



2. Water and sanitary sewer systems, water treatment plants, waste water treatment plants, storage tanks, etc., shall be designed and constructed according to the regulations of the West Virginia Bureau of Health, the West Virginia Department of Environmental Protection and federal regulations, as applicable.

A copy of the approved West Virginia Bureau of Health permit and a complete set of the approved plans shall be submitted prior to approval of the Preliminary Plan. The plans shall include the utility system plan, profiles, details, and specifications necessary for construction of the system.

For waste water treatment plants, a copy of the West Virginia Department of Environmental Protection's waste load allocation and discharge permit shall be provided prior to approval of the Preliminary Plan.

3. If a central water and/or sanitary sewer system is required, then the developer shall enter into a binding legal agreement with the appropriate Public Service District for the construction and operation of such systems. The terms and conditions of such agreement must be acceptable to the Public Service Commission and in compliance with all pertinent rules and regulations of the West Virginia Public Service Commission. Such construction and operation agreement shall be in full force and effect and guaranteed construction funding, in a form acceptable to the Planning Commission and the Jefferson County Commission, shall be committed prior to the sealing of the Final Plat by the Planning Commission.
4. Where centralized water and/or a sanitary sewer system are provided in a subdivision, a note shall be placed on the Final Plat stating:

“Private wells and/or private septic systems for domestic use are prohibited when central water and/or sanitary sewer service is available.”
5. Where possible, water and sewer lines that are installed parallel to subdivision roads shall be laid within the road right-of-ways. Otherwise, utility easements shall be provided as deemed necessary to provide for access and maintenance. A note shall be placed on the Final Plat stating:

“A blanket easement is granted to the appropriate Public Service District in all road right-of-ways for construction and maintenance of water and sanitary sewer lines.”
6. A note shall be placed on the Preliminary Plans and Final Plats stating that:

“Service laterals to individual lots or sites shall be installed prior to construction of the finished road pavement surface.”
7. The installation of water and sanitary sewer utility lines and appurtenances shall be inspected and certified by the Public Service District that will own and operate the system. In the event the Public Service District is not able to perform the inspections, an independent professional engineer licensed in West Virginia shall inspect and certify that the system is installed in accordance with the approved plans and permits.

8. Fire hydrants shall be installed in subdivisions served by existing municipal water systems or subdivisions served by a central water system that has at least 60,000 gallons of storage capacity. The hydrant shall have a minimum flow rate of 500 gallons per minute (gpm) at a residual pressure of 20 pounds per square inch (psi).
9. Fire hydrants shall be installed at each street intersection with additional hydrants installed where necessary to provide fire hydrants at a maximum spacing interval of 500 feet or ISO standards, whichever is less. Fire hydrants shall be connected to water lines that are at least 6 inches in diameter. Fire hydrants shall have isolation valves and be designed to drain and prevent freezing.
10. Fire hydrant specifications and thread sizes shall be acceptable to the West Virginia State Fire Marshal and the Jefferson County Volunteer Fireman's Association.
11. Subdivisions with central water systems that do not meet the standards required for the installation and operation of fire hydrants shall provide proper tap connections at the storage site to permit water draws by pumper or tank trucks.
12. Fire service, dry hydrants, and cisterns (underground water storage tanks), where installed, shall meet the specifications and standards as established by the Jefferson County Office of Emergency Management; and shall be acceptable to the Chief County Engineer.

Sec. 3.2 Utilities

All utility transmission lines (e.g., electric, phone, cable, water, sewer, etc.) and service lines within the subdivision or site development project shall be underground.



Division 4.0 Stormwater Management and Erosion & Sediment Control

Sec. 4.1 Erosion & Sediment Control

A. Review and Approval of Erosion & Sediment Control Plans.

1. No changes shall be made in the contour of the land and no grading, excavating, removal or destruction of topsoil, trees, or other vegetative cover shall be commenced, until an erosion and sediment control plan for stabilizing disturbed areas has been reviewed and approved by the Jefferson County Engineer; and until a subdivision Final Plat has been recorded and bonded or a Site Development Plan has been approved and bonded, as may be applicable.
2. The applicant shall submit the erosion and sediment control plan and any supporting computations to the Jefferson County Planning, Zoning & Engineering Departments for review and approval. The erosion and sediment control plan shall contain sufficient information and notes to describe how soil erosion and off-site sedimentation will be minimized. The Jefferson County Planning, Zoning & Engineering Departments shall review the plan to determine compliance with the “West Virginia Erosion & Sediment Control Handbook For Developing Areas” and these regulations. The plan shall serve as a basis for all subsequent grading and stabilization.
3. The Jefferson County Engineer may require that the erosion and sediment control plan be provided on separate plan sheets in the Preliminary Plan and/or Site Development Plan, solely intended to show the erosion and sediment control plan and the related details and notes.
4. All plans must meet the requirements of the West Virginia Department of Environmental Protection’s Construction Stormwater NPDES regulations, as applicable. In the event of conflict between the Jefferson County Subdivision Ordinance requirements and WVDEP requirements, WVDEP requirements shall prevail.
5. Approval of the Site Development Plan and/or Preliminary Plan by the Jefferson County Engineer shall constitute approval of the erosion and sediment control plan.

B. Contents of the Erosion and Sediment Control Plan.

1. The applicant is responsible for submitting an erosion and sediment control plan which meets the requirements of the Jefferson County Engineering Department, this Ordinance, and the “West Virginia Erosion & Sediment Control Handbook For Developing Areas.” The plans shall include sufficient information to evaluate the potential impacts of the proposed grading on water resources and the effectiveness and acceptability of measures proposed to minimize soil erosion and off-site sedimentation.
2. The erosion and sediment control plan shall be submitted as a part of the application for subdivision Preliminary Plan or Site Development Plan approval. The erosion and sediment control plan shall include, at a minimum, the following information:
A plan at an appropriate scale indicating at least:
 - a. North arrow and graphic scale.

- b. Symbol key for all erosion and sediment control measures (i.e., stabilized construction entrance, silt fence, check dams, culvert inlet protection, etc.) shown on the plan.
- c. The existing and proposed topography/grading contours.
- d. The limits of the disturbed area.
- e. Storm drainage provisions, including velocities and peak quantities of the Q10 flow at outfalls.
- f. Erosion and sediment control provisions to minimize erosion and prevent off-site sedimentation including:
 - 1) Provisions to preserve topsoil and limit disturbance;
 - 2) Details of grading practices;
 - 3) Design details and construction notes for structural controls; and
 - 4) Details and notes of temporary and permanent stabilization measures including placement of the following notes on the plan:



Erosion & Sediment Control Notes

1. Any area of exposed soil where no construction activity is anticipated for a period of longer than three weeks or has stopped for three weeks shall be temporarily stabilized.
2. Following initial soil disturbance or re-disturbance, permanent stabilization shall be completed within:

Seven calendar days after completion of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1); and

Seven calendar days after reaching final grade for all other disturbed or graded areas.

These provisions do not apply to those areas which are shown on the plan for material storage or for those areas on which actual construction activities are currently being performed.

These time requirements may be extended, as deemed necessary by the Jefferson County Engineer in the event that adverse conditions prevent compliance with the stated time limitations for the completion of permanent or temporary stabilization.
3. Stabilization will be considered adequate when the following conditions are met:
 - a) Water courses, stream banks and drainage easements shall be 100% stabilized and free from erosion and deposition.
 - b) Slopes steeper than 10% shall have at least 98% stable ground cover, as determined by the County Engineer.
 - c) All other areas shall have at least 85% stable ground cover, as determined by the County Engineer.
 - d) Grass vegetation shall have reached a minimum of 3 inches height or have been mowed back to a minimum of 2 inches of height.
4. For all projects adjacent to or within 500 feet of a continuously flowing stream, no grading, excavating, removal or destruction of topsoil, trees or other vegetative cover, or construction activity shall result in point or non-point loading of suspended matter such that turbidity standards spelled out in the Water Resources Board legislative rules are violated. Said standards state that turbidity shall not exceed 10 NTU's over background turbidity when the background is 50 NTU's or less; or have more than a 10 percent increase in turbidity (plus 10 NTU minimum) when the background turbidity is more than 50 NTU's.
5. An off-site borrow pit is (or is not) proposed for this project.
6. Maintenance shall be performed as necessary to ensure that all erosion and sediment control measures are performing as designed. The Jefferson County Engineer may require modifications to an approved plan, require additional sediment and erosion control measures, or cause new plans to be submitted as a result of field inspection revealing the approved plans do not provide adequate protection.
7. All residential and commercial/industrial building lots shall have a stabilized construction entrance installed prior to beginning construction on the lot.
8. The developer/applicant is responsible for ensuring that all clearing, grading, drainage, construction and development is conducted in accordance with the erosion and sediment control plan.

- g. Temporary and permanent seeding specifications, including:
Type of seed (mixture) and application rate;
Type of lime and fertilizer and the associated application rates; and
Type of mulching, application rate, and type of anchoring.
- h. Sequence of construction outlining the installation and maintenance of erosion and sediment controls, including permanent and temporary stabilization and the various stages or phases of earth disturbance and construction. The sequence of construction shall, at a minimum, outline the sequence for the installation of erosion and sediment control devices for the following applicable activities:
- 1) Installation of the stabilized construction entrance;
 - 2) Clearing and grubbing for those areas necessary for installation of perimeter controls;
 - 3) Construction of perimeter controls (i.e. dikes, silt fence, sediment traps, sediment basins, etc.);
 - 4) Remaining clearing and grubbing;
 - 5) Road grading;
 - 6) Grading of ditch lines and drainage swales;
 - 7) Utility installation;
 - 8) Grading for stormwater management facilities
 - 9) Grading for the remainder of the site;
 - 10) Final grading, landscaping or stabilization;
 - 11) Maintenance schedule for all E & S control devices; and
 - 12) Removal of temporary erosion & sediment controls.
- i. Any off-site source of borrow materials that is located in Jefferson County, and not regulated directly by an agency of the State or Federal governments, shall be so noted on the erosion and sediment control plan and an erosion and sediment control plan shall be provide for the borrow pit.
If no off-site borrow source is proposed, it shall be so noted on the erosion and sediment control plan.
- j. The following note shall be placed on the Site Development Plan, Preliminary Plan, and Final Plat of subdivision:
“All residential and commercial/industrial building lots shall have a stabilized construction entrance installed prior to beginning construction on the lot.”
- k. Computations as may be necessary to show adequate sizing of erosion and sediment control measures.



3. The Jefferson County Engineer may waive the inclusion of any specific information required by this section that is considered by the County Engineer to not be required or not applicable for the affected site.

C. Modifications to Erosion and Sediment Control Plan.

The Jefferson County Engineer may require modifications to an approved plan, require additional sediment and erosion control measures, or cause new plans to be submitted as a result of field inspection revealing the approved plans do not provide adequate protection. Modifications may also be requested by the developer or engineer of record due to unforeseen field conditions.

Sec. 4.2 Storm Drainage

A. Drainage Culverts.

1. Roadway culverts shall be designed to pass the 10-year, 24 hour storm event without overtopping the roadway at the edge of pavement. Provide calculations in the stormwater management report.
2. Roadway drainage culverts shall be galvanized corrugated metal pipe (CMP) or approved equal by the Jefferson County Engineer. The culverts shall be a minimum of 15 inch diameter or equivalent elliptical/arched pipe size.
3. The outlet end of roadway drainage culverts shall be protected from scour by rip-rap aprons or other energy dissipating devices.
4. Drainage culvert outfalls shall be at a 0% grade (flat) for the length of the rip-rap apron or energy dissipating device. The Jefferson County Engineer may waive this requirement where it is not practical to meet this requirement due to topographic constraints.
5. Roadway culverts shall have a minimum of 12 inches of cover over the pipe.
6. Roadway culverts shall have manufactured end-sections or concrete end walls at the inlet and outlet ends.
7. Profiles of the roadway culverts shall be shown on the Preliminary Plan and/or Site Development Plan, as applicable; and shall show:
 - a. Culvert identification that corresponds with plan view.
 - b. Pipe size, shape, material type & length.
 - c. Inlet and outlet invert elevations.
 - d. Slope of pipe.
 - e. Inlet and outlet end-section type.
 - f. Outfall rip-rap apron/energy dissipation device at 0% grade.
 - g. Q10 flow rate and velocity.
8. Construction details and specifications shall be provided on the preliminary plat and/or site plan, as applicable, for the culvert pipe, outfall aprons, and culvert end sections/wing walls.



9. Individual lot driveway culverts shall be sized for the 10-year storm event; however, the minimum is 15 inch diameter. Driveway culverts shall be galvanized corrugated metal pipe or approved equal by the Jefferson County Engineer.

A table of lot number and driveway culvert size shall be provided on the Preliminary Plan and Final Plat, if applicable.

B. Roadway Ditch Lines.

1. Roadway ditch lines shall be a minimum depth of 1-1/2 feet, with a 4:1 slope in from road shoulder and a 2:1 return slope back out.
2. Roadway ditch lines shall have a minimum linear slope of 1.5%; unless a trapezoidal ditch (minimum 2 feet wide) is used; then a minimum of 0.5% is acceptable.
3. Roadway ditch lines shall not meander and shall be generally parallel to the roadway, except where necessary to direct runoff into culverts, move a ditch to the bottom of a fill slope, or to provide for a suitable discharge point.
4. Ditch line invert treatment shall be provided based on the 10-year, 24 hour storm event flows and the velocity of the water in the ditch line, as shown on Table 4.2-1.

Ditch Material	Maximum Allowed 10-year storm event velocity (feet per second)	Maximum Allowed Ditch Slope (Percent)
Seed & Mulch (Grass)	2.0	3.5
Mesh Ditch Liner	3.0	5.0
Solid Sodding	5.0	10.0
Loose Rip-Rap	7.0	10.0
Concrete Channel	Governed by ability to dissipate energy at outfall to provide a maximum velocity of 4 fps.	

5. The location and type of ditch line treatment and a typical section of the roadway ditch line shall be provided on the Preliminary Plan and/or Site Development Plan, as applicable.

C. Curb & Gutter.

1. Curb & gutter shall be required along all residential subdivision roadways and parking bay areas where the net residential density is equal to or greater than three dwelling units per acre of land (e.g., condominium and townhouse projects).
2. Curb & gutter shall be required along the subdivision streets in non-residential (i.e., commercial and industrial) subdivisions unless exempted by the Planning Commission because of low vehicular traffic.



3. Curb & gutter construction details shall be provided on the Preliminary Plan and/or Site Development Plan as applicable.

Road curbs and gutters shall be constructed of 3,000 psi strength Portland cement concrete. Curbs shall be to a height of no less than six inches above the finished road surface. The base of the curb shall be a minimum of 7-3/8 inches in width. The curb face may slope outward to join a rounded edge having a radius of 1-1/2 inches or more. Other curb designs may be approved by the Jefferson County Engineer.

Drainage gutter and storm drain inlet devices shall be designed to carry the peak flow from a 2-year frequency, 24 hour storm event with a maximum spread of one-half the travel way.

D. Roof Drains.

For all non-residential sites, the building structure roof drain discharge points shall be located so as to avoid icing of walkways, driveways, and building entrances. The location of roof drain discharge points shall be shown or noted on the Preliminary Plan and/or Site Development Plan, as applicable.

E. Drainage Swales.

1. Drainage swales shall be sized for the 10-year, 24 hour storm event. Provide calculations in the stormwater management report.
2. Drainage swale grading and drainage swale details shall be provided on the preliminary plat and/or site plan, as applicable.

F. Storm Sewers.

1. Storm sewer system piping shall be designed for the 10-year storm event. Storm sewer inlets shall be designed for the 2-year storm event. Inlet structures located in a sump shall be checked to prevent curb overtopping during the 10-year event. Provide calculations in the stormwater management report.
2. Storm sewer systems may utilize curb and gutter where needed to capture and divert runoff into storm inlets.
3. Storm sewer pipe shall be galvanized corrugated metal pipe (CMP) or approved equal by the Jefferson County Engineer. The pipe shall be a minimum of 15 inch diameter or equivalent elliptical/arched pipe size.
4. The outlet end of the storm sewer shall be protected from scour by rip-rap aprons or other energy dissipating devices.
5. Storm sewer outfalls shall be at a 0% grade (flat) for the length of the rip-rap apron or energy dissipating device. The Jefferson County Engineer may waive this requirement where it is not practical to meet this requirement due to topographic constraints.
6. Storm sewer pipe shall have a minimum of 12 inches of cover over the pipe.
7. The outlet end of the storm sewer shall have manufactured end-sections or concrete end walls.

8. Profiles of the storm sewer system shall be shown on the preliminary plat and/or site plan, as applicable; and shall show:
 - a. Inlet identification that corresponds with plan view.
 - b. Top and bottom of storm inlet elevations.
 - c. Pipe size, shape, material type & length.
 - d. Pipe inlet and outlet invert elevations.
 - e. Slope of pipe.
 - f. Outlet end-section type.
 - g. Outfall rip-rap apron/energy dissipation device at 0% grade.
 - h. Q10 flow rate and velocity.
 9. Drain inlets in residential subdivisions with closed section roads shall have bicycle safe grates.
 10. Construction details and specifications shall be provided on the Preliminary Plan and/or Site Development Plan as applicable, for the storm inlets and grates, manholes, pipe, end section/wing wall, outfall rip-rap apron, curb and gutter, etc.
- G. Drainage Easements.
1. Drainage swales shall be located within drainage easements where necessary (i.e., on individual lots, etc.) to retain the right to convey runoff from roadway ditch lines and common areas to stormwater management facilities; and to provide access for maintenance of the drainage swale.

Drainage swale easements shall be sized to contain the 10-year, 24 hour storm event flow within the easement. Drainage swale easements shall be a minimum width of 15 feet.
 2. Storm sewer systems shall be located within drainage easements where necessary (i.e., on individual lots, etc.) to retain the right to convey runoff and to provide access for maintenance of the storm sewer system.

Storm sewer system easements shall be a minimum width of 15 feet. The Staff has the authority to require larger storm sewer drainage easements when large pipe diameters and/or bury depth make a 15 foot wide easement impractical for access, maintenance or replacement of the storm sewer.
 3. Drainage easements shall be shown on the Final Plat.

Sec. 4.3 Stormwater Management

A. Quantity Control.

1. A hydrologic analysis for calculating the water shed runoff for both the pre-development and post-development conditions shall be provided and based on the 24-hour rainfall event. This may be done using the NRCS methodologies (i.e., TR-20 & TR-55, etc.) that takes into consideration the ground cover, time of concentration, area of the watershed, and the 24 hour rainfall amount and rainfall distribution for the region; or any other



acceptable methodology in the public domain and approved by the Jefferson County Engineer.

The hydrologic analysis shall be modeled as outlined in Table 4.3-1, *Stormwater Management – Quantity Control Criteria*. Provide the hydrologic analysis and calculations in the stormwater management report.

- 2. Stormwater quantity control shall be provided that reduces the post development runoff rate from the site such that it does not exceed the “Karst adjusted” pre-development runoff discharge. For sites located adjacent to the Potomac River, Shenandoah River or the Opequon Creek, stormwater quantity control may use the “quick release” approach to reduce the impact on the receiving stream’s peak discharge. Use of the quick release approach shall be justified based on engineering analysis and approved by the County Engineer on a case-by-case basis.

Quantity control may be provided by stormwater detention and retention basins, underground detention storage infiltration basins or trenches, and/or any other means approved by the Jefferson County Engineer. Provide the hydrologic and hydraulic routing calculations and analysis in the stormwater management report.

- 3. The runoff from any pre-development area draining to a sinkhole shall not be counted in the calculation of the pre-development runoff from the site.
- 4. Table 4.3-1 provides for reduction of the predevelopment flows due to the Karst geology characteristics of Jefferson County. This results in lower pre-development runoff rates for the 1-year, 2-year, 10-year, and 100-year, 24-hour storm events.

The Karst adjustment factors shown in Table 4.3-1 shall only apply to the area of the county depicted as Karst on Map 4.3-1, *Karst Geology Map of Jefferson County*.

- 5. An off-site stormwater management facility may be used instead of an on-site facility when:
 - a. An adequate route of conveyance between the site and the off-site facility exists, or will be built as part of the project; and
 - b. The off-site facility has the capacity or can be retrofitted to meet the criteria stated above; and
 - c. The developer has demonstrated the right to convey the runoff and use the off-site stormwater management facility.
- 6. The emergency spillway and principal spillway outfalls shall be constructed in a cut section only (to prevent erosion and collapse of the basin embankment) and shall maintain a flat (0%) grade to the end of the designed length of the outfall rip-rap, plunge pool or other approved outfall spreader.
- 7. Where the outfall of a stormwater management facility is less than 75’ from the immediate downstream property line, the outfall rip-rap apron shall be depressed six inches at the property line to create a plunge pool.



8. Where a stormwater management basin exceeds six (6') feet in height above the existing ground, anti-seep devices shall be provided along the principal spillway pipe to prevent "piping" and collapse of the basin embankment. (See standard details)
9. Where a stormwater management basin embankment exceeds ten (10') feet in height above the existing ground, a dam breach/failure analysis is required identifying the potential for damage to homes, buildings, roads, utilities, etc.
10. All stormwater management basin embankments shall have core trenches consistent with the size of the embankment.

The Natural Resources Conservation Service (NRCS) Pond 377 & 378 Engineering Standards shall be used as a guide for designing pond embankments, spillways, anti-seep collars and core trenches, etc; unless another standard is approved by the County Engineer.

11. All stormwater management basins shall be able to pass the 100-year, 24-hour storm event with a minimum of one foot of freeboard.
12. The stormwater management basin shall have a minimum slope of 1.0% across the bottom and slope toward the low flow outlet at the control structure to ensure that the pond drains; and to prevent the puddling of water after the basin has emptied. This requirement does not apply to stormwater management basins designed as shallow marsh wetlands and/or stormwater retention basins.

Finish contours/grades and/or spot elevations shall be provided on the Preliminary Plan or Site Development Plan, as applicable, detailing the bottom of pond grading.

13. Infiltration rates for infiltration basins shall be determined from percolation tests performed by a licensed septic installer or a licensed geotechnical engineer; or based on the NRCS Soils Manual for Jefferson County using infiltration rates for the soil type at the site. The method used shall be approved by the Jefferson County Engineer.
Infiltration basins shall be designed to infiltrate/empty within 72 hours after the storm event has ended.

14. Stormwater management easements shall be provided where necessary to provide for access and maintenance of the stormwater management facilities. All easements shall be shown on the Preliminary Plans and Final Plat.

For stormwater detention, retention and infiltration basins, the limits of the 100-year, 24-hour storm event storage elevation shall be delineated on the Preliminary Plan and/or Site Development Plan, as applicable. The stormwater management facility and the limits of the 100-year storm event storage limits shall be located within a lot/common area specifically designated for stormwater management purposes; or a stormwater management easement shall be provided that provides access to and contains both the stormwater management facility and the 100-year storm event storage limits. The limits of the 100-year storm event shall not encroach into a roadway.

All other stormwater management facilities shall have easements where necessary to provide for access and maintenance.



15. The stormwater management plan and report shall demonstrate adequate downstream conveyance of stormwater discharge from the site.

The capacity should be determined of the existing downstream storm drainage system to convey runoff discharged by a project to natural streams and rivers. If the capacity is less than the pre-development runoff rate, then the capacity of the storm drainage system shall be used as the allowable release rate.



Table 4.3-1

**Stormwater Management
Quantity Control Criteria**

	Criteria	1-Yr & 2-Yr Storm	10-Yr Storm	100-Yr Storm
1.	Conditions under which stormwater management is required.	All Sites	All Sites	Sites located within the upper two-thirds of the drainage basin as measured from the Potomac or Shenandoah Rivers, or Opequon Creek; and which are located within a "growth" area; and which have a FEMA designated floodplain on or adjacent to the site.
2.	Allowable Assumptions for Pre-development land use.	Model as Wooded, Meadow, or existing Orchard	Model as land use at present time.	Model as land use at present time.
3.	Typical control Device	Extended Detention + 1-Yr & 2-Yr Low Flow Orifices + Principal Spillway	10-Yr High Weir + Principal Spillway	Highest Weir for control, or if not controlled, provide emergency overflow spillway cut into existing ground or size the principal spillway to pass the 100-Yr Storm Event.
4.	Minimum adjustment of Pre-development runoff for Karst Geology.	Apply 100% to all on-site drainage area and pro-rate off-site based on % of undeveloped off-site area in the total off-site drainage area.	Pro-rate based on % of undeveloped on-site & off-site area in the total drainage area.	Pro-rate based on % of undeveloped on-site & off-site area in the total drainage area.

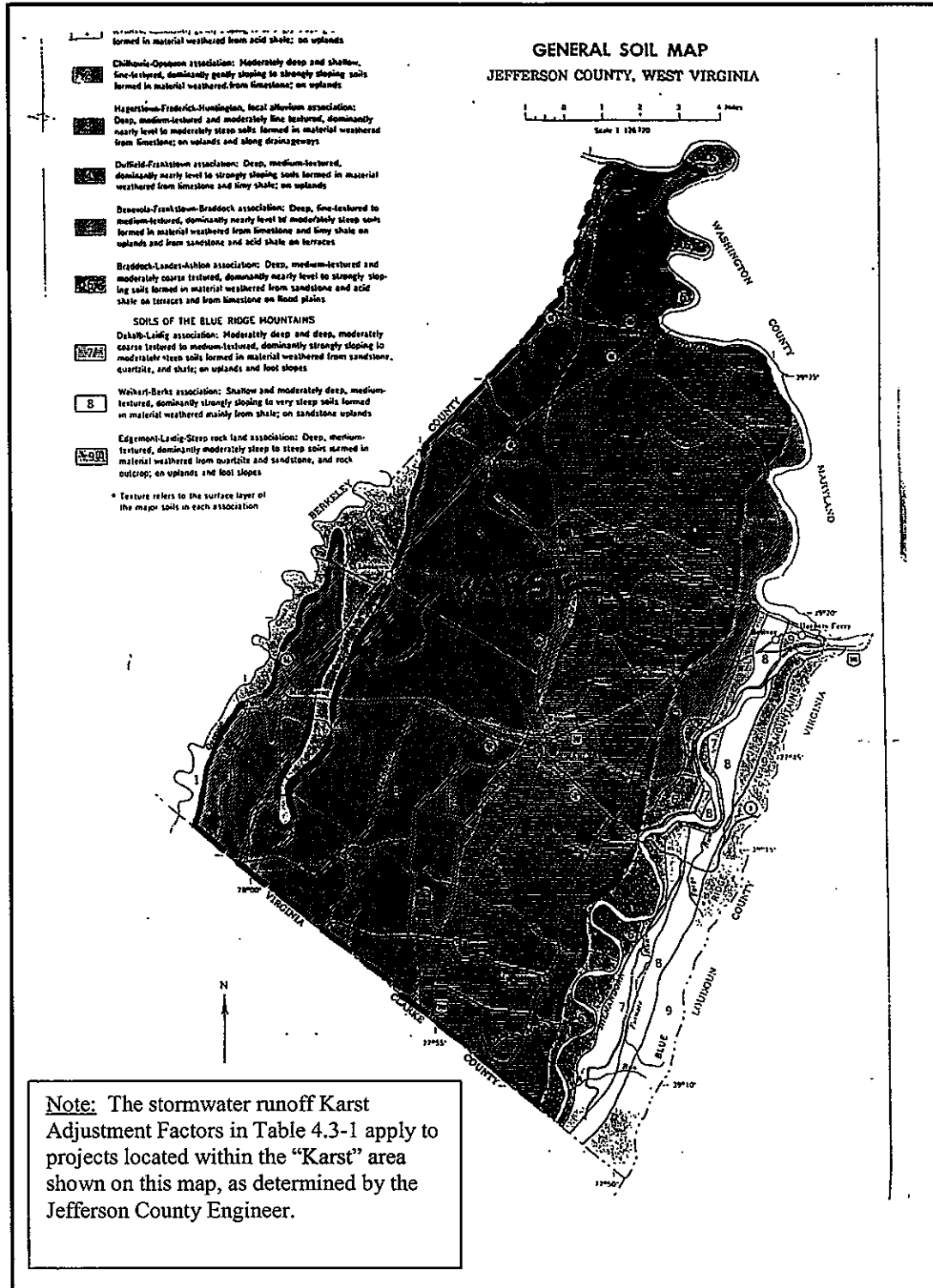
Karst Geology – Runoff Adjustment Factors

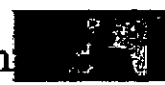
% Karst	Multiply Pre-Development Peak Discharge by Factors Below		
100	0.33	0.43	0.50
90	0.34	0.46	0.56
80	0.38	0.51	0.62
70	0.47	0.58	0.68
60	0.55	0.66	0.74
50	0.64	0.73	0.80
40	0.73	0.80	0.85
30	0.82	0.86	0.89
20	0.91	0.92	0.93
10	1.00	0.98	0.97
0	1.00	1.00	1.00

Note: Post-development runoff adjustment may be made for Karst in large lots subdivisions only, based on 1-acre per lot plus the area of road rights-of-way modeled as "disturbed area," with the remaining undisturbed area considered Karst area. Such adjustment shall be reviewed and approved by the County Engineer on a case by case basis.



Map 4.3-1
Karst Geology Map of Jefferson County





B. Quality Control.

1. There are two options for providing quality control at stormwater management basins:
 - a. Provide extended detention whereby the 1.25” storm event post development runoff from the project is stored and released in not less than ~~over~~ a 24 hour period and not more than a 72 hour period; or
 - b. Provide quantity control of the 1-year 24 hour storm event.
 - c. Provide a wet pond. The design of wet ponds for quality control shall be approved on a case-by-case basis by the County Engineer. Stormwater retention (wet ponds) ponds and infiltration basins do not require extended detention.
2. Stormwater management basins may be utilized as temporary sediment basins during the construction phase by providing 3600 cubic feet of storage volume per acre of area. Half the volume shall be in a permanent pool and half shall be in dry storage. Sediment basins must be able to de-water the dry storage volume in 48 to 72 hours.

The temporary sediment basin shall be converted to a permanent stormwater management facility once construction is complete and the site is stabilized.

3. Stormwater management basins for commercial & industrial sites shall have vegetation capable of enhancing water quality. Constructed wetland and bio-retention designs are acceptable in this case.
4. For sites that do not have a stormwater management basin or are using a basin that does not have water quality features, then separate water quality facilities shall be provided that filter the volume of water resulting from the first ½ inch of runoff from paved areas, vehicle travel ways and parking areas.

Note: The only site that this presently applies to is the Bardane/Burr Industrial Park. Central stormwater management is provided; however, each individual commercial site is required to provide its own stormwater quality control facility/basin.

C. Stormwater Management Plan & Report.

1. Provide on the Preliminary Plan and/or Site Development Plan, all grading, details and construction notes for all stormwater management features/facilities.
2. A Stormwater Management Report shall be submitted with the subdivision Preliminary Plan and/or Site Development Plan, as applicable, including but not limited to the following:
 - a. Report in a binder and signed, sealed, and dated by the engineer of record.
 - b. Storm drainage maps for “pre” and “post” development conditions with the watershed divides, time of concentration flow path, and the type of flow and flow length.
 - c. Soil types delineated on the drainage maps.



- d. Show on the drainage maps, all off-site structures within 200 feet downstream of any stormwater management drainage or discharge point.
- e. A narrative of the analysis and modeling of the stormwater runoff and routing of the stormwater management facilities. The following is a guide of key points that may be included:
 - 1) Location of the project site
 - 2) The size/acreage of the site.
 - 3) Description of the adjacent properties (i.e., roads, schools, residential, commercial development, etc.)
 - 4) General topographic description of the site (i.e., rolling terrain, hilly, flat, streams, rock out-crops, etc).
 - 5) Description of the soils and the hydrologic soil classifications (A, B, C or D).
 - 6) Pre & Post development site conditions.
 - 7) Methodology (i.e., TR-55, TR20, etc.) used to calculate the runoff and to model the SWM facilities and route the runoff hydrographs.
 - 8) Table of Pre-development runoff calculations, Karst adjustment factors, Karst adjusted allowable runoff, Post-development runoff, and the routed SWM pond discharge rates.
 - 9) Description of the type of stormwater management facilities proposed for providing quantity control of the stormwater runoff.
 - 10) The calculations and description of the stormwater management facilities proposed for providing stormwater quality control.
 - 11) Description of storm drainage features proposed (i.e., road culverts, storm sewer system, etc.)
 - 12) Provide all calculations for determining runoff rates, routed discharge rates, sizing of culverts and storm sewer systems, etc.
- f. Any other information deemed necessary by the Jefferson County Engineer for determining compliance with these regulations.

D. Other Systems for Retention or Detention

The following are Low Impact Development (LID) techniques that can be used to minimize the impact of impervious surfaces by reducing connected impervious surfaces to a minimum, thereby reducing the area and cost of mitigation techniques. Use of these techniques are encouraged and preferred when traditional stormwater management measures are not feasible.

- 1. **Water Gardens.** Convey drainage from rooftops or drives to water gardens. The water garden shall be landscaped with natural vegetation that includes unmowed groundcovers and woody plants that can tolerate periodic inundation. When conveying the roof runoff



to open spaces with natural vegetation, care must be taken to assure sheet flow, not channelized flow, to prevent erosion.

2. **Rain Barrels or Cisterns.** Rain barrels or cisterns can be designed into the buildings or yards so that roof runoff is directed to these storage facilities and used for beneficial purposes such as lawn watering, vehicle washing, or other nonpotable purposes. A variety of commercial products are available for this purpose. Their installation must be partly assured by the subdivider's surety.
3. **Pervious pavements.** Driveway, parking areas, or sidewalks may be constructed from pervious concrete to provide infiltration of runoff. Pervious concrete or asphalt is recommended for minor roads or heavily used parking areas. Concrete or other containment structures that hold gravel or turf are recommended for driveways or low use parking areas.
4. **Vegetated swales.** These shall be used unless the subdivider can show they are impractical or that the slopes would result in erosion.
5. **Swale Blocks.** The swale block is installed at intervals along a vegetated swale to allow the water to build up into a series of pools, slowing water flow and allowing the vegetation to assist in cleaning the water and settling out solids. The blocks shall be slotted to allow them to drain down and have a notch to permit maximum flows during the 50-year storm without overflowing the swale. Their use slows flows and decreases pollutant loading and the detention facilities shall be sized to account for the reduction in flows.
6. **Green Roofs.** The use of green roofs, roofs that have been planted in vegetation, shall be strongly encouraged for buildings with roof areas in excess of 20,000 square feet. These provide both stormwater storage and cleaning of the water.

Sec. 4.4 Definitions

The following definitions describe the meaning of the terms used in Appendix B, Division 4.0, *Stormwater Management and Erosion & Sediment Control*.

“Adverse impact” means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses which are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

“Applicant” means any person, firm, or governmental agency who executes the necessary forms to procure official approval of a project or a permit to carry out construction of a project.

“Aquifer” means a porous water bearing geologic formation generally restricted to materials capable of yielding an appreciable supply of water.

“Best Management Practice (BMP)” means a structural device or nonstructural practice designed to temporarily store or treat stormwater runoff in order to mitigate flooding, reduce pollution, and provide other amenities.



“Clearing” means the removal of trees and brush from the land but shall not include the ordinary mowing of grass.

“Detention structure” means a permanent structure for the temporary storage of runoff, which is designed so as not to create a permanent pool of water.

“Develop Land” means to change the runoff characteristics of a parcel of land in the conjunction with residential, commercial, industrial, or institutional construction or alteration.

“Drainage area” means that area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ridge line.

“Easement” means a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

“Exemption” means those site development activities that are not subject to the stormwater management requirements of this Ordinance.

“Extended detention” means a stormwater design feature that provides gradual release of a volume of water in order to increase settling of pollutants and protect downstream channels from frequent storm events.

“Flow attenuation” means the prolonging the flow time of runoff to reduce the peak discharge.

“Grading” means any act by which soil is cleared, stripped, stockpiled, excavated, scarified, filled or any combination thereof.

“Infiltration” means the passage or movement of water into the soil surface.

“Off-site stormwater management” means the design and construction of systems necessary to control stormwater for more than one development.

“On-site stormwater management” means the design and construction of systems necessary to control stormwater within an immediate development.

“Retention structure” means a permanent structure that provides for the storage of runoff by means of a permanent pool of water.

“Retrofitting” means the construction of a structural BMP in a previously developed area, the modification of an existing structural BMP, or the implementation of a nonstructural practice to improve the water quality over current conditions.

“Sediment” means soils or other surficial materials transported or deposited by the action of wind, water, ice, or gravity as a product of erosion.

“Site” means any tract, lot or parcel of land or combination of tracts, lots or parcels of land, which are in one ownership or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision, or project.

“Stabilization” means the prevention of soil movement by any of various vegetative and/or structural means.

“Stormwater management” means:



For quantitative control, a system of vegetative and structural measures that control the increased volume and rate of surface runoff caused by man-made changes to the land; and

For qualitative control, a system of vegetative, structural, and other measures that reduce or eliminate pollutants that might otherwise be carried by surface runoff.

“Stormwater management plan” means a set of drawings or other documents submitted by a person as a prerequisite to obtaining a stormwater management approval, which contain all of the information and specifications pertaining to stormwater management.

“Stripping” means any activity which removes the vegetative surface cover including tree removal, clearing, grubbing and storage or removal of topsoil.

“Waiver” means the relinquishment from stormwater management requirements by the Jefferson County Engineering Department for a specific development on a case-by-case basis.

“Watercourse” means any natural or artificial stream, river creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash, in and including any adjacent area that is subject to inundation from overflow or flood water.

“Watershed” means the total drainage area contributing runoff to a single point.



Division 5.0 Requirements for Townhouses

Section 5.1 Minimum Requirements and Standards

- A. The requirements and standards of Division 5.0 are minimal and are not intended to discourage the use of higher standards by subdividers who wish to achieve more desirable results. The Planning Commission may specify additional requirements where, owing to unique or unusual characteristics, the purposes of this Ordinance can be better served.
- B. The provisions of Division 5.0 are in addition to the requirements for conventional subdivisions found in Appendix A, *Plan & Plat Standards*, and Appendix B, *Engineering Standards*. In the event of a conflict between a requirement of the Appendices and Division 5.0, then the requirement of Division 5.0 shall apply.

Section 5.2 Plat/Plan Requirements

- A. In townhouse development, the developer shall submit the necessary, Preliminary Plan and Final Plat in accordance with the procedures defined in this Ordinance and the Uniform Common Interest Ownership Act (UCIOA), Chapter 36B of the West Virginia Code.
- B. See Appendix A, *Plan & Plat Standards*, for general plan/plat requirements.

Section 5.3 Design and Construction Requirements

In addition to the requirements of Appendix B, *Engineering Standards*, the following requirements specific to townhouse subdivisions shall apply:

- A. Roads and Rights-of-way Specific to Townhouse Subdivisions
 - 1. Townhouse projects shall generally have two entrances and the access to public roads shall be in accordance with Appendix B, Section 2.3, *Subdivision and Site Development Access Management*.
 - 2. Townhouse subdivision roads and rights-of-way that are designed as dead-end streets shall terminate in:
 - a. Parking areas with adequate turn-around area for emergency vehicles; or a
 - b. Circular cul-de-sac turn-around with a minimum right-of-way diameter of 100', a pavement diameter of 80', and a fillet radius of 20'. Turnarounds shall be landscaped in the center with trees, shrubs or other suitable vegetation.
 - 3. Roadways/streets and right-of-way shall be in accordance with Appendix B, Section 2.2, *Streets*. However, townhouse development roads shall be a closed section with a minimum of twenty-four (24) foot width for vehicular drives.
 - 4. Townhouse units shall have a conveniently located minimum 1000 sq.-ft. (i.e., 10' x 100') bus/mail box cluster pull-off area. Such area shall be asphalt paved the same as the roadway pavement section.
- B. Curbs, Gutters, Sidewalks Specific to Townhouse Subdivisions
 - 1. Road and parking area curbs and gutters shall be constructed in all townhouse subdivisions.



2. Sidewalks shall be constructed in all townhouse subdivisions to provide for pedestrian movement from parking areas to building entrances and for pedestrian movement between buildings.

Sidewalks will be located at or near the curb behind the planting strip and in front of all dwelling units. All other areas will have sidewalk on at least one side of the road. Sidewalks will be a minimum of four (4) feet wide.

Where a sidewalk is located outside of a road right-of-way, it shall be identified by a separate platted right-of-way.

3. Roadway curbs and gutter, and sidewalks shall be constructed in accordance with Appendix B, Section 2.2.K, *Curbs, Gutters & Sidewalks*.
4. Right-of-way will be located a minimum of one (1) foot in back of the sidewalk; and a minimum of three (3) feet from the back of the curb in areas where sidewalks are not required.
5. A minimum five (5) foot public access easement shall be provided between all buildings, as approved by the County Engineer and Staff.

C. Storm Drainage and Erosion Control Specific to Townhouse Subdivisions

Storm water management, storm drainage and sediment and erosion control shall be provided in accordance with Appendix B, Division 4.0, *Storm Water Management and Erosion & Sediment Control*.

D. Utilities

1. Townhouse subdivisions shall have public/central water and sanitary sewer systems.
2. Fire hydrants shall be provided in all townhouse subdivisions in accordance with Appendix B, Section 3.1.B.9 & 3.1.B.10. However, fire hydrant spacing shall be a maximum of 500 feet, or pursuant to the rating agency (ISO), whichever is less.
3. All utilities shall be underground and provided in accordance Appendix B, Division 3.0, *Utilities and Water & Sanitary Sewer Systems*.

E. Street & Parking Area Lighting

All townhouse subdivisions shall be furnished with outside lighting units to illuminate sidewalks, parking areas and roads. Lighting units shall be placed at intervals of 125 feet maximum; or as required by the Zoning Administrator. Lighting shall be in accordance with the Zoning Ordinance and Appendix B, Section 2.6, *Street and Parking Area – Outside Lighting*.

F. Lots and Setbacks.

Townhouse lot and building standards shall be consistent with the requirements of Section 3.303, *Planned District Housing Types*, of the Zoning Ordinance. In addition:

1. No more than five (5) clusters of townhouses may be located on a dead-end drive.
2. A group/cluster of townhouses shall not contain more than six (6) units with a continuous front, or eight (8) units total in a building of any geometric configuration.



G. Screening

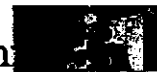
1. Street trees shall be planted along the townhouse subdivision streets. Installation of street trees shall comply with standard details as established by the Chief County Engineer.
2. Buffer screening will be provided between common areas and adjoining properties with single family detached residences, in accordance with the Zoning Ordinance.
3. A landscape plan will be submitted, in accordance with Article 8, *Landscaping and Tree Protection*, the Zoning Ordinance, for all common areas.
4. All on-site utilities (i.e., waste water treatment plant, water treatment plant, pump station etc.) and trash dumpsters shall be effectively screened; as required by Article 8, *Landscaping and Tree Protection*, the Zoning Ordinance.
5. In the event of a conflict between the provisions of Section 5.3 herein and Article 8, *Landscaping and Tree Protection*, of the Zoning Ordinance, the provisions of the Zoning Ordinance shall prevail.

H. Parkland

Parkland shall be provided as required by Section 21.106, *Requirements for Parkland*, of the Subdivision Regulations.

I. Parking

1. The minimum number of spaces shall be two (2) per dwelling unit plus 1/4 space for every bedroom.
2. Fifty (50) percent of garage bays plus one driveway space for every lot may be counted toward meeting the total number of parking spaces required.
3. Parking shall be provided in accordance with Appendix B, Section 2.5, *Off-Street Parking Standards*.
4. All parking spaces, except for driveway and garage parking spaces, shall be located within the road right-of-way.



Division 6.0 Requirements for Condominium Subdivisions (Residential & Non-Residential)

Section 6.1 Minimum Requirements and Standards

- A. The requirements and standards of this Section are minimal and are not intended to discourage the use of higher standards by subdividers who wish to achieve more desirable results. The Planning Commission may specify additional requirements where, owing to unique or unusual characteristics, the purposes of this Ordinance can be better served.
- B. The provisions of Division 6.0 are in addition to the requirements for conventional subdivisions found in Appendix A, *Plan & Plat Standards*, and Appendix B, *Engineering Standards*. In the event of a conflict between a requirement of the Appendices and Division 6.0, then the requirement of Division 6.0 shall apply.

Section 6.2 Plan/Plat Requirements

In condominium development, the developer shall submit the necessary, Preliminary Plan and Final Plat in accordance with the procedures defined in this Ordinance and the Uniform Common Interest Ownership Act (UCIOA), Chapter 36B of the West Virginia Code. In the event that a specific provision in the UCIOA is inconsistent with the requirements of a commercial or industrial project, that specific provision shall not apply.

See Appendix A, *Plan & Plat Standards*, for general plan/plat requirements. Additional plan/plat requirements specific to condominium projects are as follows:

- A. Items specific to Condominium plats
 - 1. A project that does not want to separate the building sites for trust, lease or sale shall not have to describe the site by metes and bounds.
 - 2. Show a dimensioned and scaled outline of each site (building site) upon which a principal land use or a principal building is to be located. The position of each building must be referenced to a station along the centerline of an interior subdivision road right-of-way, or other horizontal control approved by the County Engineer.
 - 3. Identify each building site as to approximate acreage, proposed use, size (sq-ft, height & no. of stories) of building.
 - 4. Show the number, location and layout of parking spaces, the location and dimensions of site access entrances and exits, and the location and dimensions of sidewalks.
 - 5. A number to identify each building site.
 - 6. The name and a survey or general schematic map of the entire common interest community.
 - 7. The location and dimensions of common areas, open space or areas to remain undeveloped.
 - 8. A legally sufficient description of any real estate subject to development rights, labeled to identify the rights applicable to each parcel.



9. The extent of any encroachments by or upon any portion of the common interest community.
10. To the extent feasible, a legally sufficient description of all easements serving or burdening any portion of the common interest community.
11. The location and dimensions of any vertical unit boundaries not shown or projected on plans recorded pursuant to subsection (d) of UCIOA and that unit's identifying number.
12. The location with reference to an established datum of any horizontal unit boundaries not shown or projected on plans recorded pursuant to subsection (d) of UCIOA and that unit's identifying number.
13. A legally sufficient description of any real estate in which the unit owners will own only an estate for years, labeled as "leasehold real estate."
14. The distance between noncontiguous parcels of real estate comprising the common interest community.
15. The location and dimensions of limited common elements, including porches, balconies and patios, other than parking spaces and the other limited common elements described in Sections 2-102(2) and (4) of Chapter 36B of the West Virginia Code.
16. In the case of real estate not subject to development rights, all other matters customarily shown on land surveys.
17. A plan/plat may also show the intended location and dimensions of any contemplated improvement to be constructed anywhere within the common interests community. Any contemplated improvement shown shall be labeled as "MUST BE BUILT" or "NEED NOT BE BUILT".
18. The location and dimensions of the vertical boundaries of each unit and that unit's identifying number.
19. Any horizontal unit boundaries, with reference to an established datum, and that unit's identifying number.
20. Any units in which the declarant has reserved the right to create additional units or common elements, identified appropriately.
21. Unless the declaration provides otherwise, the horizontal boundaries of part of a unit located outside a building have the same elevation as the horizontal boundaries of the inside part and need not be depicted on the plats and plans.
22. A final list of restrictive covenants and conditions including any special covenants and conditions requested by the Planning Commission or a final statement of project rules and regulations.
23. A final project development schedule (construction schedule) for all improvements to be installed on the tract.



Section 6.3 Design and Construction Requirements

In addition to the requirements of Appendix B, *Engineering Standards*, the following requirements specific to condominium subdivisions shall apply:

A. Roads and Rights-of-Way Specific to Condominium Subdivisions

1. Condominium projects shall generally have two entrances and the access to public roads shall be in accordance with Appendix B, Section 2.3, *Subdivision and Site Development Access Management*.
2. Condominium subdivision roads and rights-of-way that are designed as dead-end streets shall terminate in:
 - a. Parking areas with adequate turn-around area for emergency vehicles; or a
 - b. Circular cul-de-sac turn-around with a minimum right-of-way diameter of 100', a pavement diameter of 80', and a fillet radius of 20'. Turnarounds may be landscaped in the center with trees, shrubs or other suitable vegetation.
3. Roadways/streets and right-of-way shall be in accordance with Appendix B, Section 2.2, *Streets*. However, condominium development roads shall be a closed section with a minimum of twenty-four (24) foot width for vehicular drives.
4. When condominium units are proposed for residential use, a conveniently located minimum 1000 sq.-ft. (i.e., 10' x 100') bus/mail box cluster pull-off area shall be provided. Such area shall be asphalt paved the same as the roadway pavement section.

B. Curbs, Gutters, Sidewalks Specific to Condominiums

1. Road and parking area curbs and gutters shall be constructed in all condominium subdivisions.
2. Sidewalks shall be constructed in all condominium subdivisions to provide for pedestrian movement from parking areas to building entrances and for pedestrian movement between buildings. Sidewalks shall be a minimum 4 feet width.

Where a sidewalk is located outside of a road right-of-way, it shall be identified by a separate platted right-of-way.

3. Road curbs and gutter, and sidewalks shall be constructed in accordance with Appendix B, Section 2.2.K, *Curbs, Gutters & Sidewalks*.
4. Right-of-way will be located a minimum of one (1) foot in back of the sidewalk; and a minimum of three (3) feet from the back of the curb in areas where sidewalks are not required.

C. Storm Water Drainage and Erosion Control Specific to Condominiums

Storm water management, storm drainage and sediment and erosion control shall be provided in accordance with Appendix B, Division 4.0, *Storm Water Management and Erosion & Sediment Control*.

D. Utilities

1. Condominium projects shall have public/central water and sanitary sewer systems.



2. All utilities shall be underground and provided in accordance the Appendix B, Division 3.0, *Utilities and Water & Sanitary Sewer Systems*.

E. Street & Parking Area Lighting

All condominium subdivisions shall be furnished with lighting units to illuminate sidewalks, parking areas and roads. Lighting units shall be placed at intervals of 125 feet maximum; or as required by the Zoning Administrator. Lighting shall be in accordance with the Zoning Ordinance and Appendix B, Section 2.6, *Street and Parking Area – Outside Lighting*.

F. Building Sites and Setbacks

1. The ratio between building site depth and width shall not exceed 3:1. Building sites with long narrow extensions (pipestems) shall not be permitted even though average depth to width ratios may not exceed 3:1. For corner lots width will be measured parallel to the designated rear line.
2. Acute corners of building sites shall have angles of no less than sixty-degrees, unless otherwise approved by the Engineer due to site limitations or other design considerations.
3. Building site boundary lines shall not extend into road rights-of-way but shall be drawn to the edge of such road rights-of-way.
4. Every building site shall have a minimum road frontage (width) of 80 feet along a platted road right-of-way. Lesser widths may be accepted by the Engineer along road turnarounds.
5. Setbacks separating condominium buildings and adjoining properties shall comply with Division 3.300, *Bulk Regulations*, of the Zoning Ordinance.
6. Minimum spacing between condominium buildings and adjoining properties shall comply with Division 3.300, *Bulk Regulations*, of the Zoning Ordinance.
 - a Between two buildings containing multi-family residential units:
30 feet or the height of the taller of the two buildings, whichever is greater.
 - b Between two buildings containing one single family unit in each building: 17 feet.
 - c Between two buildings containing non-residential uses:
50' or the height of the taller of the two buildings, whichever is greater.
 - d Between a building containing non-residential uses and a building containing any residential use:
100 feet.
7. For buildings which are attached to each other by a common fire-rated party wall (e.g. townhouses or duplexes), the combined units shall be considered a “single building” for purposes of determining minimum spacing between buildings.
8. Lots and setbacks for Residential and Multi-family condominium subdivisions shall be in accordance with Division 3.300, *Bulk Regulations*, of the Zoning Ordinance.



G. Parkland

For residential condominium subdivisions, parkland shall be provided as required by Section 21.106, *Requirements for Parkland*, of the Subdivision Regulations.

H. Parking

1. Parking shall be provided in accordance with Appendix B, Section 2.5, *Off-Street Parking Standards*.
2. All parking spaces, except for driveway and garage parking spaces, shall be located within the road right-of-way.
3. Parking for commercial/industrial condominium subdivisions shall be provided in accordance with the requirements of the Zoning Ordinance for the proposed use.

Parking for residential/multi-family condominium subdivisions shall be provided as follows:

Type of Dwelling Unit	Minimum Number of Parking Spaces per Dwelling Unit
Efficiency (no separate bedroom)	1.00
One Bedroom	1.25
Two Bedroom	1.50
Three Bedroom	2.00
Four-plexes	2.00

Not more than fifty percent of the total area of the minimum required side and rear yards shall be occupied by parking spaces, drives, access roads running between such spaces, turnarounds or other surfaces designed for vehicular use; and no parking spaces or vehicular uses, except entrance drives, shall be located within the minimum required front yard.

I. Surveys

Requirements for surveys shall be as required by State of West Virginia laws governing property surveys, and Appendix B, Section 1.2, *Surveys*. In the event of a conflict, State law shall prevail.

J. Construction Plans and Specifications

Construction plans and specifications shall be submitted in accordance with Appendix A, Section 1.2, *Preliminary Plan or Site Development Plan*; and Appendix B, Section 1.3, *Construction Plans and Specifications*.

K. Construction Practices

Construction practices shall be in accordance with Appendix B, Section 1.4, *Construction Practices*.



Section 6.4 Self-Storage Condominium Subdivisions

Self-storage (commonly referred to as mini-storage) projects that are developed with all units on one parcel, and where the units are for rent or lease, shall be processed as a commercial Site Development Plan.



Division 7.0 Mobile/Manufactured Home Parks & Campgrounds

Section 7.1 Minimum Requirements and Standards

- A. The requirements and standards of this Section are minimal and are not intended to discourage the use of higher standards by subdividers who wish to achieve more desirable results. The Planning Commission may specify additional requirements where, owing to unique or unusual characteristics, the purposes of this Ordinance can be better served.
- B. Mobile/Manufactured home parks and campgrounds are subdivisions with special requirements of their own. The provisions of Division 7.0 are in addition to the requirements for conventional subdivisions found in Appendix A and Appendix B. In the event of a conflict between a requirement of the Appendices and Division 7.0, then the requirement of Division 7.0 shall apply.

Section 7.2 Mobile/Manufactured Home Park Requirements

- A. The following provisions supplement the provisions of Section 2.407, *Mobile Manufactured Home Parks and Subdivisions*, of the Jefferson County Zoning Ordinance. If any of these provisions or standards conflict with those contained in Section 2.407, the provisions contained within this section shall apply.
- B. The design, construction, installation, maintenance, and operation of a mobile/manufactured home park or a mobile/manufactured home park development shall comply with all applicable provisions of this Subdivision Ordinance; and also comply with the mobile home regulations, minimum standards and engineering practices which are approved and acceptable to the West Virginia State Department of Health. All mobile/manufactured home parks shall be reviewed and approved by the West Virginia Department of Health for compliance with their regulations.
- C. The area of each mobile/manufactured home site (building site) shall be a minimum of 4,000 square feet. Each mobile/manufactured home site shall have a minimum road frontage (width) of 40 feet along a platted road right-of-way.
- D. Each mobile/manufactured home site shall provide an adequate stand for the placement of a mobile home unit.
- E. Not more than one mobile/manufactured home unit shall be placed on or above a mobile/manufactured home site. The mobile/manufactured home structure shall be set on the site in accordance with the requirements of the Jefferson County Building Code Enforcement Ordinance and applicable State Codes. The more stringent requirement shall prevail.
- F. All mobile/manufactured homes not set on permanent masonry or concrete foundation walls shall be skirted. Mobile homes shall be skirted with a uniform material; and an access door a minimum size of two feet by two feet shall be constructed in the skirting of each mobile home.
- G. Mobile/manufactured homes and accessory buildings shall be set back a minimum of 20 feet from the front mobile/manufactured home-site lines and 10 feet from rear and side mobile/manufactured home-site lines. No mobile/manufactured home shall be located within a FEMA flood-hazard area.



- H. Mobile homes, structures, and storage buildings, in a mobile/manufactured home park, shall be kept 25 feet back from all exterior property lines and right-of-way lines.
- I. Convenient off-street parking (on each mobile home site or in designated parking areas) shall be provided at the rate of two spaces per mobile home site. Each space shall have a minimum dimension of 10 feet by 20 feet.
- J. Each mobile home stand shall be served by an individual sidewalk a minimum 2 feet in width. All walkways shall be constructed in accordance with Appendix B, Section 2.2.K.3, *Sidewalks & Paths*. Individual sidewalks shall connect with the common sidewalks in the mobile home park, or, to paved off-street parking spaces, or, to paved streets.
- K. Each mobile home site shall provide serviceable connections for water supply, sewage disposal and electricity. Water and sewer connections shall comply with the minimum standards of the West Virginia Department of Health. Electrical connections shall comply with service provider requirements.
- L. Each mobile home park shall be served by a central water supply system.
- M. Each mobile home park shall be served by a central sewerage system. Septic systems are prohibited.

Section 7.3 Campground Requirements

- A. The following provisions supplement the provisions of Section 2.433, *Campgrounds and Recreational Vehicle Parks*, of the Jefferson County Zoning Ordinance. If any of these provisions or standards conflict with those contained in Section 2.433, the provisions contained within this section shall apply.
- B. The area of each campsite shall be a minimum of 1,500 square feet not to include road rights-of-way. Each campsite shall have a minimum road frontage (width) of 20 feet along a platted road right-of-way.
- C. Each campsite shall provide an adequate stand for the placement of a camping unit. A campsite stand shall be at least 15 feet by 25 feet in size, shall be flat, and shall not exceed a 3 percent slope in any direction. No more than one camping unit shall be placed on or above a campsite.
- D. A campsite may contain any combination of water, sewerage or electrical connections. If not provided at campsites, water and sewerage facilities must be provided at convenient comfort stations as determined by the Planning Commission.
- E. Main entrance and primary looping roads – as determined by the County Engineer - within a campground, shall be minimum 22 feet wide asphalt paved with shoulders and ditch lines, the same as the asphalt roadway requirements of Appendix B, Section 2.2.C.2.b, *Residential Subdivision with more than 12 lots*.
- F. Roads within a campground that are not main entrance or primary looping roads – as determined by the County Engineer – shall be a minimum of 20 feet wide gravel with shoulders and ditch lines, the same as the gravel roadway requirements of Appendix B, Section 2.2.C.2.a, *Residential Subdivision with a maximum of 12 lots*.
- G. Convenient off-street parking shall be provided at the rate of 1 space at each campsite; plus 3



additional spaces for each 50 campsites to be located at or near the campground office. Each parking space shall have a minimum dimension of 10 feet by 20 feet. As a minimum, designated parking areas shall be surfaced according to the surfacing requirements for gravel roads. Designated parking areas may not be used for overnight camping or occupancy.

- H. Each campsite shall be provided with a sanitary, covered garbage can.
- I. A campground shall provide at least one sanitary sewerage dump station for every forty (40) or fraction thereof trailer or recreational vehicle hookups, one water refill station and one solid waste disposal collection facility.
- J. As a minimum, design capacities for centralized water and sewerage systems shall be based on the total number of campsites proposed plus 25 percent again to accommodate the tent area (if any), plus an allowance for a sewerage dump station and a water refill station.
- K. All power lines shall be placed underground in a campground. Overhead power lines may be permitted by the Planning Commission where such lines can be effectively screened from view by trees.
- L. Road rights-of-way in a campground shall be a minimum of 50 feet in width.
- M. One-way roads shall be at least 12 feet in width with 3 foot wide gravel shoulders. Drainage ditch lines 1-1/2 feet deep shall be provided at a 4:1 slope from the edge of the shoulder, with a 2:1 return slope back to existing grade.



Division 8.0 – Non-Residential Subdivisions

Section 8.1 General

Non-residential subdivisions shall be subject to all requirements of the Subdivision Regulations except for those requirements which are specifically intended for residences (e.g. Land for Parks and Schools) as determined by Staff.



Division 9.0 Site Development Plan Requirements

Section 9.1 Minimum Requirements and Standards

- A. The requirements and standards of this Section are minimal and are not intended to discourage the use of higher standards by subdividers who wish to achieve more desirable results. The Planning Commission may specify additional requirements where, owing to unique or unusual characteristics, the purposes of this Ordinance can be better served.
- B. The provisions of Division 9.0 are in addition to the requirements for Site Development projects found in Appendix A and Appendix B. In the event of a conflict between a requirement of the Appendices and Division 9.0, then the requirement of Division 9.0 shall apply.
- C. Conditions under which the site development plan requirements may be waived or limited are cited in Section 4.0 of the Improvement Location Permit Ordinance. Staff shall determine whether or not a site development plan may be waived, or only a limited site development plan is required or a full site development plan is required.

Section 9.2 General Information Requirements

- A. Before a site development plan for Heavy Industrial Uses on a parcel can be reviewed, a Community Impact Statement shall be submitted and approved by the Board of Zoning Appeals.
- B. In the event conditions are encountered during construction which make the approved Site Development Plan impractical or excessively costly, field changes may be proposed, in writing, by the developer - through the developer's design consultant - to the County Engineer. The County Engineer will review the proposed changes to determine whether or not the change is major and subject to Planning Commission action. In either case, the Engineer will determine the technical acceptability of the proposed changes. Where said changes are minor, technically acceptable and in accord with the intent of the Ordinances the Engineer may grant a field change. Modified plans will be signed by the appropriate professional and filed with the Planning Commission office.

Section 9.3 Site Access

- A. Site Development access entrances, from either an internal subdivision road or a public road, shall be provided in accordance with Appendix B, Section 2.3.B, *Site Development Access to Public Roads*.
- B. For Site Development projects with site access directly onto a public road (not onto an internal subdivision road) owned and maintained by the West Virginia Division of Highways, site access improvements shall be provided in accordance with Appendix B, Section 2.3.C, *Improvements to State Highways*.

Section 9.4 Internal Vehicular Circulation & Parking

- A. For Site Development projects, internal site vehicular circulation and parking (including handicapped parking) shall be provided in accordance with Appendix B, Section 2.5, *Off-Street Parking Standards*.
- B. The number of parking spaces shall be as required by Section 7.104, *Parking and Loading Requirements Table*, of the Zoning Ordinance.



- C. All parking aisle, parking space, parking stall dimensions, parking width, and off-street loading shall be provided as required by Division 7.200, *Parking and Loading Design*, of the Zoning Ordinance. All parking aisle, parking space and internal site driveway setbacks shall be shown on the land development site plan.
- D. Shared use of parking spaces shall be permitted at the discretion of the Staff. Proposals for shared use of parking spaces must be accompanied by a study and documentation of user hours to demonstrate compatibility of the proposal prepared in accordance with the requirements of Section 7.107, *Mixed Uses and Shared Parking*, of the Zoning Ordinance.
- E. Internal site driveways, (does not include parking area drive aisles) such as those that:
 1. Lead to parking areas; or are
 2. Internal site driveways connecting separated parking bays; or
 3. Provide vehicular access to loading docks, drive-in windows, etc., shall be designed to the following standards unless other design is justified by the design consultant and approved by the County Engineer:

Traffic Flow	Internal Site Driveways Width
Two –Way	22’ to 24’
One-Way	12’ to 14’
Drive-up Window	10’

- F. Internal access driveways serving delivery truck-trailer or truck-semi-trailer combinations shall be designed for a vehicle with an inside tracking radius of 44’.
- G. Loading spaces shall be designated for all building bay door openings 6’ or greater in width. The loading spaces shall not conflict with internal site driveways and parking aisle access. The loading spaces shall not be counted toward satisfying the parking space requirements.
- H. Drive-in service facilities and drive-up windows shall be located and provided with sufficient vehicle queue length such that waiting vehicles will not block internal vehicular circulation or external vehicular access to the site and shall meet vehicle stacking requirements contained in Section 7.205, *Vehicle Stacking Requirements*, of the Zoning Ordinance.

Section 9.5 Parking Area, Entrance and Internal Driveway Paving

- A. Site Development parking lots, entrances and internal driveways for use by the public shall be bituminous asphalt or concrete paved. Paving sections shall be approved by the Engineer. The minimum acceptable bituminous asphalt paving section is as follows:

- 1 ½" Bituminous Concrete Surface Course
- 2 ½" Bituminous Concrete Base Course
- 9" Graded Aggregate Base Course (placed in 2 lifts)

Heavier pavement sections may be required by the County Engineer. The consulting engineer shall take into consideration the soil subgrade strength and load bearing capacity and the type of traffic loads anticipated in preparing the concrete or bituminous asphalt pavement section design.

Section 9.6 Curbs, Gutters, & Sidewalks

- A. Curbs, gutters and sidewalks shall be provided to support multi-family residential and non-residential/commercial industrial development when more than three (3) parking spaces are required unless a plan for pedestrian movement, parking management and stormwater management using low impact development technology (LID) and landscaping is demonstrated to achieve equal or better results. Curbs and gutter shall be provided where necessary to convey storm water from impervious areas to storm water management facilities; and shall be in accordance with Appendix B, Section 2.2.K.2, *Roadway Curbs & Gutter*.
- B. Internal site sidewalks and ramps shall be provided where necessary to convey pedestrian traffic from parking areas to buildings; and shall be in accordance with Appendix B, Section 2.2.K, *Curbs, Gutters, & Sidewalks*.
- C. Sidewalks will be provided where required to continue existing public sidewalks or where required to provide pedestrian conveyance between existing developments on either side of the proposed site.

Section 9.8 Site Grading

- A. Site access entrance grades shall be in accordance with Appendix B, Section 2.3.B, *Site Development Access to Public Roads*.
- B. Grades for parking areas and internal driveways shall be in accordance with Appendix B, Section 2.5, *Off-Street Parking Standards*.
- C. Grades for sidewalks shall be in accordance with Appendix B, Section 2.2.K, *Curbs, Gutters & Sidewalks*.
- D. A minimum three foot wide strip, not to exceed 3% grade, shall be provided between the edge of parking areas, internal driveways and/or sidewalks, and the toe or top of slopes that are steeper than a 4:1 slope.
- E. When retaining walls are used, the design thereof shall be certified by a Licensed Professional Engineer licensed in the State of West Virginia. All construction details and specifications shall be provided on the Site Development Plan. The following note shall be placed on the Site Development Plan:

“Retaining walls 4 feet or greater in height require a building permit under the Jefferson County Building Code Enforcement Ordinance. The Owner/Developer is responsible for obtaining the permit.”



Section 9.9 Utilities and Water & Sanitary Sewer Systems

A. General

Utilities and water and sanitary sewer systems shall be provided in accordance with Appendix B, Division 3.0, *Utilities and Water & Sanitary Sewer Systems*.

B. Sanitary Sewer System

The following requirements specific to land development site plans shall also apply:

1. Sanitary sewer connections will have a minimum grade of 2% for gravity flow, a minimum pipe size of 4 inches and will be a minimum of 100 feet from any water well. There is no minimum grade for a pump system.
2. A monitoring manhole will be set on the sewer connection line at the property line if, in the opinion of the local health officials, the proposed uses on the property could result, either by intent or accident, in the introduction of non-septic sewage, oils, chemicals, paint or petroleum products into the sanitary sewer system.
3. Sewer connection sizes will be justified by accompanying computations indicating the daily flow rate (gallons per day) for the proposed use and the minimum required pipe size. This information shall be shown on the land development site plan.

C. Water System

The following requirements specific to land development site plans shall also apply:

1. Water supply demand computations will be provided and will be based on plumbing fixture-unit tables provided by the West Virginia Department of Health. The total daily demand flow rate (gallons per day) shall be shown on the land development site plan.
2. Where sprinkler systems are proposed, the water supply demand calculations shall demonstrate that an adequate supply of water is available for the sprinkler system.
3. In a commercial/industrial subdivision that does not have fire hydrant service installed but has adequate public water service available; the developer shall install a fire hydrant to serve the project site if a fire hydrant is not located within 1,000 feet of the site.

For a land development project located outside a commercial/industrial subdivision where it does not have fire hydrant service within 1,000 feet, but has adequate public water service available; the developer shall install a fire hydrant to serve the project site.

Calculations demonstrating adequate fire flow at the minimum residual pressure - as established by the West Virginia State Department of Health - shall be provided and shown on the site plan.

4. Fire hydrants shall be connected to water lines that are at least 6 inches in diameter. Fire hydrants shall have isolation valves and be designed to drain and prevent freezing.
5. Fire hydrant specifications and thread sizes shall be acceptable to the West Virginia Fire Marshal and the Jefferson County Volunteer Fireman's Association.
6. Fire hydrants set in the right-of-way shall be located two feet back of the sidewalk or in accordance with the standards of the controlling public service district.



D. Underground Utilities

All on-site utility service lines (e.g., electric, phone, cable, fiber optic, water, sewer, etc.) serving the Site Development project shall be underground.

Section 9.10 Storm Water Management

- A. Storm water management, storm drainage and sediment and erosion control shall be provided in accordance with Appendix B, Division 4.0, *Storm Water Management and Erosion & Sediment Control*.
- B. Site Development project on-site stormwater runoff from impervious areas shall be contained for conveyance whenever concentrated flows exceed 2.5 cubic feet per second (cfs) during the ten year event as determined using the Rational Method. Containment may be accomplished using either closed pipe or open channel systems. Open channel systems shall include pedestrian crossings spaced no further apart than 300 feet apart in areas where pedestrian traffic exists. With the approval of the County Engineer, bio-retention methods may be used to minimize the rate of flow.

Section 9.11 Green Space, Open Space & Parkland

Site Development shall comply with the green space requirements established in Section 21.106, *Requirements for Parkland*, of the Subdivision Regulations and the open space and Landscape surface requirements of Section 3.201, *District Standards*, of the Zoning Ordinance.

Section 9.12 Landscaping, Screening and Buffer Yard Requirements

- A. Screening in the form of either vegetation or opaque fencing will be provided on properties used for commercial, industrial, institutional or other non-agricultural or non-residential uses along property lines which adjoin properties used or zoned for any residential use in accordance with Article 8, *Landscaping and Tree Protection*, of the Zoning Ordinance.
- B. Site Development Plans will include a landscape plan meeting the requirements of Article 8, *Landscaping and Tree Protection*, of the Zoning Ordinance
- C. Commercial, industrial or institutional parking lots will contain landscaping in accordance with Section 8.302, *Parking Lot Landscaping*, of the Zoning Ordinance.
- D. Opaque screen fences will be a minimum of six (6) feet high. A sketch of the proposed screen will be submitted for approval with the preliminary plat.
- E. Other requirements are referenced in the Jefferson County Zoning Ordinance.
- F. All on-site utilities and dumpsters shall be effectively screened in accordance with the requirements of Section 2.302F, *Accessory Waste/Trash Storage*, of the Zoning Ordinance.

Section 9.13 Signing

Signing shall be in conformance with all existing Ordinances in Jefferson County and/or State and Federal Law.



Section 10.0 Site Development Plans for Communications Towers

Section 10.1 General

- A. The provisions of Division 10.0 are in addition to the requirements for Site Development projects found in Appendix A, *Plan & Plat Standards*, and Appendix B, *Engineering Standards*. In the event of a conflict between a requirement of the Appendices and Division 10.0, then the requirement of Division 10.0 shall apply.
- B. Any site developed for a communication tower shall require a Site Development Plan. Where the site is located on a lot to be created out of a subdivision of land, then a Preliminary Plan and Final Plat shall also be required.

Section 10.2 Design and Construction Requirements

- A. Entrances
 - 1. The site access road running from the public road or subdivision street to the communications tower site, and which serves no other commercial use and no more than three residences, may be as narrow as 12 feet in width. Otherwise, the site access road shall be in accordance with Appendix B, Section 2.2, *Streets*.
 - 2. The site access road shall have an all-weather gravel surface at least six inches deep.
 - 3. Connection of the site access road to the public road shall be in accordance with West Virginia Division of Highways requirements.
- B. Parking

No delineated parking spaces need be shown on the Site Development Plan.
- C. Landscaping and Screening and Other Site Amenities
 - 1. Landscaping may be limited to perimeter vegetative screening suitable to the Staff.
 - 2. The site is exempt from providing sidewalks.
- D. Stormwater Management and Erosion and Sediment Control

Stormwater management and erosion and sediment control shall be provided to control runoff from the access road and the tower site, in accordance with Appendix B, Division 4.0, *Storm Water Management and Erosion & Sediment Control*.