

City of Pooler – PLAN REVIEW CHECK LIST

PROJECT NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

Please address each item below using a “ok” or “n/a”.

**BASIC ENGINEERING INFORMATION**

1. \_\_\_\_ Development name; If not obvious, add a description of the development;
2. \_\_\_\_ Location of site / location map: Sufficiently detailed to pinpoint the site’s location.
3. \_\_\_\_ Date of plans with space for revision dates;
4. \_\_\_\_ Name and contact information of the engineer and engineering firm responsible for the plans;
5. \_\_\_\_ Name and contact information of owner, authorized agent of the owner, and/or developer.
6. \_\_\_\_ 24 hour contact with phone number;
7. \_\_\_\_ Signed and dated P.E. stamp or other licensed professional as allowed by law;
8. \_\_\_\_ Sheet index;
9. \_\_\_\_ Property size, disturbed area, impervious area, property zoning, maximum building height;
10. \_\_\_\_ Show property boundaries with metes and bounds descriptions;
11. \_\_\_\_ North arrow, graphic scale;
12. \_\_\_\_ Show existing site features of the property, existing contours at 1-foot intervals (Appendix A, Article V, Section 4 C), existing buildings, parking, driveways, undeveloped areas, etc;
13. \_\_\_\_ Identify the ownership and use of all adjacent surrounding properties;
14. \_\_\_\_ Show adjacent roads and curb cuts within 500 feet; (Appendix A, Article V, Section 4 C)
15. \_\_\_\_ Name of adjacent roads. Route number if state or federal route; (Appendix A, Article V, Section 4 C)
16. \_\_\_\_ Show and label the right-of-way of adjacent roads. (Appendix A, Article V, Section 4 C)
17. \_\_\_\_ Existing improvements inside adjacent road right-of-ways such as turn lanes, drainage systems, sidewalks/pathways, utilities, and any other items that may have an impact on this development.
18. \_\_\_\_ Show existing drainage features on or around this site that may impact the development: creeks, ponds, ditches, swales, buffers, pipe systems, drainage easements, existing detention ponds, lakes, wetlands, floodplain limits, etc;
19. \_\_\_\_ Indicate whether or not FLOOD PLAIN exists on the site. Provide a FEMA map reference and date of FEMA map;

20. \_\_\_\_\_ Indicate whether or not STATE WATERS exist on the site. If they do, show the required buffers. (Georgia EPD jurisdiction);
21. \_\_\_\_\_ Indicate whether or not WETLANDS exist on the site. If they do, show the required buffer (Corps of Engineers jurisdiction).
22. \_\_\_\_\_ Location of existing utilities; (Appendix A, Article V, Section 4 C 5)
23. \_\_\_\_\_ Easements existing upon the property;
24. \_\_\_\_\_ Provide cut/fill computations for fill placed in the regulated flood plain, or provide FEMA no-rise certification (NFIP 60.3(d)(3)).

### **PROPOSED DEVELOPMENTS**

1. \_\_\_\_\_ New Developments & redevelopments - reminder: Please assure the bonds are provided in accordance with 42-183.8 (stormwater), 42-204.1 (landscaping), and 74.136 (sidewalks).
2. \_\_\_\_\_ The site plan shall provide all pertinent data for proposed building construction or expansion, proposed parking, open areas, landscaping. (Appendix A, Article V, Section 4 C).
3. \_\_\_\_\_ Show building setback lines and buffers from property lines and street right-of-way lines. (Appendix A, Article V, Section 4 C).
4. \_\_\_\_\_ For commercial and industrial developments, provide details of the proposed driveway(s) onto the public rights-of-way. This may need to be at an enlarged scale to show all necessary information.
5. \_\_\_\_\_ Show sidewalk that is to be constructed or extended; in accordance with Appendix B, Article VI, Section 601.02. Include the City's sidewalk detail.
6. \_\_\_\_\_ Show location of entrance signage if proposed. Make sure site distance is not impacted.
7. \_\_\_\_\_ Show interior traffic pattern.
8. \_\_\_\_\_ Erosion control plans in accordance with State and local ordinances. Checkoff list is required if disturbed area is > 1 acre.
9. \_\_\_\_\_ GDOT permit is required if any work is proposed in a State or US route. A copy of the Georgia DOT encroachment permit approval prior to obtaining a land disturbance permit.
10. \_\_\_\_\_ At least two benchmarks shall be established within a subdivision. Such benchmarks shall be at opposite corners of the property being subdivided. (Appendix B, Article VI, Section 607).
11. \_\_\_\_\_ Show all required easements (around utilities, around drainage structures, 25' access easements, etc);
12. \_\_\_\_\_ Greenbelt required as a buffer between incompatible zonings. (Appendix A, Article III, Section 11).
13. \_\_\_\_\_ Provide a fire access road meeting the requirements of the Fire Code. (Exceptions exist, but generally a paved road extending to within 150' of all portions of the facility with a minimum width of 20 feet and with a vertical clearance of 13'6"). See IFC 503.

**NEW STREETS**

Private streets? \_\_\_\_\_

1. \_\_\_\_\_ If new streets are to be private, clearly indicate this.
2. \_\_\_\_\_ An identifying name of each new street with the proposed right-of-way;
3. \_\_\_\_\_ Street alignment to be in conformance with the approved Preliminary Plat;
4. \_\_\_\_\_ Plan and profile of proposed streets; include profile grades, vertical curve lengths, K factors, etc.
5. \_\_\_\_\_ Maximum street profile change without a vertical curve is 1%.
6. \_\_\_\_\_ Minimum street profile grade is 0.3% (Chapter 74, Article V, Section 74-133f).
7. \_\_\_\_\_ Pavement requirements: 7.5 inches crushed stone base and 1.5 inches asphalt wearing surface. (Chapter 74, Article V, Section 74-133b and c).
8. \_\_\_\_\_ Provide the City's standard details that relate to street construction (street typical section, pavement specifications, curb detail, sidewalk detail, etc.)
9. \_\_\_\_\_ A Neighborhood Grading and Drainage Plan is required for all subdivisions. (Appendix B, Article VI, Section 601.02)
10. \_\_\_\_\_ Verify intersection sight distance is provided;
11. \_\_\_\_\_ Show the location of all proposed R/W monuments – "Stone or concrete monuments four inches in diameter or square, 30 inches long, with a flat top, which shall be set at each street corner, and at all points where the street lines intersect the exterior boundaries of the subdivision, and at the P.C. and P.T. of each street. The top of the monuments shall contain a metal pin or be scored with an indented cross to identify the location." (Appendix B, Article VI, Sec. 605)
12. \_\_\_\_\_ The city will not accept for maintenance any unpaved street or road. (Chapter 74, Article V, Section 74-134)
13. \_\_\_\_\_ Show the location of all proposed road signs;
14. \_\_\_\_\_ Show the location of all proposed pavement markings;
15. \_\_\_\_\_ All pavement markings and other traffic control items shall be in accordance with the latest edition of the MUTCD on both public streets and private streets that are "open to public travel". (MUTCD Introduction, page I-1, paragraph 03).
16. \_\_\_\_\_ Commercial developments: Show traffic control items (directional arrows, stop bars, stop signs, etc).
17. \_\_\_\_\_ Label the curb radius at intersections;
18. \_\_\_\_\_ Gutter spread shall not extend beyond the center of the travel lane for Q10.

**REQUIRED NOTES:**

Include the following notes as applicable to the project:

1. \_\_\_\_ "In case of conflict between these plans and the City of Pooler's ordinances, standards, specifications or details, the City of Pooler standards are to take precedence."
2. \_\_\_\_ Add the following note when new public streets are being constructed: "Laboratory compaction, stability and density tests are required for the pavement with compression for the concrete curb and gutter." (Chapter 74, Article V, Section 74-133g)
3. \_\_\_\_ Add the following note when new public streets are to be constructed: "Construction will be performed under the supervision of a registered engineer." (Chapter 74, Article V, Section 74-133j)
4. \_\_\_\_ "All road signage and pavement markings shall be in accordance with MUTCD specifications." (MUTCD Introduction, page I-1, paragraph 03).
5. \_\_\_\_ Thermoplastic pavement markings are required within right of way (Standard Specifications 02500.2.06).
6. \_\_\_\_ When new public streets are being constructed, include the following: Add a note or sufficient information on the plans to indicate that Petromat, Supex or other suitable material is required within 50 feet of intersections. (Appendix B, Article VI, Section 601.02)
7. \_\_\_\_ Select fill SHALL be use in all roads to be dedicated to the City;
8. \_\_\_\_ Road fill shall be compacted to 100% standard proctor (ASTM D 698);
9. \_\_\_\_ Traffic signs installed inside the public R/W must have High Intensity or Diamond Grade Sheeting.
10. \_\_\_\_ Street name signs shall be provided by the developer. (Chapter 74, Article V, Section 74-135).
11. \_\_\_\_ The owner must certify that all land disturbing and development activities will be completed in accordance with the approved stormwater management design plan (Chapter 42, Article V, Section 42-183.4(6)).
12. \_\_\_\_ The designer must certify that the design meets the requirements of the City of Pooler and the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual, and any relevant local addenda (Chapter 42, Article V, Section 42-183.4(5))

#### **DRAINAGE:**

References: City of Pooler Code of Ordinances, Chapter 74, Article V, Section 74-132; Chapter 42, Article V, Section 42-156; Appendix B, Article VI, Section 602;

1. \_\_\_\_ Internal subdivision drainage to be designed for a minimum of a 10-year 24-hour storm event with immediate runoff. (Chapter 74, Article V, Section 74-132i)
2. \_\_\_\_ Storm drain pipe beneath city maintained streets shall be a minimum of 18 inches in diameter and shall be RCP. (Chapter 74, Article V, Section 74-132a)

3. \_\_\_\_\_ Storm side-drain under driveways and walkways shall be 15 inch minimum. Plastic culverts are acceptable but shall have concrete headwalls to protect the pipe ends. (Chapter 74, Article V, Section 74-132b)
4. \_\_\_\_\_ Metal pipe is not permitted in the city's rights-of-way or easements. (Chapter 74, Article V, Section 74-132c)
5. \_\_\_\_\_ Provide a plan and profile of the proposed storm drainage system; Show the maximum high water elevation for the design-year storm at each structure. The high water elevation must be below street elevation. Show crossing utilities to eliminate vertical conflicts. (Chapter 42, Article V, Section 42-183.4)
6. \_\_\_\_\_ Lot drainage shall be from the rear to the front of lots; 0.5% grade minimum. Exceptions will be considered. (Chapter 74, Article V, Section 74-132d)
7. \_\_\_\_\_ Side lot drainage shall be piped; ditches on side lot lines are not permitted. Exceptions will be considered. (Chapter 74, Article V, Section 74-132e)
8. \_\_\_\_\_ All drainage ditches/canal shall have a maintenance easement. The structure itself shall be in an easement with an additional 25-foot access easement on one side for mechanical cleaning access purposes. Side slopes shall be grassed and shall be 2:1 or flatter. Side slopes shall be constructed in such a manner that they do not erode and can be maintained with riding grass cutting equipment. The soil type encountered will be considered in selecting the proper slope. Slope approval shall be at the discretion of the city, with a laboratory report on the angle of repose. (Ch 74, Article V, Section 74-132f & h).
9. \_\_\_\_\_ Swales less than one foot deep shall be paved a minimum of two feet wide. Swales greater than one foot deep but less than three feet deep shall have a 4(H):1(V) side slope with a permanent stand of grass established on both slopes. (Chapter 74, Article V, Section 74-132g)
10. \_\_\_\_\_ Storm drainage pipe or gutter flow shall not discharge into a swale. A drainage swale or ditch greater than three feet deep shall be piped unless it is a primary or secondary outfall. (Chapter 74, Article V, Section 74-132g).
11. \_\_\_\_\_ Floodplain elevation for 100-year storm shall be shown on the drainage plans. (Chapter 74, Article V, Section 74-132j).
12. \_\_\_\_\_ Minimum lot elevation: finished floor elevations shall be at least one foot above the level of the 100-year flood. The entire lot shall be properly drained. (Appendix B, Article VI, Section 602 e).
13. \_\_\_\_\_ Detention ponds: The peak post development discharge shall not exceed the predevelopment discharge. (Chapter 74, Article V, Section 74-132k; also Sec 601.02)
14. \_\_\_\_\_ Detention ponds: must be located outside wetlands. (Chapter 42, Article V, Sec 42-156)
15. \_\_\_\_\_ The City will not accept detention areas for maintenance or ownership. (Chapter 74, Article V, Section 74-132k)

## **MOBILE HOME PARKS**

1. \_\_\_\_\_ Verify correct zoning.
2. \_\_\_\_\_ Minimum lot size 40' x 100' and a minimum of 4000 sf. (Appendix A, Article III, Section 10 A(2))

3. \_\_\_\_\_ Setback - front: At least 20' from front lot line or 35' from center of road. (Appendix A, Article III, Section 10 B 1)
4. \_\_\_\_\_ Setback -sides: At least 5' with a 20' minimum between manufactured homes; (Appendix A, Article III, Section 10 B 2)
5. \_\_\_\_\_ Setback - rear: At least 5' with a 20' minimum between manufactured homes. (Appendix A, Article III, Section 10 B 3)
6. \_\_\_\_\_ At least two (2) paved parking spaces per lot (Appendix A, Article III, Section 10 C)
7. \_\_\_\_\_ Streets shall be 2-way and a minimum of 20 feet wide. No on-street parking. (Appendix A, Article III, Section 10 I)
8. )) \_\_\_\_\_ Water supply - City of Pooler when available. The development of an independent water supply can be used only upon approval of the county health officer. (Appendix A, Article III, Section 10 D)
9. \_\_\_\_\_ Sewerage disposal - City of Pooler when available. Alternative methods can only be used upon approval in writing by the county health officer. (Appendix A, Article III, Section 10 E)
10. \_\_\_\_\_ Utilities - underground only. (Appendix A, Article III, Section 10 G)
11. \_\_\_\_\_ Street Lights - Street lighting shall be provided, not to exceed 200 feet separation, including park entrance. (Appendix A, Article III, Section 10 H).
12. \_\_\_\_\_ Recreation area - < 25 units: a minimum of 5,000 square feet shall be reserved for recreation. > 25 units, a minimum of 10% of the total area. (This 10% shall not include bodies of water.) Such recreation areas shall be made safe from traffic by an enclosure or other device. (Appendix A, Article III, Section 10J).
13. \_\_\_\_\_ Maximum distance to a fire hydrant shall be 250 feet. (Appendix A, Article III, Section 10 L)

## **UTILITIES:**

References: City of Pooler Code of Ordinances, Chapter 74, Article V, Section 74-138 and Appendix B, Article VI, Section 606

### **General:**

1. \_\_\_\_\_ Look at the overall layout of the water lines. The plan needs to show the location of where it connects to an existing system with all the usual information.
2. \_\_\_\_\_ All utilities are to be installed underground.
3. \_\_\_\_\_ Utilities shall not be placed longitudinally under street pavement. (Chapter 74, Article V, Section 74-138 c)
4. \_\_\_\_\_ Excessive or unnecessary water/sewer crossings. Minimum separation: 10' horizontal and 18" vertical between water & sewer.
5. \_\_\_\_\_ Water mains must be DIP when crossing storm or sewer mains. Include detail W-16.

6. \_\_\_\_ Provide the City-approved street typical section detail that shows the placement location of utility lines. (Chapter 74, Article V, Section 74-139 c)
7. \_\_\_\_ Developments must be served by public water and public sewers when available. (Appendix B, Article VI, Section 606.01)
8. \_\_\_\_ Plans for private water and sewer systems shall be approved by the Chatham County Health Department. (Appendix B, Article VI, Section 606.02)
9. \_\_\_\_ All water and sewer lines running under streets/sidewalks shall be sleeved. (Appendix B, Article VI, Section 606.03)
10. \_\_\_\_ All publicly owned utilities shall be installed in the road rights-of-way or approved access easements. (Appendix B, Article VI, Section 604 and 606.04)
11. \_\_\_\_ Sanitary sewer, water mains, service laterals or other publicly owned utilities shall not be installed behind or between lots without the express approval of the City of Pooler. If allowed the utility will need to be in a proper easement. (Appendix B, Article VI, Section 606, Utilities 2)
12. \_\_\_\_ A #12 gauge solid copper tracing wire shall be installed on all water mains, water laterals, fire hydrants, post hydrants, and/or blow offs and along all sanitary sewer lines, laterals, and force mains. (Appendix B, Article VI, Section 606).

#### **Water:**

1. Fire hydrant spacing:
  - 300 feet maximum in multi-family, commercial & industrial zonings.
  - 500 feet maximum for single family; (Appendix B, Article VI, Section 606.03).
  - 250 feet spacing in mobile home parks (Appendix A, Article III, Section 10 L).
2. \_\_\_\_ All fire hydrants shall be painted yellow. (Appendix B, Article VI, Section 606).
3. \_\_\_\_ Provide Detail W-03 - Standard Fire Hydrant Assembly (Appendix B, Article VI, Section 606).
4. \_\_\_\_ Residential water laterals: 1" diameter minimum. (Appendix B, Article VI, Section 606).
5. \_\_\_\_ Residential water laterals shall be installed no more than 5' feet from the property corner. (Appendix B, Article VI, Section 606 Water 16).
6. \_\_\_\_ The water mains at the cul-de-sac shall be installed around the cul-de-sac thereby eliminating the laterals from being installed under the cul-de-sac. (Appendix B, Article VI, Section 606 Water 14).
7. \_\_\_\_ Water mains in subdivisions shall be 8" diameter minimum. In cul-de-sacs without fire hydrants, the minimum size can be reduced to 4". (Appendix B, Article VI, Section 606).
8. \_\_\_\_ When feasible all water mains shall be looped into the nearest main of the same size or larger size as the line of origin. (Appendix B, Article VI, Section 606).
9. \_\_\_\_ Cut-off valves will be located at all tees where lines are two inches or larger. (Appendix B, Article VI, Section 606.03).

10. \_\_\_\_ All gate valves 4" or larger that are installed on a transmission line shall be installed in a manhole. All gate valves at the entrance of a subdivision that tie into a transmission line shall be installed in a manhole. All other gate valves can be installed in a cast iron valve box with a concrete collar and concrete value marker posts. (Appendix B, Article VI, Section 606 Water 6).

11. \_\_\_\_ All valves shall have a concrete monument with "W/Valve" inscribed on two sides of the monument, installed no more than 6" away from the valve. (Appendix B, Article VI, Section 606 Water 9).

12. \_\_\_\_ All meter connection points must have an approved, reduced pressure backflow device. This includes fire lines, irrigation lines, and domestic supply lines. (Appendix B, Article VI, Section 606).

13. \_\_\_\_ The private water main starts at the property line. Therefore meters and back flow preventers shall be placed at the property line.

14. \_\_\_\_ Minimum cover 3 feet. (Standard Specifications Section 02700 3.01 D).

15. \_\_\_\_ Service laterals under roads are to be sleeved and at least 30" beneath the road surface. (Standard Specifications Section 02700 3.01 F 2).

16. \_\_\_\_ Pipe material: (City of Pooler Standard Specifications, Section 02700 and 02730)

For line size < 4" polyethylene pipe, 200 psi, SIDR-7CTS

For line size 4" - 12" PVC C900 DR 18

For line size > 12" DIP is required. ANSI / AWWA C151 A21.51 and thickness according to ANSI / AWWA C150 A21.50 for pressure class 250. Flange Pipe or Victaulic grooved pipe shall be Pressure Class 350. (Standard Specifications 02700 Section 2.01 A 2)

### **Sanitary Sewer:**

1. \_\_\_\_ Sanitary manholes shall not exceed 350-foot spacing. (Appendix B, Article VI, Section 606, Sewer 1).

2. \_\_\_\_ 8 inches diameter minimum. (Appendix B, Article VI, Section 606, Sewer 3)

3. \_\_\_\_ Minimum size sanitary lateral is 4". (Appendix B, Article VI, Section 606, Sewer 4)

4. \_\_\_\_ Laterals shall connect directly to the manhole when possible, entering at an angle of at least 90 degrees to the direction of flow. (Appendix B, Article VI, Section 606, Sewer 2)

5. \_\_\_\_ Residential sewer laterals shall be installed within 15 feet of the property corner. (Appendix B, Article VI, Section 606, Sewer 9)

6. \_\_\_\_ Please assure that the sanitary sewer cleanouts are flood proofed and designed prevent infiltration of flood waters into the system (Appendix B, Article VI, Section 606.01 and Chapter 50, Section 50-91).

7. \_\_\_\_ Use watertight manhole rings and covers within or below Base Flood Elevation + 1' (Standard Specifications.02720.2.02.G.2)

8. \_\_\_\_ Cleanouts should be provided every 100' and at the bends. Cleanouts located within the pavement should be traffic rated.



9. \_\_\_\_ Try to move manholes out of sidewalk.

10. \_\_\_\_ Pipe Material:

- SDR 26 PVC sewer pipe meeting the requirements of ASTM D3034 for pipes 15" and smaller and ASTM F679 for 18" and larger.
- DIP manufactured in accordance with ANSI A21.51 with thickness according to ANSI A21.50

11. \_\_\_\_ Min cover 3'

12. \_\_\_\_ Drop manholes are required when the 'invert in' is 2.0 feet or more above the 'invert out'. The MH must be a 6' diameter precast MH and conform to ASTM C478. The drop pipe shall be the same size as the influent pipe. All hardware on ductile iron piping associated with drop manholes must be stainless steel. (Standard Specifications Section 02720 2.02).

13. \_\_\_\_ Drop manholes - inside and outside drop manhole details S-7, S-8.

14. \_\_\_\_ Sanitary sewer line - minimum slope:

8"	0.40%	21"	0.10%
10"	0.28%	24"	0.08%
12"	0.22%	27"	0.07%
14"	0.17%	30"	0.06%
15"	0.15%	33"	0.05%
16"	0.14%	36"	0.05%
18"	0.12%	42"	0.04%

### **Grease Traps:**

1. \_\_\_\_ Grease trap is required for restaurants / eating establishments (any establishment with kitchen facilities) with a sampling MH on the effluent side before the sanitary line from the building enters the line. MH to be a minimum of 18 inches in diameter. (Chapter 86, Article V, Division 4, Section 86-226 and 228).

### **Grinder Pumps:**

1. \_\_\_\_ When grinder pumps are necessary, they shall be purchased from the City of Pooler. The pumps will be maintained by the City. Plans should indicate proposed pump locations and the total number of pumps anticipated. (Appendix B, Article VI, Section 606, Sewer 5 and 6)

2. \_\_\_\_ For residential installations show a minimum 5-foot easement for the City of Pooler for the maintenance of the grinder pump and sanitary low pressure lateral. (Appendix B, Article VI, Section 606, Sewer 5).

### **Sanitary Sewer Lift Stations:**

1. \_\_\_\_ The City must approve lift station locations. Lift stations should not be located behind residential homes or commercial property. (Appendix B, Article VI, Section 606, Utilities 3).
2. \_\_\_\_ The lift station shall have a 25-ft (minimum) access easement from a paved public road. (Appendix B, Article VI, Section 606, Utilities 4 and 5).
3. \_\_\_\_ The easement shall provide an all-weather access road at least 15 feet wide, constructed of 8-inches of graded aggregate base with geo-textile fabric (or grid) if necessary to assure stability. (Appendix B, Article VI, Section 606, Utilities 5).
4. \_\_\_\_ The immediate entrance at the paved public roadway to the access easement shall be constructed of a 15' x 15' x 4" thick concrete pad. The concrete shall be 4,000 psi @ 28 days fiber reinforced concrete mixture. (Appendix B, Article VI, Section 606, Utilities 6).
5. \_\_\_\_ The lift station access shall have a vehicle turn-a-round drive provided, unless it is deemed not necessary by the water and sewer superintendent. (Appendix B, Article VI, Section 606, Utilities 7).
6. \_\_\_\_ All lift stations, with three HP or larger motors, shall have a true three phase power supply. No single phase, rotophase, capacitor banks, shall be permissible. (Appendix B, Article VI, Section 606, Utilities 8).
7. \_\_\_\_ All lift stations shall be constructed with submersible pumps only. (Appendix B, Article VI, Section 606, Utilities 9).
8. \_\_\_\_ The city and its engineers shall approve the pump size and manufacturer. (Appendix B, Article VI, Section 606 Utilities 9).
9. \_\_\_\_ All lift stations sites shall be fenced in. The minimum gate opening is 12-foot with a 180 degree gate swing. The fence material can be either wood or cyclone. All fences shall be of privacy manner. (Appendix B, Article VI, Section 606, Utilities 10).
10. \_\_\_\_ The mounting panel for the controls, etc., shall be constructed out of three-inch galvanized post and galvanized support brackets. (Appendix B, Article VI, Section 606, Utilities 11).
11. \_\_\_\_ Lift Stations - Please provide lift station design calculations (flow and anti-flotation).

### **Force Mains:**

Reference: Appendix B, Article VI, Section 606 Utilities 12, Standard Specifications Section 02710

1. \_\_\_\_ Show force main location. All force mains shall be installed in the access easement or public road right-of-way.
2. \_\_\_\_ Identify the size and material type of the force main pipe.
3. \_\_\_\_ Manholes that are the termination point for force mains are be lined with Raven Lining Systems spray-in liner.
4. \_\_\_\_ Force main markers are to be place every 500 feet and at change of direction. Attach the #12 solid copper tracing wire to each marker. (City of Pooler Standards & Specifications Section 02710.3.05).

## **STORMWATER MANAGEMENT**

### References:

- City of Pooler Code of Ordinances, Part 2, Chapter 42, Article V
- Georgia Stormwater Management Manual.
- Coastal Supplement to the Georgia Stormwater Management Manual. (Chapter 42, Article V, Section 42-180.7)

### **Applicability and exemptions (Chapter 42, Article V, Section 42-180.3)**

1. \_\_\_\_ What developments do the City of Pooler Stormwater Management provisions apply to?  
(Chapter 42, Article V, Section 42-180.3 (1))

- a. New development that involves the creation of 5,000 sf or more of impervious cover or that involves other land disturbing activities of 1 acre or more; or
- b. Redevelopment that involves the creation, addition or replacement of 5,000 sf or more of impervious cover or that involves other land disturbing activities of 1 acre or more; or
- c. New development or redevelopment, regardless of size, that is part of a larger common plan of development, even though multiple, separate and distinct land disturbing activities may take place at different times and on different schedules; or
- d. New development or redevelopment, regardless of size, that involves the creation or modification of a stormwater hotspot, as defined by the director;

2. \_\_\_\_ The following activities are exempt: (Chapter 42, Article V, Section 42-180.3 (2))

- a. New development or redevelopment that involves the creation, addition or replacement of < 5,000 sf of impervious cover and that involves < 1 acre of other land disturbing activities;
- b. New development or redevelopment activities on individual residential lots that are not part of a larger common plan of development and do not meet any of the applicability criteria listed above;
- c. Additions or modifications to existing single-family homes and duplex residential units that do not meet any of the applicability criteria listed above;
- d. Development projects that are undertaken exclusively for agricultural or silvicultural purposes within areas zoned for agricultural or silvicultural;
- e. Maintenance and repairs of any green infrastructure or stormwater management practices deemed necessary by the director;
- f. Any part of a land development project that was approved by the director prior to the adoption of this article; and,
- g. Redevelopment activities that involve the replacement of impervious cover when the original impervious cover was wholly or partially lost due to natural disaster or other acts of God occurring

after April 12, 2012.

3. \_\_\_\_\_ Redevelopment projects must handle stormwater run-off in at least one of the following methods. The method(s) selected must be acceptable to the City of Pooler (Section 42-184.8):

- a. Reduce existing site impervious cover by at least 20 percent.
- b. Manage the stormwater runoff from at least 20 percent of the site's existing impervious cover in addition to any new impervious cover. Stormwater shall be managed with criteria selected, designed, constructed and maintained in accordance with the information presented in the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual and any relevant local addenda.
- c. Provide off-site stormwater management practices;

**Stormwater Management DESIGN PLAN** (Chapter 42, Article V, Section 42-183.4)

4. \_\_\_\_ Provide a hydrologic analysis of the EXISTING conditions that includes: (Section 42-183.4 (1))

- a. Existing conditions map;
- b. Describe the existing conditions of each on-site drainage area of the development site (e.g. size, soil types, land cover characteristics);
- c. Describe the existing conditions of off-site drainage areas that contribute runoff to the development site (e.g. size, soil types, land cover characteristics);
- d. Information about the stormwater runoff rates and volumes generated, under existing conditions, in each on-site drainage area of the development site;
- e. Information about the stormwater runoff rates and volumes generated, under existing conditions, in each off-site drainage area that contributes runoff to the development site;
- f. Documentation showing how the existing conditions hydrologic analysis was completed.

5. \_\_\_\_\_ Provide a hydrologic analysis of the PROPOSED conditions that includes: (Section 42-183.4 (2))

- a. Proposed conditions map (Sec 42-183.2(4));
- b. Describe the proposed conditions of each on-site drainage area of the development site (e.g. size, soil types, land cover characteristics);
- c. Describe the proposed conditions of off-site drainage areas that contribute runoff to the development site (e.g. size, soil types, land cover characteristics);

- d. Information about the stormwater runoff rates and volumes generated, under proposed conditions, in each on-site drainage area of the development site;
- e. Information about the stormwater runoff rates and volumes generated, under proposed conditions, in each off-site drainage area that contributes runoff to the development site; and
- f. Documentation (e.g. model diagram) and calculations showing how the proposed conditions hydrologic analysis was completed.

6. \_\_\_\_\_ Provide a POST-CONSTRUCTION STORMWATER MANAGEMENT SYSTEM PLAN that illustrates:  
(Section 42-183.4 (3))

- a. Proposed topography;
- b. Proposed drainage divides and patterns;
- c. Existing and proposed roads, buildings, parking areas and other impervious surfaces;
- d. Existing and proposed primary and secondary conservation areas;
- e. Plan view of existing and proposed low impact development and stormwater management practices;
- f. Cross-section and profile views of existing and proposed low impact development and stormwater management practices, including information about water surface elevations, storage volumes and inlet and outlet structures (e.g. orifice sizes);
- g. Plan view of existing and proposed storm drain infrastructure (e.g. inlets, manholes, storm drains);
- h. Cross-section and profile views of existing and proposed storm drain infrastructure (e.g. inlets, manholes, storm drains), including information about invert and water surface elevations; and
- i. Existing and proposed channel modifications (e.g. bridge or culvert installations).

7. \_\_\_\_\_ Provide a post-construction stormwater management system narrative that includes information about: (Section 42-183.4 (4))

- a. How post-construction stormwater runoff will be managed on the development site, including a list of the low impact development and stormwater management practices that will be used.
- b. It shall also include documentation and calculations that demonstrate how the selected low impact development and stormwater management practices satisfy the post-construction stormwater management criteria that apply to the development site, including information about the existing and proposed conditions of each of the drainage areas found on the development site (e.g. size, soil types, land cover characteristics).

8. \_\_\_\_ Certification by plan preparer that the stormwater management design plan meets the requirements of the City's stormwater management ordinance and the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual, and any relevant local addenda. (Section 42-183.4 (5))

9. \_\_\_\_ Certification by owner that all land disturbing and development activities will be completed in accordance with the approved stormwater management design plan. (Section 42-183.4 (6))

**Inspection and Maintenance Plan:** (Chapter 42, Article V, Section 42-183.5 and Section 42-186.2)

10. \_\_\_\_ An Inspection and Maintenance Agreement and Plan must be submitted. This document is a binding agreement signed by the applicant or owner that is binding on all subsequent owners unless the stormwater management system is dedicated to and accepted by the City. The plan must include the following:

- a. Identification by name or official title the person(s) responsible for carrying out the inspection and maintenance;
- b. A statement confirming that responsibility for the operation and maintenance of the stormwater management system shall remain with the property owner and shall pass to any successive owner;
- c. A provision stating that, if portions of the development site are sold, legally binding arrangements shall be made to pass the responsibility for the operation and maintenance of the stormwater management system to the appropriate successors in title. These arrangements shall designate, for each portion of the stormwater management system, the person(s) to be permanently responsible for its inspection and maintenance.
- d. A maintenance schedule stating when, what, and how often routine inspection and maintenance will occur to ensure proper function of the system. (Section 42-186.2)

**Off-Site Stormwater Management Practices** (Chapter 42, Article V, Section 42-183.9)

11. \_\_\_\_ Off-site or regional stormwater management practice must meet the following criteria:

- a. Located on property legally dedicated to that purpose;
- b. Be designed and sized to meet the post-construction stormwater management criteria presented below;
- c. Provide stormwater quality and quantity control that is equal to or greater than that which would be provided by on-site green infrastructure and stormwater management practices;
- d. Stormwater management practices shall be installed, where necessary, to protect properties and drainage channels that are located between the development site and the location of the off-site or regional stormwater management practice.

12. \_\_\_\_\_ Submit a stormwater management design plan that demonstrates the off-site or regional stormwater management practice will not result in the following impacts:

- a. Increased threat of flood damage or endangerment to public health or safety;
- b. Deterioration of existing culverts, bridges, dams and other structures;
- c. Accelerated streambank or streambed erosion or siltation;
- d. Degradation of in-stream biological functions or habitat; or,
- e. Water quality impairment in violation of state water quality standards and/or violation of any other state or federal regulations.

**Post-construction stormwater management (Section 42-184)**

1. \_\_\_\_\_ **Natural resources inventory** (Section 42-184.1) - Prior to the start of any land disturbing activities, including any clearing and grading activities, site reconnaissance and surveying techniques should be used to complete an assessment of the natural resources, both terrestrial and aquatic, found on a development site. The natural resources inventory shall be completed in accordance with the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual. The preservation and/or restoration of these natural resources may be assigned quantifiable stormwater management "credits" that can be used when calculating the stormwater runoff volumes (sections 42-184.3 through 42-184.7). The green infrastructure practices that qualify for these "credits," and information about how they can be used is provided in the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual.

2. \_\_\_\_\_ **Green Infrastructure Practices** (Section 42-184.2) - Green infrastructure practices shall be used to the maximum extent practical

3. \_\_\_\_\_ **Stormwater runoff reduction** (Section 42-184.3) - The stormwater runoff volume generated by the runoff reduction storm event shall be reduced on-site. A system is presumed to comply with this criteria if:

- a. It includes green infrastructure practices that provide for the interception, evapotranspiration, infiltration or capture and reuse of stormwater runoff, that have been selected, designed, constructed and maintained in accordance with the coastal stormwater supplement to the Georgia Stormwater Management Manual and any relevant local addenda; and,
- b. It is designed to provide the amount of stormwater runoff reduction specified in the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual.

4. \_\_\_\_\_ **Water quality protection** (Section 42-184.4) - Post-construction stormwater runoff shall be adequately treated before it is discharged from a development site. Applicants can satisfy this criteria by satisfying the stormwater runoff reduction criteria (section 42-184.3). However, if any of the stormwater runoff volume generated by the runoff reduction storm event cannot be reduced on the development site, it shall be intercepted and treated in one or more stormwater management practices that provide at least an 80% reduction in TSS loads and reduce nitrogen and bacteria loads to the maximum extent

practical. When seeking to satisfy this criteria through the use of one or more stormwater management practices, applicants shall:

a. Intercept and treat stormwater runoff in stormwater management practices that have been selected, designed, constructed and maintained in accordance with the information presented in the coastal stormwater supplement to the Georgia Stormwater Management Manual and any relevant local addenda; and,

b. Provide adequate documentation to the City of Pooler to show that total suspended solids, nitrogen and bacteria removal were considered during the selection of the stormwater management practices that will be used to intercept and treat stormwater runoff on the development site.

5. **\_\_\_\_\_ Aquatic resource protection** (Section 42-184.5) - In order to protect local aquatic resources from the negative impacts of the land development process, applicants shall provide aquatic resource protection in accordance with the coastal stormwater supplement to the Georgia Stormwater Management Manual.

6. **\_\_\_\_\_ Overbank flood protection** (Section 42-184.6) - Stormwater management systems shall control the peak discharge generated by the overbank flood protection storm event. A stormwater management system is presumed to comply if it is designed to provide overbank flood protection in accordance with the information provided in the coastal stormwater supplement to the Georgia Stormwater Management Manual.

7. **\_\_\_\_\_ Extreme flood protection** (Section 42-184.7) - Stormwater management systems shall control the peak discharge generated by the extreme flood protection storm event. A system is presumed to comply with this criteria if it is designed to provide extreme flood protection in accordance with the information provided in the latest edition of the coastal stormwater supplement to the Georgia Stormwater Management Manual.

Note only: Certification, final inspection and as-built plans - The applicant is responsible for certifying that the project has been completed in accordance with the approved stormwater management design plan. The applicant is also responsible for submitting as-built plans for all green infrastructure and stormwater management practices shown on the approved plan. The as-built plans must show the final design specifications for all green infrastructure and stormwater management practices and must be certified by a licensed design professional such as a landscape architect, professional surveyor or professional engineer. A final inspection shall be conducted by the City staff to confirm the accuracy of the as built plans. (Sec 42-185.3)

## **TREE PROTECTION ORDINANCE**

Reference: City of Pooler Code of Ordinances, Chapter 42, Article VI

**Minimum Tree Coverage** (Section 42-197)



1. \_\_\_\_ Residential tree requirement—A residential lot shall have a minimum of 3 preferred trees, of which one shall be located in the front of the residence. (Chapter 42, Article VI, Section 42-197)

2. \_\_\_\_ Multi-family, commercial and industrial requirement—The minimum allowable post development tree coverage for all development sites shall be 15 existing trees (excluding pine trees and Sweet Gums), eight-inch diameter at breast height (dbh) or larger per acre developable land (excluding buffers and wetlands). Each tree with a diameter of 24 inches dbh or larger (18 inches dbh for Live Oaks) must be designated on the landscape plan and may count as five trees towards meeting the minimum allowable coverage. Each tree with a diameter of 36 inches dbh or larger (30 inches dbh for Live Oaks) must also be designated on the landscape plan and may count as ten trees towards meeting the minimum allowable coverage. (Chapter 42, Article VI, Section 42-197).

### **Significant Trees** (Section 42-198)

3. \_\_\_\_ Significant tree - A tree with dbh of  $\geq 24$ " (except sweet gums and pines). Live oaks with dbh of  $\geq 18$ ".

4. \_\_\_\_ Significant tree - If a significant tree is to be removed, the planting of new trees of the same species, or preferred species if the same species is not available, totaling the same number of inches in diameter will be required. Replacement trees shall have a minimum dbh of six inches.

### **Replacement** (Section 42-199)

5. \_\_\_\_ Replacement trees shall be at least 2" dbh and 8' tall. (Chapter 42, Article VI, Section 42-199).

6. \_\_\_\_ If a developer will be contributing to the city's tree planting program in order to meet the provisions of this ordinance, make a statement on the plans to this effect. (Chapter 42, Article VI, Section 42-199(3)).

### **Parking Lot Coverage** (Section 42-200)

7. \_\_\_\_ Parking lot islands - a 400 sf (min) landscaped island area with at least 1 preferred tree is required for every 12 parking spaces. (Chapter 42, Article VI, Section 42-200)

### **Protection Zones** (Section 42-201)

8. \_\_\_\_ The area within the tree protection zone must be open and unpaved, except where approved pervious pavers may be utilized or tree aeration systems and tree wells are installed. (Chapter 42, Article VI, Section 42-201).

9. \_\_\_\_ The protection zone is defined as a circle with a radius of 1' per 1" dbh extending outwardly from the tree to be protected or the extent of the drip line, whichever is more restrictive. (Chapter 42, Article VI, Section 42-201).

10. \_\_\_\_\_ Tree protective barriers must be at least 4' in height, be prominent visually and erected completely around the protection zone. The use of orange polyethylene safety fencing or a similar material is required as a minimum. (Chapter 42, Article VI, Section 42-201).

#### **Landscape Plan (Section 42-204)**

11. \_\_\_\_\_ Each phase of a development must include a landscape plan. (Chapter 42, Article VI, Section 42-204). The Landscaping Plan must show utility easements and areas to be covered with asphalt or concrete.

12. \_\_\_\_\_ Required note - "Trees shall not be planted within 10 feet of any underground utility or storm drain."

13. \_\_\_\_\_ A tree survey showing existing tree coverage, completed by a state registered land surveyor. If a portion of the tract is not to be disturbed, then a tree survey is not required on that portion; (Chapter 42, Article VI, Section 42-204).

14. \_\_\_\_\_ A clearing plan showing the location of significant trees to be removed; (Chapter 42, Article VI, Section 42-204.2).

15. \_\_\_\_\_ A tree replacement plan; (Chapter 42, Article VI, Section 42-204.3).

16. \_\_\_\_\_ The method of tree protection to be used; (Chapter 42, Article VI, Section 42-204.3).

17. \_\_\_\_\_ If a residential subdivision, a typical lot layout is required showing the minimum tree requirement of three trees per lot; (Chapter 42, Article VI, Section 42-204.5).

18. \_\_\_\_\_ Location, size and types of trees, shrubs and groundcover to be planted on the site. (Chapter 42, Article VI, Section 42-204.6).

19. \_\_\_\_\_ All trees and landscaped areas shall be provided with a means for delivery of water in a quantity that is sufficient to establish and maintain the viability of the plants; A water supply is not required for areas of established trees and other vegetation that are retained for green space, provided that site grading or development activities will not result in damage to said areas. (Chapter 42, Article VI, Section 42-204).

#### **Preferred Tree List:**

For residential — American Holly, Birch, Cypress, Dogwood, Hickory, Live Oak, Magnolia, Maple, Pecan, Sycamore, Walnut, Willow, Drake Elm, Bosque Elm, and Alee Elm. (Chapter 42, Article VI. Section 42-198)

For multi-family, commercial, public institutional or industrial developments—American Holly, Birch, Cypress, Hickory, Live Oak, Maple, Palm (greater or equal to eight-inch dbh), Sycamore, Walnut, Willow, Drake Elm, Bosque Elm, and Alee Elm. (Chapter 42, Article VI. Section 42-198)