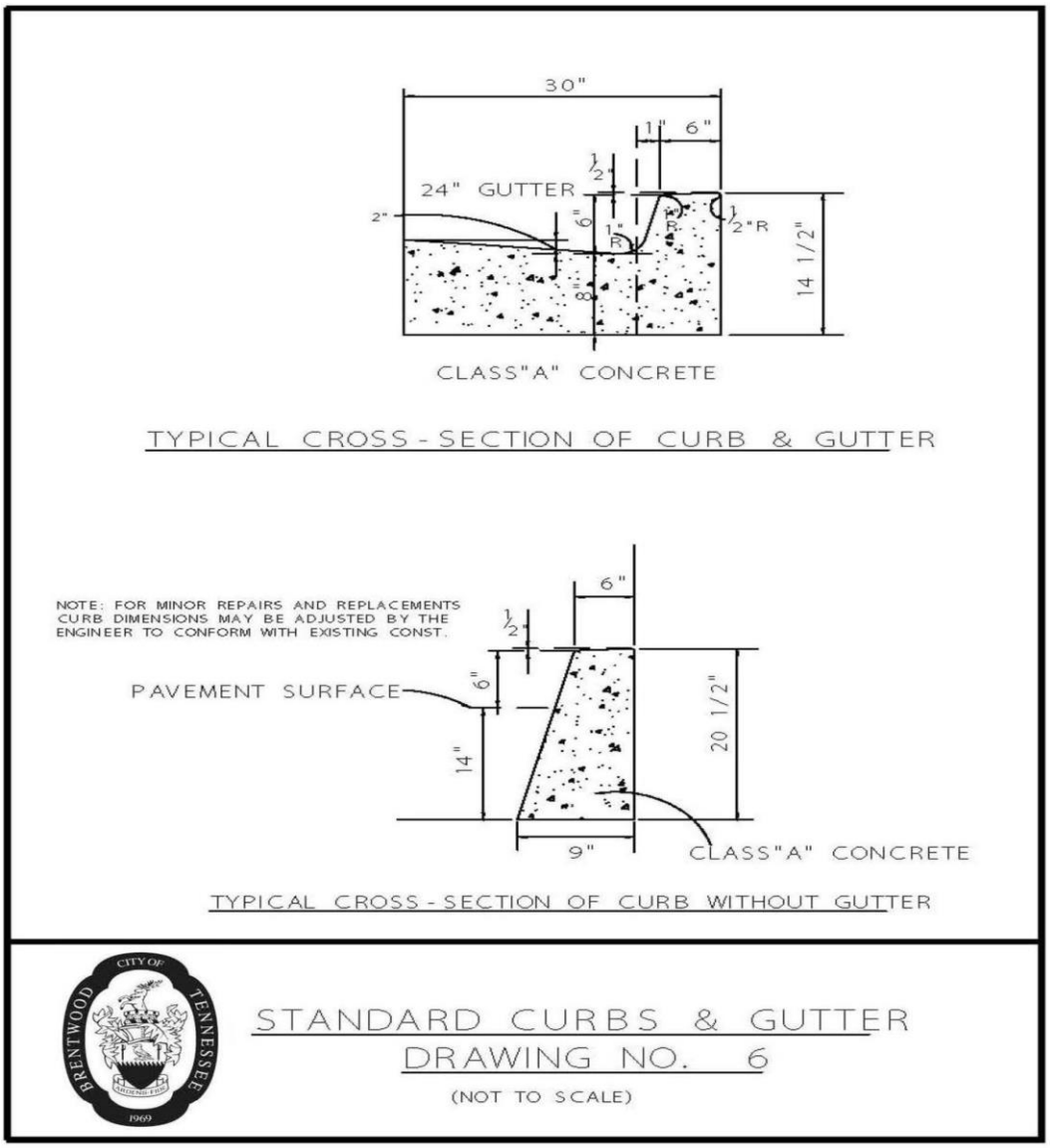


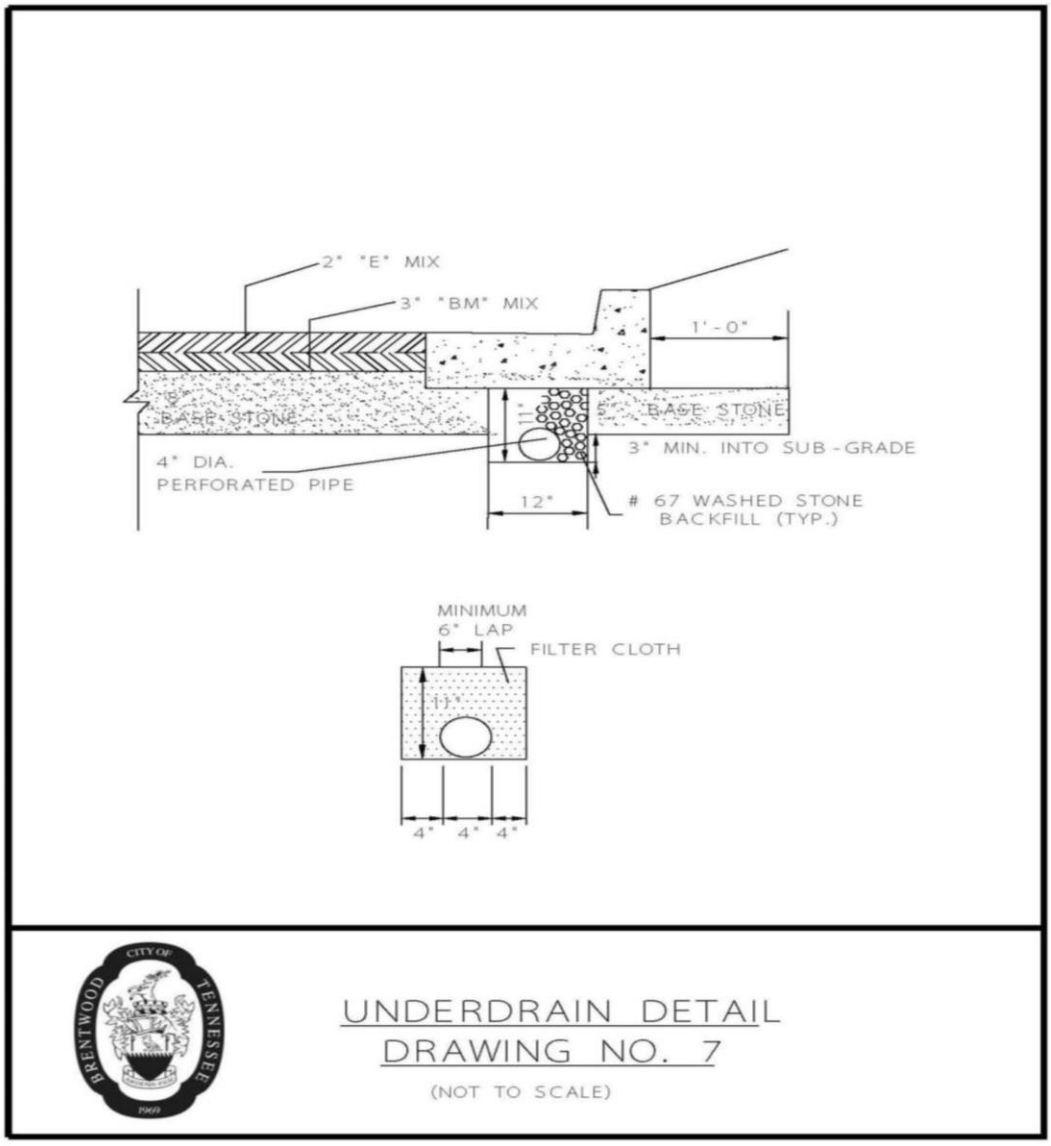
DIA.	"H"	"B"	"L"
18"	4' - 2"	2' - 0 1/2"	6' - 0"
21"	4' - 5"	2' - 1 1/4"	7' - 0"
24"	4' - 8"	2' - 2"	8' - 0"
30"	5' - 2"	2' - 3 1/2"	10' - 0"

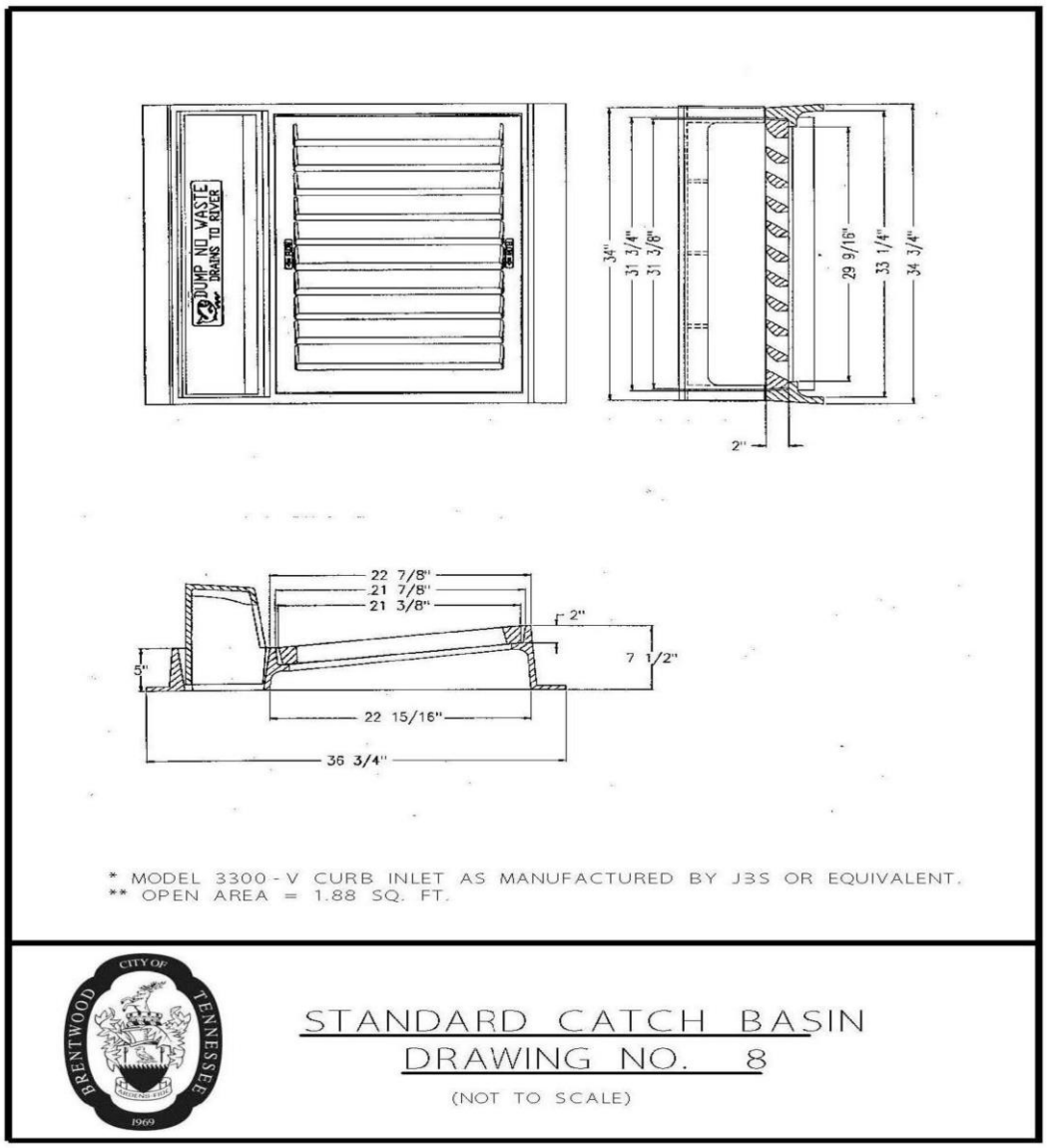
STRAIGHT ENDWALL FOR CIRCULAR PIPE
DRAWING NO. 3
(NOT TO SCALE)

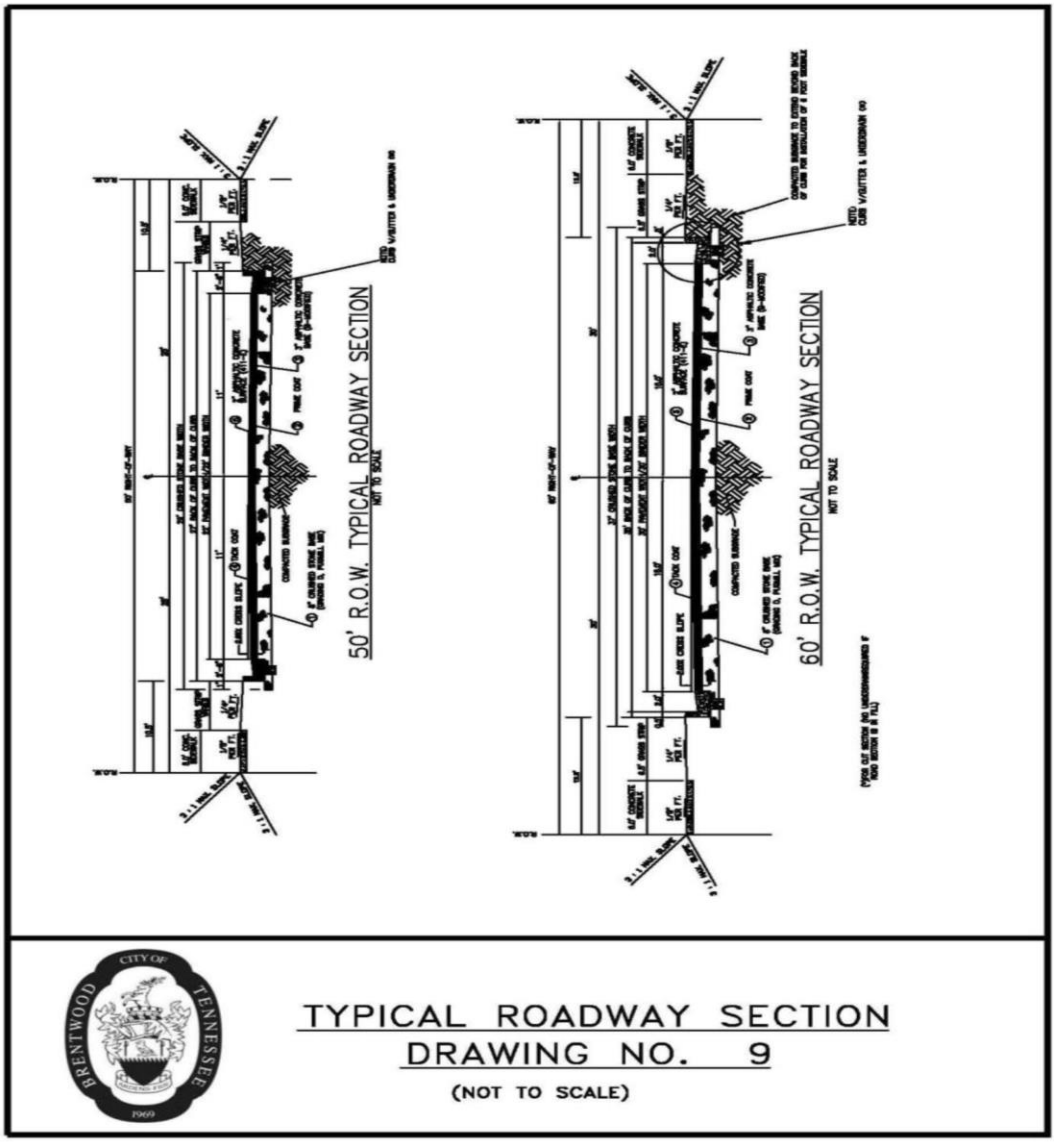

EXPANSION JOINT
TRANSVERSE JOINT MARKINGS
CURB
5' SIDEWALK BUILT TO CURB
EXPANSION JOINT TO BE SPACED A MAXIMUM OF 20' APART
OR AS DIRECTED BY THE ENGINEER TO MATCH CURB EXPANSION
JOINTS WHERE SIDEWALK IS BUILT TO CURB.
5'-0"
VARIES
GRASS PLOT
CURB
OR AS OTHERWISE APPROVED
5' SIDEWALK WITH GRASS PLOT
EXPANSION JOINT TO BE SPACED A MAXIMUM OF 20' APART
DEPENDING ON MARKINGS, FIXED EXPANSION JOINTS AND JOINTS
IN CURB WHERE SIDEWALK IS BUILT TO CURB.
TRANSVERSE JOINT MARKINGS
LONGITUDINAL JOINT MARKINGS
CURB
SIDEWALK BUILT TO CURB
(WIDTH GREATER THAN 6')
NOTE:
SIDEWALKS SHALL BE 4" MIN. THICKNESS CLASS "A" CONCRETE
BRENTWOOD TENNESSEE
CITY OF
1969
STANDARD CONCRETE SIDEWALK
DRAWING NO. 4
(NOT TO SCALE)

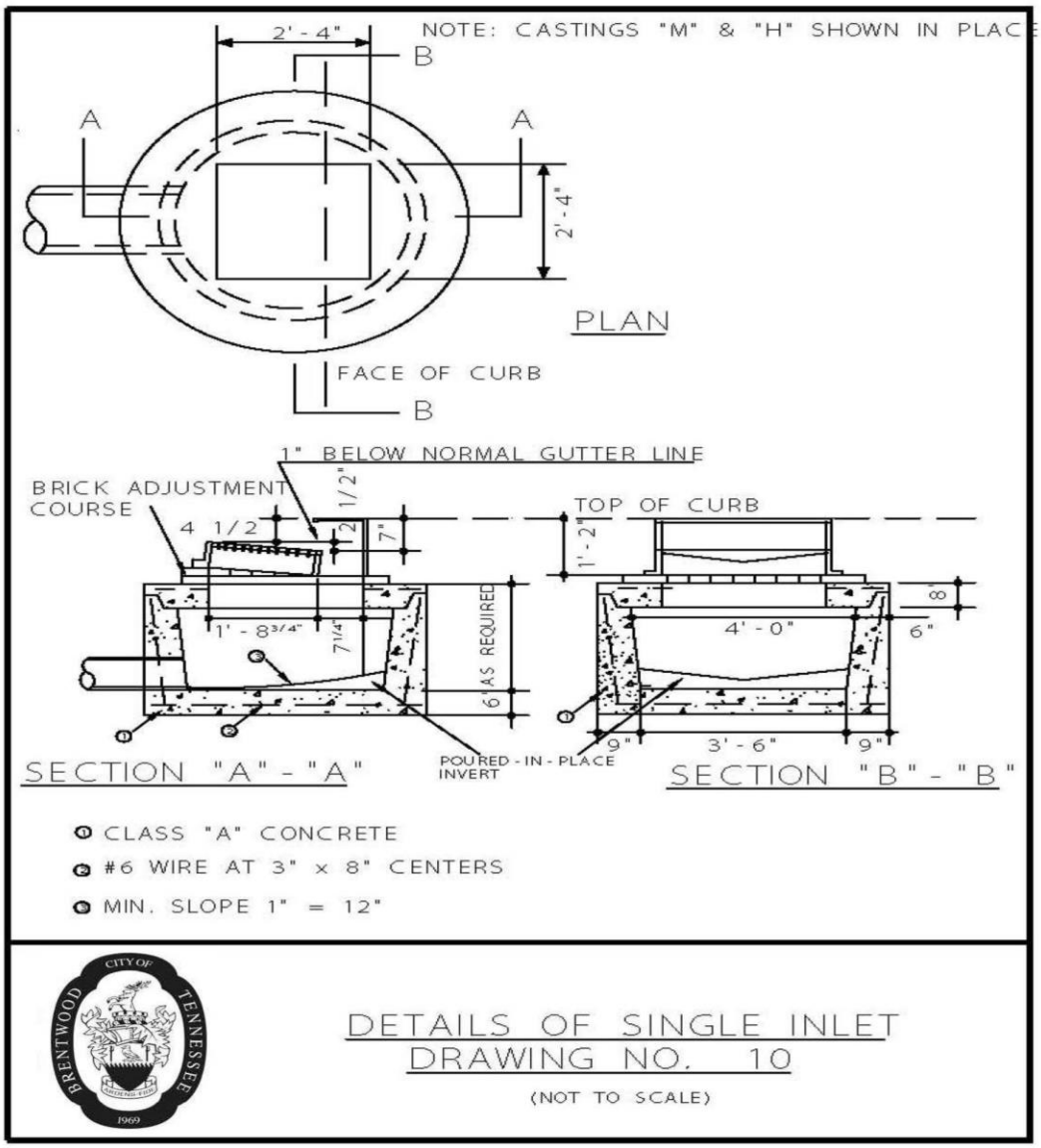

16' MIN.
14' MIN.
R.O.W.
CONCRETE SIDEWALK
1/2" EXPANSION JOINT
LONGITUDINAL JOINT MARKINGS @ 9' O.C.
GRASS
CURB
GUTTER
EXPANSION JOINT
PLAN
SIDEWALK
SECTION A - A
VARIES
PRIVATE DRIVEWAY
SLOPE 3/4" PER. 12" (MAX)
CLASS "A" CONC.
6" RESIDENTIAL
8" COMMERICAL
SECTION B - B
MAX. SLOPE 3/4" PER FT. IN SIDEWALK AREA
VARY LENGTH OF SLOPED AREA IF REQUIRED
SECTION C - C
(SHOWING TYPICAL DEPRESSION AT SIDEWALK)
TANG.
EXP JT
TYPICAL CURB DEPRESSION
TYPICAL JOINT MARKING
CITY OF BRENTWOOD TENNESSEE 1969
STANDARD DRIVEWAY RAMPS
DRAWING NO. 5
(NOT TO SCALE)

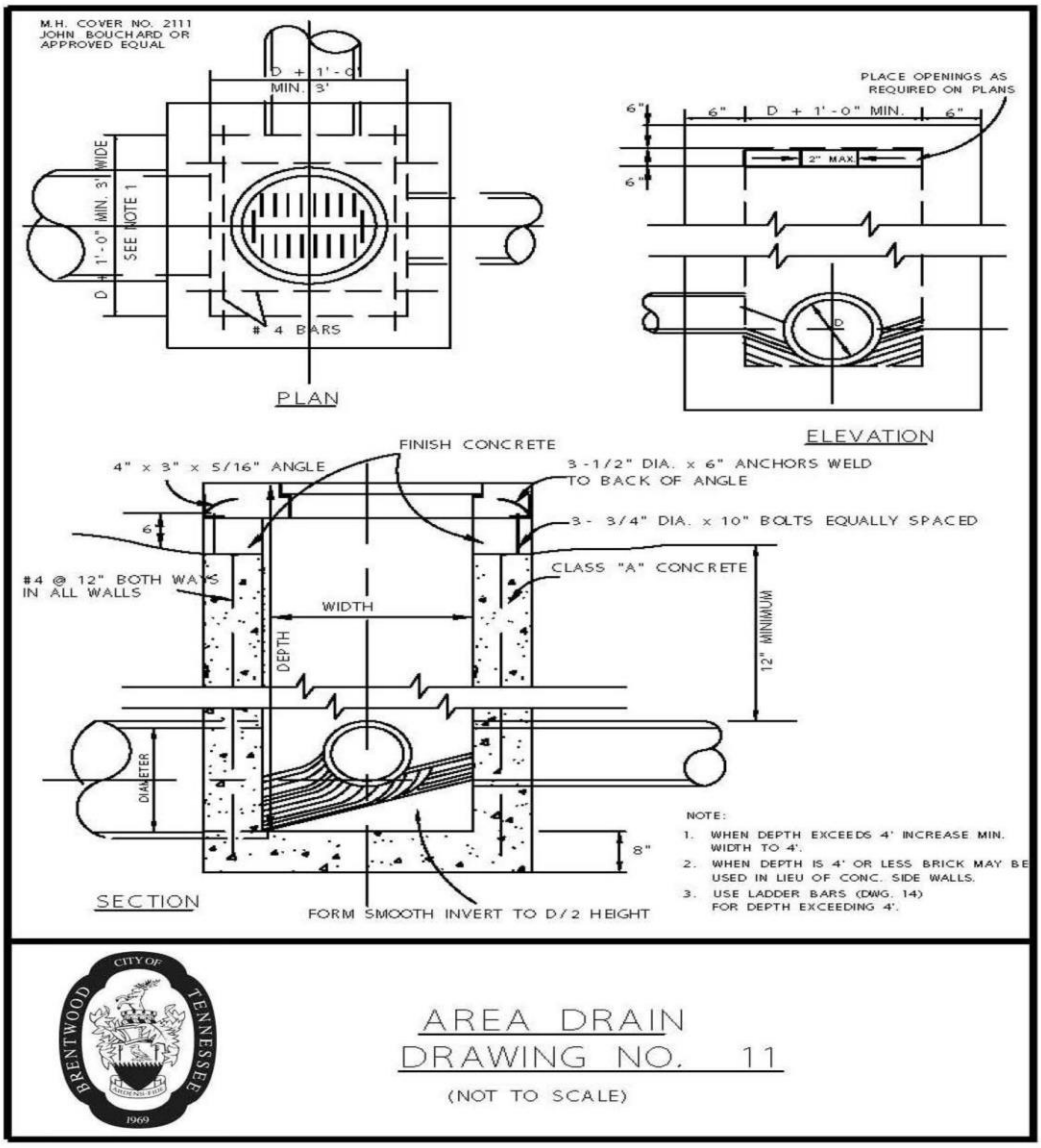

30"
1"
6"
1/2"
24" GUTTER
2"
6"
7"
1/2"R
14 1/2"
8"
CLASS"A" CONCRETE
TYPICAL CROSS-SECTION OF CURB & GUTTER
NOTE: FOR MINOR REPAIRS AND REPLACEMENTS CURB DIMENSIONS MAY BE ADJUSTED BY THE ENGINEER TO CONFORM WITH EXISTING CONST.
6"
1/2"
PAVEMENT SURFACE
6"
14"
20 1/2"
9"
CLASS"A" CONCRETE
TYPICAL CROSS-SECTION OF CURB WITHOUT GUTTER
CITY OF BRENTWOOD TENNESSEE 1969
STANDARD CURBS & GUTTER
DRAWING NO. 6
(NOT TO SCALE)

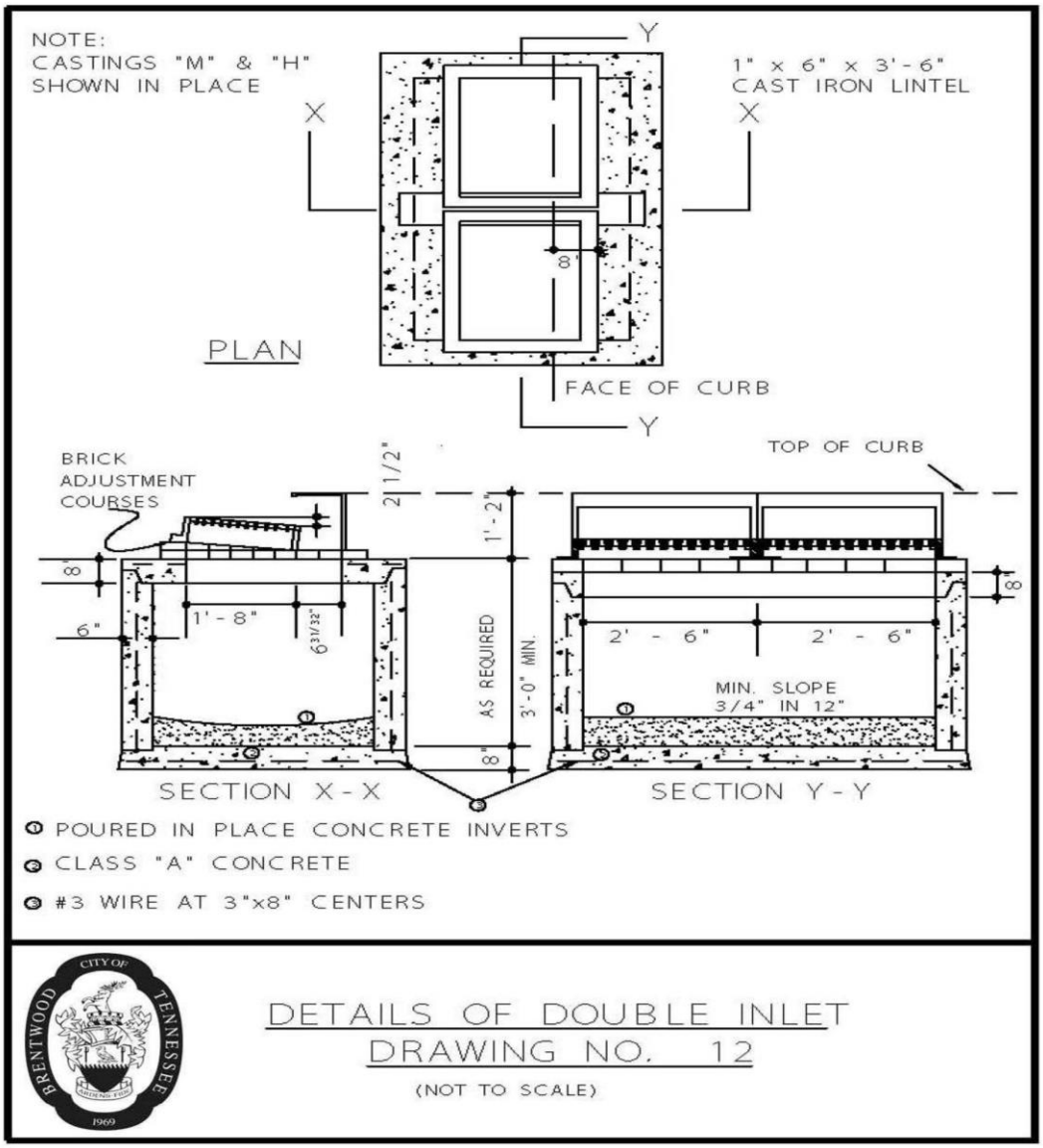

2" "E" MIX
3" "BM" MIX
1'-0"
5" BASE STONE
5" BASE STONE
3" MIN. INTO SUB-GRADE
4" DIA.
PERFORATED PIPE
12"
67 WASHED STONE
BACKFILL (TYP.)
MINIMUM
6" LAP
FILTER CLOTH
11"
4" 4" 4"
CITY OF BRENTWOOD TENNESSEE 1969
UNDERDRAIN DETAIL
DRAWING NO. 7
(NOT TO SCALE)

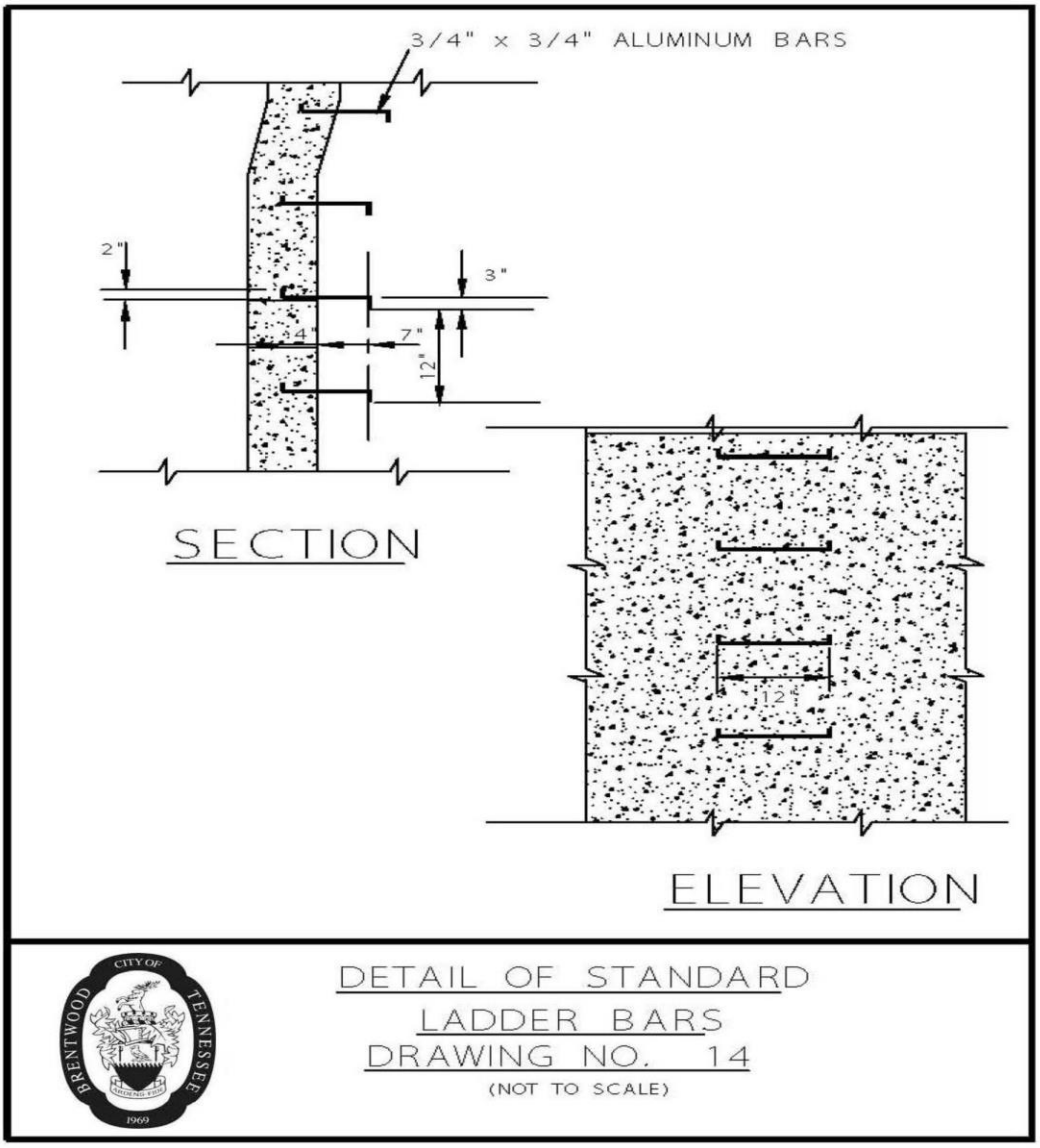

DUMP NO WASTE
DRAINS TO RIVER
34"
31 3/4"
31 3/8"
29 9/16"
33 1/4"
34 3/4"
2"
22 7/8"
21 7/8"
21 3/8"
2"
7 1/2"
5"
22 15/16"
36 3/4"
* MODEL 3300-V CURB INLET AS MANUFACTURED BY J3S OR EQUIVALENT.
** OPEN AREA = 1.88 SQ. FT.
CITY OF BRENTWOOD TENNESSEE 1969
STANDARD CATCH BASIN
DRAWING NO. 8
(NOT TO SCALE)

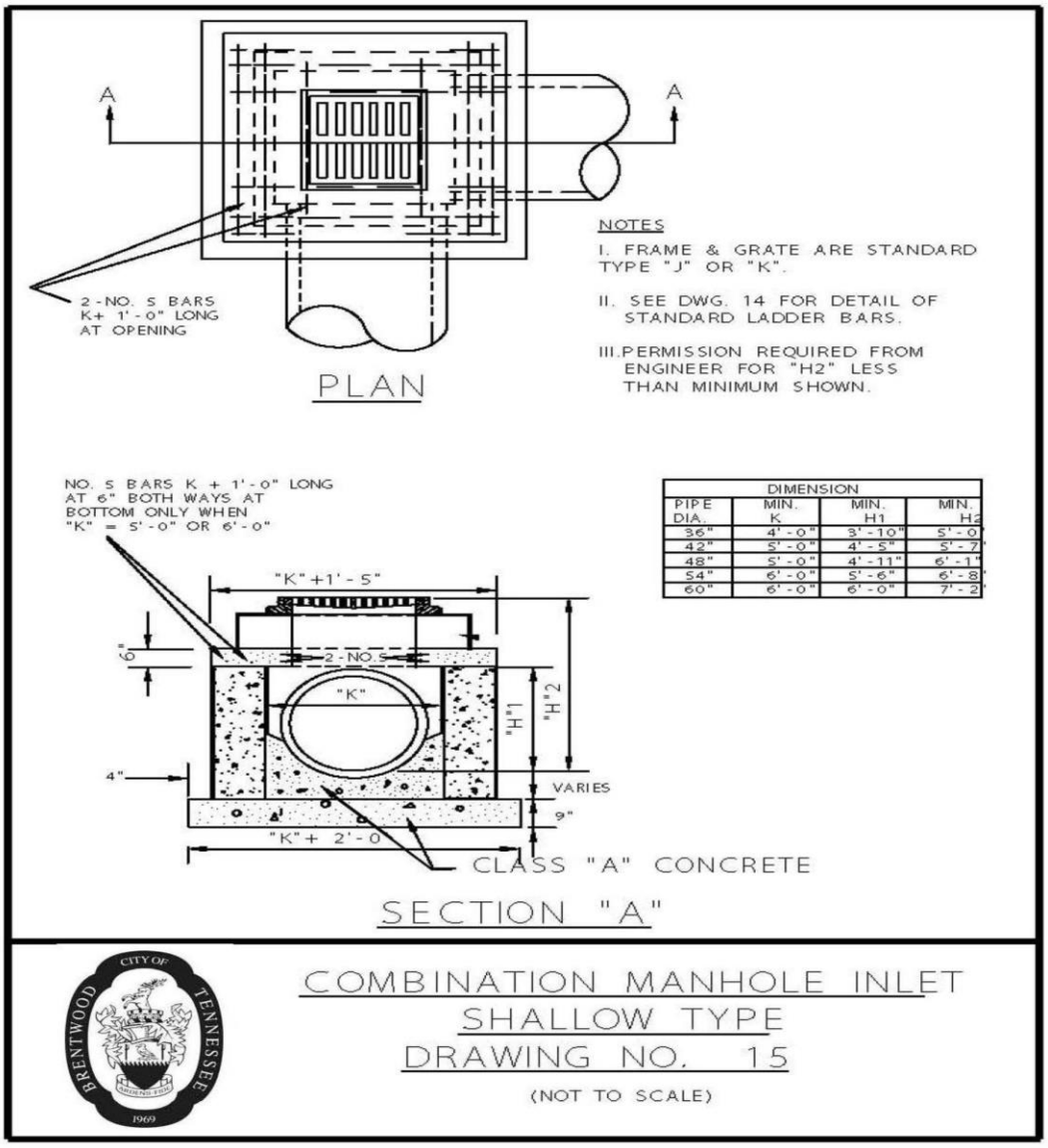

50' R.O.W. TYPICAL ROADWAY SECTION
NOT TO SCALE
60' R.O.W. TYPICAL ROADWAY SECTION
NOT TO SCALE
CITY OF BRENTWOOD TENNESSEE
1969
TYPICAL ROADWAY SECTION
DRAWING NO. 9
(NOT TO SCALE)

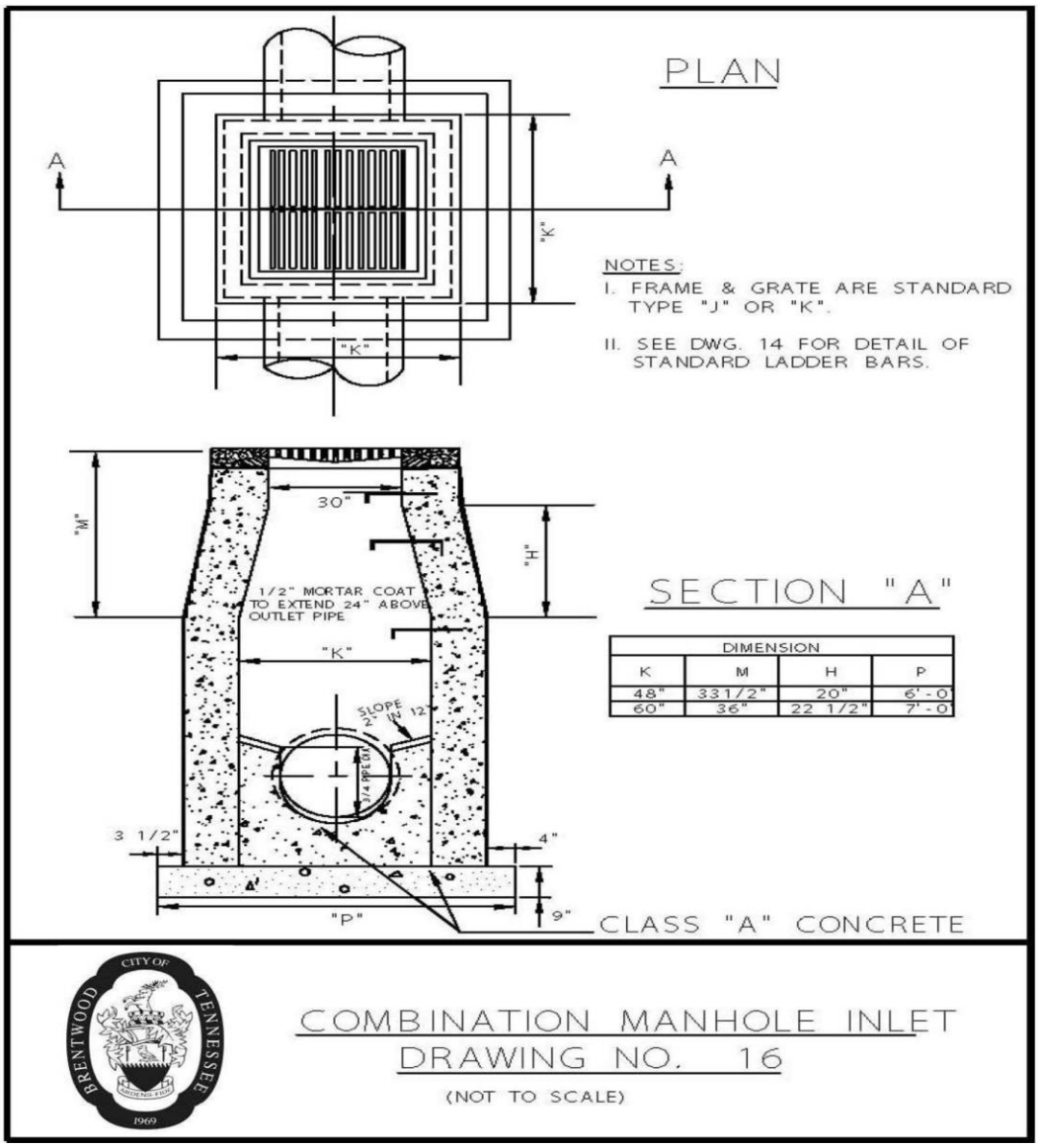

NOTE: CASTINGS "M" & "H" SHOWN IN PLACE
2'-4"
B
A
A
2'-4"
PLAN
FACE OF CURB
B
1" BELOW NORMAL GUTTER LINE
BRICK ADJUSTMENT COURSE
4 1/2"
1 1/2"
7"
TOP OF CURB
1'-2"
1'-8 3/4"
7 1/4"
6" AS REQUIRED
8"
4'-0"
6"
9"
3'-6"
9"
POURED-IN-PLACE INVERT
SECTION "A"-"A"
SECTION "B"-"B"
1 CLASS "A" CONCRETE
2 #6 WIRE AT 3" x 8" CENTERS
3 MIN. SLOPE 1" = 12"
CITY OF BRENTWOOD TENNESSEE 1969
DETAILS OF SINGLE INLET
DRAWING NO. 10
(NOT TO SCALE)

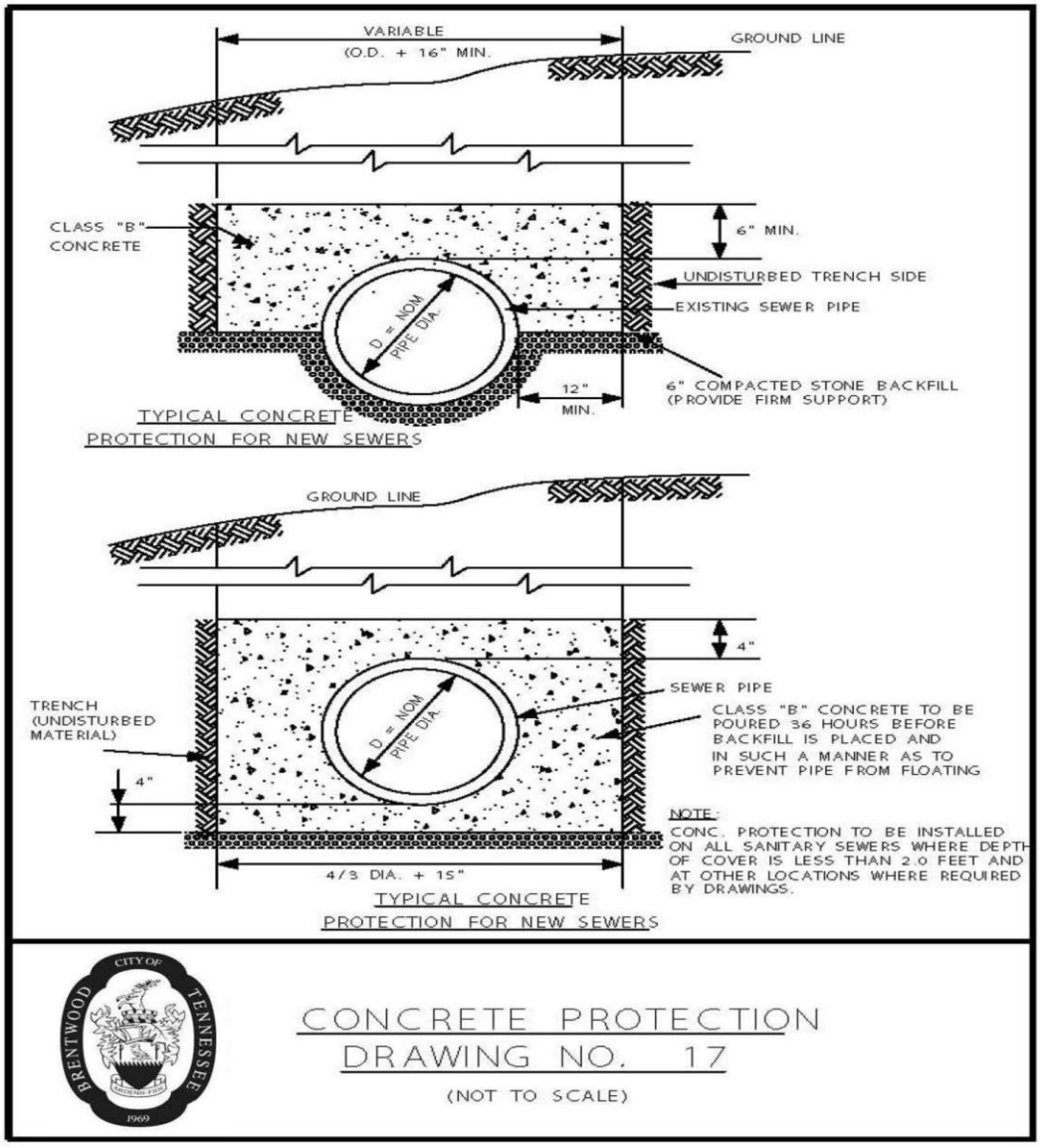

M.H. COVER NO. 2111
JOHN BOUCHARD OR
APPROVED EQUAL
D + 1'-0"
MIN. 3'
D + 1'-0" MIN. 3' WIDE
SEE NOTE 1
4 BARS
PLAN
PLACE OPENINGS AS
REQUIRED ON PLANS
6"
6"
D + 1'-0" MIN.
6"
6"
2" MAX
ELEVATION
FINISH CONCRETE
4" x 3" x 5/16" ANGLE
3-1/2" DIA. x 6" ANCHORS WELD
TO BACK OF ANGLE
3- 3/4" DIA. x 10" BOLTS EQUALLY SPACED
6"
#4 @ 12" BOTH WAYS
IN ALL WALLS
CLASS "A" CONCRETE
WIDTH
DEPTH
12" MINIMUM
DIAMETER
8"
SECTION
FORM SMOOTH INVERT TO D/2 HEIGHT
NOTE:
1. WHEN DEPTH EXCEEDS 4' INCREASE MIN. WIDTH TO 4'.
2. WHEN DEPTH IS 4' OR LESS BRICK MAY BE USED IN LIEU OF CONC. SIDE WALLS.
3. USE LADDER BARS (DWG. 14) FOR DEPTH EXCEEDING 4'.
CITY OF BRENTWOOD TENNESSEE
1969
AREA DRAIN
DRAWING NO. 11
(NOT TO SCALE)

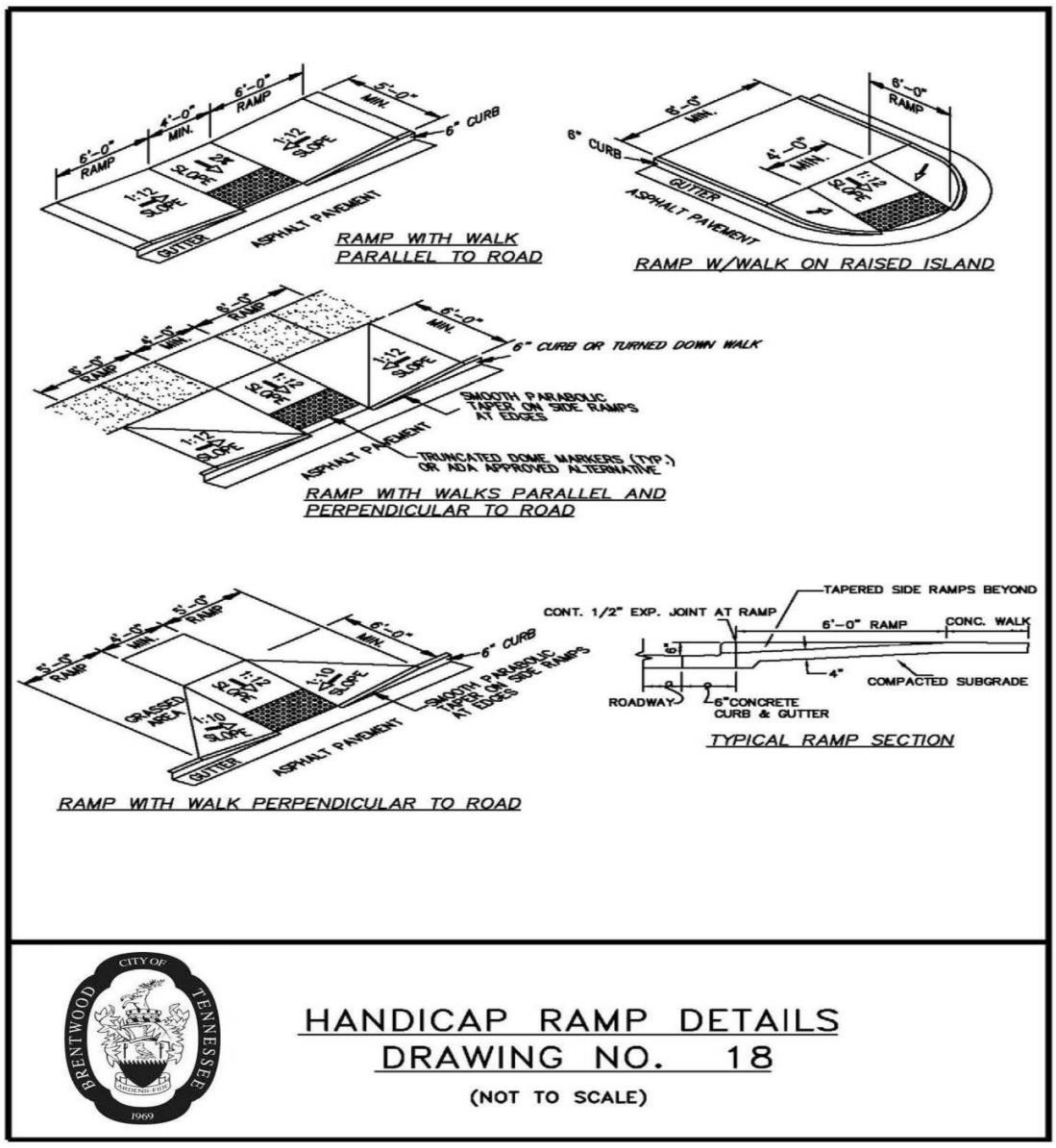

NOTE:
CASTINGS "M" & "H"
SHOWN IN PLACE
Y
X
1" x 6" x 3'-6"
CAST IRON LINTEL
X
8"
PLAN
FACE OF CURB
Y
BRICK
ADJUSTMENT
COURSES
2 1/2"
TOP OF CURB
1'-2"
8"
6"
1'-8"
6 31/32"
AS REQUIRED
3'-0" MIN.
8"
2' - 6"
2' - 6"
MIN. SLOPE
3/4" IN 12"
8"
SECTION X-X
SECTION Y-Y
① POURED IN PLACE CONCRETE INVERTS
② CLASS "A" CONCRETE
③ #3 WIRE AT 3"x8" CENTERS
CITY OF BRENTWOOD TENNESSEE
1969
DETAILS OF DOUBLE INLET
DRAWING NO. 12
(NOT TO SCALE)

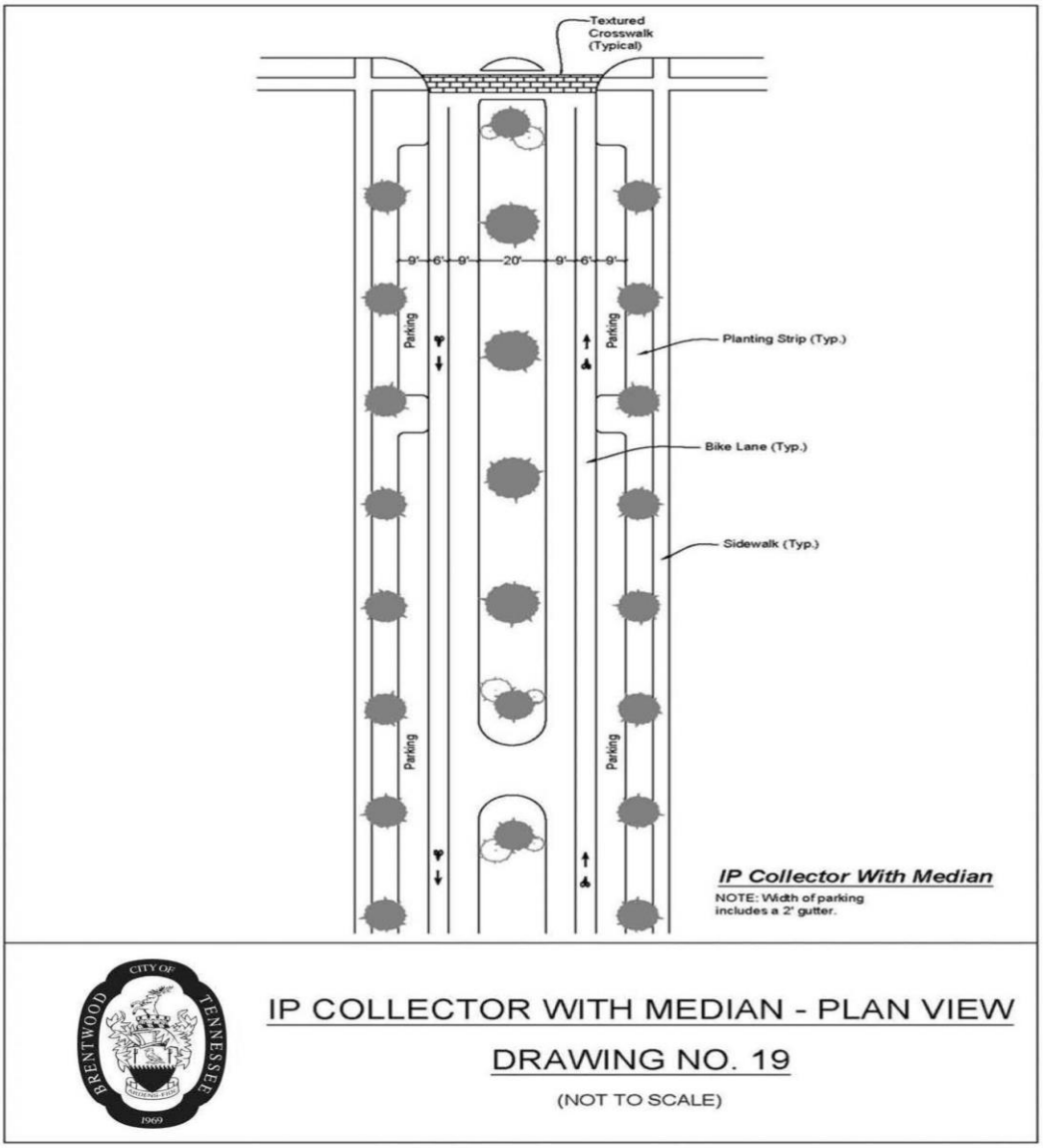

3/4" x 3/4" ALUMINUM BARS
2"
3"
4
7"
12"
SECTION
12"
ELEVATION
DETAIL OF STANDARD
LADDER BARS
DRAWING NO. 14
(NOT TO SCALE)

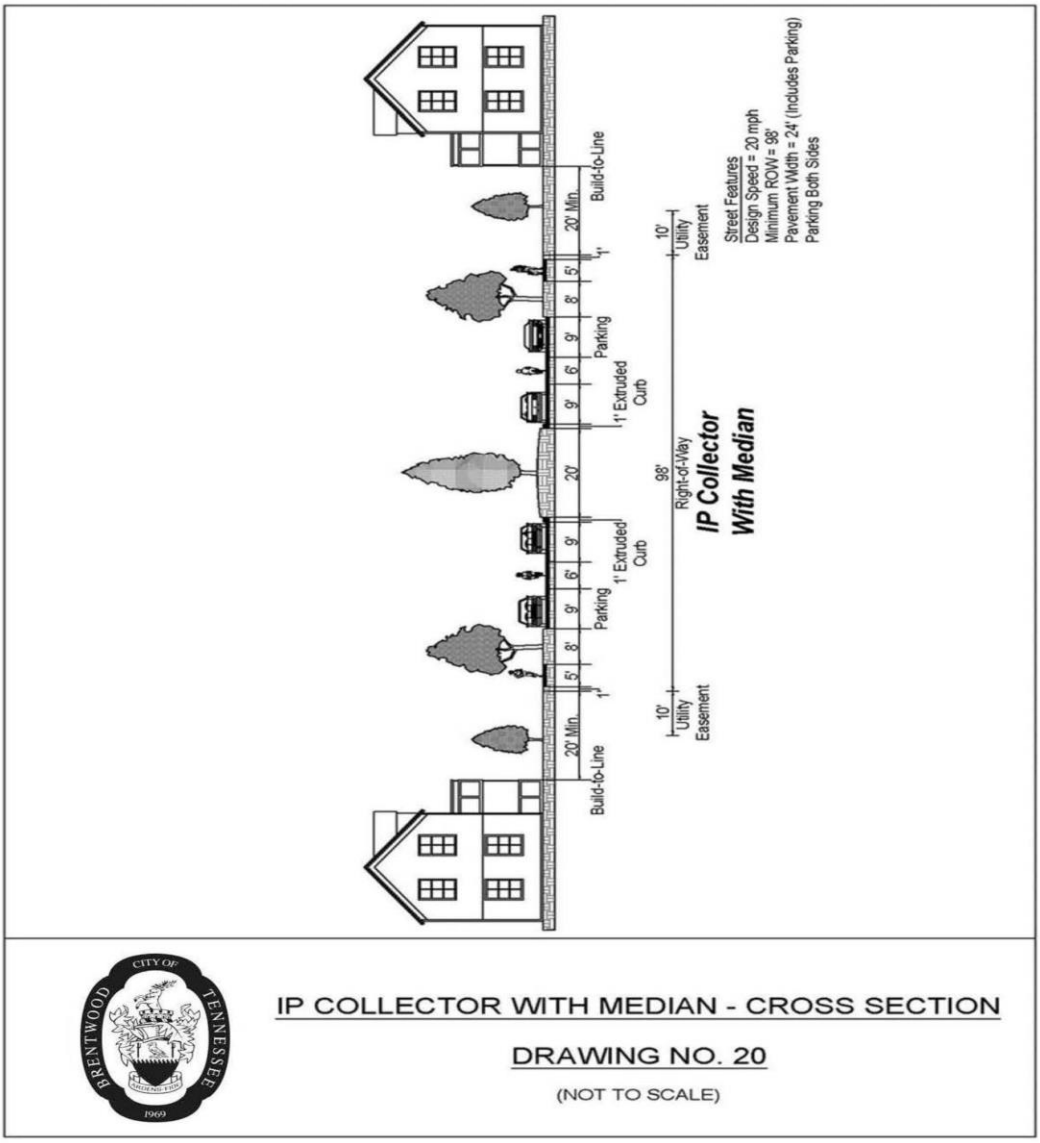

A
A
2 - NO. 5 BARS
K+ 1'-0" LONG
AT OPENING
PLAN
NOTES
I. FRAME & GRATE ARE STANDARD TYPE "J" OR "K".
II. SEE DWG. 14 FOR DETAIL OF STANDARD LADDER BARS.
III. PERMISSION REQUIRED FROM ENGINEER FOR "H2" LESS THAN MINIMUM SHOWN.
NO. 5 BARS K + 1'-0" LONG AT 6" BOTH WAYS AT BOTTOM ONLY WHEN "K" = 5'-0" OR 6'-0"
"K"+1'-5"
6"
2 - NO. 5
"K"
"H"1
"H"2
4"
VARIES
9"
"K"+ 2'-0
CLASS "A" CONCRETE
SECTION "A"
DIMENSION
PIPE DIA.
MIN. K
MIN. H1
MIN. H2
36" 4'-0" 3'-10" 5'-0"
42" 5'-0" 4'-5" 5'-7"
48" 5'-0" 4'-11" 6'-1"
54" 6'-0" 5'-6" 6'-8"
60" 6'-0" 6'-0" 7'-2"
COMBINATION MANHOLE INLET
SHALLOW TYPE
DRAWING NO. 15
(NOT TO SCALE)

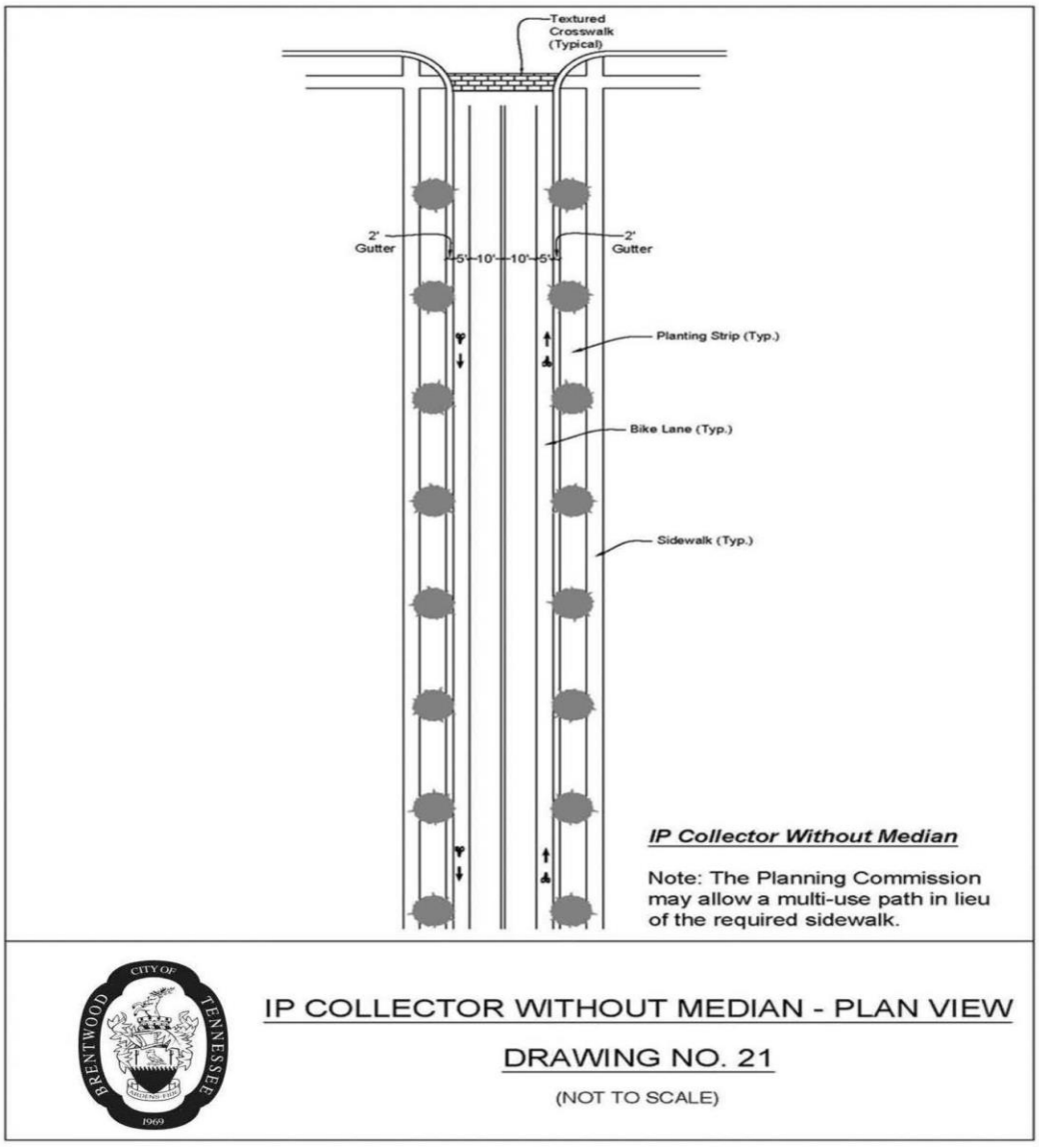

PLAN
A
A
"K"
"K"
NOTES:
I. FRAME & GRATE ARE STANDARD TYPE "J" OR "K".
II. SEE DWG. 14 FOR DETAIL OF STANDARD LADDER BARS.
"M"
30"
"H"
1/2" MORTAR COAT TO EXTEND 24" ABOVE OUTLET PIPE
"K"
SLOPE 2" IN 12"
3 1/2"
4"
"P"
9"
SECTION "A"
DIMENSION
K M H P
48" 33 1/2" 20" 6'-0
60" 36" 22 1/2" 7'-0
CLASS "A" CONCRETE
CITY OF BRENTWOOD TENNESSEE 1969
COMBINATION MANHOLE INLET
DRAWING NO. 16
(NOT TO SCALE)

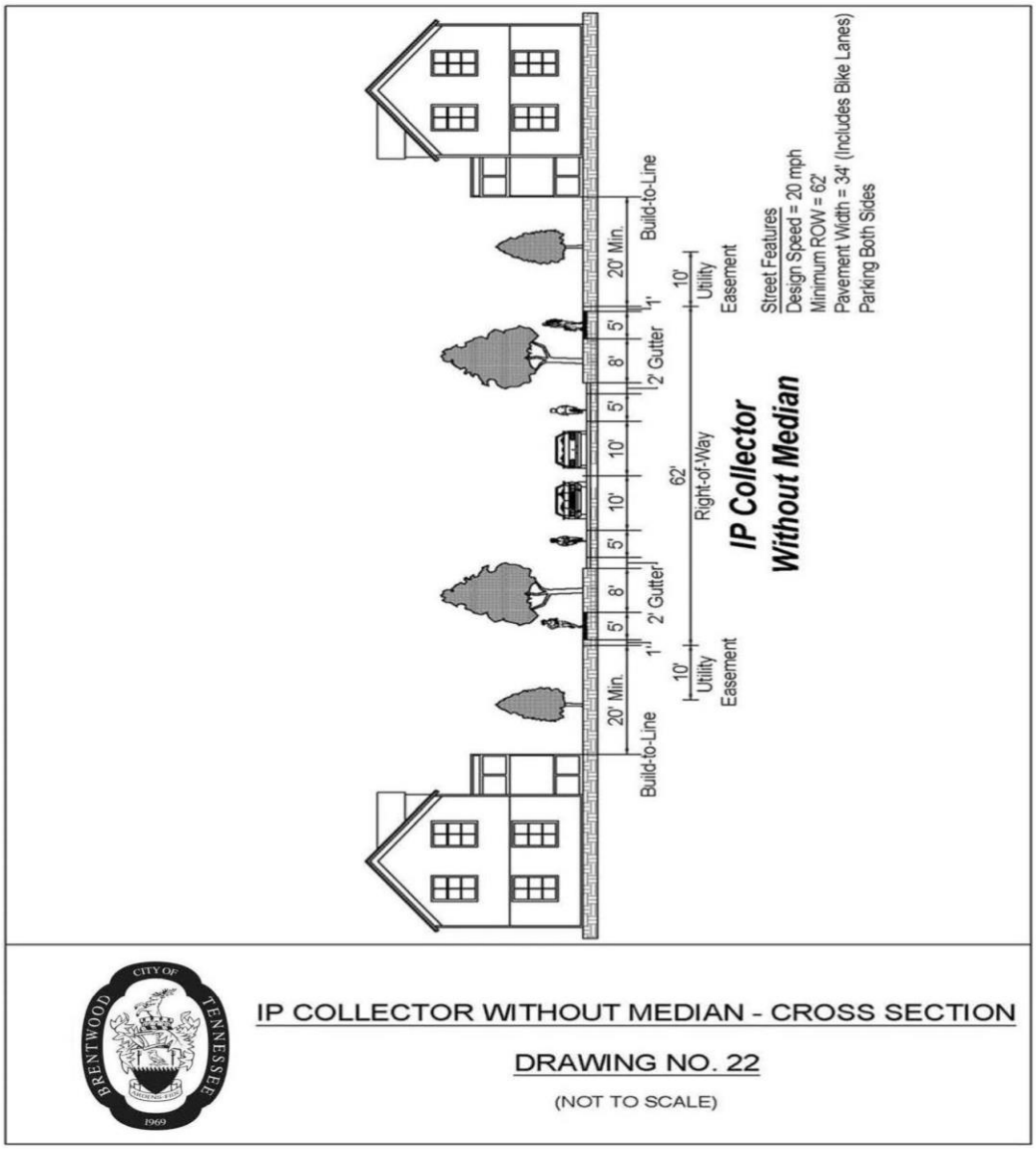

VARIABLE
(O.D. + 16" MIN.
GROUND LINE
CLASS "B" CONCRETE
6" MIN.
UNDISTURBED TRENCH SIDE
EXISTING SEWER PIPE
D = NOM. PIPE DIA.
12" MIN.
6" COMPACTED STONE BACKFILL (PROVIDE FIRM SUPPORT)
TYPICAL CONCRETE PROTECTION FOR NEW SEWERS
GROUND LINE
4"
SEWER PIPE
CLASS "B" CONCRETE TO BE POURED 36 HOURS BEFORE BACKFILL IS PLACED AND IN SUCH A MANNER AS TO PREVENT PIPE FROM FLOATING
TRENCH (UNDISTURBED MATERIAL)
D = NOM. PIPE DIA.
4"
NOTE:
CONC. PROTECTION TO BE INSTALLED ON ALL SANITARY SEWERS WHERE DEPTH OF COVER IS LESS THAN 2.0 FEET AND AT OTHER LOCATIONS WHERE REQUIRED BY DRAWINGS.
4/3 DIA. + 15"
TYPICAL CONCRETE PROTECTION FOR NEW SEWERS
CONCRETE PROTECTION
DRAWING NO. 17
(NOT TO SCALE)

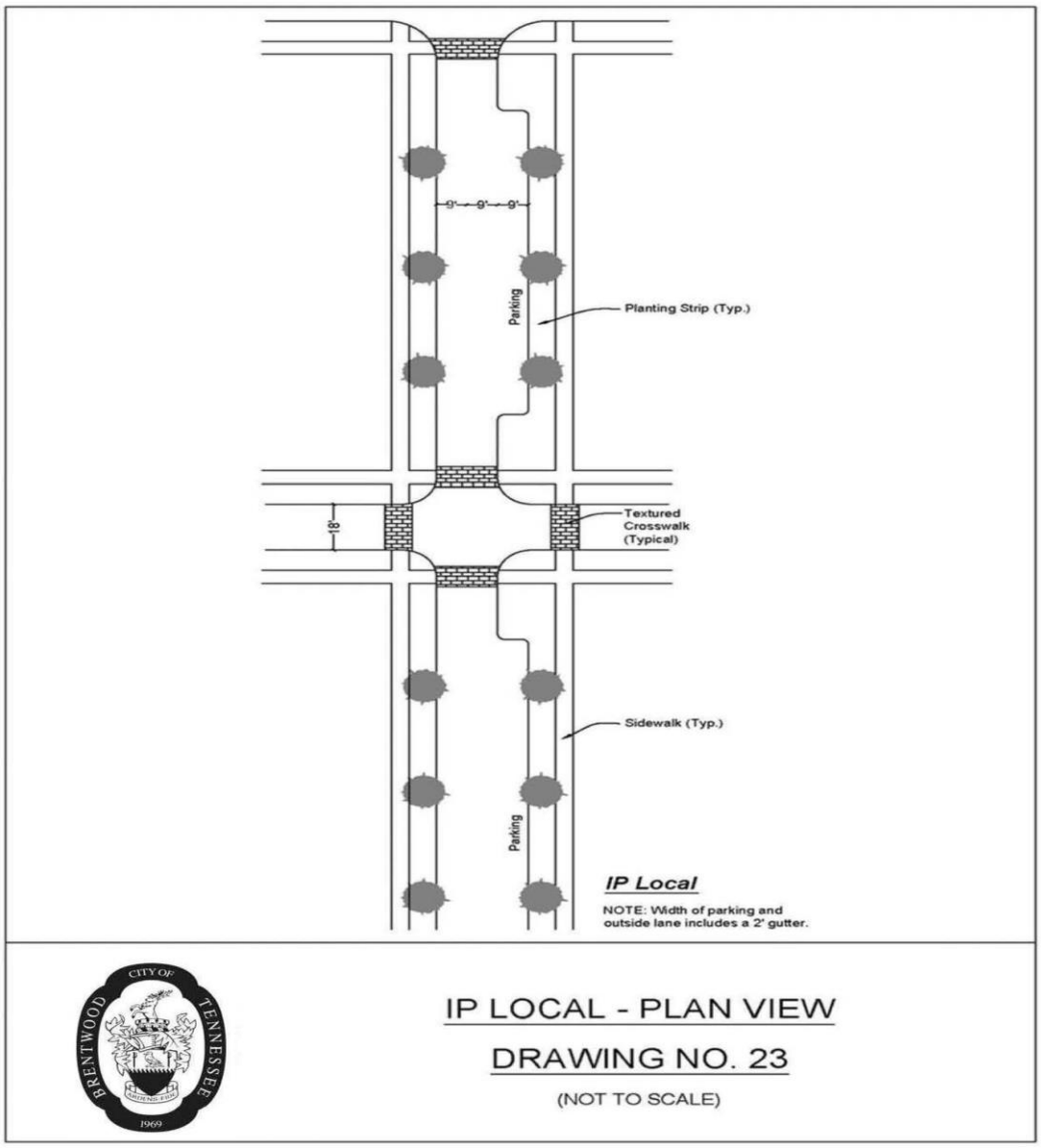

6'-0" RAMP
4'-0" MIN.
6'-0" RAMP
5'-0" MIN.
6" CURB
1:12 SLOPE
1:12 SLOPE
1:12 SLOPE
GUTTER
ASPHALT PAVEMENT
RAMP WITH WALK PARALLEL TO ROAD
6" CURB
GUTTER
ASPHALT PAVEMENT
RAMP W/WALK ON RAISED ISLAND
6" CURB OR TURNED DOWN WALK
SMOOTH PARABOLIC TAPER ON SIDE RAMPS AT EDGES
TRUNCATED DOME MARKERS (TYP.) OR ADA APPROVED ALTERNATIVE
ASPHALT PAVEMENT
RAMP WITH WALKS PARALLEL AND PERPENDICULAR TO ROAD
GRASSED AREA
1:10 SLOPE
6" CURB
SMOOTH PARABOLIC TAPER ON SIDE RAMPS AT EDGES
GUTTER
ASPHALT PAVEMENT
RAMP WITH WALK PERPENDICULAR TO ROAD
CONT. 1/2" EXP. JOINT AT RAMP
TAPERED SIDE RAMPS BEYOND
6'-0" RAMP
CONC. WALK
4"
COMPACTED SUBGRADE
ROADWAY
6"CONCRETE CURB & GUTTER
TYPICAL RAMP SECTION
CITY OF BRENTWOOD TENNESSEE 1969
HANDICAP RAMP DETAILS
DRAWING NO. 18
(NOT TO SCALE)

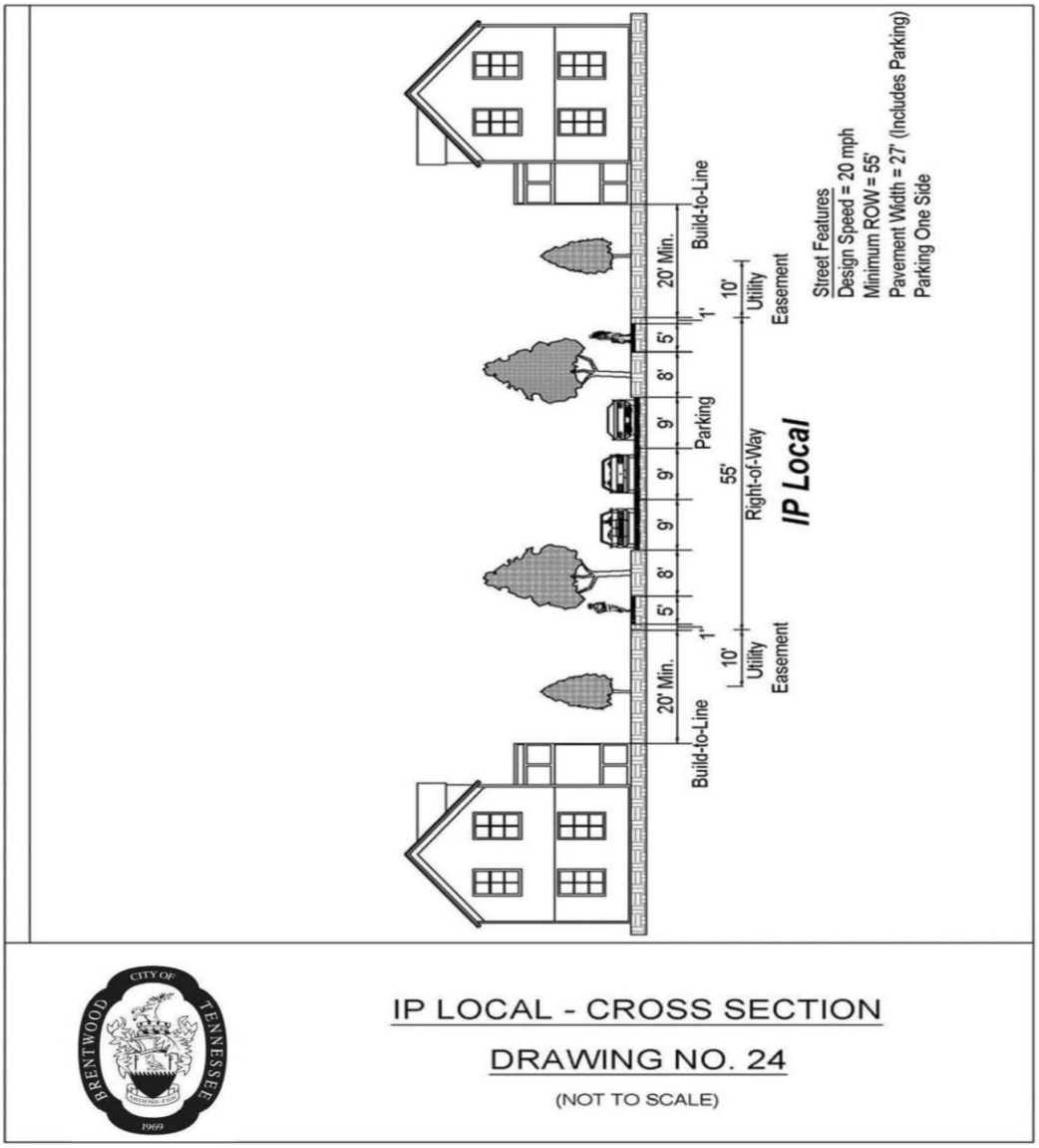

Textured Crosswalk (Typical)
9'
6'
9'
20'
9'
6'
9'
Parking
Parking
Parking
Parking
Planting Strip (Typ.)
Bike Lane (Typ.)
Sidewalk (Typ.)
IP Collector With Median
NOTE: Width of parking includes a 2' gutter.
CITY OF BRENTWOOD TENNESSEE 1969
IP COLLECTOR WITH MEDIAN - PLAN VIEW
DRAWING NO. 19
(NOT TO SCALE)


Build-to-Line
20' Min.
1'
5'
8'
9'
6'
9'
Parking
1' Extruded Curb
20'
1' Extruded Curb
Parking
9'
6'
9'
8'
5'
1'
20' Min.
Build-to-Line
10'
Utility Easement
98'
Right-of-Way
10'
Utility Easement
IP Collector
With Median
Street Features
Design Speed = 20 mph
Minimum ROW = 98'
Pavement Width = 24' (Includes Parking)
Parking Both Sides
CITY OF
BRENTWOOD
TENNESSEE
1969
IP COLLECTOR WITH MEDIAN - CROSS SECTION
DRAWING NO. 20
(NOT TO SCALE)


Textured Crosswalk (Typical)
2' Gutter
5'
10'
10'
5'
2' Gutter
Planting Strip (Typ.)
Bike Lane (Typ.)
Sidewalk (Typ.)
IP Collector Without Median
Note: The Planning Commission may allow a multi-use path in lieu of the required sidewalk.
IP COLLECTOR WITHOUT MEDIAN - PLAN VIEW
DRAWING NO. 21
(NOT TO SCALE)


IP Collector
Without Median
Street Features
Design Speed = 20 mph
Minimum ROW = 62'
Pavement Width = 34' (Includes Bike Lanes)
Parking Both Sides
Build-to-Line
20' Min.
1'
2' Gutter
8'
5'
10'
10'
5'
5'
8'
2' Gutter
1'
20' Min.
Build-to-Line
10'
Utility
Easement
62'
Right-of-Way
10'
Utility
Easement
CITY OF BRENTWOOD TENNESSEE
1969
IP COLLECTOR WITHOUT MEDIAN - CROSS SECTION
DRAWING NO. 22
(NOT TO SCALE)

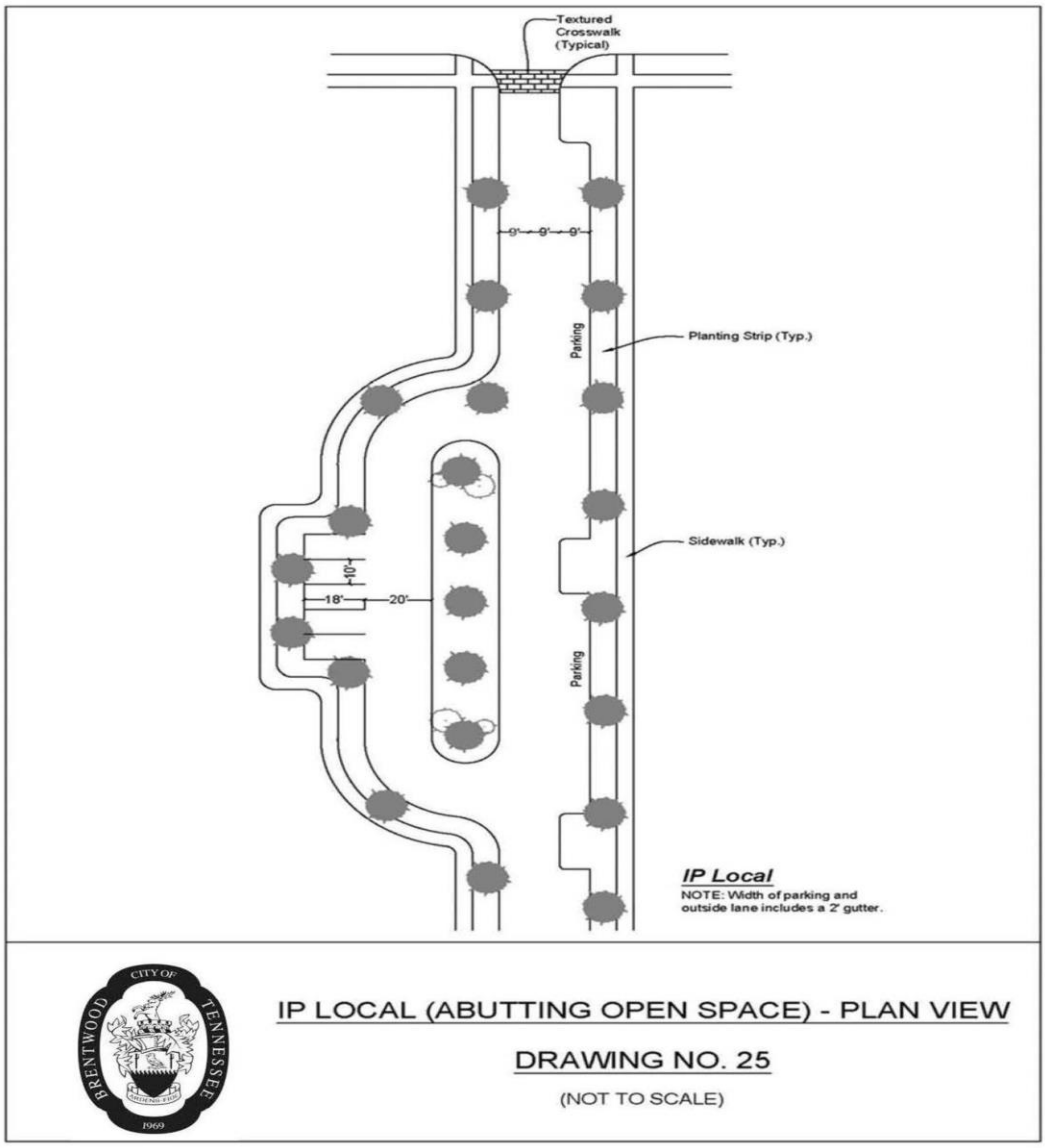

9'
9'
9'
Parking
Planting Strip (Typ.)
18'
Textured
Crosswalk
(Typical)
Sidewalk (Typ.)
Parking
IP Local
NOTE: Width of parking and
outside lane includes a 2' gutter.
CITY OF
BRENTWOOD
TENNESSEE
1969
IP LOCAL - PLAN VIEW
DRAWING NO. 23
(NOT TO SCALE)

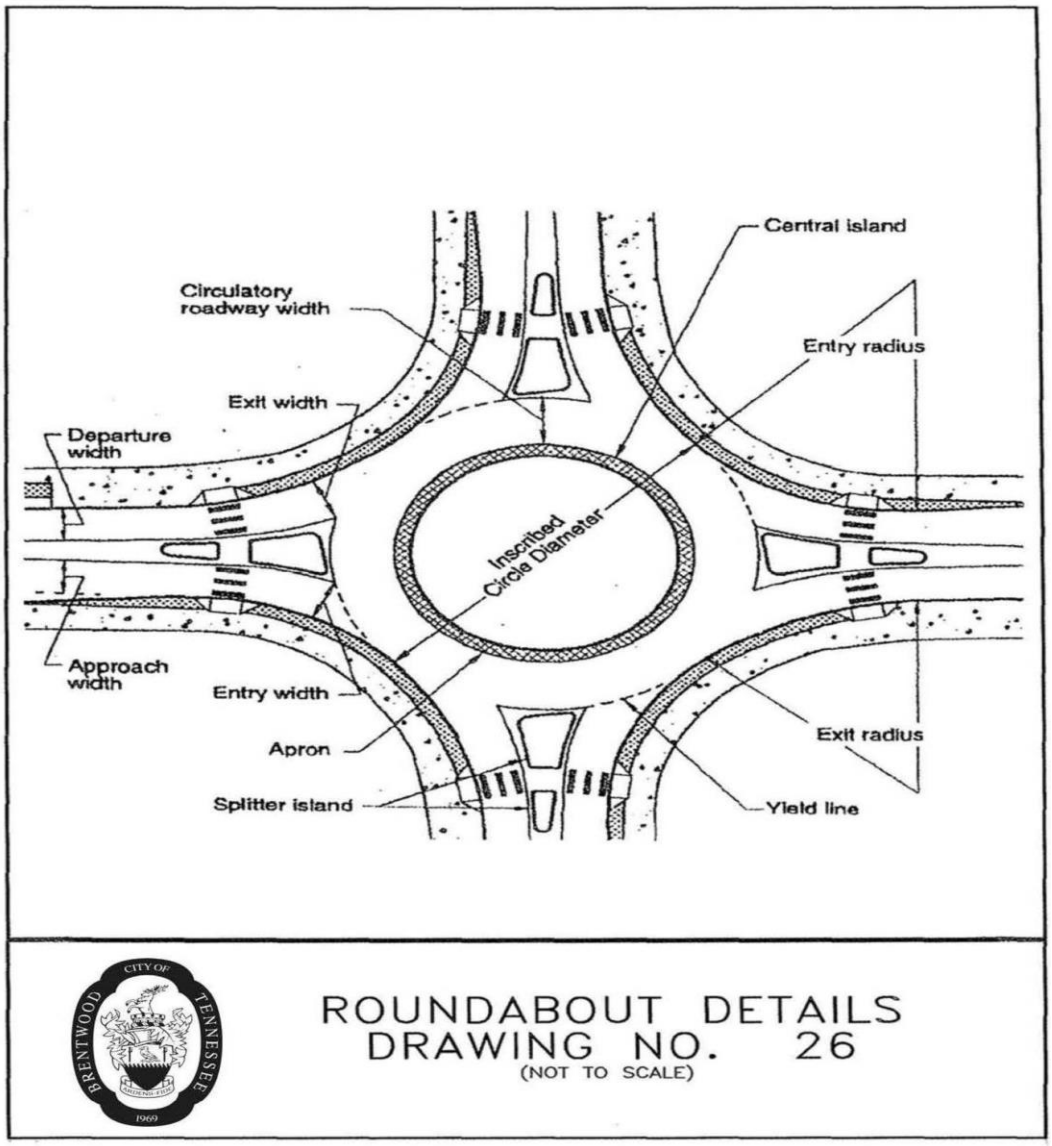


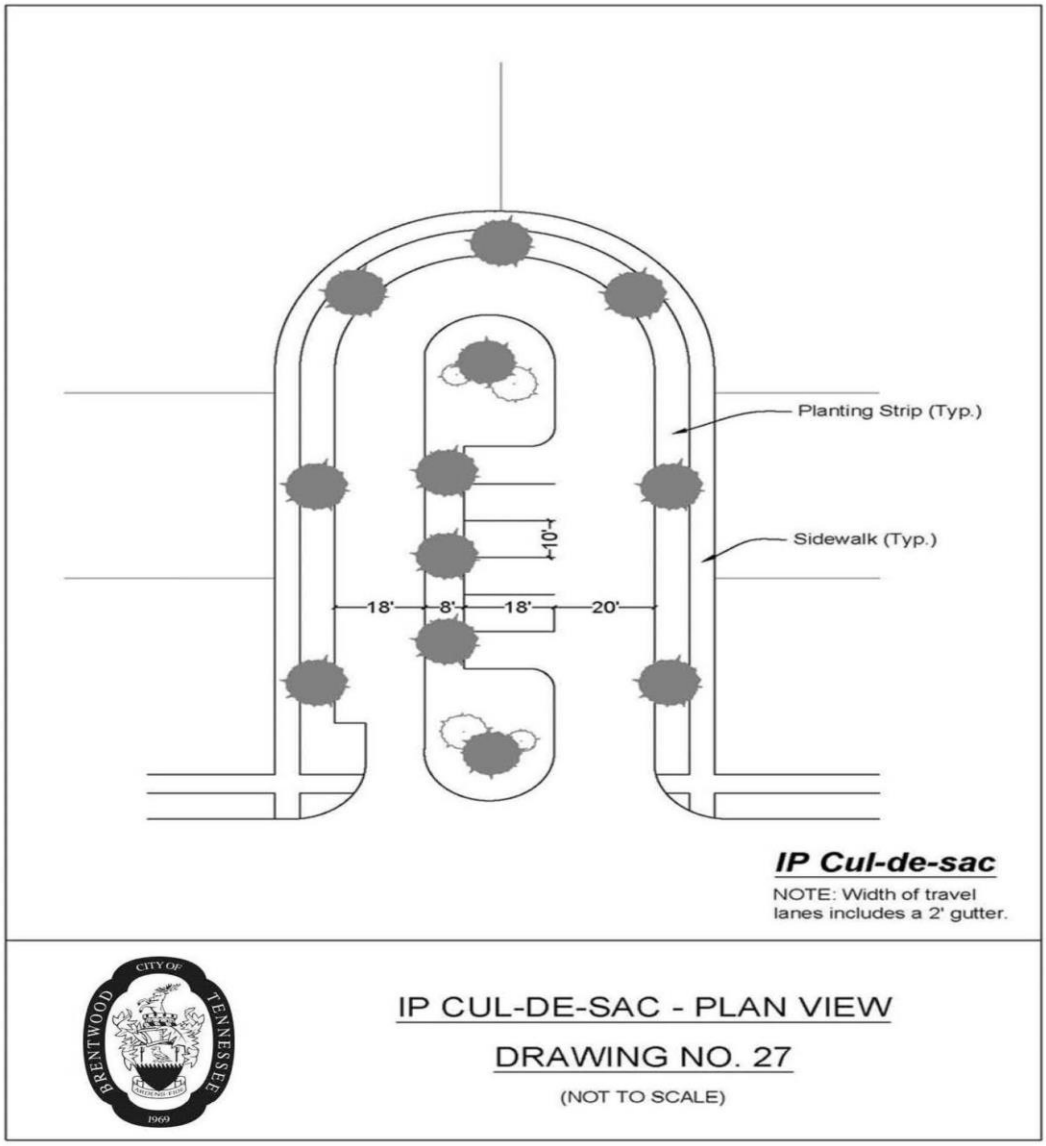
IP LOCAL - CROSS SECTION

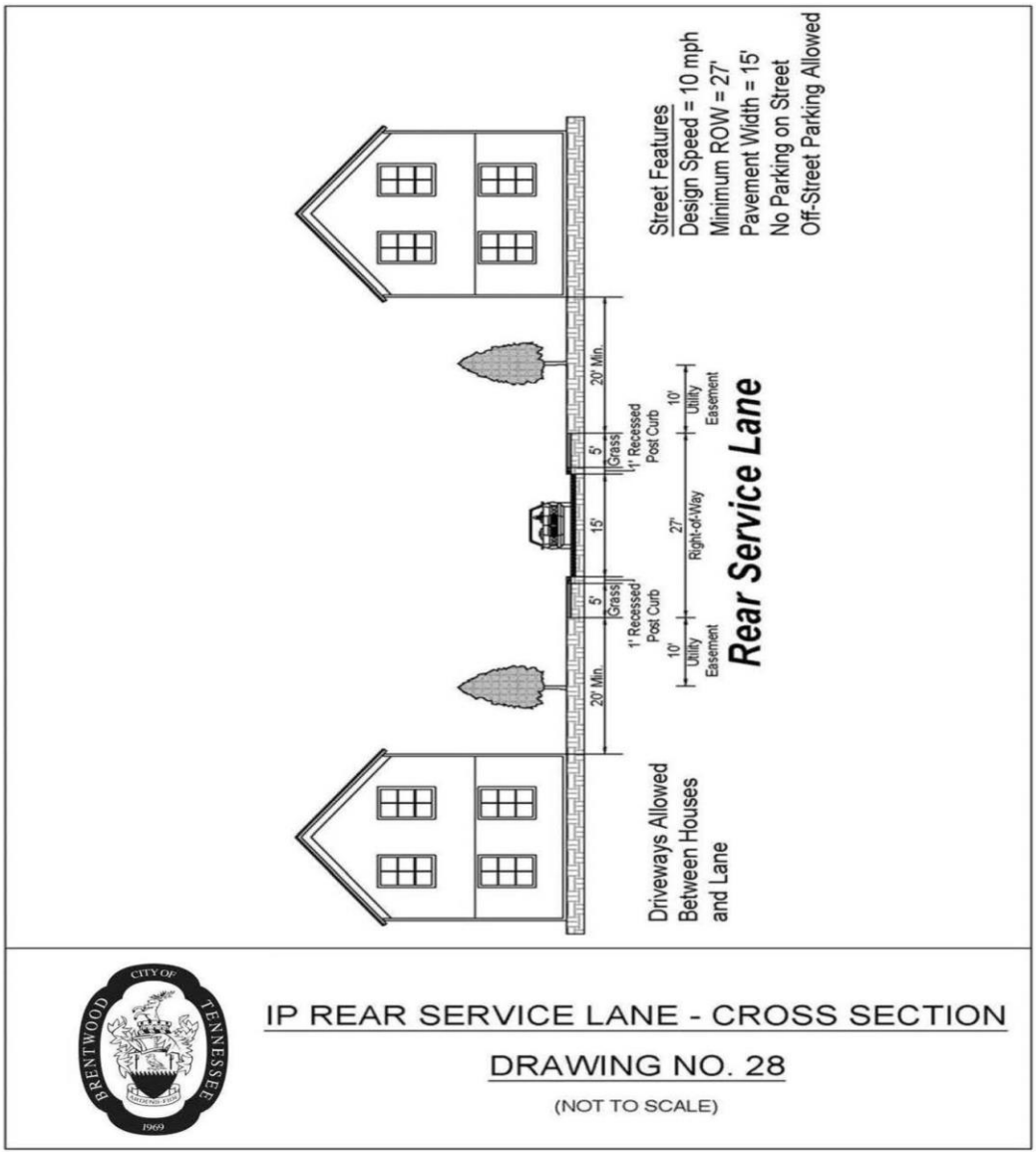
DRAWING NO. 24

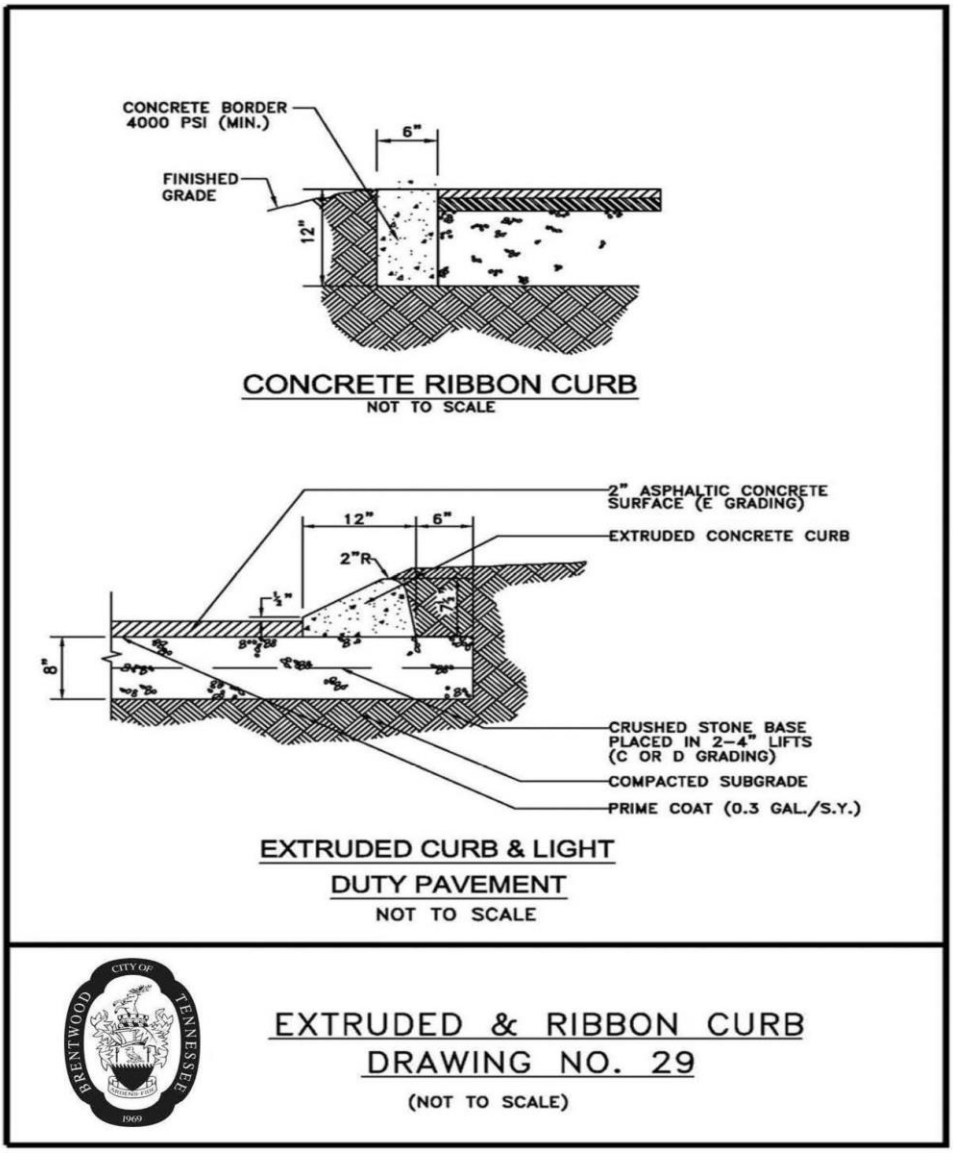
(NOT TO SCALE)


Textured
Crosswalk
(Typical)
9'
9'
9'
Parking
Planting Strip (Typ.)
Sidewalk (Typ.)
10'
18'
20'
Parking
IP Local
NOTE: Width of parking and
outside lane includes a 2' gutter.
CITY OF
BRENTWOOD
TENNESSEE
1969
IP LOCAL (ABUTTING OPEN SPACE) - PLAN VIEW
DRAWING NO. 25
(NOT TO SCALE)


Central island
Circulatory roadway width
Entry radius
Exit width
Departure width
Inscribed Circle Diameter
Approach width
Entry width
Apron
Splitter island
Exit radius
Yield line
BRENTWOOD
CITY OF
TENNESSEE
1969
ROUNDABOUT DETAILS
DRAWING NO. 26
(NOT TO SCALE)


Planting Strip (Typ.)
Sidewalk (Typ.)
10'
18'
8'
18'
20'
IP Cul-de-sac
NOTE: Width of travel lanes includes a 2' gutter.
IP CUL-DE-SAC - PLAN VIEW
DRAWING NO. 27
(NOT TO SCALE)


Street Features
Design Speed = 10 mph
Minimum ROW = 27'
Pavement Width = 15'
No Parking on Street
Off-Street Parking Allowed
Rear Service Lane
20' Min.
5'
Grass
1' Recessed
Post Curb
15'
27'
Right-of-Way
10'
Utility
Easement
Driveways Allowed
Between Houses
and Lane
CITY OF
BRENTWOOD
TENNESSEE
1969
IP REAR SERVICE LANE - CROSS SECTION
DRAWING NO. 28
(NOT TO SCALE)



(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

APPENDIX THREE. FORMS FOR FINAL PLAT CERTIFICATIONS

The city is served by a number of utility providers. Each may have adopted specific wording and/or certificates designed to address their individual needs. Additional certifications may be required on the final plat by these agencies, depending upon the utility service area in which the particular property is located. The appropriate certificates must be included as part of the final plat.

Form 1—Certificate of Ownership and Dedication

I (we) hereby certify that I am (we are) the owner(s) of the property shown and described hereon and that I (we) hereby adopt this plan of subdivision with my (our) free consent, establish the minimum

building restriction lines, and dedicate all streets, alleys, walks, parks and other open spaces to public or private use as noted.

Owner Name: _____

Title: _____ Date: _____

Form 2—Certificate of Approval of Street Names

I hereby certify that the Williamson County Department of Emergency Communications has approved the street name(s).

_____ Date: _____
Williamson County Department
of Emergency Communications

Form 3—Certificate of Approval of Subdivision Name

I hereby certify that the City of Brentwood Planning and Codes Department has approved the subdivision name.

_____ Date: _____
Secretary, Planning Commission
or Planning and Codes Director

Form 4—Certificate of Accuracy

I hereby certify that the plan shown and described hereon is a true and correct survey to the accuracy required by the specifications of the Brentwood Planning Commission.

Name: _____
By: _____ Date: _____

Form 5—Certificate of Approval of Water and Sewer Systems

I hereby certify that the following utility systems outlined or indicated on the final subdivision plat entitled _____ have been installed in accordance with current applicable regulations.

Water System:
_____ Date: _____
Name, Title and Agency of Approving Agent

Sewer System:
_____ Date: _____
Name, Title and Agency of Approving Agent

Form 6—Certificate of Provision of Electrical Service

I hereby certify that the requirements set forth in rules, regulations, by-laws, policy and operational bulletins, plat approval checklists and tree planting guidelines have been met for the electrical provider below. Any approval is at all times contingent upon continuing compliance with the aforementioned requirements.

_____ Date: _____
Electric Provider

Form 7—Certificate of Approval of Streets

I hereby certify that all streets designated on the final subdivision plat have been constructed in accordance with current applicable regulations.

_____ Date: _____
Engineering Director

Form 8—Certificate of Approval for Recording

I hereby certify that the subdivision plat shown hereon has been found to comply with the subdivision regulations of the City of Brentwood, with the exception of such variances and/or modifications, if any, as are noted in the minutes of the Planning Commission.

_____ Date: _____
Secretary, Planning Commission or
Planning and Codes Director

Form 9—Certificate of Approval of Addresses

I hereby certify that the subdivision plat shown hereon has been assigned the addresses in conformance with the City of Brentwood addressing standards.

_____ Date: _____
City of Brentwood
Addressing Authority

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

APPENDIX FOUR. BRENTWOOD MUNICIPAL PLANNING COMMISSION—IRREVOCABLE STANDBY LETTER OF CREDIT STANDARD FORM

Issuing Bank:
Name:
Address:
City, State, Zip Code:

Beneficiary:
City of Brentwood
Planning and Codes Department
P.O. Box 788
Brentwood, TN 37024-0788

Developer/Property Owner:
Name:
Address:
City, State, Zip Code:
Contact Person:

Amount: _____

Expiration Date: _____

We hereby issue this Irrevocable Standby Letter of Credit in your favor which is available at sight by drafts on (Name of Bank) , bearing the clause "Drawn under Irrevocable Standby Letter of Credit Number _____", accompanied by:

Beneficiary's statement signed by one of its officials stating " (name of the developer) has failed to complete certain improvements and/or has failed to obtain written authorizations for release from all affected agencies for the development project known as (Name of the project) ."

Partial drawings shall be permitted.

Drafts and documents may be presented by hand delivery to (name of issuing bank, address of office/branch authorized to accept draws, and name of contact person or department to whom documents should be addressed) .

Alternatively, drafts and documents may be delivered by:

[Check where applicable. If address for hand delivery is located more than 60 miles from the city limits of Brentwood, Tennessee, then at least one of the following delivery methods must be allowed.]

(a) Registered or certified mail or courier service (such as Federal Express) delivered to (name of issuing bank, address of office/branch authorized to accept draws, and name of contact person or department to whom documents should be addressed) .

(b) Facsimile delivered to (fax number of contact person or department to whom documents should be addressed) .

(c) Electronic mail delivered to (email address of contact person or department to whom documents should be addressed. Include any measures agreed upon to verify authenticity) .

(d) (Describe other means by which delivery will be accepted. Must be approved by City of Brentwood Planning and Codes Director prior to providing this Letter of Credit.)

This Letter of Credit has been established for (insert type of improvement, such as streets, drainage, street lighting, water and sewer improvements, or landscaping improvements) for (name of subdivision or project) .

It is a condition of this letter of credit that it shall be deemed to be automatically extended, without amendment, for period(s) of one year each from the current expiration date hereof or any future expiration date, unless at least ninety (90) days prior to any expiration date we notify you by registered or certified mail or overnight courier at the above listed address that we elect not to consider this letter of credit renewed for any such period.

We hereby agree that any draft drawn under and in compliance with the terms of this Letter of Credit shall be duly honored upon due presentation to us.

If you require any assistance or have any questions regarding this Letter of Credit, please call (Contact Name and Telephone Number) .

Authorized Signature:

_____

Printed Name:

_____

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

APPENDIX FIVE. BRENTWOOD PLANNING COMMISSION—PERFORMANCE AGREEMENT

PERFORMANCE AGREEMENT

For: _____ (Subdivision name)

Section No.: _____ (if applicable)

(Insert developer name) , as Principal (hereinafter called "Principal") is indebted and bound unto the City of Brentwood, Tennessee (hereinafter called "the City") and for the use and benefit of all future lot holders within the subdivision known as _____ (hereinafter called "the Project"), in the penal sum of _____ **Thousand And 00/100 U.S. Dollars ($___,000.00)**, good and lawful money of the United States of America, for securing the performance of certain improvements and works, as hereinafter set forth; and for the payment of which sum well and truly to be made, Principal does bind itself, its heirs, executors, personal representatives, administrators, successors and assigns, jointly and severally, firmly by these presents, and in support thereof represents, acknowledges and agrees as follows:

WHEREAS, Principal has submitted a final subdivision plat (hereinafter called "the Plat") for the Section No. ___ of the Project, said Plat having been prepared by _____ and dated _____, 20___; and

WHEREAS, in accordance with the Subdivision Regulations of the City (hereinafter, "the Subdivision Regulations") as adopted by the Brentwood Planning Commission (hereinafter call the "Planning Commission"), the approval of the Planning Commission is a condition precedent to the right of Principal to have the Plat recorded in the Register's Office of Williamson County, Tennessee, and to receive necessary construction permits; and

WHEREAS, the City will not authorize the recording of the Plat until: (a) all required improvements and facilities are completed and installed in accordance with the regulations and specifications of the City and the conditions established by the Planning Commission, including but not limited to any or all of the following: grading, ditching, drainage improvements, erosion control, sanitary sewers, water lines, street improvements, alleys, street lights, traffic control devices, signage, sidewalks, pedestrian/bike paths and landscaping (such required improvements and facilities being hereinafter called "the Improvements"); or (b) a satisfactory performance agreement with sufficient security is furnished, providing for and securing to the public the actual construction and installation of the Improvements; and

WHEREAS, pursuant to the Subdivision Regulations of the City (hereinafter called "the Subdivision Regulations"), as adopted by the Planning Commission, it is permissible for Principal, in lieu of completing the Improvements prior to commencement of development activities on individual lots, to execute a performance agreement with good and sufficient security satisfactory to the City in an amount equal to the estimated cost of completion of the construction and installation of the Improvements, providing and insuring that the Improvements will be constructed; and

WHEREAS, Principal has commenced or intends to commence construction and installation of the Improvements, but is unable to complete the work at this time, and it is the desire of Principal to have the Plat recorded in the Register's Office of Williamson County, so as to provide for the orderly development and transfer of property; and

WHEREAS, it is estimated that the cost of completing the Improvements is as follows:

Streets	**$**_____
Drainage	**$**_____
Water	**$**_____
Sewer	**$**_____
Street Lights	**$**_____
Landscaping	**$**_____
[List other improvement/facility categories and costs here.]	
TOTAL	**$**_____; and

WHEREAS, to secure installation of the Improvements, and to induce the City to allow issuance of necessary building permits prior to completion of the Improvements, Principal provides this performance agreement (hereinafter called "Performance Agreement") and an irrevocable letter of credit (hereinafter called "the Security") issued by _____, containing an automatic renewal feature, the proceeds of which are payable to the City in an amount equal to _____ Thousand And 00/100 U.S. Dollars ($___,000.00); and

WHEREAS, the Planning Commission and the City are willing to authorize the issuance of necessary permits upon the execution of this Performance Agreement by Principal and the providing of the Security, with the understanding that this Performance Agreement is subject to the condition that the Principal will, prior to _____, 20___, complete the construction and installation of the Improvements, as herein set forth, and obtain their inspection, approval and acceptance by the City.

NOW THEREFORE, Principal agrees to the following terms and conditions:

1. Conditional Approval. Approval of the Plat is subject to all conditions of approval established by the Planning Commission. Principal agrees to construct and install the Improvements in accordance with said conditions and in compliance with the Subdivision Regulations, the Brentwood Municipal Code, all codes adopted by the City, the notes on the Plat and the approved construction plans and specifications; and further agrees to comply with all applicable construction inspection requirements, complete all punch lists and obtain the approval of all applicable departments and agencies no later than _____, 20___. Principal further agrees to maintain all roads, utilities and other infrastructure until they have been accepted for public use and throughout the Maintenance Period established herein. The obligations set forth in this paragraph are hereinafter collectively referred to as "Principal's Obligations."

2. Security. Principal shall maintain adequate security at all times to assure completion of Principal's Obligations. Such security shall comply with the requirements of the Subdivision Regulations and shall be satisfactory to the City Attorney. At the discretion of the City's Planning and Codes Director, the amount of such security may be reduced, based on the amount of work completed on the Improvements. If the Security provided with this Performance Agreement expires, Principal will furnish substitute security at least 30 days prior to such expiration.

3. Engineering/Architectural Consultants. Principal agrees to have a registered professional engineer and/or registered landscape architect, depending on the type of improvements, involved in the construction phase of the Project for the purpose of monitoring construction in order to determine conformity with the plans and specifications approved by the City. All costs for the aforementioned professional services shall be borne by Principal.

4. Superintendence. Principal shall give personal superintendence to the work on the Improvements, or have a competent foreman or superintendent, satisfactory to the City and with authority to act for Principal, present at all times during work on the Improvements.

5. Inspection. Principal shall at all times provide safe access for inspection by the City to all parts of the work on the Improvements. All work which requires inspection shall be performed during the City's normal working hours and workdays, unless otherwise approved by the City. No work which requires inspection shall be performed during times when an inspector is not available.

6. Acquisition of Property Rights. Principal agrees to pay all costs of acquiring easements and other property rights necessary for completing Principal's Obligations, including any attorney fees and litigation costs associated with acquisition of such property rights. All permanent easements and other property rights that are to be a part of the City's roadway, utility or drainage system are to be conveyed to the City.

7. Title to Public Improvements. Title to, and ownership of, all improvements that are to be a part of the City's roadway, utility or drainage system shall vest absolutely in the City, upon completion and acceptance of such improvements by the City.

8. Release of Principal's Obligations. If the Principal's Obligations hereunder are completed, as determined within the sole discretion of the City's Planning and Codes Department (hereinafter called "the Planning Department"), by _____, 20___, then the Principal shall be released from further obligation hereunder. Otherwise, Principal's Obligations shall remain in full force and effect. Upon default, as described below, the City may exercise any of the remedies set forth in the Performance Agreement, or any combination of such remedies as may be deemed necessary by the City. Nothing herein shall be construed to relieve Principal from the burden of full compliance with all terms hereunder.

9. Extensions. Principal may request an extension to the completion date established herein. Any such request for an extension will be granted only upon a determination of the Planning Department that good cause has been shown. The Planning Department shall determine the length of any such extension. No extension shall release or modify the Security.

10. Final Acceptance of Improvements and Release of Security. Principal may request final acceptance of the Improvements and release of the Security at the point when all of the Improvements are completed in full. Any such request for a release shall be accompanied by written authorizations from all applicable departments and agencies accepting all improvements.

11. Maintenance Security. Upon release of the Security guaranteeing completion of the Improvements, Principal shall provide a new security (hereinafter called "the Maintenance Security"), the proceeds of which are payable to the City in an amount equal _____ Thousand And 00/100 U.S. Dollars ($___,000.00). Said Maintenance Security shall remain valid for a period of months (hereinafter called "the Maintenance Period") and shall be subject to the same standards established for the original Security.

12. Repair or Reconstruction of Defective Work. During the Maintenance Period, if any of the work performed under this Performance Agreement fails to meet any of the requirements of this Performance Agreement or any other requirements or specifications referred to herein, Principal shall without delay and without any cost to the City, repair or replace or reconstruct any defective or otherwise unsatisfactory part or parts of the work. Should Principal fail to act promptly or in accordance with this requirement, or should the exigencies of the case require repairs or replacements to be made before Principal can be notified, the City may, as its option, make the necessary repairs or replacements or perform the necessary work and Principal shall pay to the City the actual cost of such repairs and replacements, plus ten percent (10%) for administrative costs. The City may draw from the Maintenance Security as needed to pay for costs that have been or will be incurred by the City for such repairs, replacements and administrative costs.

13. Assignment—Consent Required. The provisions of this Performance Agreement shall inure to the benefit of and shall be binding upon the respective successors and assignees of the parties hereto. Neither this Performance Agreement nor any of the rights and obligations of Principal hereunder shall be assigned or transferred, in whole or in part, without the prior written consent of the Planning Commission or its duly appointed agent. Any such assignment or transfer shall not release Principal from its obligations hereunder.

14. Replacement. Should the Planning Commission, by and through the staff of the Planning Department, accept another performance agreement and security for the aforementioned section of the Project, and

said performance agreement and security have been approved as to form by the City Attorney, then Principal shall be released from its obligations hereunder.

15. Principal's Default. If Principal fails to comply with any of the terms of this Performance Agreement, the City, by and through the staff of the Planning Department, may determine that Principal is in default. Examples of default may include (but are not limited to) the following:

    a) Failure to complete any of the Improvements described in this Performance Agreement within the time allotted or to repair or replace or reconstruct any defective or otherwise unsatisfactory part or parts of the work during the Maintenance Period.

    b) Abandonment of the performance of Principal's Obligations or failure to progress with work on any of the Improvements pursuant to the standards described or referenced herein or pursuant to the plans approved by the City. (This may occur before the required completion date if the work completed to date is substandard or is not progressing sufficiently.)

    c) Renunciation or repudiation by Principal of Principal's Obligations.

    d) Insolvency of Principal or other action or inaction indicating that Principal's Obligations cannot be completed within the time allotted.

    e) Breach of any other of the terms of this Performance Agreement.

    f) Failure to provide substitute security at least 30 days prior to the expiration of the Security.

16. Remedies. If the City, by and through the staff of the Planning Department, determines that Principal is in default, the City shall have each of the following non-exclusive remedies against Principal:

    a) Determine Principal to be in Default and proceed to collect the funds which are held as Security or Maintenance Security to this Performance Agreement, or so much thereof as is necessary to complete Principal's Obligations.

    b) Proceed to complete Principal's Obligations with the understanding that Principal shall be responsible for: (a) any difference between the cost of completing Principal's Obligations and any proceeds derived through the Security or Maintenance Security (the "Deficiency") and (b) the City's administrative costs (the "Administrative Costs") associated with overseeing the completion of Principal's Obligations, to be assessed at ten percent (10%) of the cost of completion.

    c) Proceed to collect the Deficiency and the Administrative Costs.

    d) Require specific performance, compelling completion of Principal's Obligations hereunder or compliance with other terms of this Performance Agreement.

    e) Recover attorneys' fees and litigation costs incurred in pursuing any of the remedies specified herein.

    f) Withhold the issuance of permits for construction on any lot or other portion of the Project, issue stop work orders in regard to any such permits previously issued, and order Principal to discontinue any other development activities on the Project.

    g) Any other remedy available at law or in equity.

17. Miscellaneous.

    a) *Hold harmless/indemnification agreement.* Principal shall hold harmless the City, its elective and appointive boards, commissions, officers, agents, and employees, from any liability for damage

for personal injury, including death, as well as from claims for property damage which may arise from the construction of or failure to maintain the Improvements or from any aspect of Principal's or Principal's contractors', sub-contractors', agents' or employees' operations under this Performance Agreement or in the completion of the Project. Principal agrees to fully indemnify City and its elective and appointive boards, commissions, officers, agents and employees from any suits or actions at law or in equity for damages caused, or alleged to have been caused, by reason of any of the aforesaid operations; provided as follows:

i. That the City does not waive any rights against Principal which the City may have by reason of the aforesaid hold harmless/indemnification agreement because of the acceptance of any portion of the Improvements or the release of Principal's Obligations by the City.

ii. That the aforesaid hold-harmless agreement shall apply to all damages and claims for damages of every kind suffered, or alleged to have been suffered, by reason of any of the aforesaid operations referred to in this Performance Agreement, regardless of whether or not the City has prepared, supplied or approved of, plans and/or specifications for the Project.

b) *Severability.* If any clause or portion of this Performance Agreement is found not to be valid and binding, the remainder shall continue in full force and effect.

c) *Non-waiver.* The failure or refusal of the City to initiate any action, proceedings or step to enforce any remedy or exercise any right under this Performance Agreement or the initiation of any action, proceeding or step by the City, acting in good faith upon the belief that same is permitted, shall not in any way release Principal from Principal's Obligations. Furthermore, acceptance of this Performance Agreement by the City does not waive or modify any provision or requirement of the statutes, ordinances, codes, rules and regulations applicable to the Project. The Plat and any approved plan or revision provided by Principal in fulfillment of Principal's Obligations are incorporated for reference purposes only to the extent that they meet, at a minimum, the unmodified requirements of said statutes, ordinances, codes, rules and regulations.

d) *Principal not agent of city.* Neither Principal nor any of Principal's agents or contractors are or shall be considered to be agents of the City in connection with the performance of Principal's Obligations under this Performance Agreement.

e) *Jurisdiction/venue.* This Performance Agreement shall be administered and interpreted in accordance with the laws of the State of Tennessee. Any actions arising out of this Performance Agreement or the Security shall be filed and maintained in the courts of Williamson County, Tennessee.

Witness my hand this the _____ day of _____, 20___.

PRINCIPAL

By: _____
Signature

Printed Name: _____

Title: _____

Mailing Address: _____
_____

STATE OF _____
COUNTY OF _____

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared _____, and who upon oath, acknowledged himself to be _____ of _____, the within named Principal and that he as _____, being authorized so to do, executed the foregoing instrument for the purpose therein contained.

Witness my hand and official seal at office in _____, _____, this _____ day of _____, 20___.

Notary Public: _____

My commission expires: _____

ACCEPTED BY:

_____
Planning and Codes Director
City of Brentwood, Tennessee

Date: _____

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

APPENDIX SIX. BRENTWOOD PLANNING COMMISSION—PERFORMANCE AGREEMENT FOR AMENITY IMPROVEMENTS

SUBDIVISION AMENITY/OPEN SPACE USE
PERFORMANCE AGREEMENT

(Insert developer name) , as Principal (hereinafter called "Principal") is indebted and firmly bound unto the **City of Brentwood, Tennessee** (hereinafter called "the City") and for the use and benefit of the _____ *[insert legal name of home owners or property owners association]* (hereinafter called "the HOA") and all future lot owners within the certain subdivision known as _____ (hereinafter called "the Project"), in the penal sum of _____ **Thousand And 00/100 U.S. Dollars ($___,000.00),** good and lawful money of the United States of America, for securing the performance of certain improvements and works, as hereinafter set forth; and for the payment of which sum well and truly to be made, Principal does hereby bind itself, its heirs, executors, personal representatives, administrators, successors and assigns, jointly and severally, firmly by these presents, and in support thereof represents, acknowledges and agrees as follows:

WHEREAS, Principal has submitted a final subdivision plat (hereinafter called "the Plat") for _____ *[insert "the Project" if the subdivision consists of only one section, or "Section One of the Project" if the subdivision is to consist of more than one section]*, said Plat having been prepared by _____ and dated _____, 20___; and

WHEREAS, in addition to the Plat, Principal has submitted, and the Brentwood Planning Commission (hereinafter called "the Planning Commission") has approved, design plans (hereinafter, "the Design Plans") prepared by _____ and dated _____, 20___ for the subdivision amenities described as follows:

[Insert description of amenities]

The above-described subdivision amenities are to be contained within the required open space of Section(s) _____ of the Project; and

WHEREAS, in accordance with the Subdivision Regulations of the City (hereinafter called "the Subdivision Regulations") as adopted by the Planning Commission, the approval of the Planning Commission is a condition precedent to the right of Principal to have the Plat recorded in the Register's Office of Williamson County, Tennessee, and to receive necessary construction permits; and

WHEREAS, the City will not authorize the recording of the Plat until: (a) all construction and installation of the above-described amenities and all required grading, ditching, drainage culverts, stormwater facilities and improvements associated with said amenities, as well as the stabilization of all improvements, erosion and sedimentation control measures and methodologies, both permanent and temporary, and any other related improvements are completed and installed in accordance with the Subdivision Regulations and the approved Design Plans, and the conditions established by the Planning Commission (these measures being hereinafter collectively referred to as "the Amenities"); or (b) a satisfactory performance agreement with sufficient surety is furnished, providing for the completion of the Amenities as set forth above; and

WHEREAS, pursuant to the Subdivision Regulations, it is permissible for Principal, in lieu of the completion of the Amenities prior to commencement of development activities on individual lots, to execute a performance agreement with good and sufficient surety satisfactory to the City in an amount equal to the estimated cost of completion of the construction and installation of the Amenities, providing and insuring that said improvements and works will be constructed; and

WHEREAS, Principal has commenced or intends to commence construction and installation of the Amenities, but is unable to complete the work at this time, and it is the desire of Principal to have the Plat recorded in the Register's Office of Williamson County, Tennessee, so as to provide for the orderly development and transfer of property; and

WHEREAS, it is estimated that the cost of completing the Amenities is _____ Thousand And 00/100 U.S. Dollars ($___,000.00); and

WHEREAS, to secure installation of the Amenities, and to induce the City to allow issuance of necessary building permits prior to completion of the required improvements and works, Principal provides this performance agreement (hereinafter called "Performance Agreement") and an irrevocable letter of credit (hereinafter called "the Security") issued by _____, containing an automatic renewal feature, the proceeds of which are payable to the City in an amount equal to _____ Thousand And 00/100 U.S. Dollars ($___,000.00); and

WHEREAS, the Planning Commission and the City are willing to authorize the issuance of necessary permits upon the execution of this Performance Agreement by Principal and the providing of the Security, with the understanding that this Performance Agreement is subject to the condition that Principal will, prior to _____, 20___: (a) complete the construction and installation of the Amenities, as herein set forth; (b) provide certification by the design engineer for the Amenities that same were completed in accordance with the approved Design Plans; (c) obtain all inspections and approvals required by the City; and (d) provide written acceptance of the Amenities by the HOA.

NOW THEREFORE, Principal agrees to the following terms and conditions:

1. Conditional Approval. Approval of the Plat is subject to all conditions of approval established by the Planning Commission. Principal agrees to construct and install the Amenities in accordance with said conditions and in compliance with the Subdivision Regulations, the Brentwood Municipal Code, all codes adopted by the City, the notes on the Plat and the approved Design Plans; and further agrees to comply with all applicable construction inspection requirements, complete all punch lists, and obtain the approval of all applicable departments and agencies no later than _____, 20___. Principal further agrees to maintain the Amenities until proof of written acceptance of the Amenities by the HOA has been submitted to the City. The obligations set forth in this paragraph are hereinafter collectively referred to as "Principal's Obligations."

2. Security. Principal shall maintain adequate security at all times to assure completion of Principal's Obligations. Such security shall comply with the requirements of the Subdivision Regulations and shall be satisfactory to the City Attorney. At the discretion of the City's Planning Director, the amount of such security may be reduced, based on the amount of work completed on the Amenities. If the Security provided with this Performance Agreement expires, Principal will furnish substitute security at least 30 days prior to such expiration.

3. Engineering/Architectural Consultants. Principal agrees to have a registered professional engineer and/or registered landscape architect, depending on the type of improvements, involved in the construction phase of the Amenities for the purpose of monitoring construction in order to determine conformity with the approved Design Plans. Principal shall provide certification by such professional(s) that the Amenities were completed in accordance with the approved Design Plans. All costs for the aforementioned professional services shall be borne by Principal.

4. Superintendence. Principal shall give personal superintendence to the work on the Amenities, or have a competent foreman or superintendent, satisfactory to the City and with authority to act for Principal, present at all times during work on the Amenities.

5. Inspection. Principal shall at all times provide safe access for inspection by the City to all parts of the work on the Amenities. All work which requires inspection shall be performed during the City's normal working hours and workdays, unless otherwise approved by the City. No work which requires inspection shall be performed during times when an inspector is not available.

6. Ownership of Amenities. Unless otherwise approved by the Planning Commission, ownership of the Amenities shall be conveyed to the HOA when the designated open space within which the Amenities are located is deeded to the HOA pursuant Section 78-186 of the Brentwood Municipal Code.

7. Release of Principal's Obligations. If the Principal's Obligations hereunder are completed, as determined within the sole discretion of the City's Planning Department (hereinafter called "the Planning Department"), by _____, 20___, then the Principal shall be released from further obligation hereunder. Otherwise, Principal's Obligations shall remain in full force and effect. Upon default, as described below, the City may exercise any of the remedies set forth in this Performance Agreement, or any combination of such remedies as may be deemed necessary by the City. Nothing herein shall be construed to relieve Principal from the burden of full compliance with all terms hereunder.

8. Extensions. Principal may request an extension to the completion date established herein. Any such request for an extension will be granted only upon a determination of the Planning Department that good cause has been shown. The Planning Department shall determine the length of any such extension. No extension shall release or modify the Security.

9. Final Acceptance of Improvements and Release of Security. Principal may request release of the Security at the point when all of the Amenities are completed in full and all certifications, approvals and acceptances required under this Performance Agreement, including proof of written acceptance of the Amenities by the HOA, have been submitted to the City.

10. Maintenance Security. Upon release of the Security guaranteeing completion of the Amenities, Principal shall submit proof that a new security (hereinafter called "the Maintenance Security") has been provided to the HOA. The proceeds of the Maintenance Security shall be payable to the HOA, rather than the City, for the HOA's use in repairing or replacing any defective components of the Amenities. The Maintenance Security shall be in an amount equal to _____ Thousand And 00/100 U.S. Dollars ($___,000.00) and shall remain valid for a period of ___ months (hereinafter called "the Maintenance Period.") The Maintenance Security shall otherwise be subject to the same standards established for the original Security.

11. Assignment Consent Required. The provisions of this Performance Agreement shall inure to the benefit of and shall be binding upon the respective successors and assignees of the parties hereto. Neither this Performance Agreement nor any of the rights and obligations of Principal hereunder shall be assigned or transferred, in whole or in part, without the prior written consent of the Planning Commission or its duly appointed agent. Any such assignment or transfer shall not release Principal from its obligations hereunder.

12. Replacement. Should the Planning Commission, by and through the staff of the Planning Department, accept another performance agreement and security for the aforementioned section of the Project, and said performance agreement and security have been approved as to form by the City Attorney, then Principal shall be released from its obligations hereunder.

13. Principal's Default. If Principal fails to comply with any of the terms of this Performance Agreement, the City, by and through the staff of the Planning Department, may determine that Principal is in default. Examples of default may include (but are not limited to) the following:

    a) Failure to complete any of the Amenities described in this Performance Agreement within the time allotted or to repair or replace or reconstruct any defective or otherwise unsatisfactory part or parts of the work during the Maintenance Period.

    b) Abandonment of the performance of Principal's Obligations or failure to progress with work on any of the Amenities pursuant to the standards described or referenced herein or pursuant to the Design Plans. (This may occur before the required completion date if the work completed to date is substandard or is not progressing sufficiently.)

    c) Renunciation or repudiation by Principal of Principal's Obligations.

    d) Insolvency of Principal or other action or inaction indicating that Principal's Obligations cannot be completed within the time allotted.

    e) Breach of any other of the terms of this Performance Agreement.

    f) Failure to provide substitute security at least 30 days prior to the expiration of the Security.

14. Remedies. If the Principal is in default, the following non-exclusive remedies may be exercised against Principal by the City, or by the HOA where specified:

    a) The HOA may require specific performance by the Principal, compelling completion of Principal's Obligations hereunder or compliance with other terms of this Performance Agreement.

    b) The City may proceed to collect the funds which are held as Security to this Performance Agreement, or so much thereof as is necessary to complete the Amenities, and hold said funds in escrow for the HOA for the HOA's use in paying for completion of the Amenities. Action by the City in drawing on the Security shall not be deemed a release of Principal for any liability hereunder.

    c) The City may release any or all funds held by the City for completion of the Amenities to the HOA upon the HOA's submittal of invoices or other written documentation, satisfactory to the City's Planning Director, as evidence of the completion of construction of the Amenities or progress toward such completion. Upon completion of Principal's Obligations and submittal of releases from any other parties who might otherwise have a claim against the funds held by the City, any remaining funds held by the City will be refunded to Principal.

    d) The HOA may proceed to collect the difference between the cost of completing the Amenities and any proceeds derived through the Security.

e) If the Principal fails to repair or replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Amenities during the Maintenance Period, the HOA may collect the funds which are held as Maintenance Security for the HOA's use in completing such repairs, replacements or reconstruction.

f) The City and the HOA may each recover from the Principal all attorneys' fees and litigation costs incurred in pursuing any of the remedies specified herein.

g) The City may withhold the issuance of permits for construction on any lot or other portion of the Project, issue stop work orders in regard to any such permits previously issued, and order Principal to discontinue any other development activities on the Project.

h) The City and the HOA may exercise any other remedy available at law or in equity.

15. Miscellaneous.

a) *Hold harmless/indemnification agreement.* Principal shall hold harmless the City, its elective and appointive boards, commissions, officers, agents, and employees, from any liability for damage for personal injury, including death, as well as from claims for property damage which may arise from the construction of or failure to maintain the Amenities or from any aspect of Principal's or Principal's contractors', sub-contractors', agents' or employees' operations under this Performance Agreement or in the completion of the Project. Principal agrees to fully indemnify City and its elective and appointive boards, commissions, officers, agents and employees from any suits or actions at law or in equity for damages caused, or alleged to have been caused, by reason of any of the aforesaid operations; provided as follows:

i. That the City does not waive any rights against Principal which the City may have by reason of the aforesaid hold harmless/indemnification agreement because of the acceptance of any portion of the Amenities or the release of Principal's Obligations by the City.

ii. That the aforesaid hold-harmless agreement shall apply to all damages and claims for damages of every kind suffered, or alleged to have been suffered, by reason of any of the aforesaid operations referred to in this Performance Agreement, regardless of whether or not the City has approved of plans and/or specifications for the Project.

b) *Severability.* If any clause or portion of this Performance Agreement is found not to be valid and binding, the remainder shall continue in full force and effect.

c) *Non-waiver.* The failure or refusal of the City to initiate any action, proceedings or step to enforce any remedy or exercise any right under this Performance Agreement or the initiation of any action, proceeding or step by the City, acting in good faith upon the belief that same is permitted, shall not in any way release Principal from Principal's Obligations. Furthermore, acceptance of this Performance Agreement by the City does not waive or modify any provision or requirement of the statutes, ordinances, codes, rules and regulations applicable to the Project. The Plat and any approved plan or revision provided by Principal in fulfillment of Principal's Obligations are incorporated for reference purposes only to the extent that they meet, at a minimum, the unmodified requirements of said statutes, ordinances, codes, rules and regulations.

d) *Principal not agent of city.* Neither Principal nor any of Principal's agents or contractors are or shall be considered to be agents of the City in connection with the performance of Principal's Obligations under this Performance Agreement.

e) *Jurisdiction/venue.* This Performance Agreement shall be administered and interpreted in accordance with the laws of the State of Tennessee. Any actions arising out of this Performance

Agreement or the Security shall be filed and maintained in the courts of Williamson County, Tennessee.

Witness my hand this the _____ day of _____, 20___.

PRINCIPAL

By: _____
Signature

Printed Name: _____

Title: _____

Mailing Address: _____
_____

STATE OF _____
COUNTY OF _____

Before me, the undersigned, a Notary Public of the State and County aforesaid, personally appeared _____, and who upon oath, acknowledged himself to be _____ of _____, the within named Principal and that he as _____, being authorized so to do, executed the foregoing instrument for the purpose therein contained.

Witness my hand and official seal at office in _____, _____, this _____ day of _____, 20___.

Notary Public: _____

My commission expires: _____

ACCEPTED BY:

_____
Planning and Codes Director
City of Brentwood, Tennessee

Date: _____

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)

APPENDIX SEVEN. STREET NAMING AND ADDRESSING STANDARDS

Street Names.

The naming of the streets within a proposed subdivision shall be the responsibility of the developer. All proposed street names must be approved by the Williamson County Department of Emergency Communications before submission of the preliminary plan for Planning Commission review. Following staff review and recommendation, the Planning Commission shall have final authority to approve or disapprove the names of all streets appearing on the final plat. General requirements for the naming of streets include:

(1) Proposed streets, which are in alignment with others already existing and named, or which are intended to eventually connect, shall bear the names of those existing streets.

(2) Street names/types that continue through multiple subdivisions shall remain consistent.

(3) Street names and types shall be carried, without change, across intersections.

(4) Directional suffixes shall not be used on circular streets.

(5) In no instance shall the use of a different street type (street, lane, drive, way, court, etc.) constitute a unique name. Example: East Street and East Drive are not unique names, and therefore shall not be used anywhere within the City or County. Only recognized street types (prefixes, suffixes) as listed in the Master Street Address Guide (MSAG) shall be used.

(6) Proposed street names shall contain no more than 24 characters, excluding spaces and the proposed street types.

(7) Street names shall not include punctuation or other special characters.

(8) Street names shall not contain more than three words, not including the directional and street type.

(9) Street names shall not duplicate, be spelled the same as, or too closely approximate, phonetically, or otherwise, the name of any other streets within the City of Brentwood or Williamson County, except as set forth above.

(10) Requests to change an existing street name shall require approval from the Board of Commissioners, via resolution.

All proposed street names shall be submitted for staff approval and shown on the preliminary plan. Upon final approval of the preliminary plan, staff from the Brentwood Geographic Information System (GIS) Department shall assign all street addresses prior to the recordation of the final plat.

Final Subdivision Plat Requirements:

(1) All lots shall include an address block where the address number is added after they are assigned by the GIS Department. The block and address must be easily readable.

(2) Final Subdivision Plats shall be submitted for review by staff with the GIS Department for assignment of addresses before it is submitted for Planning Commission review.

(3) All Subdivision Names shall be approved by the Planning and Codes Department.

(4) On corner lots in residential districts, the assigned address shall be to the street where the front yard setback is located. Addresses may be assigned to the corner if two front yard setbacks are provided. Only one address will be labeled on the plat to prevent confusion.

Residential Addresses.

(1) A numerical address shall be assigned for each proposed lot within a single-family residential development. Each approved address shall be consistent with the established address range for the area.

(2) Fractional address numbers such as ½ or alpha-numeric addresses shall not be permitted. Exceptions may be considered by City staff for accommodating new addresses in an existing range. These address types may be assigned to structures that are typically unstaffed, power supplies, cell towers, etc., that may require a permit and/or installation of an electric or water meter or for emergency service location purposes.

(3) Address numbers shall be plainly visible from the fronting street.

(4) Each residential structure shall install street numbers on the house itself. The applicable standards as shown in 5(c), below shall apply.

(5) The United States Post Office now requires the installation of Central Box Units (CBUs) to facilitate centralized mail delivery in all new established and extensions of existing subdivisions. Location of the CBU's shall meet the following standards:

a. The locations of the proposed CBUs must meet Post Office requirements and be approved in advance by the USPS District Growth Management Coordinator before a preliminary plan is submitted for Planning Commission review.

b. A written approval must be received from the district Growth Management Coordinator before the plan may be presented to the Planning Commission for review and before any permits will be release for the subdivision.

c. In lieu of individual mailboxes, an address post shall be permanently placed in concrete at the end of each driveway, within the street right-of-way, or private ingress/egress easement displaying the assigned address for the structure.

1. The posts must be at least 32 inches tall.

2. Address numbers shall be at least four inches tall and be visible from both travel directions on the street.

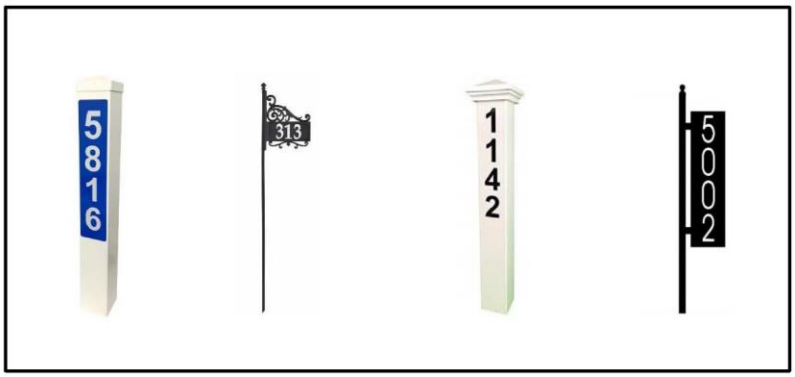
3. Landscaping or other site improvements shall not obstruct visibility of the post from the adjacent street, and

4. The address posts must be in place before a certificate of occupancy will be issued for the structure.

d. Custom posts may be permitted with prior approval by the Planning Commission or staff. Details showing the locations of all CBU's shall be included on the preliminary plan. The posts may be fabricated of alternate materials such as vinyl, wood stone or metal or be lighted. The address numbers shall be painted with a reflective coating for visibility at night. The address posts used in a subdivision shall be consistent throughout.

e. The required address posts shall be similar in design to the following examples:

FIGURE THREE
ADDRESS POSTS



(6) Flag lots will be assigned an address based upon the access to the lots or structures, with limitations based upon neighboring addresses.

(7) House Numbering scheme:

a. Even House Numbering: Main house numbers ending in an even number (0, 2, 4, 6, and 8) are generally used on the north side and east side of streets.

b. Odd House Numbering: Main house numbers ending in an odd number (1, 3, 5, 7, and 9) are generally used on the south side and west side of streets.

Commercial Addresses.

Addresses assigned to single multi-story buildings on a site including office buildings and mixed-use shopping centers will employ a street address and a suite number.

Businesses with front door access to the street will be assigned a main address based upon the entrance along the address range

Businesses sharing door access to the street will be assigned unit or suite numbers at the single main address based upon the entrance's location along the street address range.

Street numbers on building façades shall comply with the requirements of Section 78-420 of the zoning ordinance and shall not exceed 12 inches in height.

Street numbers are also required on permanent monument signage being not less than eight (8) inches in height.

Address Changes.

A change of address may be initiated by a property owner or the City of Brentwood. A City-initiated address change occurs when an address poses an emergency service response delay for the property owner or surrounding neighbors. If the existing address meets one or more of the following criteria, an address change will be initiated:

1. Out of sequence with the neighboring addresses.
2. An odd address on the even side of the street.
3. An even address on the odd side of the street.
4. A duplicate address.
5. Property is incorrectly using an address assigned to another property.
6. Property is accessed from a different street than the address in use.
7. There is no space between house numbers for forthcoming development.
8. The street name has changed, or an easement has been named.

Property owners may request a change of address to their existing valid address, as long as the new address meets the addressing standards outlined in these Regulations. The City can deny a request to change an address for the following reasons:

1. The request conflicts with the established addressing standards.
2. There is no space between the house numbers to accommodate the request.
3. The property's address has been changed, by the current property owner, within the last year. All customer-initiated address changes are reviewed by City staff before approval and processing.
4. Residential street address numbers shall not be changed unless one of the following applies:
    a. There is a duplication or an out-of-sequence street number address.

b. A newly created lot requires an address, and the current address sequencing does not allow room for additional addresses within the address range.

Existing Addresses and Street Names.

All addresses and street names shall fall under these Regulations. However, certain non-conforming addresses or street names may be considered exempt. This shall be determined on a case-by-case basis, with consideration from the City of Brentwood, the United States Post Office, and the Williamson County Department of Emergency Communications.

(Amend. of 6-1-2020 ; Amend. of 9-7-2021)