



CITY of POOLER
— GEORGIA —

City of Pooler – PLAN REVIEW CHECKLIST

PROJECT NAME: _____

DATE: _____

Please address each item below using an “ok” or “n/a”, and indicate what plan sheets the item can be located on. This checklist is intended to serve as a guide for a complete site plan application but does not consist of all City standards. All City of Pooler Code of Ordinance requirements must be met.

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, proposed square footage, proposed 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 rights-of-way 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 FLOODPLAIN 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 and if wrested vegetation is present. If State waters, with wrested vegetation, are present on site, delineate required buffers, extending from the wrested vegetation. (Georgia EPD jurisdiction)
21. ____ Indicate whether or not WETLANDS exist on the site. All wetlands shall be delineated on the site plans and identified as jurisdictional or non-jurisdictional. If applicable, show 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 all proposed grading in the floodplain. If the cut/fill calculations result in a net fill, provide FEMA no- rise certification, accompanied by the calculations utilized to perform analysis (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 freestanding signage if proposed. Make sure intersection sight 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 right-of-way. A copy of the approved Georgia DOT encroachment permit shall be required 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. Benchmarks shall be included on site development plans with coordinates and elevation (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 27)
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
14. _____ Show location of Mailbox Kiosk and provide details demonstrating it is ADA compliant
15. _____ Provide building elevations and proposed architectural materials or proposed architectural materials if no elevations exist
16. _____ Provide Phasing Plan when project is proposed to be constructed in phases (multi building sites)
17. _____ Provide site lighting plan for all proposed lighting.
18. _____ Provide Traffic Impact Study or technical memo for traffic

NEW 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. _____ The maximum change in grade that does not require a vertical curve shall be as follows: 20 mph – 1.2%, 25 mph – 1.1%, 30 mph – 1.0%, 35 mph – 0.9%, 40 mph – 0.8%, 45 mph – 0.7%, 50 mph – 0.6%, 55 mph – 0.5%, 60 mph – 0.4%, 65 mph – 0.3%. If the cumulative effect of vertical grade breaks violates stopping sight distance criteria, these values shall be reduced
6. _____ Minimum street profile grade is 0.3% (Chapter 74, Article V, Section 74-133f)
7. _____ Roadway pavement shall at a minimum meet the requirements outlined in the City of Pooler Standards and Specifications unless a geotechnical engineer requires a thicker pavement section more suitable for the proposed use of the road. (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. _____ Demonstrate that intersection sight distance is achieved
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 10-year design storm event
19. _____Ensure that the season high groundwater table elevation is a minimum of 24 inches below the bottom of the base course for proposed streets

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 requirements shall be required."
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 or 95% modified proctor (ASTM D698 or ASTM D1557)
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 hydraulic grade line for the applicable design-year storm, for the full extent of the stormwater conveyance system. The high water elevation must be below street elevation for the design-year storm event. Show all underground utility crossings, with the required vertical separation. (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. _____A swale is a drainage feature that receives stormwater from sheet flow and/or overland flow. Storm drainage pipe or gutter flow shall not discharge into a swale. (Chapter 74, Article V, Section 74-132g)
10. _____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)
11. _____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)
12. _____The 100-yr floodplain shall be delineated on the site development plans, with Base Flood

Elevation (BFE), when required. (Chapter 74, Article V, Section 74-132j)

13. _____ Minimum lot elevation: finished floor elevations shall be at least one foot above the level of the Base Flood Elevation, associated with the 100-year floodplain. The entire lot shall be properly drained. (Appendix B, Article VI, Section 602 e)
14. _____ The peak post development discharge shall not exceed the predevelopment discharge. (Chapter 74, Article V, Section 74-132k; also Sec 601.02)
15. _____ Detention ponds: must be located outside wetlands. (Chapter 42, Article V, Sec 42-156)
16. _____ 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. _____ Minimize unnecessary water/sewer crossings to the extent possible. Minimum parallel separation: 10' horizontal and 18" vertical separation between water & sewer (Sanitary & Storm)
5. _____ Water mains must be DIP when crossing under 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 wells or septic systems shall require approval 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)
13. _____ If water main, gravity sewer main, or force main are proposed, provide profiles on site plan. Include all underground utility crossings with required vertical separation
14. _____ Submit all applicable outside agency and other jurisdiction approvals such as LDA, Chatham County, City of Savannah and Georgia EPD forms (forms extending water and sewer main lines)

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. _____ Provide an engineering report for the proposed water distribution system. Calculations shall, at a

minimum, include needed fire flow, expected domestic demand, and fire hydrant flow test results demonstrating that the required fire protection will be achieved on site. If extending water main, a complete water distribution system model and analysis shall be provided

5. _____ Residential water laterals: 1" diameter minimum. (Appendix B, Article VI, Section 606)
6. _____ Residential water laterals shall be installed no more than 5' feet from the property corner. (Appendix B, Article VI, Section 606 Water 16)
7. _____ 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)
8. _____ 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)
9. _____ 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)
10. _____ Cut-off valves will be located at all tees where lines are two inches or larger. (Appendix B, Article VI, Section 606.03)
11. _____ 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 valve marker posts. (Appendix B, Article VI, Section 606 Water 6)
12. _____ 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)
13. _____ 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)
14. _____ The private water main starts at the property line. Therefore, meters and back flow preventers shall be placed at the property line
15. _____ Minimum cover 3 feet. (Standard Specifications Section 02700 3.01 D)
16. _____ Service laterals under roads are to be sleeved and at least 30" beneath the road surface. (Standard Specifications Section 02700 3.01 F 2)
17. _____ 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. _____ If proposing a gravity sanitary sewer main, an engineering report shall be provided, with calculations

for expected demand and sewer pipe sizing

4. _____ Minimum size sanitary lateral is 4". (Appendix B, Article VI, Section 606, Sewer 4)
5. _____ 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)
6. _____ Residential sewer laterals shall be installed within 15 feet of the property corner. (Appendix B, Article VI, Section 606, Sewer 9)
7. _____ 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)
8. _____ Use watertight manhole rings and covers within or below Base Flood Elevation + 1' (Standard Specifications.02720.2.02.G.2)
9. _____ Sewer laterals: Cleanouts should be provided every 100' and at the bends. Cleanouts located within the pavement should be traffic rated
10. _____ Try to move manholes out of sidewalk
11. _____ 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
12. _____ Min cover 3'
13. _____ 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)
14. _____ Drop manholes - inside and outside drop manhole details S-7, S-8
15. _____ 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). A sampling manhole shall be installed downstream of the grease trap and upstream of sanitary sewer main tie-in. Sampling MH shall be a minimum of 18 inches in diameter. Grease traps shall be sized at 20 gallons per seat, or a minimum capacity of 1,000 gallons and must be singular or in series and directly accessible from the exterior of the building. (Chapter 86, Article V, Division 4, Section 86-226 and 228)

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. _____All proposed Lift Stations shall be accompanied by an engineering report. The following information shall be included in the report:
 - Title page – Title page should include the project name, date, developer/owner’s name, the engineering firm preparing the plans and PE stamp.
 - Sewer system information – type, location and size of development
 - Existing sewer system – location and type of gravity system the force main will discharge into
 - Future plans for sewer system – the number of lots this phase will encompass initially, if future phases will be constructed, and the extent to which the proposed system will serve future phases
 - Pump Station and Force Main Design Calculations – the Average Daily Flow (ADF), Peak Daily Flow (PDF), Total Dynamic Head, Force Main (velocity produced in force main and maximum operating pressure) and Wet Well Buoyancy Calculation
 - Cycle Times – volume in wet well needed to turn primary pump on, cycle time for ADF, cycle time for PDF and total cycle time

Force Mains:

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

1. ____ Show force main location and all associated appurtenances. 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)

General

Water quantity may be handled through a master system, water quality/run-off reduction needs to be addressed as part of the individual development site.

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

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

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

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
- 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
 - 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
 - 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 and selected from large or medium tree species list. (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), six-inch diameter at breast height (dbh) or larger per acre of 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 three trees towards meeting the minimum allowable coverage. Each tree with a diameter of 40 inches dbh or larger must also be designated on the landscape plan and may count as five 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 ≥ 24 " (except sweet gums and pines). Live oaks with dbh of ≥ 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. _____Where pre-development tree coverage is less than the prescribed minimum, 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, provide a statement on the plans to this effect along with supporting documentation as to why the payment is necessary and cannot be achieved through design alternatives. (Chapter 42, Article VI, Section 42- 199(3))

Parking Lot Coverage (Section 42-200)

7. _____Parking lot islands - a 500 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 chain link fencing is required as a minimum. No change in grade within the protection zone shall be allowed around existing trees except for a max two inches of mulch. Those trees to be preserved as shown on the approved landscaping plan shall be marked on-site with a bright blue ribbon encircling the trunks prior to clearing and grading. The construction plan must clearly state the purpose of the blue ribbon to prevent any confusion at the site. (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. Provide an arborist report of significant tree conditions. (Chapter 42, Article VI, Section 42-204)
 - Any tree except a pine or sweet gum tree 6" dbh or greater shall be included.
 - Any tree except a pine or sweet gum with a dbh between 6" and 17" shall have their common name provided.
 - Any tree except a pine or sweet gum with a dbh of 18" or greater shall have their specific name provided.

- Any pine or sweet gum with a dbh of 24” or greater shall be included with their specific name provided.

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 42-204.7)

20. _____ In ground irrigation systems installed with water supply to all newly planted trees and plant material shall result in a 20 percent reduction of the landscape establishment bond. (Chapter 42, Article VI, Section 42-204.8)

Preferred Tree List: (Section 42-198)

LARGE SPECIES	MEDIUM SPECIES	SMALL SPECIES
American Beech	American Holly	Eastern Redbud
American Elm hybrids	Maple, Red	Holly, attenuate hybrids
American Sycamore	Maple, Florida	Holly, Yaupon
Ash, Green	Maple, Trident	Magnolia, Sweetbay
Ash, White	Cedar, Eastern Red	Fringe tree
Cypress, Bald		
Cypress, Pond		
Gingko (male)		
Hickory species		
Magnolia, Southern		
Oak, Live		
Oak, Nuttall		
Oak, Overcup		
Oak, Shumard		
Oak, White		
Oak, Willow		

Oak, Southern Red		
Poplar, Yellow		

1. No more than 30% of trees may be from the small species list or from one species
2. Upon recommendation of the City Arborist, a species different from one listed may be approved