

DESIGN  
AND  
CONSTRUCTION  
STANDARDS CODE

FOR

CITY OF BRIDGEPORT  
HARRISON COUNTY  
WEST VIRGINIA

AUGUST 1995

*REVISED DECEMBER 21, 2015*

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**DESIGN AND CONSTRUCTION STANDARDS CODE**  
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## CHAPTER 1.000

### GENERAL

#### 1.100 AUTHORITY

This document, entitled the City of Bridgeport Design and Construction Standards Code, has been developed and designed to assist the public and the development community in determining the policies which apply to land development in the City. It contains information primarily concerned with the design and construction standards and guidelines for improvements related to subdivisions and site plans.

The majority of the information contained herein is a compilation of existing requirements already in place. This document will serve as a central reference for these items. However, in the course of its assembly, certain shortcomings or lack of information were identified and have been changed or added for clarification. In cases where a conflict is detected, this code shall apply.

By ordinance at its meeting on July 24, 1995 the City of Bridgeport City Council adopted this code as referenced and thus, made it as an integral part of the City Code. The following implementation procedure shall be followed for this version of the code:

#### 1.200 INTERPRETATION AND REVISION

##### A. Interpretation

These standards and guidelines are designed to supplement the provisions of existing Federal and State regulations and ordinances. Nothing herein shall be deemed to waive or modify other requirements of existing codes. Except as expressly provided otherwise in this document, the City Engineer is the designated official charged with the administration of the standards and requirements contained in this code and, in administering them shall treat them as guidelines. The City Engineer may allow for variations of given standards where the effect of such variation is in keeping with established engineering practices and procedures and shall make the final decision on all questions regarding interpretation of this code, after reviewing recommendations from the designated departments, authorities, boards, and committees.

##### B. Revision

As new basic information on design criteria becomes available and is accepted and as Federal, State, and City laws, regulations, and standards are changed, they will be reflected in this publication after at least an annual review. Any record plats or plans and profiles submitted prior to the approval of any revisions of this code will comply with the standards in effect at the time of submission.



## **C. Disclaimer of Liability**

The purpose of this code is to establish reasonable land development standards and guidelines for the protection and promotion of the general health, safety, and welfare of the City's residents. Approval of plans and plats by the City or its agencies pursuant to the ordinance and this code is not intended as a guarantee of warranty for any individual, landowner, or developer that any improvements will be designed, planned, constructed, or operated in any particular manner or be free from defects. Such approval shall create no duty or result in any liability on the part of the City, its officials, or employees for any claim, demand, suit, or damages alleged to have resulted from the development, construction, existence, or operation of improvements constructed pursuant to such approved plans or plats.

### **1.300 LAND DEVELOPMENT PROCESS**

#### **1.310 APPLICABILITY**

The provisions of this code are applicable to any tract of land, which falls under the jurisdiction of the City of Bridgeport to include property that may be included under the provisions of the **WV Code** that is to be subdivided or developed.

#### **1.320 PURPOSE**

The purpose of this code is to establish land development standards and guidelines for the orderly development of all projects within the corporate limits.

##### **A. Preliminary Plan**

The preliminary plan is the first stage of the development process. It is required for all subdivisions and site development plans and all other situations where required by ordinance. The plan should reflect the final design of the development. It will be reviewed in depth by various City agencies for conformance with this code. Based on this review, revisions to the plan may be necessary prior to development finalization. Preliminary plans for subdivisions and site development plans must be approved by the Planning Commission in accordance with Chapter 13 of the city code.

##### **B. Record Plat, Final Site Plan, Construction Plans**

The record plat, final site development plan, and/or construction plans are the final step in the development procedure. Based on the approved preliminary plan, the applicant may provide a final plat for recordation. Construction plans may be submitted prior to or concurrent with the plat. The plat and plans will be reviewed by the City and other public agencies to insure compliance with all necessary

regulations. When all requirements are met, the development may be approved by the City.

**C. Preliminary/Record Plats**

For simple subdivisions or site development plans, the applicant may choose to submit the preliminary subdivision plan and final plat, and preliminary site plan and final site plan concurrently. If this option is chosen, all the submittal requirements of both submittals must be met, and the documents will be entitled “preliminary/final plat.” Any such documents will be processed in accordance with the time limits prescribed by City Ordinance.

**D. Permits**

The applicant shall be responsible for obtaining all permits needed for their development. Permits may include, but are not limited to the following:

- A. West Virginia Department of Highways (WVDOH).
- B. West Virginia Office of Environmental Health Services.
- C. NPDES.
- D. Public Lands.
- E. Erosion and Sediment Control.
- F. FEMA Flood Plain Ordinance.

## CHAPTER 2.000

### WATER SUPPLY AND DISTRIBUTION SYSTEM

#### 2.100 GENERAL REQUIREMENTS - PUBLIC WATER SYSTEMS

##### A. **Installation of Facilities**

Where a public water system is accessible, the sub-divider shall install adequate water facilities (including fire hydrants) subject to current design criteria and specifications of the City of Bridgeport and, if required, the West Virginia (WV) Bureau for Public Health.

##### B. **Mapping of Facilities**

To facilitate the above, the location of all fire hydrants, valves, all water supply improvements, and boundary lines, indicating all improvements proposed to be served, shall be shown on all subdivision and site development plans. Infrastructure to support the development will either be complete or bonded prior to construction of structures.

##### C. **Construction Plans**

Construction plans for water facilities shall be drawn to an appropriate scale. Plan and profile sheet shall include the watermain, all valves, fire hydrants, and other appurtenances. Plan scale shall be 1" = 50' or smaller; profile scale shall be 1" = 10' vertical or smaller and 1" = 50' horizontal or smaller. The engineer may approve variation to the scale, if needed. Construction plans shall also show existing and proposed topographic features along with existing and proposed utilities. Profiles should include all proposed and existing utility crossings, required casings, etc. Plans shall be certified as to their completeness and conformance with applicable regulations by a Professional Engineer duly licensed by the State of West Virginia. The water line shall be AWWA C-900, ASTM Class 250 pipe, or two (2) times the water pressure if more stringent. Bedding of crushed stone or sand shall be placed 4" under the pipe in soil conditions to the spring line/mid-point of the pipe. In rock, the bedding shall be 6" below the pipe to 6" over the pipe. In no case shall any backfill larger than 2" in diameter be placed within 1' of the water main. Water main shall have a minimum of 36" of cover to the top of the main and not more than 60" unless approved by the city engineer. If the water line is to be extended more than 1,000' from an existing fire hydrant the line shall be 6" in diameter. Blue metallic caution tape shall be placed one foot below finished grade for all water facilities.

**D. Review of Construction Plans**

All construction plans for the installation of water facilities shall be reviewed by the City Engineer and, if required, the WV Bureau for Public Health.

**E. Approval of Facilities**

Approval of facilities shall be provided by the City Engineer, and, if required, by the WV Bureau for Public Health.

**F. Required Permits**

If required, a permit to construct, alter, or renovate a public water supply system must be obtained from the West Virginia Bureau for Public Health prior to subdivision or site plan approval by the City Engineer.

**2.200 PRIVATE WELLS - WATER SUPPLY**

**A. General Requirement**

An individual parcel serving one residence or commercial building may utilize an individual well for water if city water facilities are farther than 500 feet from property line, and it is not feasible to extend said water line. All wells shall comply with all county and state regulations, and copies of all received permits shall be presented to the city for approval.

**2.300 FIRE HYDRANTS**

**A. General Requirements**

Fire hydrants shall be required for all subdivisions and/or site development plans that have an adequate water supply. Fire hydrants shall not be approved on water mains less than six (6) inches in diameter or where the supply main serving the proposed development is less than six (6) inches in diameter. Also, fire hydrants shall not be approved where hydraulic analyses of the proposed system indicates that required fire flows will create residual water pressures below 20 psi in any portion of the system. Minimum fire flow shall be 250 gpm at 20 psi. Fire hydrant appurtenances and installation shall be in accordance with the design criteria of the City of Bridgeport and the WV Bureau for Public Health. Upon installation, fire hydrants shall be flow tested and color coded with approved reflective paint as follows:

Blue : > 1500 gpm  
Green: 1000-1499 gpm  
Orange: 500-999 gpm  
Red: 250-499 gpm  
Black: < 250 gpm (assumed dead)

**B. Placement**

In residential and commercial areas, fire hydrants shall be located no more than 500 feet apart and within 500 feet of any structure and shall be approved by the City. In commercial and industrial areas, fire hydrant placement will be reviewed and approved by both the City Engineer and Fire Chief. To eliminate future street opening, all fire hydrants shall be installed before any final paving of a street shown on the subdivision plat.

**C. Approved Fire Hydrants**

Fire hydrants shall have a 5 ¼” nozzle opening and will be either M & H or Mueller with national Standard threads

**2.400 DESIGN REQUIREMENTS**

**A. Water System**

1. In general, the water system will be designed and installed in accordance with the West Virginia Bureau for Public Health and the American Water Works Association.
2. All taps into the water system will be made by the City unless specified and agreed upon by the City Engineer. In order to avoid future street openings, conduits will be placed under the new road to provide service lines to lots on the opposite side from the water line.
3. All end of line not connected, i.e., if loop system; needs to have a “blow-off” installed.
4. Any water lines deeper than 12 foot shall be Ductile Iron.
5. All installation of water systems shall be inspected and approved by the City.
6. Mapping of facilities – upon completion, a set of “as-builts” for the project shall be delivered to the city in paper and electronic format.

## CHAPTER 3.000

### SANITARY SEWERAGE FACILITIES

#### 3.100 GENERAL REQUIREMENTS

##### A. **Installation Requirements**

The applicant shall install sanitary sewer facilities in a manner prescribed by the City. All plans shall be designed in accordance with the rules, regulations, standards and specifications of the City of Bridgeport.

1. Where a public sanitary sewerage system is within 100 feet of the property line for the development, the applicant shall connect with the sewer and provide sewers accessible to each lot in the subdivision, and/or site development.
2. An individual parcel serving one residence or commercial building may utilize an individual system for sewer if city sewer facilities are farther than 100 feet from property line, and it is not feasible to extend said sewer line. All systems shall comply with all county and state regulations, and copies of all received permits shall be presented to the city for approval.

##### B. **Mapping of Facilities**

To facilitate the installation of these facilities, the location of all manholes, cleanouts, all sewerage improvements, and the boundary lines of the proposed subdivision, and/or site development plan shall be shown on the preliminary plan, and/or site development plan. Infrastructure to support the development will either be completed or bonded prior to construction of structures. Upon completion, a set of “as-builts” for the project shall be delivered to the City in paper and electronic format.

##### C. **Separation of Sanitary Sewer and Water Facilities**

The physical separation of water and sewer facilities, both existing and proposed, shall be ten feet, measured edge-to-edge in accordance with the current design standards of the City of Bridgeport and the WV Bureau for Public Health.

**D. Construction Plans**

Construction plans for sewerage facilities shall be drawn to an appropriate scale no larger than 1"=50', and shall include plan and profile of the sanitary sewer, all manholes, cleanouts, manhole invert elevations and other appurtenances. Construction plans shall also include existing and proposed topographic features along with existing and proposed utilities. Profiles shall include all proposed and existing utility crossings, required casings, etc. Plans should be certified as to their completeness and conformance with applicable regulations by a Professional Engineer duly licensed by the State of West Virginia.

**E. Review of Construction Plans**

All construction plans for the installation of sanitary sewerage facilities shall conform to the requirements of the City, and shall be reviewed by the City, and, if required, the WV Office for Environmental Health Services.

**F. Approval of Sewerage Facilities**

Approval of sanitary sewerage facilities shall be provided by the City, and if required by the WV Office for Environmental Health Services.

**G. Required Permits**

If required, a permit to construct a sanitary sewer system must be issued by the WV Office for Environmental Health Services. For individual septic systems, permits must be issued by the local health agency. All permits must be issued prior to the subdivision and/or site development plans approval by the City. If a proposed development will require a modification to the City's existing NPDES Permit, the developer shall pay all costs associated with this modification.

**3.200 MANDATORY CONNECTION TO PUBLIC SEWER SYSTEM**

**A. Mandatory Connections**

In accordance with City of Bridgeport Codified Ordinance 927.02, if a public sanitary sewer is within 100 feet of the property line of the project, and a sanitary sewer is placed in a street or alley abutting upon property, the owner thereof shall be required to connect to said sewer for the purpose of disposing of waste, and it shall be unlawful for any such owner or occupant to maintain upon any such property

an individual sewage disposal system.

### 3.300 **INDIVIDUAL DISPOSAL SYSTEM REQUIREMENTS**

#### A. **Individual Disposal System**

If public sewer facilities are not within 100 feet of the property line of the project, and an individual disposal system is proposed, the project shall conform to the requirements of the State Health Laws and percolation tests and test holes (or other approved soil tests or reports) shall be made as directed by the local health agency. The individual disposal system, including the size of the septic tank(s) and size of the drain fields or other approved disposal device, shall also be, approved by the County Health Development. Locations of the disposal system shall be designated on the plat and shall meet all separation standards of the state and local health agencies. Individual systems shall be approved by the Harrison County Health Department.

### 3.400 **DESIGN CRITERIA FOR SANITARY SEWERS**

#### A. **Deviation from Design Criteria**

These design criteria are not intended to cover extraordinary situations. Deviations may be allowed and may be required in those instances where considered justified by the City Engineer or the Sanitary Board.

#### B. **Design Factors**

Sanitary sewer systems should be designed for the ultimate tributary population.

#### C. **Design Standards for Sanitary Sewers**

Sanitary Sewer Systems shall be designed and installed according to the rules and regulations of the City of Bridgeport, the WV Office of Environmental Health Services, and the WV Department of Environmental Protection, as applicable, as found in the following design manuals:

1. Sewage Treatment and Collection Systems Design Standards, West Virginia Office of Environmental Health Services.
2. Recommended Standards for Wastewater Facilities (Policies for the Design, Review, and Approval of



Plans and Specifications for Wastewater Collection and Treatment Facilities Report of the Wastewater Committee of the Great Lakes Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers), commonly known as “10 State Standards.”

### 3.500 **CONSTRUCTION**

The construction and installation or modification of all sewer systems shall be in accordance with this code and the Design Standards of the West Virginia Office of Environmental Health Services.

No foundation drains, downspouts, or other sources of stormwater shall be connected to the sanitary sewer systems.

Yellow metallic caution tape to be installed 1 foot below finished grade for all sewer lines which are installed.

The holder of the permit shall notify the City Engineer when construction is to begin. The City shall inspect all facets of installation.

### 3.600 **INSPECTIONS**

The City shall make, or cause to be made, as many inspections as they deem necessary during the construction or installation of permitted sewer line extension or modification.

The owner or occupant of a dwelling, establishment, or land shall provide the City access to all parts of the property for the purpose of making such inspection.

No extension or pumping system shall be used or placed in operation until the system has been inspected and approved in writing by the City.

### 3.700 **SPECIFICATIONS**

All plans and specification shall adhere to the Sewage Treatment and Collection Systems Design Standards, of the West Virginia Office of Environmental Health Services.

#### A. **Additional Requirements**

1. Gravity Sewers  
Any gravity sewer with greater than twelve feet of cover shall be constructed of ductile iron pipe- AWWA C-110, C-151, cement lined.

2. Sewage Lift Stations  
Lift Stations shall be designed in accordance with WV Office of Environmental Health Services standards.
3. No simplex or single pump lift stations will be approved by the City.
4. Pumping station control panel shall include a transfer switch with female connector to connect a portable generator for emergency power source.
5. Telemetry systems shall be included and conform to current City's practices.
6. Land shall be dedicated to the City for pump stations, including right-of ways for access.

## **CHAPTER 4.000**

### **TRANSPORTATION (STREET DESIGN)**

#### **4.010 GENERAL GUIDELINES AND CRITERIA**

It is the intent of the City that all streets be dedicated for public use and maintained by the City. Therefore, any new dedicated streets proposed for construction must meet standards and attain the approval of the City. Only when authorized by the City Engineer may streets deviate from the standards of this chapter. Except as specified in this ordinance, all West Virginia Department of Highways (WVDOH) standards shall apply to street construction within the City.

The City Engineer may allow for variations of given standards provided the effect of such variation is consistent with established engineering practices and procedures and provided there is sufficient justification for the variation. The City Engineer shall make the final decision on all questions regarding interpretation of this chapter of the code, after reviewing recommendations from the designated departments, authorities, boards, and committees. Any request for a waiver to any of the standards provided herein must be addressed to the City and include a statement of justification for the waiver. For any item not specifically detailed in this chapter, good engineering and design practice shall be followed as may be accepted by the City Engineer.

#### **4.020 DEFINITIONS**

The following definitions shall apply to this chapter:

AASHTO: American Association of State Highway and

ADT:	Transportation Officials Average Daily Traffic
Access Easement:	An area of land, generally containing a private road, which provides legal ingress and egress across one property to another from a public street.
Breakover:	The difference in grade between two intersecting pavements.
Cartway:	A site accessway or aisle located within or providing access to a parking area.
Clear Site Triangle:	An area of land at an intersection which must remain free of obstructions to site distance requirements. Minimum measurements are 25 feet along each leg of the intersection at the edge of right-of-way, joined at their distant ends by the third segment of the triangle.
Common Driveway:	A private road serving a minimal number of lots, each of which has frontage on a public road, to include pipestem driveways and frontage roads specifically authorized by the Planning Commission.
Cul-de-sac:	A dead-end road, one with a single point of ingress and generally provided with a vehicle turn around area at the end.
City:	City of Bridgeport.
Driveway:	A private roadway serving a single property.
FAR:	Floor Area Ratio.
HOA:	Home Owners Association.
Landing:	That section of a street or driveway which is adjacent to an intersection and utilized for vehicle stacking.
LOS:	Level of Service, a measurement of traffic condition.

Private Street:	A road used for multi-lot access which is privately maintained and not a public responsibility of the City of Bridgeport or WVDOH.
Private Access Easement Road:	A road built to the standards of Section 4.350 where City ordinance permits the use of private access easements.
Public Street:	A road built to the standards of the City of Bridgeport and accepted for maintenance.
Sidewalk:	A pedestrian facility with dependent grading and alignment relative to the center line of the adjacent street.
Street:	A strip of land or right-of-way, generally with an improved surface, intended primarily for vehicular traffic and providing the principal means of access to property.
Townhouse/ Multi-Family Access-Ways:	Private vehicular facilities used in townhouse and multi-family residential developments, which provide for individual lot access, parking and predominantly onsite traffic accommodations.
Trail:	A facility specially designed for use by pedestrians, bicycles, and/or horses with independent grading and alignment.
WVDOH:	West Virginia Division of Highways.

#### 4.030 **PROCEDURES**

All plans will be reviewed by the City as a part of a land development application.

The applicant shall be responsible for obtaining all necessary WVDOH permits required for working within WVDOH right-of-way or accessing a public road.

All public street construction shall be inspected by the City or a licensed Professional Engineer certified to practice in the State of West Virginia, or as may be specifically approved by the City Engineer. This professional shall certify that the construction has been in accordance with the requirements of this code and general criteria as applicable.

Fully engineered plans and profiles shall be submitted for all public street construction, except as provided for by this ordinance.

#### 4.040 **TRANSPORTATION ITEMS FOR PLAN SUBMISSIONS**

The following transportation related items shall be included on all plans submitted for review by the City of Bridgeport. All items shall be included on the plan unless otherwise noted that a separate submission will be accepted. Other submission requirements of other City ordinances shall not be precluded by this section.

**A. Subdivision - This section shall apply to all forms of subdivision.**

1. The subdivision plan shall show all site entrances, opposing entrances, and median breaks on adjacent streets.
2. A typical section shall be provided for all on site and adjacent roads, to include proposed roads and proposed improvements to existing roads. This information shall be for evaluation purposes only. Final typical section approval will be at the plans and profile stage.
3. All easements pertaining to the subject property shall be indicated and their use shall be identified.
4. All utilities, including aboveground and underground lines and pipes, and permanent fences shall be shown. This shall include all utilities within or adjacent to the road right-of-way for those roads extending onto or adjacent to the subject property.
5. Projected ADT's for the development project at build out shall be shown at internal street intersections and all entrances to the site, at the request of the City Engineer.
6. The applicant shall demonstrate that adequate site distance requirements can be achieved where subdivision streets intersect existing roads, and at intersections within the subdivision.

**B. Site Development Plan**

1. Typical sections for all pavement shall be required.

2. All curbing types and curb radii shall be identified.
3. A clear site triangle shall be provided at all entrances to the site.
4. All improvements to frontage roads, including turn lanes shall be shown.

**C. Construction Plans: Street Plan and Profile Requirements**

1. Stations shall be indicated every 100 feet on centerline; at points of curvature, points of intersection and points of tangency; at centerline intersections, at subdivision or section limits, and at turnaround radius points.
2. The profile of the building restriction lines shall be shown on the plan at the request of the City Engineer. Where there are none, if requested, show profile 25 foot from the right-of-way line.
3. Existing centerline profiles for a 300-foot minimum distance shall be shown to ensure a proper grade tie when a proposed street is an extension of or connects with an existing street.
4. When a proposed street intersects with an existing street, the centerline profile of the existing street shall be shown for a minimum of 350 feet, or as required for adequate sight distance, to the right and the left of the proposed connection.
5. A grade line of all proposed street construction shall include:
  - a. Percent of grade.
  - b. Elevations at the beginning and the end of all vertical curves.
  - c. The length of vertical curves with elevations site distances and stations of vertical points of intersection.
  - d. Elevations computed every 50 feet on all tangent sections and every 25 feet on vertical curves.

- e. Elevations at all:
    - 1) centerline intersections of streets
    - 2) street centerline intersections with the boundaries of a subdivision
    - 3) curb returns
    - 4) culvert and storm sewer crossings
    - 5) curb inlets
    - 6) beginning and ending of superelevation transition sections, if applicable.
  - f. The point of finished grade on typical section (i.e., centerline, top of curb, etc.) and of all sanitary sewer, water and other manholes or structures that are in the paved area of the road.
- 6. The locations of curb-cut ramps for the handicapped shall be in accordance with Federal ADA Regulations.
  - 7. The proposed location of multiple mailbox groupings and other uses requiring a vehicle staging area shall be shown.
  - 8. Roadside ditches shall be indicated in the profile where the depth is not in conformance with the typical street cross section.
  - 9. All proposed and existing culverts, storm sewer crossings, sanitary sewer crossings and utility crossings shall be shown on street profiles at the proper location and grade.
  - 10. All utility easements and or proposed relocations shall be identified.
  - 11. When a proposed street parallels or is located near an existing stream or open drainage way, profiles of the

top of the bank of the stream, computed water elevations and invert (or flow line) of the stream or drainage way shall be provided. The relationship of the proposed street grade to existing profiles of the stream or drainage way shall be shown. Street construction shall not encroach on the approved floodplain limit of the stream, except as permitted by City Ordinance. Applicable flood plain requirements of Chapter 5 shall be followed.

12. Grade profiles of proposed curb and gutter construction in cul-de-sacs are to be computed along the face of the curb.
  - a. Grade ties of the proposed street, before entering the cul-de-sac grade, shall be shown on each end of the cul-de-sac grade profile to insure proper grade connection.
  - b. Other acceptable methods may be used subject to the approval of the City.
13. Building Restriction Line profiles for cul-de-sacs shall be radial to the profile at face of curb and proposed grade.
14. If a difference exists in elevations on proposed curb grades, curb elevations showing top of curb right and top of curb left shall be shown on the plans.
15. Street landings shall be shown on plans and profiles to ensure adequate sight distance and appropriate grade.
16. Anticipated driveway landing locations (both individual and common) where grades above ten percent are proposed, lot grading plans shall be provided which demonstrate adequate vehicular clearance for driveway approaches, departures and breakover transitions. (Reference Section 5.200 G)
17. A proper connection to any existing or proposed public street shall be shown where appropriate.
18. Traffic control signage and structures (e.g. road delineators, barricades, and stop signs), and street signs, shall be shown on the plans. Signage shall



conform to the requirements of the City and WVDOH.

19. Sight distance at all entrances shall conform to the West Virginia Department of Highway's standards for all intersections on both plan and profiles to ensure adequacy.

Where the line of sight departs the established right-of-way or private street easement, a separate sight distance easement shall be provided. The profile along the line of sight shall be shown reflecting existing and proposed grades as well as any obstacles to the driver's vision (e.g., plantings, utility structures, etc.)

20. All off-site right-of-way required for construction shall be identified. Temporary construction and permanent maintenance easements for slope grading, drainage or erosion and sediment control shall be shown.
21. Typical street cross sections shall be provided on the plans.
22. Sidewalks and trails shall be shown where applicable.
23. Equality stations for the centerline of both streets shall be shown at all intersections or entrances.
24. For road sections consisting of more than two lanes, a pavement striping plan indicating the travelways, tapers, turn lanes and directional markings (e.g., turn and through arrows, solid and dashed line delineators, etc.) shall be provided. Where appropriate, pedestrian crosswalks shall be included on this plan.
25. The following notes shall appear on all construction plans:
  - a. "Subgrades for streets and shoulders shall be mechanically compacted to 95% proctor density as outlined by the West Virginia Department of Highways."

- b. “A smoothing grade shall be maintained from the centerline of the existing road to the proposed curb and gutter, to preclude the forming of false gutters and/or the ponding of any water on the roadway.”
- c. “Standard guardrail and handrail shall be installed at hazardous locations as designated by the City during final field inspections.”

**D. Bond Information or Letter of Credit**

Bonding or Letter of Credit shall be required for all public street construction, as per Chapter 8.000 of this Code. The bond or letter of credit amount shall be based on a set of construction plans approved by the City, where applicable.

- 1. Streets shall be subject to the bonding requirements of Chapter 8.000.
- 2. The estimated cost of improvement to each road, or phase of road construction, shall be provided separately. This estimate shall include quantity, cost per unit, and total cost of construction.
- 3. The estimated engineering costs shall include onsite inspection as may be required by the City or WVDOH.
- 4. Estimated construction costs shall include all materials, their transportation to the site, and disposal of non-usable materials. These costs shall be included in the per unit cost of the bond estimate.
- 5. The estimated cost of utility relocation shall also be provided.

4.100 **PRELIMINARY TRANSPORTATION PLANNING**

4.110 **GENERAL REQUIREMENTS**

- A. All streets constructed in conjunction with subdivision plats and development plans shall be designed to comply with the standards of WVDOH and this chapter of the City of Bridgeport Design and Construction Standards Code (DCSC). Streets shall be designed so as to provide adequate drainage and to have geometric design in compliance with the requirements of the City and/or WVDOH regulations.

- B. The arrangement, character, extent, width, grade, and location of all streets and roads shall conform to the Comprehensive Plan of the City where applicable.
- C. Streets shall be designed and constructed to properly connect with existing, platted, or planned streets. Such streets shall be designed and constructed so as to ensure coordination with regard to location, width, grade, and drainage of existing, platted or planned streets within the general area.
- D. When a subdivision or other development site abuts one side of any public street in the State or City street system, the subdivider may be required to dedicate one-half of the total right-of-way necessary to make such street conform to WVDOH or City criteria. In addition, the subdivider may be required to dedicate additional right-of-way necessary to make appropriate horizontal and vertical adjustments to such street.
- E. Vehicular access to other streets or portions of streets from off street parking and service areas shall be so combined, limited, located, designed, and controlled so as to channel traffic from and to such areas conveniently, safely and in a manner that minimizes marginal traffic friction and promotes free traffic flow on streets without excessive interruption.
- F. Whenever a proposed development contains or is adjacent to a primary highway arterial or major collector road, the City may require that provisions be made for the elimination or reduction of direct access through methods such as the creation of a parallel road system, combined lot access, and other methodologies as determined appropriate.
- G. Urban sections, to include curb and gutter, shall be provided in all residential developments with a minimum lot frontage requirement of 100 feet or less; and in commercial areas with an FAR greater than 0.2; or as may be designated by the City.
- H. Reserve strips (spite strips) controlling access to streets shall be prohibited.
- I. Upon review, the city engineer may require subdivisions to have two (2) or more points of access. No more than 50 dwelling units in a subdivision shall obtain their access from a single point of access.

#### 4.120 **TRAFFIC STUDIES**

The following standards shall apply to all traffic studies which are required of all developments subject to rezoning or special exception. The City may require traffic studies of subdivisions which are anticipated to generate more than 500 ADT's. This study shall be used by the City to assist in the determination of the impact of the proposed project's traffic upon the road network.

- A. As a general guide to vehicular trip generation, the current edition of the Institute of Transportation Engineer's (I.T.E.) Trip Generation Report shall be used. These rates may be supplemented by additional information provided by the City.
- B. The traffic study shall provide existing and projected traffic volumes for: average daily traffic (ADT), and the AM and PM peak hours of either the adjacent street or site generator, whichever is greater. These volumes shall be provided at all street intersections and commercial or multi-lot entrances.
- C. Level of service calculations for existing and projected conditions for highway segments, intersection legs, and entrances shall be provided. Calculations shall be in accordance with the most current edition of the Highway Capacity Manual, or as may be accepted by the City Engineer. Traffic volumes and level of service information shall be provided for each phase of development, to include conditions at date of project completion. Projections shall be made for date of completion plus 10 years.
- D. Recommendations for phased improvements to the road network in order to maintain an acceptable level of service shall be provided.
- E. All assumptions which determine projected background traffic shall be provided. Specific development project names and respective development square footage or residential units shall be provided where appropriate.
- F. All streets internal or adjacent to the development site shall be included in the traffic study. External roads shall be included to the extent that the project's generated traffic constitutes at least 15 percent of the road's traffic volumes. Unless otherwise specified by the City Engineer this area shall not extend more than 5 miles from the project site. The area so defined shall constitute the study area.
- G. Directional distribution information shall be provided for all project entrances and major intersections within the study area for all phases of development.

- H. All traffic counts and level of service worksheets shall be included as a part of the traffic study.
- I. Road safety hazards within the study area shall be identified in the traffic study.

#### 4.200 **STREET FUNCTIONAL CLASSIFICATIONS -**

All proposed streets shall include approved and/or reserved street names and sign locations. The street names will be submitted in writing to the city. The city will submit street names to the Harrison County Addressing Coordinator for formal approval.

#### 4.210 **GENERAL**

All development projects shall recognize the functional street classifications as provided by the Comprehensive Plan. The City recognizes a hierarchy of roads based on functional classification and encourages the development of routing options at each level. Broad categorizations of this hierarchy includes: limited access highways, arterial roads, collector roads, and local streets. The main function of the higher category streets is the accommodation of through traffic. Lower category streets function to provide local access.

#### 4.300 **STREET DESIGN STANDARDS**

#### 4.310 **GENERAL CRITERIA**

- A. All streets shall conform to the design requirements set forth in this Chapter. Design shall be based upon projected traffic counts and functional street classification.
- B. Public streets are to be designed to the standards of the WVDOH or the City of Bridgeport so that they may be maintained by the City. Unless specified by ordinance or waived by the engineer, all streets in the City shall be constructed to public streets.
- C. The methods and materials used for the construction of all streets shall conform to the current WVDOH Standard Specifications - Roads and Bridges, except as contained in this code or modified in writing by the City Engineer or WVDOH, as may be applicable.
- D. Standard roadway structures and elements shall conform to the current WVDOH standards, except as contained in this code or modified by the City Engineer.

- E. Each street shall have a continuity of design throughout. Therefore, multiple or “step down” typical designs will not be acceptable.
- F. All construction plans shall be identified with a seal of a Professional Engineer licensed to practice in the State of West Virginia.
- G. For any new street construction which includes landscaping and is intended for inclusion in the City’s street system, a landscaping plan must be approved by the City.

4.320 **DESIGN REQUIREMENTS**

- A. Streets shall be laid out in such a manner as to intersect as nearly as possible at right angles and no street shall intersect any other street at less than 80 degrees, unless approved by the City Engineer.
- B. Street jogs with centerline offsets of less than 225 feet shall not be allowed. Street intersections and entrances shall be designed to align with existing or proposed entrances wherever practical.
- C. A cul-de-sac shall not exceed the lengths set forth below except as may be approved by the Planning Commission. Measurement of the cul-de-sac length shall be taken from the centerline intersection of the cul-de-sac with the nearest existing or proposed thru street to the center of the turn around. The cul-de-sac shall be provided with a turn around having a radius of no less than 55 feet at the property line and no less than 45 feet at the curb or edge of pavement line. Other types of turn arounds may be considered for short streets with low vehicular traffic.

<b><u>Development Type</u></b>	<b><u>Allowable Maximum Cul-de-Sac Length</u></b>
Commercial, retail, industrial, office	1,000 feet
Multi-family residential	800 feet
Single-family residential	
Town house	800 feet
Detached	
1 unit per acre or greater density	1,000 feet
Less than 1 unit per acre, but	
Greater than 1 unit per 10 acres	1,400 feet
1 unit per 10 acres or lesser density	2,700 feet

The length of the cul-de-sac shall be controlled by the higher density. Modification to these standards will be considered where excessive topographic or other constraints are present. Any modification may require a primary access modification or a secondary access for emergency vehicle use, subject to the approval of the City.

- D. Street landings shall be provided for the minor street at all intersections to ensure adequate grade and sight distance at intersections. The maximum grade at the landing shall not exceed 5%. “Breakover” shall not exceed 10%. The minimum length of landing shall be 50 feet.
- E. Excepting access to individual residential lots, all streets shall have a minimum tangent length of 150 feet between curb returns and/or curb cuts. In no case shall intersections be located less than 200’ apart, unless approved by the Engineer.
- F. On all urban sections the road right-of-way, or easement where applicable, shall extend a minimum of six feet beyond the face or curb so that drainage structures can be adequately accommodated.
- G. Actual starting and stopping points of guardrail, as well as additional installations at hazardous locations, will be designated by representative of the City in the field.

#### 4.330 **PUBLIC STREET STANDARDS**

- A. Public streets shall be designed to conform fully to the requirements of the latest editions of the appropriate WVDOH standards and table 4-1 or 4-1A of this code, except as specifically modified in writing by the City Engineer.
- B. Where this ordinance and the standards of WVDOH may differ, the more restrictive requirements shall apply.
- C. All public street construction plans require the approval of the City.

#### 4.340 **PRIVATE ACCESS EASEMENT ROADS AND COMMON DRIVE**

- A. Private access roads will not be permitted unless approved by the City. If approved, private access roads will meet public standards.
- B. All private access easements shall allow for the entrance of public service and emergency vehicles.

4.350 **COMMON DRIVEWAY STANDARDS**

- A. Common driveways are defined as accessways serving more than one lot and less than five lots. Travelways exceeding these parameters shall be designed as private or public streets in accordance with the requirements of this Code. Individual driveways serving a one single family detached dwelling unit shall not be subject to the requirements of this section.
- B. All units which share a common driveway shall provide a minimum of four on-site parking spaces per residential dwelling. In addition, these driveways shall be clearly labeled “no parking along driveway” on all plats and plans submitted.
- C. All common driveways shall be contained within access easements, regardless of number of units served or easement width. Additional easements shall be clearly labeled “no parking along driveway” on all plats and plans submitted.
- D. The design for all driveways which are to serve more than one lot shall be shown in typical section and on the grading plan of the construction plans, together with turnaround and required utilities, and shall be included in the completion bond for the project.
- E. Driveways shall be constructed in accordance with the standards as set forth in this Code and materials shall conform to WVDOH specifications.
- F. Common driveways shall not serve as a thru function.
- G. Common driveways shall have a minimum pavement width of 12 feet within a 24 foot easement when two lots are served. Minimum pavement width shall be 14 feet within a 28 foot easement when more than two lots are served.
- H. No common driveway shall extend a distance of more than 200 feet from a public road to the property which the common driveway serves, or exceed a total length of 600 feet if a loop configuration.
- I. No paved portion of a common drive right of way shall be located closer than 7 feet to any abutting residential zoning district or the lot line of any existing residential use, which is not directly served by the common driveway. The common driveway right of way can begin at the property line.



- J. Each common driveway shall be clearly identified as a private drive. A single sign, not to exceed two square feet in area, shall be posted at the entrance of each such driveway, displaying only the words “Private Drive” and the addresses of any residences utilizing the common driveway.
- K. In addition to all other requirements for final plat, any subdivision containing a common driveway shall include a statement on the final plat acknowledging that maintenance is a private responsibility and not the responsibility of the State or City. Public utility and emergency vehicle access shall be guaranteed.
- L. The maximum grade for all common driveways shall be 16 percent with provision or a landing less than 5 percent and a “breakover” of less than 6 percent.
- M. Common driveways shall be well drained, designed not to adversely impact lot drainage, and shall conform to the standards of Chapter 5 of this code as may be appropriate.
- N. The minimum horizontal curvature shall be 50 feet at centerline.
- O. Access to each individual lot from the common driveway shall be designed with appropriate geometrics to accommodate an emergency design vehicle without a change of direction movement.
- P. An emergency vehicle must be able to back into and exit the common driveway.

4.360 **TOWNHOUSE/MULTI-FAMILY PRIVATE ACCESSWAYS**

- A. Townhouse/multi-family private accessways are defined as private vehicular facilities in residential/townhouse and multi-family access which serve the following functions:
  - 1) provide individual lot access
  - 2) provide for parking, and
  - 3) carry predominantly on-site traffic.

Access ways shall be used only where a volume of less than 750 ADT’s is anticipated. Design must meet the minimum standards as defined for categories A and B below, and all standards of Section 4.340 except as explicitly provided for in this section.

Category	ADT's	Travelway Width	Curve Radius	Stopping Sight Distance	Maximum Grade
A	250	25'	100'	90'	12%
B	600	25'	100'	120'	12%

Additional pavement area may be required to accommodate an emergency design vehicle with minimal encroachment on opposing lanes and an emergency design vehicle within the full travelway.

- B. An intersection is defined as the juncture of at least three segments of streets or accessways at a common point.
- C. No internal intersections with an accessway shall occur for a distance of at least 150' from a public street, measured from the flow line of the gutter pan.
- D. All legs of intersections shall have an minimum 20' tangent section, measured from the end of the curb return, before any horizontal curvature may occur.
- E. An accessway or entrance jog of less than 100' at centerline is not permitted unless otherwise approved by the Planning Commission.
- F. No parking shall occur for a minimum distance of 30' from an intersection, measured from the flow line of the gutter pan.
- G. Accessways shall have a posted speed no higher than design speed or 15 mph. Curves with less than a 125' radius on Category B accessway shall be posted with a warning sign.
- H. Whenever an accessway extends from a street and exceeds a length of 500' on which no angle parking is provided, private street design standards shall apply.
- I. Adequate turnaround for emergency vehicles will be provided as required by the City.

4.400 **PAVEMENT THICKNESS DESIGN STANDARDS**

4.410 **DESIGN CRITERIA**

- A. Subdivision Streets – In general, the thickness design of asphalt pavements for public and private streets in subdivisions in the City of Bridgeport shall comply with the requirements from Table 4-2, Base

and Pavement Design. Design California Bearing Ration (CBR) and Average Daily Traffic (ADT) values shall be determined through geotechnical investigations and transportation studies for the proposed site. All pavement designs shall be certified by a Professional Engineer duly licensed in the State of West Virginia. However, the minimum allowable pavement section is 8" aggregate base course, 3 ½" bituminous base course, and 1 ½" of wearing course.

- B. Subbase depth and pavement design shall be based on a CBR value of 10. Soil tests of the subgrade shall be performed for the actual determination of required subbase thickness and pavement design prior to the placement of the subbase.
- C. Common Driveways and Site Developments – The minimum pavement section for privately owned and maintained parking areas (including drive aisles within parking areas), residential common driveways serving five or less dwelling units, and driveways serving individual commercial lots shall consist of an 8 inch aggregate base course and a 3-1/2" inch bituminous base course, and 1-1/2" of wearing course.
- D. Pavement in commercial areas shall be a heavy duty design in the major cartways and loading areas, and at dumpster pads to accommodate the anticipated vehicle loads. This design shall be subject to the approval of the City Engineer. A minimum section will be 8" aggregate, 3-1/2" base asphalt and 1-1/2" wearing course asphalt.
- E. Exceptions – When specifically authorized by the City, alternative pavement design sections will be permitted. A request for approval of special designs shall be submitted to the City Engineer and shall include the basis of design, calculations in accordance with current, accepted engineering procedures and justifications for the exception to these standards. Where appropriate, technical information regarding the characteristics of alternative materials of construction (e.g., brick or concrete pavers, pavement admixtures, etc.) shall be provided as part of the request. The request may be submitted either as an integral part of the construction plans or separately for consideration.
- F. The City Engineer may require stronger pavement sections where specific soil problems exist based on the recommendations included in a prepared geotechnical report.

#### 4.420 **TESTING REQUIREMENTS**

- A. For actual pavement section design, laboratory CBR tests shall be conducted.
  - 1. Tests shall be taken whenever subgrade soil types change.
  - 2. Tests shall be made at a maximum of 500 feet intervals where the subgrade soils remain constant.
  - 3. A minimum of two CBR tests are required for all cul-de-sac or dead end streets less than 500 feet in length.

#### 4.500 **PEDESTRIAN SIDEWALKS AND TRAILS**

#### 4.510 **GENERAL REQUIREMENTS**

- A. In all proposed residential areas zoned with lot sizes of less than 1 acre, in all planned unit development areas, and on all site development plans, a comprehensive plan for the safe and convenient movement of pedestrians throughout the area shall be shown.
- B. Public sidewalks shall be constructed by the developer for all residential, commercial and industrial lots.
- C. Where pedestrian systems are within WVDOH right-of-way, they shall be designed and constructed in conformance with the latest requirements of that agency.
- D. Proposed systems will be required to extend to the property boundaries of the project and shall tie into existing systems or provide for future additions to insure continuity of pedestrian walkways between projects.
- E. Trails and sidewalks shall be designed and constructed in accordance with good engineering drainage practice, including underdrains where appropriate.
- F. Handicap ramps and railings shall be provided as required by the City, and shall be in full conformance with the requirements of the latest edition of the ADA Accessibility Guidelines.
- G. The Planning Commission may delete the sidewalk and trail requirements at their discretion.

#### 4.520 **SIDEWALKS**

- A. Sidewalks shall be constructed to the standards of the WVDOH and as provided in this section.
- B. Sidewalks shall have a minimum unobstructed width of 4 feet, unless otherwise approved by the City.
- C. When the sidewalk is located outside of the Public right-of-way, it shall be carried within a public access easement having a minimum width of 10 feet.
- D. Sidewalk shall be constructed on a sub-grade compacted to 95% density at optimum moisture content.
- E. Sidewalks shall be constructed to one of the following cross-sections:
  - 1. WVDOH Class B concrete to a minimum depth of four inches with 4 inch crushed stone subbase, or
  - 2. Crushed stone (WVDOH Class I), 4 inches thick, topped with 1.5 inches of bituminous concrete (surface course)
- F. The maximum cross slope allowed shall be 1/4 inch per foot.
- G. The longitudinal slope shall be consistent with the adjacent street. Where stairs are employed, consideration shall be given for providing handicapped ramps.

#### 4.530 **TRAILS**

To be considered on an individual basis.

#### 4.600 **EASEMENTS AND AGREEMENTS**

#### 4.610 **ACCESSWAY AND COMMON DRIVEWAY EASEMENTS**

- A. Adequate public ingress and egress easements shall be provided to accommodate all private streets, townhouse/multifamily accessways and common driveways. The dimensions and locations of easements shall be included on the record plat of the subdivision. Additionally, easement agreements in a form approved by the City Attorney shall be executed and recorded with the record plat.

- B. Access easements shall extend to the property lines of the individual properties served by the easement.
- C. Access easements shall clearly define the terms and conditions of ingress and egress and the specific lots intended to be served by the easement.
- D. The cost of construction for all townhouse/multifamily accessways and common driveways shall be included in the completion bond or letter of credit for the project.

4.620 **MAINTENANCE AGREEMENTS**

- A. Townhouse/multifamily accessways and common driveways proposed with a subdivision or development plan shall be subject to a maintenance agreement which specifically identifies the responsibility for maintenance of all improvements. The agreement will be subject to the approval of the city.
  - 1. In general, maintenance agreements guaranteeing private maintenance responsibility by Homeowner or Landowner Associations shall be acceptable for the purposes of this section.
  - 2. Each maintenance agreement shall contain a 20 year projected cost estimate for street maintenance. The agreement shall also identify revenue sources. An emergency repair fund shall be provided in the agreement.
- B. Every record plat of a division of land which includes a townhouse/multifamily accessway or common driveway not maintained by an HOA or similar organization shall contain a statement by the subdivider that clearly states that all such private facilities within that division of land are not a public maintenance responsibility and shall be collectively maintained by the owners of all lots that are served by the private street, townhouse/multifamily accessway or common driveway. The record plat shall reference the maintenance agreement.
- C. Each deed of conveyance shall state that:
  - 1. A townhouse/multifamily accessway or common driveway is not publicly maintained and shall be privately maintained by all of the owners of lots that are provided access by way

of such private facility.

2. Each lot owner shall include a similar restriction in any deed of conveyance upon resale of the lot.
3. An agreement, in proper form, shall be recorded in the land record and reflected in the chain of title of each lot in order to set forth that the construction, repair and maintenance of the a townhouse/multifamily accessway or common driveway connecting such lot to the public street system is not responsibility of the City or the State and to set forth legally binding responsibilities for the parties who are responsible for the construction, repair and maintenance (including snow removal) and all pertinent details. The agreement shall be between the owner of the lot, the contract purchaser and other parties, if pertinent to the purpose of the agreement.

**TABLE 4-1**

**GEOMETRIC DESIGN GUIDES FOR MAJOR SUBDIVISION ROADS AND STREETS  
(Numbers Shown in Parenthesis Designate Applicable Footnote)**

TRAFFIC CLASSIFICATION	TERRAIN	SUGGESTED MAXIMUM % GRADE (9)	DESIGN SPEED (MIN.)	ABSOLUTE MINIMUM STOPPING SIGHT DISTANCE FOR SAFETY	MINIMUM BASE DESIGN CATEGORY (SEE TABLE 4-2)	WITHOUT CURB AND GUTTER			WITH CURB AND GUTTER		
						MINIMUM PAVEMENT WIDTH	MINIMUM SHOULDER WIDTH FILL	MINIMUM CUT	MINIMUM RIGHT OF WAY WIDTH (8)	MINIMUM DIST. FACE TO FACE OF CURBS (6)	MINIMUM RIGHT OF WAY WIDTH (5)
251-400 VPD	Flat	7	35	240' (7)	II	20'	6'	4'	50'	36'	40'
	Rolling	9	35	240' (7)	II	20'	6'	4'	50'	36'	40'
	Mountainous	12	25	160' (7)	II	20'	6'	4'	50'	36'	40'
401-3000 VPD	Flat	6	35 (2)	240' (7)	III, IV or V	22'	8'	6'	50'	38'	40'
	Rolling	8	35 (2)	240' (7)	III, IV or V	22'	8'	6'	50'	38'	40'
	Mountainous	10	25 (2)	160' (7)	III, IV or V	22'	8'	6'	50'	38'	40'
3001-5500 VPD	Flat	6	45 (2)	310' (7)	VI	24'	8'	6'	50'	40'	50'
	Rolling	8	35 (2)	240' (7)	VI	24'	8'	6'	50'	40'	50'
	Mountainous	10	25 (2)	160' (7)	VI	24'	8'	6'	50'	40'	50'
5501-8000 VPD	Flat	6	45 (2)	310' (7)	VI	24' (3)	8'	6'	60' & Var.	68'	70'
	Rolling	8	35 (2)	240' (7)	VI	24' (3)	8'	6'	60' & Var.	68'	70'
	Mountainous	10	25 (2)	160' (7)	VI	24' (3)	8'	6'	60' & Var.	68'	70'
8001 + VPD	Flat	6	45 (2)	310' (7)	VI	2- 24' (1)	8'	6'	90'	68'	90'
	Rolling	8	35 (2)	240' (7)	VI	2- 24' (1)	8'	6'	90'	68'	90'
	Mountainous	10	25 (2)	160' (7)	VI	2- 24' (1)	8'	6'	90'	68'	90'

**Footnotes:**

1. Four Lane Divided with Median.
2. On Arterial or Collector Streets with a traffic count of more than 2000, the VPD Design Speed shall be based on Type of development and frequency.
3. Channelized Intersections with left turn lane required.
4. Four-12' Lanes, divided with raised median and 12' parking lanes
5. Where sidewalks are to be provided, additional right of way width to accommodate them is required.
6. Dimensions shown take into considerations that parking will be permitted.
7. Sufficient stopping sight distance must be provided to safely accommodate realistic operating speeds notwithstanding the suggested design speed shown in the tabulation.
8. A minimum 50' of right-of-way is required. Additional widths in increments of 10 as necessary to accommodate the full roadway elements including cut or fill slopes and sidewalks where applicable, is required.
9. Maximum allowable grade is 16%.

**General Notes:**

Each street should have continuity of design throughout. Therefore, multiple or "step down" typical designs will not be acceptable except where a major traffic generator such as an intersection with a collector street would delineate a clear line of demarcation.

Due to the normal density of development adjacent to residential subdivision streets, standard curve superelevation is not practical; therefore, on local streets where the speeds are 25 MPH or less, no superelevation is applicable for curves from 0 degrees - 59 degrees, and those curves of 1 degrees and greater should be superelevated by an amount equal to the standard pavement crown. For Arterial or through streets where prevailing speeds are likely to be greater than 25 MPH, superelevation and pavement widening should be provided in accordance with current WVDOT standards.



**TABLE 4-1A**

**GEOMETRIC DESIGN GUIDES FOR TERTIARY SUBDIVISION STREETS  
(Numbers Shown in Parenthesis Designate Applicable Footnote)**

TRAFFIC CLASSIFICATION	TERRAIN (6)	SUGGESTED MAXIMUM % GRADE	DESIGN SPEED (MIN.)	ABSOLUTE MINIMUM STOPPING SIGHT DISTANCE FOR SAFETY (4-2)	MINIMUM BASE DESIGN CATEGORY (SEE TABLE)	WITHOUT CURB AND GUTTER			WITH CURB AND GUTTER		
						MINIMUM PAVEMENT WIDTH	MINIMUM SHOULDER WIDTH FILL CUT	MINIMUM RIGHT OF WAY WIDTH	MINIMUM DIST. FACE TO FACE OF CURBS	MINIMUM RIGHT OF WAY WIDTH (4)	
Up to 250 VPD	Flat	7 (3)	20	120 (2)	I	20	5	4	40	30	40
	Rolling	9 (3)	20	120 (2)	I	20	5	4	40	30	40
	Mountainous	12 (3)	20	120 (2)	I	20	5	4	40	30	40

**CUL-DE-SACS, LOOPS, AND OTHER STREETS OF FIXED VEHICULAR GENERATION**

Up to 250 VPD	Flat	7 (3)	15	100 (2)	I	20 (1)	5	4	40	24 (5)	30
	Rolling	9 (3)	15	100 (2)	I	20 (1)	5	4	40	24 (5)	30
	Mountainous	12 (3)	15	100 (2)	I	20 (1)	5	4	40	24 (5)	30
251 - 500 VPD	Flat	7 (3)	20	120 (2)	II	20	6	4	50	30	40
	Rolling	9 (3)	20	120 (2)	II	20	6	4	50	30	40
	Mountainous	12 (3)	20	120 (2)	II	20	6	4	50	30	40

**FOOT NOTES:**

1. 18 foot width pavement allowed in developments of large acreage lot size (3 or more acres) providing that such is not in conflict with City ordinances.
2. Sufficient stopping sight distance must be provided to safely accommodate realistic operating speeds notwithstanding the suggested design speed shown in the tabulation.
3. Grades of relatively short length (up to 300 ft.) May be increased by 50% of the value shown upon approval of the City Engineer when rationale shows that such steep grades will not cause an intolerable maintenance situation.
4. Where sidewalks are to be provided, additional right-of-way to accommodate them will be required.
5. Dimension as shown applicable only if parking is prohibited.
6. Maximum allowable grade is 16%.

**GENERAL NOTES:**

1. An adequate turnaround shall be provided at the end of dead end or cul-de-sac streets to allow safe maneuvering by service vehicles, highway equipment, and school buses (a minimum 45 foot radius is required where circular turnarounds are used).
2. Due to local nature of streets and low design speed, curve superelevation is not required.

**TABLE 4-2  
BASE AND PAVEMENT DESIGN**

CATEGORY	SUBBASE	BASE	SURFACE
I up to 250 VPD	1. Not Required (NR)	6" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	2. NR	6" Soil Cement Stab. (Nature Soil or Borrow)	Curing Agent and Dbl. Seal or 1" Bituminous Concrete Surface Course
	3. 4" Select Material Type I,II or III	3" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	4. 4" Cement or Lime Stabilized Subgrade	3" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	5. NR	5" Pl. Portland Cement Conc.	
	6. NR	4" Bit. Conc. Base Course	1" Bit. Coc. Surface Course
II 250to 400 VPD	1. NR	8" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	2. 6" Cement Stabilized Subgrade	3" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	3. 6" Select Material Type I,II or III	4" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	4. NR	6" Local or Select Material Stab. W/Cement	Curing Agent and Dbl. Seal or 1" Bituminous Concrete Surface Course
	5. NR	5" Pl. Portland Cement	
	6. NR	5" Bit. Conc. Base Course	1" Bit. Conc.
III 401-750 VPD	1. 6" Cement Stabilized Subgrade	3" Aggr. Base Material	Prime and Dbl. Seal or 100# S-4 or S-5
	2. 6" Lime Stabilized Subgrade	4" Aggr. Base Material	Prime and Dbl. Seal or 100# S-4 or S-5
	3. NR	10" subbase or Select Mat. Type II (Top 6" Stab. With Cement	Curing Agent and Dbl. Seal or 100# S-4 or S-5
	4. 4" Subbase or Select Material Type II	4" Bit. Conc. Base Course	1" Bit. Conc. Surface Course
	5. 6" Select Material, Type I or III	5" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	6. 6" Subbase or Select Material Type II	4" Aggr. Base Material	Prime and Dbl. Seal or 1" Bituminous Concrete Surface Course
	7. NR	6" Pl. Portland Cement Concrete	
IV 751-1500 VPD	1. 6" Cement Stabilized Subgrade	4" Aggr. Base or Subbase Material	220# Bit. Conc. Surface Course
	2. 6" Lime Stabilized subgrade	5" Aggr. Base or Subbase Material	220# Bit. Conc. Surface Course
	3. 6" Select Material, Type I or III	5" Aggr. Base or Subbase Material	220# Bit. Conc. Surface Course
	4. 10" Local or Select Material Type II	Top 6" Stabilized with Cement	220# Bit. Conc. Surface Course
	5. 6" Local or Select Material Type II	5" Bit. Conc. Base Course	165# Bit. Conc. Surface Course
	6. 8" Aggr. Subbase or Base Material	275# Bit. Conc. Base Course	165# Bit. Conc. Surface Course
	7. 3" Aggr. Subbase or Base Material	7" Pl. Portland Cement Conc.	
V 1501-3000 VPD	1. 6" Cmt Stab. Subg. & 5" Aggr S.base or Base	3" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	2. 6" Lime Stab. Subq. & 6" Aggr S.Base or Base	3" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	3. 6" Select Material, Type I or III	6" Aggr. Subbase or Base & 3" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	4. 12" Aggr. Base or Subbase Materials	3" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	5. 4" Aggr. Base or Subbase Material	7" Pl. Portland Cement Concrete	
	6. 6" Local or Select Material Type II	6" Bit. Conc. Base Course	2" Bituminous Concrete Surface Course
VI 3000 + VPD	1. 6" Cement Stabilized Subgrade & 6" Aggr Base	5" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	2. 8" Select Material Type I or III & 6" Aggr. Base	6" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	3. 6" Subbase or Select Material Type II & 6" CTA	4" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	4. 6" Cement Stabilized Subgrade	7" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	5. 6" CTA	6" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	6. NR	12" Bit. Conc. Base Course	1.5" Bituminous Concrete Surface Course
	7. 4" Subbase or Base Material	8" Pl. Portland Cement Concrete	1.5" Bituminous Concrete Surface Course

- (1) When the anticipated VPD requires a four lane facility, the total traffic volume would be 50% in each direction. Consequently, this is the figure to be used to determine the applicable traffic category.
- (2) Subgrade support soils, immediately under the pavement, with CBR values of less than 10 will require an additional 6" of subbase, base, or select material. In lieu of this, the CBR values may be improved To a minimum of 10 by any other acceptable means.
- (3) Sufficient CBR tests must be run to determine the true support values of the various soils in the subgrade.
- (4) Pavement design certified by a Professional Engineer is acceptable as an alternate to any of the above.
- (5) Each street should have continuity of design throughout. Therefore multiple and/or variable base design will not be acceptable except in unusual situations.
- (6) Designs within a specific traffic category may not be structurally equal because of differences in the materials' flexural strengths and practical construction consideration.
- (7) Cement Treated Aggregate (CTA) or full depth Bituminous Concrete can be substituted for any aggregate, subgrade stabilization, or select material on a basis of 1 inch of CTA or Bituminous Concrete for 2 inches of the other materials. Neither CTA nor Bituminous Concrete should be placed directly on a resilient soil unless the soil is stabilized with cement or other stabilizing agent. CTA should have a minimum of 4 inches of aggregate material under it when less than 4 inches of bituminous concrete is used on top of the CTA.

## CHAPTER 5.000

### **STORM DRAINAGE**

#### 5.100 **DEFINITION OF “ADEQUATE DRAINAGE”**

Adequate drainage must have the hydraulic characteristics to accommodate the maximum expected flow of stormwaters for a given watershed, or portion thereof, for a specified duration and intensity of rainfall.

Adequate drainage must be designed to (a) account for both off site and on site stormwaters; (b) honor natural drainage divides; (c) convey said stormwater to a stream, water channel, natural drainageway, or existing facility, and (d) discharge said stormwater into the natural drainageway by tying into the drainageway at natural elevations or by discharging the stormwater into an existing facility of sufficient capacity to receive the same.

Adequate drainage for residential lots less than 20,000 sq. ft. will prevent ponding water from remaining on any portion of the lot more than 24 hours after a design storm.

Drainage structures should be constructed in such a manner that they can be maintained at reasonable cost.

Determinations of the size and capacity of an adequate drainage system shall take into account the planned development in the watershed or affected portions thereof. The design must provide for a system that does not adversely affect adjacent or neighboring properties.

It is the responsibility of the developer or property owner to receive or acceptably handle the runoff as it flows onto his property from the shed above and to conduct it through his property to an adequate outfall at his lower property line or beyond. The outfall must be sufficient to receive the proposed runoff without deterioration of the downstream drainageway by either erosion or flooding.

Adequate temporary drainage must be maintained to avoid ponding or excessive erosion damage that might occur during construction prior to completion of the permanent storm drainage system.

#### 5.200 **DESIGN STANDARDS**

##### A. **Hydrologic Design**

The rational method shall be used for all stormwater drainage design (for drainage areas less than 200 acres) in which  $Q=C_fACI$ . In drainage areas larger than 200 acres, The U.S. Soil Conservation Service Technical Release 55 (TR55) or other City approved methods must be used.

- Q = Quantity of stormwater runoff in cubic feet per second.
- $C_f$  = Correction factor for ground saturation--1.0 for 10 years; 1.1 for 25 years; 1.25 for 100 years (Note:  $C_f \times C$  1.0)
- A = Drainage area, in acres, contributing to the point of concentration.
- C = Coefficient of runoff.
- I = Average rainfall intensity, in inches per hour for the period of concentration to the point under consideration.

The on-site drainage area (A) shall be outlined on a legible schematic drawing, which shall include contours. Each differential area shall be shown with respect to the point of concentration and the acreage shown thereon. The minimum acceptable scale shall be based on legibility and subject to City approval. Off-site drainage areas contributing water to the system being designed shall be shown on a USGS topographic or other approved map. A schematic drainage plan, showing probable areas, major drainage systems being proposed, and all existing drainage divides, must be submitted with the preliminary plan.

Coefficients of runoff shall be employed with respect to development, as shown in the following table:

Residential (Average Lot Size)

A. 10,000 to 20,000 square feet	0.35-0.50
B. 20,000 or more square feet	0.35-0.40
Parks, Agriculture (unimproved or Cemeteries)	0.25-0.35
Townhouses	0.65-0.75
Schools	0.50-0.60
Apartments	0.65-0.75
Business, Commercial or Industrial	0.80-0.90
Asphalt, Concrete Parking Lots & Roofs	0.90-0.95
Open Space	0.25-0.35
Steep Slopes, i.e., 2:1	0.70

NOTES:

1. When calculating flow to a structure, if all runoff to the structure is from impervious areas (i.e., pavement and roofs), the C to be used is 0.95.
2. The lowest range of runoff coefficients may be used for flat areas (areas where the majority of the grades and slopes are 2 percent or less).
3. The average range of runoff coefficients should be used for intermediate areas (areas where the majority of the grades and slopes are from 2 to 5 percent).
4. The highest range of runoff coefficients shall be used for steep areas (areas where the majority of the grades are greater than 5 percent), for cluster areas, and for development in clay soil areas.

**B. Closed Conduit System**

The closed conduit system shall be designed for a 10-year rainfall frequency when its intended use is to function as the primary drainage system. Design flows will be determined by methods discussed in Section 5.200.A, and pipes will be sized by the amount of runoff to each point of intersection of flow.

Drainage computations, prepared by or under the direction of a Professional Engineer duly certified in the State of West Virginia, will be submitted with all plans and profiles containing storm sewer or culvert systems.

The storm sewer and culvert systems are to be shown in plans and profiles on 24 inch by 36 inch sheets.

1. All construction information, including invert elevations, in and out; size; type of pipe; gauge or class; length and percent of slope shall be shown on the plans and/or profiles.
2. All storm sewer appurtenances shall be identified by type and number (i.e., #00, MH-1, or MH #2), including number and length of throats and locations on both the plans and profiles.

### C. Storm Sewer Pipe

Size of storm sewer pipe may be determined by the Manning formula, which is expressed as:

$$Q = \frac{v a}{n} = \frac{1.49 r^{2/3} S^{1/2} a}{n}$$

Q = Quantity of flow in cubic feet per second.

v = Velocity of flow in cubic feet per second.

a = Required area in square feet.

n = Coefficient of roughness=0.013 for concrete culvert pipe

r = Hydraulic radius in feet =  $\frac{\text{cross sectional area of flow}}{\text{wetted perimeter}}$

S = Slope of barrel in feet per foot.

Adjustments of pipe sizes, as determined by the Manning formula, may be necessary due to hydraulic gradient considerations.

Other guidelines related to size and/or configuration of storm sewer pipe are as follows:

1. Minimum size of pipe to be used outside of the public right-of-way will be 12 inches in diameter where the distance between access openings is less than 50 feet. The minimum size of pipe permitted within public right-of-way is 15 inches.
2. Pipes will be designed for flows intercepted by the inlets.
3. Except where noted otherwise, the maximum length between access openings shall be 300 feet for pipes less than 36 inches in diameter or 500 feet for pipes 36 inches in diameter or greater. An access opening may be in the form of an inlet, manhole, junction box, or other approved appurtenance.
4. In general, there may be no reduction in pipe size along the direction of flow.
5. Minimum cover for storm sewer pipe shall be 2 feet

from the finish grade to the outside top of the pipe, except where approved structural correction is provided when the cover requirement cannot be met.

6. Minimum easement width shall be determined as follows:

<b>Pipe Size</b>	<b>Easement Width</b>
12-18 inches	10 feet
21-33 inches	15 feet
36-48 inches	20 feet
54-72 inches	24 feet

Where multiple pipes are installed, the edge of easement shall be 5 feet clear of the outside edge of the outermost pipe. Easements will follow established lot lines. However, when this is not possible, 5 feet will be added to the easement width on the side toward the nearest on site building. For deeply buried pipe, minimum easement width shall be based on the width of the trench necessary to unearth the pipe. Criteria resulting in the greatest width shall be used.

7. Storm sewers shall be designed to provide an average velocity when running full of no less than 2 ½ feet per second. Maximum velocity for any segment of the storm sewer system shall be 20 feet per second.
8. The minimum slope of each segment of the storm sewer lines shall be 0.5%.
9. The need for concrete anchors must be investigated on storm sewer lines with slopes of 16 percent or greater. If anchors are required, the design engineer will show a detail on the plans with spacing requirements.
10. Where storm sewers are provided, they shall not outfall in the front yard of a lot, but should be extended at least to the rear property line in lots up to ½ acre in size and at least 100 feet to the rear of the house on larger lots or to the rear lot line, whichever is less. If the storm sewer outfalls on a lot, or adjacent to a lot, on which an existing building will remain, the topography of the area between the building and the outfall, as well as the structure, must be shown. Floor elevations should be provided if possible.

11. In general, drainage facilities should not be terminated at the subdivisions boundary unless an adequate outfall exists at this point.
12. All storm drainage systems must be designed to provide, as a minimum, overland relief for the 100 year storm without damaging or endangering nearby buildings. The designer must submit calculations to show this when the primary drainage system is adjacent to the buildings. In lieu of calculations, the designer may show at least a minimum of 1 foot of overland relief being provided between the relief point and the lowest entry point of any building.

**D. Culverts**

Culvert pipe sizes shall be determined in accordance with Hydraulic Engineering Circular No. 5, Bureau of Public Roads, Department of Commerce, or other City approved method.

**E. Appurtenances**

The ends, entry or exit, of any storm drain shall be provided with a standard end wall, head wall, curb inlet, yard inlet, flared end section, or other appurtenance suitable for the intended use of the storm drain.

A manhole shall be constructed at every change in line and grade or change in pipe culvert size. Where pickup of additional stormwater is required, a standard inlet shall be constructed. Yard inlets shall be designed to intercept runoff from the 10 year storm without ponding beyond the limits of the drainageway and/or all storm drainage lines shall be straight between manholes, catch basins, or other appurtenances, except where specifically approved to be otherwise. A minimum 0.1 foot drop in inverts is required at every structure.

Erosion protection shall be provided at the outlets of storm sewer lines and culverts based on outlet velocity in accordance with the following:

**1. 2 fps to 6 fps Velocity**

Sod protection at the outlet (Kentucky Blue Grass or equally erosion resistant sod or other material).

**2. 5 fps to 11 fps Velocity**



Rip-rap (WVDOH Specification 218.3.2) or current equivalent. Rip-rap is to be placed on engineering fabric in accordance with current WVDOH Specifications.

3. **11 fps to 18 fps Velocity**

Grouted rip-rap (WVDOH Specification 218.3.3) or current equivalent. Rip-rap is to be placed on engineering fabric in accordance with current WVDOH Specifications.

4. **Velocities in Excess of 18 fps**

Special design energy dissipaters or impact basins shall be required. The design of these structures must meet the approval of the City.

5. **Special Cases**

The City may require protection in special cases not meeting the above.

For curb inlets occurring in sag points of the roadway, a minimum throat length of 6 feet shall be required and shall be calculated based on a 0.2 percent grade.

F. **Open Channel Flow**

All open channels (areas of concentrated flow) will be in a minimum drainage easement of 15 feet.

An open channel is defined as a drainageway with a discharge greater than 3 cfs for a 10 year storm. They do not include natural streams draining an area greater than 100 acres. They are allowed only in residential developments, or with the approval of the city. The majority of the lots shall be 0.5 acres or greater.

The minimum grade on open channels shall be 1% with grass lining and 0.5% with paved lining. For open channels, easement width shall be based on the width required to carry the design flow plus 5 feet on each side. Easements for drainage ditches shall be of sufficient width for proper maintenance and shall be shown on the plans. Ditches shall be designed and constructed in accordance with the current engineering practices. The computations and the ditch cross-section

shall be submitted with the plan and profile sheets. Paved ditches will be required based on velocity of flow and the erosive nature of the channel material.

**G. Residential Lot Grading Plans**

Swale slopes shall be a minimum of 3 percent. In addition to the maximum discharge, maximum width of flow shall be 10 ft., the maximum depth of flow shall be 6 in., and the maximum velocity of flow shall be 4 ft./sec. Generally, lot grading will honor drainage divides used for storm sewer design.

Designs for lot grading and siting and elevations of buildings shall provide for protection of the building against flooding from storms exceeding the capacity of the normal design storm for which the drainage system is sized.

Maximum driveway grades shall be 12%.

**H. Stormwater Management**

Except as specifically supplemented herein, the design provisions of the most recent edition of the West Virginia Erosion and Sediment Control Handbook, shall apply in all cases.

Stormwater management designs proposed shall provide that the post-development peak runoff rate from a two-year storm and a ten-year storm, considered individually, shall not exceed respective predevelopment rates.

Central Stormwater management facilities shall be provided for all planned development where the property is to be subdivided. Central Stormwater management is defined as retention or detention facilities which serve the entire planned development. Stormwater management designed on a lot-by-lot basis will not be permitted in subdivisions.

Regional Stormwater management will be provided as required by the City. Regional Stormwater management is defined as retention or detention facilities which may be identified in an area-wide approved drainage district study to control increases in runoff from developed sites within the established district.

Additional peak flow attenuation of the 10 year event will be required if the receiving channel, culvert, or storm sewer does not meet design

criteria. Detention of larger storms may be required for regional Stormwater management facilities.

## **I. Best Management Practices (BMPS)**

### **1. Objective**

It is the objective of the City of Bridgeport to promote water quality via the incorporation of BMP measures within all new and/or modified Stormwater management designs. BMP design standards are to provide prudent measures to insure water quality improvement without requiring extensive water quality testing and/or inspection by City staff.

It is anticipated the inclusion of BMP's within all new Stormwater management installations will counteract the negative effects of urbanization of stream geometry, surface and groundwater quality, watershed hydrology, natural wildlife habitat, and exportation of pollutants. The prescribed BMP device should control the quantity and quality of water leaving individual construction/development sites or portion of the watershed associated with regional Stormwater management facilities.

### **2. Design Criteria**

This document provides detailed design specifications and appropriate application of the various types of BMP devices.

The following minimum criteria must be met:

- a. Control/detain first flush of all storms which equates to the equivalent of runoff volume produced by a one inch storm.
- b. (30) hour drawn down time of the first flush is required for optimal pollutant removal for applicable devices.
- c. The volumetric storage requirements for BMP detention in existing facilities shall be based upon the developed acreage that is proposed with the site or subdivision and need not

include existing acreage that is unchanged by the plan.

3. **Factors to consider when choosing the best BMP:**

- a. Suitability to the site.
- b. Stormwater control benefits provided.
- c. Expected pollutant removal capability.
- d. Associated environmental and human values.
- e. Cost/benefit relationships for the purpose of maximizing water quality improvement at the least life-cycle cost.

4. **The following BMP measures are acceptable for use within the City of Bridgeport:**

- a. Extended detention ponds.
- b. Retention (wet) ponds.
- c. Subsurface detention structures
- d. Water quality inlets.
- e. Designed landscape techniques.
  - 1) Grass swales.
  - 2) Filter strips.
  - 3. Urban forestry.
  - 4) Basin landscaping.
  - 5) Shallow marsh creation.

5. Maintenance of the storm water management structure(s) will be the responsibility of the developer or an entity designated by the developer. A Maintenance Agreement with said entity shall be recorded with a copy of the storm water management plan at the Harrison County Court House.

Inclusive with the BMP design criteria and associated calculations, a prescribed maintenance plan for the proposed BMP devices should be documented. The applicant and/or successor will be responsible

for the long term authority to inspect the devices, at its discretion, to insure adequate performance and safety criteria.

### 5.300 **CONSTRUCTION STANDARDS**

Except where specifically supplemented, acceptable engineering design practices and the most recent edition of WVDOH Standard Specifications for Roads and Bridges shall apply in all cases.

#### **A. Open Channels**

All designs must be prepared by or under the direct supervision of a Professional Engineer duly licensed by the State of West Virginia.

#### **B. Closed Conduits and Appurtenances**

1. All pipe used for the construction of storm sewer drainage systems shall be concrete, corrugated HDPE with smooth interior, or corrugated galvanized steel pipe. Alternate materials can be used where specifically permitted by the City.
2. All drainage pipe shall meet the requirements of the WVDOH specifications. Where velocities exceed 20 fps, special designs will be required for consideration by the City.
3. The minimum cover for all drainage culverts within the street right-of-way shall be 2 feet, or one half the diameter of the pipe whichever is larger. Minimum cover for single residential lot driveways shall be as required by the design engineer. When the storm sewer pipe is laid outside the street right-of-way, a minimum of 2 foot of cover shall be required.
4. If the minimum cover requirements as set forth in this section cannot be met, then structural modifications may be submitted for approval. Plans will show specific standard drainage items.
5. If precast units are to be considered for use, there will be a note on the plans stating that precast drainage units may be substituted for the standard cast-in-place units.

## 5.400 **FLOODPLAINS**

### A. **Definitions:**

1. Base Flood: The flood that has a one percent probability of occurrence in any given year and is commonly referred to as the 100 year flood.
2. Floodplain:
  - a. A relatively flat or low land area adjoining a river, stream, or water course which is subject to partial or complete inundation;
  - b. An area subject to the unusual and rapid accumulation or runoff of surface waters from any source.
3. Floodway:
  - a. The channel of a river or other watercourse and the adjacent land area that must be reserved to discharge the base flood without increasing the water surface elevation of that flood more than one foot at any point.

## 5.410 **GENERAL**

Any development within a floodplain area shall meet all requirements of Article 1731 of the Codified Ordinances of Bridgeport.

## **CHAPTER 6.000**

### **SOILS AND GEOTECHNICAL REVIEW**

Soils and/or geotechnical reviews are not required for subdivision or site development activities. However, the City reserves the right to require soils and/or geotechnical reviews if the area has a history of soil deficiencies. Furthermore, if during development, it becomes known to have soil deficiencies, the City may require the project to cease operations until a soils and geotechnical report is performed. All costs associated will be borne by the developer.

## CHAPTER 7.000

### SEDIMENT AND EROSION CONTROL

#### 7.100 SEDIMENT AND EROSION CONTROL

##### A. **General Requirements**

Any changes in the contour of the land shall not be made, nor shall any grading, excavating, removal or destruction of topsoil, trees, or other vegetative cover be permitted until such time as a plan for minimizing erosion and sedimentation has been received and approved by the City Engineer. The review for erosion and sediment control shall take into consideration the recommendations and standards contained in the most recent edition of the applicable Erosion and Sediment Control Handbook published by the Natural Resources Conservation Service (NRCS).

All exposed slopes shall be stabilized with vegetative cover or other suitable stabilizing material which may be required for the particular slope, soil and moisture conditions encountered. As a minimum, exposed slopes shall be seeded according to the applicable erosion and sediment control handbook as referenced above. Germination adequate to control erosion shall be evident.

##### B. **Erosion and Sediment Control Plans**

Erosion and Sediment Control plans shall be drawn to an appropriate scale and shall be drawn to an appropriate scale and shall include all existing and proposed topographic features, limits of clearing, limits of disturbance and all proposed erosion and sediment control devices.

Plans shall include a brief narrative detailing a proposed schedule of events and the placement of control devices or facilities. Details and calculations for the specific controls utilized shall be included on the plans. Plans shall include provisions for both temporary and permanent erosion control devices.

##### C. **Area of Disturbance**

The smallest practical area of land shall be exposed at any one time during development. Exposure shall be for the shortest possible period of time.

**D. Effect of Adjacent Property**

Earthwork, clearing, and grading or any material generated from these procedures shall not encroach upon or adversely affect adjoining properties without having first obtained written consent from the adjacent owner(s). Such agreements shall be in place prior to the approval of the Erosion and Sediment Control Plan.

**7.200 PERMIT REQUIREMENTS**

- A. If required, on NPDES permit must be obtained from the WV Department of Environmental Protection. This permit must be obtained prior to City approval.
- B. A grading permit must be obtained from the City prior to any grading activity in accordance with Section 8.300 of this code.

**CHAPTER 8.000**

**ADMINISTRATIVE PROCEDURES**

This chapter establishes certain minimum criteria, which must be met to allow a systematic approach to a comprehensive review process. In addition to the information below, it is the applicant's responsibility to provide all necessary information to allow reviewing agencies to adequately determine if all requirements of pertinent ordinances and provisions of this code have been met.

**8.100 PRELIMINARY PLAN OF SUBDIVISION**

- A. The preliminary plan shall contain at least the following: applicable date, legibly drawn, on sheets of 24 inches by 36 inches in size, with appropriate match lines, as necessary. The plan shall be done by a Professional Engineer or a Professional Surveyor.
  - 1. The scale in English, the North point, and date of plan.
  - 2. The proposed name of the subdivision, which shall not duplicate or too closely resemble that of any existing subdivision in this or any neighboring county.
  - 3. The name, address, and signature of the owner of record and the name and address of the sub divider and the engineer or surveyor who prepared the plan.
  - 4. The number of sheets comprising the plan and a revision block.



5. The sources of data used in preparing the plan, in particular, plat book and page numbers of the plat of record, deed book and page numbers of the last instrument in the chain of title.
  6. The boundary survey or existing survey of record.
  7. All required zoning information as mandated in Article 13 of the Bridgeport City Code.
  8. Proof of any proffer, variance, special exception, or subdivision exception shall be identified on the plan.
  9. The proposed number of lots.
  10. Purposes for which proposed lots are to be used.
- B. The preliminary plan shall show the location of the proposed subdivision by an insert vicinity map, drawn to a scale of 1 inch equals 1000 feet.
1. The existing boundary lines of the proposed subdivision and of any larger tract of which the subdivision forms a part.
  2. All adjoining roads, streets, and private access easements with their names and/or route numbers.
- C. The preliminary plan shall show the following, legibly drawn to scale and showing dimensions:
1. The scale shall be 1 inch equals 200 feet or larger as directed by the city, unless another suitable scale has been approved, in writing, by the city.
  2. Boundary lines and total acreage of the proposed subdivision and the acreage remaining in the original tract, if any. The Planning Commission may require the preliminary plan to show a proposed future subdivision of such remaining acreage, or part thereof, to make certain that proper orientation and size of future streets may be developed with the proposed plan.
  3. All proposed lot lines, showing dimensions, proposed block and lot numbers, and the area of each lot.

4. The names of all adjoining property owners, land use, and adjacent property line intersections.
5. The location, width, and centerline of each proposed street, pedestrian circulation, easement, or other public or private way within the subdivision. All pedestrian circulation paths should be shown, including proposed pedestrian trails and plans.
6. The location, width, and centerline of adjoining streets, roads, and easements with their names and/or numbers.
7. All proposed streets shall include approved and/or reserved street names and sign locations. The street names will be submitted in writing to the city. The city will submit street names to the Harrison County Addressing Coordinator for formal approval.
8. The proposed building restriction lines, including all dimensions, shown as dashed lines and labeled as such.
9. The location and area of any land to be dedicated or reserved for public use or for road right-of-way or common use of future property owners in the subdivision.
10. The location and description of all existing monuments.
11. Watercourses and names, if any, and floodplain delineation as defined in Article 1731 of the Codified Ordinances of Bridgeport. A note stating the source of the floodplain delineation should be included.
12. Proposed and existing drainage ways, sewers, ponds, onsite sewage disposal and water supply systems.
13. Sanitary sewer, storm sewer, and water lines, existing and proposed.
14. If extensive changes of topography are contemplated, a plan showing the changes proposed.

15. A topographic map, indicating when and by what means it was made, having contour intervals.
16. Tabulate and note on plans the number and location of provided parking places.
17. A Conceptual Tree Preservation/Landscape Plan showing the limits of existing tree cover, areas of proposed clearing, general location of trees to be planted, buffering to be provided.
18. Show all other utilities which will serve the development.

D. Items to Accompany Preliminary Plan of Subdivision

The following items shall accompany the submission of a preliminary plan of subdivision:

1. If it is proposed to dedicate or reserve land (other than for streets) for public use or for the common use of future property owners in the subdivision, a copy of the proposed Homeowner Association Documents or other relevant documents outlining the terms proposed.
2. Public water and sewerage shall be provided, and a certificate from the governing body thereof shall be submitted. Such certificate may require that certain specifications be met as a condition to furnishing or operating public water and sewerage.
3. A floodplain certificate, which indicates whether or not the property or any portion thereof is affected by a floodplain as defined in Article 1731 of the Codified Ordinances of Bridgeport. This certificate shall be sealed by a Professional Engineer or Professional Surveyor duly licensed in the State of West Virginia.

8.120 **FINAL PLAT OF SUBDIVISION**

- A. The record plat shall be prepared by a Professional Engineer or Surveyor duly licensed by the State of West Virginia, who shall endorse upon such plat a certificate, with his signature, setting forth the source of title of the land subdivided and the place of record of the last instrument in the chain of title.

- B. The record plat shall be substantially in accordance with the approved preliminary plan (together with any changes or additions required by the Planning Commission as a condition for its approval), except that a record plat may include all or any part of the area covered by the preliminary plan.
- C. The record plat shall conform to the following:
1. The scale in English, the North point, and date of plan.
  2. The proposed name of the subdivision, which shall not duplicate or too closely resemble that of any existing subdivision in this or any neighboring county.
  3. The name, address, and signature of the owner of record and the name and address of the subdivider and the engineer or surveyor who prepared the plan.
  4. If the subdivision is shown on more than one sheet, the sheet number, the total number of sheets, and the subdivision name shall be shown on each sheet, and match lines shall indicate clearly where the several sheets join.
  5. The sources of data used in preparing the plan, in particular, plat book and page numbers of the plat of record, deed book and page numbers of the last instrument in the chain of title.
  6. The boundary survey with an error of closure within the limit of 1 in 10,000.
  7. The plat shall be drawn to a scale as directed by the city.
  8. Zoning requirement, including the zoning district, overlay zoning districts, minimum area, minimum lot width, maximum length/width, ratio, minimum front, side and rear setback lines, etc.
  9. Proof of any proffer, variance, special exception, or subdivision exception shall be referenced on the plat. The conditions of approval (if any) of the preliminary plan of subdivision shall also be referenced on the plat.

10. The proposed number of lots.
11. Purposes for which proposed lots are to be used.
12. The developer shall provide a permanent benchmark, i.e. fire hydrant base, chiseled mark on culvert headwall, etc.
13. All proposed lot lines, showing dimensions, proposed block and lot numbers, and the area of each lot.
14. The location, width and centerline of each proposed and existing street, easement, or other public or private way within and adjacent to the subdivision. All existing streets shall include route numbers and street names.
15. The location, dimensions, and area of all easements.
16. Building setback lines, shown as dashed lines, with the dimension from each lot line and the length of the front building restriction line clearly illustrated and identified.
17. All dimensions, shown in feet and decimals of a foot to the closest one-hundredth of a foot, and all bearings in degrees, minutes, and seconds, to the nearest 10 seconds, shall be included.
18. The data for all curves shall be shown in detail at the curve data table containing the following: radius, delta, arc, tangent, chord, and chord bearing. Bearings and distances of corners to the nearest recorded property corner or monument shall be included.
19. If any land is being dedicated or reserved for public use for streets, parking areas for public use, or for common use of the future property owners of the subdivision, the record plat shall so state and illustrate such.
20. The record plat shall contain a correct description of the land being subdivided and a statement to the effect that the subdivision is with the free consent and in accordance with the desire of the undersigned owners or trustees of the property.

21. The record plat shall indicate Health Agency approved sewerage disposal systems and water supply systems.
22. The record plat shall contain a statement setting forth the persons or entities responsible for maintenance of stormwater detention and drainage facilities and easements.
23. Watercourses and names, if any, and a floodplain easement.
24. The location and description of all existing and proposed monuments.
25. All pertinent archeological, natural, and historical features and landmarks.
26. The record plat shall provide space and contain suitable lettering for evidencing:
  - a. The surveyor's certificate as to title.
  - b. The surveyor's certificate as to monuments.
  - c. All restrictive covenants or reference thereto.
  - d. The owner's certificate.
27. The record plat shall provide space, in the lower right-hand corner for approval of the record plat by the Planning Commission in accordance with Article 1335 of the Codified Ordinances of Bridgeport.
28. Each lot shall be labeled with an approval address in accordance with the Harrison County Bureau of Emergency Services Addressing Coordinator.

D. Documents to Accompany Final Plats

When delivered to the City of Bridgeport, the record plats shall be accompanied by the following documents:

1. Water shall be provided by and sewerage connected to the City of Bridgeport Systems. A certificate signed by the City Engineer indicating the availability of such service shall also be submitted.

2. If all improvements required under this ordinance are not completed, a cash bond, certified check, surety performance, or Certified Letter of Credit as required by the city, shall be submitted for review. Such guarantee must be approved by the City prior to final site plan approval.
3. In cases where land or facilities are to be dedicated to and held in perpetuity by a homeowner's association, copies of all homeowner's association documents shall be submitted.
4. A floodplain certificate which indicates whether or not the property or any portion thereof is affected by a floodplain as defined in Article 1731 of the Codified Ordinance of Bridgeport. The certificate shall be sealed by a Professional Engineer or Professional Surveyor duly licensed in the State of West Virginia.

8.130 **PRELIMINARY SITE DEVELOPMENT PLANS**

- A. The preliminary plan shall be clearly and legibly drawn to a scale as directed by the city. The owner of any tract of land who desires to develop such tract of land by constructing three or more contiguous residential units or developing such land for commercial or industrial purposes shall submit a plan for the use and development of land.
  1. Proposed development name, which shall not duplicate or approximate other development names in the City of Bridgeport.
  2. Name and address of the record owner of the property.
  3. Name, address and seal of the engineer/designer who prepared the preliminary site plan.
  4. The scale in English, the North point, and date of plan.
  5. The number of sheets comprising the plan and a revision block.
  6. Proof of any proffer, variance, special exception, subdivision exceptions, or subdivisions granted, including any conditions resulting from such actions, shall be indicated on the site plans.

7. Intended use of the proposed structure (s).
  8. Correct zoning of the property and the proposal use for the site.
- B. The preliminary site plan shall show the location of the proposed site by an insert vicinity map, drawn to a scale as directed by the city.
1. The existing boundaries of the proposed development and of any larger tract of which the development area forms a part.
  2. All adjoining roads, streets, and private access easements with their names and route numbers.
- C. The preliminary site plan shall show the following, legibly drawn to scale and showing dimensions:
1. Location of property lines, easements, buildings, watercourses, utilities, culverts, and drainage outlets in existence on the site.
  2. Location, name, and present width of existing streets or other public or private passageways.
  3. A topographic map- As directed by the city.
  4. Proposed street names shall be included for all areas requiring names per Chapter 10 of this code.
  5. Preliminary layout plans, dimensions, and types of buildings, streets, sidewalks, sanitary sewers, storm drains, water mains, curbs and gutters. Additionally, the location of manholes, basins, and underground conduits shall be illustrated.
  6. Connections with existing sanitary sewers and existing water supplies.
  7. Preliminary layout of provisions for collecting and discharging surface drainage and preliminary designs for any bridges or culverts which may be required, as well as provisions for facilities for temporary storm drains terminating at the edge of the development.



8. Preliminary plans for erosion and sedimentation control.
9. Three 1:2400 (1 inch = 200 feet) scale sketch of the preliminary site plan, showing topography, existing site information, stakeout plan, soils map, exterior outline of major structures proposed, such as buildings, parking lots, etc.
10. Watercourses and names, if any, and a map a 1 inch = 200 feet scale showing the floodplain delineation as defined in Article 1731 of the Codified Ordinances of Bridgeport.
11. The names of all adjoining property owners and zoning of these parcels.
12. The location and description of all existing monuments.

D. Items to Accompany Preliminary Site Plans

The following items shall accompany the preliminary plan:

1. Public water or sewerage shall be provided by the City of Bridgeport. A certificate from the City is required. Such certificate may require that certain specifications be met as a condition to furnishing water or sewage.
2. A floodplain certificate which indicates whether or not the property or any portion thereof is affected by a floodplain as defined in Article 1731 of the Codified Ordinance of Bridgeport. The certificate shall be sealed by a Professional Engineer duly licensed in the State of West Virginia.

8.140 **FINAL SITE PLANS**

The final site plan shall be certified by an Engineer duly licensed in the State of West Virginia.

- A. The final site plan shall contain at least the following applicable data, legibly drawn, on sheets of 24 inches by 36 inches in size, with appropriate match lines, as necessary.
  1. Construction drawings, notes, and specifications for improvements substantially in accordance with the approved preliminary plan and may include all or any

part of the area covered by the approved preliminary site plan.

2. Final plans shall be submitted with water, sanitary sewer, and storm drainage calculations, with a statement of the basis of the design and drainage area map showing individual and cumulative drainage areas tributary to each point of concentration.
  3. Proposed development name, which shall not duplicate or approximate other development names in the City of Bridgeport communities or counties.
  4. Name and address of the record owner of the property.
  5. Name, address and seal of the engineer who prepared the final site plan.
  6. The scale in English, the North point, and date of plan.
  7. The number of sheets comprising the plan and revision block.
  8. Proof of any proffer, variance, special exception, subdivision exceptions, or subdivisions granted, including any conditions resulting from such actions, shall be indicated on the site plan.
  9. Intended use of the proposed structure.
  10. Current zoning of the property and the proposal use from the site.
- B. The final site plan shall show the location of the proposed subdivision by an insert vicinity map, drawn to a scale of 1 inch equals 1000 feet.
1. The existing boundaries of the proposed development and of any larger tract of which the development area forms a part.
  2. All adjoining roads, streets, and private access easements with their names and route numbers.
  3. All subdivision, corporate boundary lines, and other landmarks, if any, within one mile of the proposal.

- C. The final site plan shall show the following, legibly drawn to scale and showing dimensions:
1. Street and utility improvement plans are to consist of plan and profile drawn to a scale of 1 inch to 50 feet horizontally and 1 inch to 5 feet vertically. The plan portion of the streets shall include in sufficient detail the location of all streets, lots, storm drainage, sanitary sewerage, and water distribution systems. The profiles shall show the existing and proposed street profiles and all sanitary sewer and storm improvements. Details of standard street sections and miscellaneous construction items shall appear on the sheets, as well as any construction notes pertaining to the proposed improvements.
  2. Grading and drainage plans, drawn to a scale of no less than 50 feet to the inch and showing the proposed street and lot layout, including dimensions. The existing topography shall be shown at no less than 2-foot contour intervals. Proposed grading shall be shown by proposed contour lines. In addition, proposed elevations of the finished grade at the building and all lot corner elevations shall be shown. Storm drainage pipes and structures and their sizes and elevations shall be indicated.
  3. A landscape plan, in accordance with Chapter 9 of this code.
  4. Location, type and dimensions of vehicular ingress and egress to the site.
  5. All off-street parking and parking bays, loading spaces, walkways, and bike paths, indicating type of surfacing, size, angle of stall, width of aisles, and specific schedule showing the number of parking spaces provided in the number required according to the applicable zoning ordinance requirements.
  6. The number of floors, floor area, height, exterior dimensions, locations, and proposed use of each building.
  7. Watercourses and names, if any and a floodplain delineation as defined by Article 1731 of the Codified

Ordinances of Bridgeport.

8. The names of all adjoining property owners and zoning of these parcels.
9. The location and description of all existing monuments.
10. Approved and/or reserved street names shall be included for all streets and private access easements requiring names.

D. Documents to Accompany Final Site Plans

1. A certificate signed by the appropriate Health Officer evidencing conformance with all applicable requirements of the Harrison County Health Department, if applicable. If water is to be provided by, or sewerage connected to the City of Bridgeport systems, a certificate signed by the City Engineer indicating the availability of such service shall also be submitted.
2. If all public improvements required under this ordinance are not completed, a cash bond, certified check, or surety performance bond and agreement, as required by the City of Bridgeport, shall be submitted for review. Such guarantee shall be accepted by the City prior to final site plan approval.
3. If applicable, an unexecuted copy of the proposed deed of dedication, accompanied by a certificate signed by the developer or his agent and duly acknowledged before some officer authorized to take acknowledgments of deeds, to the effect that this is a true copy of the proposed deed of dedication which will be present for recordation. Such copy shall:
  - a. Contain a correct description of the land developed and state that such development is with the free consent and in accordance with the desire of the undersigned owners, proprietors, and trustees, if any.

- b. Contain language such that when the deed is recorded, it shall transfer in fee simple to the City such portion of the designed premises as is set apart on such site plan for streets, easements, or other public use and to create a public right-of-passage over the same.
  - c. Contain all protective or restrictive covenants.
- 4. A plat of dedication for those areas designed on the final site plan as set apart for streets, easements, or other public use and to create public right-of-passage over the same. Said plat shall reference the deed of dedication required in Subsection 4 above and all protective or restrictive covenants. The deed should also reference the plat.
- 5. In cases where land or facilities are to be dedicated to and held in perpetuity by a lot-owner's association, condominium association, or similar organization, copies of all organization documents shall be submitted for review
- 6. A floodplain certificate which indicates whether or not the property or any portion thereof is affected by a floodplain as defined in Article 1731 of the Codified Ordinance of Bridgeport. The certificate shall be sealed by a Professional Engineer duly licensed in the State of West Virginia.
- 7. Other required inclusions:
  - a. Should include approval block reference note "Approval of this plan shall in no way relieve the developer, the owner/developer or his agents of any legal responsibility required by the City of Bridgeport".

#### 8.150 **CONSTRUCTION PLANS AND PROFILES**

Plans shall be submitted directly to the City's Professional Engineer for review and action. Plans shall be certified by a professional engineer duly licensed by the State of West Virginia. Plans shall

consist of construction drawings, notes, and specifications for improvements required and other pertinent regulations substantially in accordance with the approved plan of subdivision or site development plans as in Section 1305.03 of the City of Bridgeport Codified ordinance, and the following; the owner of any tract of land who desires to develop such tract of land by constructing three or more contiguous residential units or developing such land for commercial or industrial purposes shall submit a plan for the use and development of land. Construction plans shall be drawn on numbered streets 24 inches by 36 inches in size and shall show and or include in the submittal, the following:

- A. A cover sheet, showing vicinity map, subdivision name, and signature approval blocks.
- B. Documentation which provides the history of the project via previous conditions of approval for prerequisite applications. Applicable applications may include prior rezoning, variances, preliminary plans of subdivision, floodplain studies, etc.
- C. Street and utility plans, to consist of plan and profile drawn to a scale of no less than 1 inch to 50 feet horizontally and 1 inch to 5 feet vertically.
- D. Details of standard street sections and miscellaneous construction items, as well as any construction notes, shall appear on these sheets.
- E. Grading and drainage plans, drawn to a scale of no less than 1 inch to 50 feet and showing the proposed street and lot layout, including dimensions. Existing and proposed contours will be shown at two foot contour intervals. Storm drainage pipes and structures shall be shown, indicating sizes and locations. A floodplain delineation or a certificate sealed by a professional engineer or land surveyor duly licensed in the State of West Virginia indicating that the proposed project is not within a regulated floodplain, as appropriate.
- F. Detailed street lighting and name signs, indicating location, type and size. The initial cost for these items shall be the responsibility of the developer.
- G. Storm drainage calculations, with a statement as to the basis of design, and a drainage area map showing individual and cumulative drainage area contributing to each point of concentration.
- H. A sediment and erosion control plan indicating erosion/sediment control measures to be utilized during each phase of construction. The plan, at a minimum, shall be in compliance with requirements of the state or local agency having jurisdiction.

8.155 **INSPECTION**

All infrastructures shall be inspected by the city and approved prior to concealment.

8.160 **RECORD DRAWINGS OR “AS BUILTS” FOR SUBDIVISION OR SITE DEVELOPMENT PLANS**

Upon satisfactory completion of the installation of all required improvements shown on the approved construction drawings, the developer shall submit to the City of Bridgeport, two (2) copies of the completed record drawings of the subdivision, commercial site plan or residential site plans that consists of three or more contiguous dwelling units. The drawings shall be submitted at least two weeks prior to the anticipated occupancy of any residence and/or building within the development. The City may waive this requirement in connection with the issuance of a temporary occupancy permit. However the submission of “As Built” drawings may not be waived. As of March 1, 2009, the City will require all “As-Built” drawings to be submitted in electronic format as well as hard copy. Electronic submission will be of AutoCad Format. Drawings of water and sewer will include “As-Built” profiles. All “As-Built” will show coordinates for constructed facilities/infrastructure.

8.170 **PLAN REVISIONS**

No plan revisions will be submitted during the initial review of the construction drawings. Once the City has approved or returned comments on an application, plan revisions may be submitted at any time.

Revised sheets shall have a revision block with key numbers locating the revisions on the plan sheet.

A narrative description shall accompany revised sheets stating that the revisions are the only changes on the plan sheets. At least three (3) sets of revised plans will have unapproved revisions outlined or highlighted in red. Revisions submitted during construction must follow the above procedures. Field revisions, during construction shall not be allowed without previous approval of the City of Bridgeport.

8.200 **BONDING POLICY OR LETTER OF CREDIT**

A. **Purpose**

Bonding Policy: To obtain an acceptable guarantee of performance to assure the timely construction and completion of public and other physical improvements in accordance with approved plans and profiles, current City standards and specifications, and City and State code requirements. This policy may be amended at any time by resolution of the City Council.

B. **Agreement and Cost Estimates**

An agreement between the Developer and the City of Bridgeport,

which shall be supported by an acceptable form of surety or security, shall be required on all projects which obligate the Developer or construct required improvements in approved subdivisions, site plans, and special exceptions if the infrastructure improvements are not completed prior to a Use and Occupancy being requested for buildings or residences.

8.300 **PRIOR TO THE START OF ANY CONSTRUCTION**

The developer will insure all of the following items have been accomplished:

A. **Approved Construction Plans**

The developer must have approved construction drawings in his possession. At least one (1) copy of the approved plans, with revisions, must be kept onsite at all times.

B. **Inspection Agreement**

The developer must request through the City, that the City inspect all public improvements within the subdivision and or site development. Any inspection required by WVDOT must be coordinated separately.

C. **Grading Permit**

The developer shall have applied for and received a grading permit in accordance with Article 905 of the Codified Ordinances of Bridgeport unless the developer has applied for and received a building permit as outlined below (D).

D. **Building Permit**

The developer must have applied for and received a building permit prior to building construction in accordance with Article 1705 of the Codified Ordinances of Bridgeport (if applicable).

E. **Highway Permit**

The developer must obtain entrance permits from the City and/or WVDOT for both temporary construction entrances and permanent entrances and any other work within the existing right-of-way of the City or State.

F. **Sewer and Water Requirements**

The developer is required to coordinate with the City Engineer for



inspection of installation work. All water or sewer lines must be inspected before the trench is backfilled.

8.400 **CERTIFICATE OF OCCUPANCY OR USE**

The developer must obtain a certificate of occupancy in accordance with Article 1705.11 of the Codified Ordinances of Bridgeport.

**CHAPTER 9.000**

**MISCELLANEOUS DESIGN STANDARDS**

9.100 **STREET AND SECURITY LIGHTING STANDARDS**

9.110 **GENERAL REQUIREMENTS**

- A. All subdivisions, site development plans, planned unit developments, or other activity which requires an extension or creation of a public or private street right of way must have street lighting as required by this section.
- B. An adequate lighting plan shall be submitted with all development projects whether it is for residential, commercial or industrial purposes.
- C. A lighting plan shall be submitted as a part of the infrastructure plan.
- D. Safety lighting shall be provided by the applicant when deemed necessary by the city.

9.120 **LIGHTING STANDARDS**

- A. Lighting of streets and sidewalks or pathways within or immediately adjacent to the dedicated public street, public right-of-way or private street easement shall be installed as required by the city on the applicant's submitted infrastructure plans, if applicable.
- B. Roadway lighting shall be provided by the developer where deemed necessary by the city.

9.130 **PLAN SUBMISSION REQUIREMENTS**

- A. The lighting plan shall show the layout, location and size of the luminaries. A typical detail of the luminary shall also be shown. Luminaries shall be located so as not to direct lighting onto adjacent properties.
- B. The city, at its discretion, may waive the requirement for street lighting for any public street, private street or right-of-way.

9.140 **OPERATIONAL, MAINTENANCE, AND INSTALLATION COSTS**

- A. Installation, operation, repair, replacement and maintenance costs of the lighting system shall not be the responsibility of the City, unless agreed upon by both parties under a separate agreement.
- B. The developer, at his expense, may elect to install additional street lighting fixtures over and above what the city shall require. However, the city shall have control and approval of the layout so as to best serve the public.
- C. If the street lighting becomes inoperative or dilapidated after installation, the city shall notify the designee of record that repair, maintenance, or replacement of the street lighting fixtures are required. The designee shall have thirty days from date of notice to submit a plan of improvement to the city for approval.

9.150 **MISCELLANEOUS AGREEMENTS**

- A. Where the proposed system lies within or adjacent to dedicated right-of-way or access easement and the local power company requires that such operation, maintenance, and installation can only be contracted by public utilities, the developer or responsible party shall sign an agreement with the City which guarantees full payment to the City of all associated charges, as well as all administrative costs experienced by the City in contracting for such provisions. This agreement shall be at the option of the City. Said agreement shall be executed prior to the approval of a record plat.

9.160 **PERMITS AND EASEMENTS**

- A. Where lighting installations occur within dedicated rights-of-way that contain public roads, it is the developer's responsibility to obtain all necessary permits and easements required to install, operate, maintain, repair, and replace said lighting system.

9.200 **TREE PRESERVATION**

- A. The area of land to be cleared of trees and other vegetation in conjunction with development or land use shall be held to the minimum amount of area necessary to insure proper construction of improvements.

9.300 **LANDSCAPE PLANS**

- A. Where required by City Codes, or where deemed necessary by the City as a part of a rezoning or a condition of a special exception or variance, an applicant shall submit a landscaping plan with his plans and profiles of the project.

9.400 **UTILITY EASEMENTS**

All utility easements shall be provided and delineated on the record plat in the location and to the width designated by the City. In no case shall an easement be less than 10 feet.

- A. All utility transmission lines shall be placed underground.
- B. Wherever practical, utility easements shall be provided on each side of all rear lots lines and alongside lot lines where necessary for utility installation and maintenance.
- C. Public utility installations shall be so located to permit multiple installations within the easements.

**CHAPTER 10.000**

**STREET NAMES AND STREET SIGNAGE**

10.100 **GENERAL REQUIREMENTS**

- A. All proposed street names shall be reviewed by the City for conformance. Names may be proposed through the review process, or as a private or public initiative. All proposed street names, once approved at the municipal level, will be sent to the Harrison County Bureau of Emergency Services and shall be approved by the County Addressing Coordinator prior to receiving final approval from the City.