



Where Georgia comes together.

CIVIL DEVELOPMENT MASTER CHECKLIST

MAY 2021 REVISION 1

ENGINEER OF RECORD STATEMENT

“I, _____, submit the drawings and hydrology study for the _____ project, adhering to City of Perry standards and regulations in accordance with the Civil Development Master Checklist. I have addressed all checklist items, but I understand further clarification or additional comments outside of this checklist may be required in the future depending on the nature of the project.”

Engineer of Record Signature

Date

[Place Engineer of Record Seal Here]

FINAL APPROVED REVIEW

City’s Reviewer Signature

Date

CIVIL DEVELOPMENT MASTER CHECKLIST

Instructions

- The Engineer of Record Statement shall be completed, signed, dated, sealed, and provided with the initial development submission.
- The Engineer of Record shall use the checklist as a guide to ensure all items have been addressed in the initial development submission.
- The checkboxes for checklist items are for the City's Reviewer to fill-in, not the Engineer of Record. If items are not applicable to the project, the Engineer of Record may identify a particular item as "N/A" after the item number (eg. 1. N/A). The City's Reviewer will take the Engineer of Record's opinion of a particular item's applicability under advisement; however, more clarification may be necessary.
- The Engineer of Record shall coordinate design variance request(s) with City of Perry (City) prior to initial submission. The Variance Request Form is included in the back of the checklist. A Variance Request Form for each design variance shall be submitted to the City. Multiple variance requests shall not be accepted on the same form. If variance is requested and approved by the City, the executed form shall be submitted along with the initial development review documents.
- The Engineer of Record must complete and submit the Additional Review Submission Form with each submission. The Additional Review Submission Form is included in the back of the checklist. The form is designed for the Engineer of Record to address review comments and provide responses to the Reviewer. Future reviews will be based on reviewed comments and responses.
- The Engineer of Record is only required to submit the completed civil plan checklist for the initial submission unless otherwise required by the City and/or Reviewer. The Additional Review Submission Form will be used for additional submissions.
- The City's Reviewer shall sign and date the approved Civil Development Master Checklist and include all Additional Review Submission Forms, Variance Request Forms, etc. and submit to the City as a final record of civil development review progression for each project.
- The Engineer of Record must complete and submit the Green Infrastructure/Low Impact Development (GI/LID) Evaluation with the initial development review documents. The GI/LID Evaluation is included in the back of the checklist. The Engineer of Record is only required to fill out the form for the initial development submission unless GI/LID practices/structures are incorporated and/or changed in additional submissions.

General Requirements

<u>Provided</u>	<u>Missing</u>	
<input type="checkbox"/>	<input type="checkbox"/>	Name of the Development
<input type="checkbox"/>	<input type="checkbox"/>	Name of the Developer and Contact Information
<input type="checkbox"/>	<input type="checkbox"/>	Vicinity Map
<input type="checkbox"/>	<input type="checkbox"/>	Land Lot/District/County
<input type="checkbox"/>	<input type="checkbox"/>	Seal of the Engineer of Record
<input type="checkbox"/>	<input type="checkbox"/>	Index of all sheets in the plan set
<input type="checkbox"/>	<input type="checkbox"/>	Legend and list of abbreviations
<input type="checkbox"/>	<input type="checkbox"/>	Engineer of Record Statement completed, signed, dated, and sealed
<input type="checkbox"/>	<input type="checkbox"/>	Variance Request Form completed and included with initial submission
<input type="checkbox"/>	<input type="checkbox"/>	Additional Review Submission Form completed for each submission
<input type="checkbox"/>		1. Show existing and proposed right-of-way (R/W) lines, adjacent property owners, lot lines/building envelop pavement and other impervious areas, curb and gutter, and R/W widths.
<input type="checkbox"/>		2. Show and label all existing overhead and underground utilities including gas and electric. Include diameter and material for gas, water, wastewater, and storm sewer.
<input type="checkbox"/>		3. Show north arrow and scale for all plan sheets. Choose scale to properly show details.
<input type="checkbox"/>		4. Show floodplain, wetlands, streams, associated buffer(s), etc. and note the areas (in acres) to be impacted. Show stream buffer as measured from the point of wrested vegetation.
<input type="checkbox"/>		5. Show all existing and proposed pond, lakes, and stormwater management facilities with surface area, normal pool elevation, and dam height, top width, % slopes. Provide details for existing/proposed outlets/drainpipes and spillways.
<input type="checkbox"/>		6. Show/note the 100-year flood plain limits/sections, elevations, floodway limits. Indicate the source of the information.
<input type="checkbox"/>		7. Outline limits of disturbed area and quantify disturbed acreage.
<input type="checkbox"/>		8. Show/note the boundaries of other natural feature protection and conservation areas such as wetlands, streams, and other setbacks (e.g. septic tank and drinking water well setbacks).
<input type="checkbox"/>		9. Note on plan that any conservation areas will be recorded at the Houston County Courthouse in perpetuity with the affected properties.
<input type="checkbox"/>		10. All retaining wall designs greater than 4' in height shall be submitted and approved by the City Community Development Department prior to approval of stormwater plans.

Stormwater Management System Design

- 1. Provide plan and profile view of stormwater junctions and manholes including roof drain connections. Information shall include pipe sizes, materials, slopes, easements, top and invert elevations, and 25-year hydraulic grade line.
- 2. Show grading of all open channels. Include cross-sections and calculations in accordance with the *Stormwater Local Design Manual* including velocities, dimensions, freeboard, and permanent grassing/sodding details to sustain the Qp25 velocity.
- 3. Show inlet placement at low points in roadway, parking areas, etc. Provide details for all proposed inlet types.
- 4. All stormwater drainage manholes, junctions, and control structures have manhole access in accordance with City standards.
- 5. Provide minimum 2-foot cover for storm drainage pipe unless Class V RCP under roadways and/or trafficked areas.
- 6. Match crowns of storm drainage pipe in manholes/structures.
- 7. Provide minimum 18 inches vertical distance between water/sewer/gas from storm drainage pipe.
- 8. Show all water/sewer/gas/power crossings in storm drainage profiles.
- 9. Minimum storm drainage pipe size is 15 inches.
- 10. Velocity in pipes shall be 15 fps maximum.
- 11. Anchor collars may be required on pipes exceeding 10% slope.
- 12. Show 100-year ponding elevation associated with each stormwater management facility.
- 13. Plans should include stormwater pipe bedding details including backfill requirements for paved and non-paved areas.
- 14. Drainage other than sheet flow across two or more lots requires a dedicated drainage easement.
- 15. Provide appropriate energy dissipation devices at all pipe outlets, open channels, and outlet control structures and culverts including pipe outlet velocities. Show/note the type of energy dissipation to be provided. Provide sizing calculations if rip-rap is proposed.
- 16. For sites with a stormwater management facility (detention or retention) where depth is greater than 4 feet, provide 6-foot-high, plastic-coated chain-link fence with two (2) 10-foot gates for security and maintenance access.
- 17. Show a 20-foot minimum access/maintenance/utility easement to and around the outer limits of a stormwater management facility.

- 18. General minimum slope for a stormwater management facility is 3:1. Design standards for such facilities shall adhere to the current edition of the *Georgia Stormwater Management Manual (GSMM)* for safety and aquatic benches (grades and dimensions). Show safety bench if facility is deeper than 4 feet. For dam heights 4 feet or greater, the minimum width of detention pond earthen dam shall be 8 feet. For dam heights 10 feet or greater, the minimum width of the earthen dam shall be 15 feet.
- 19. For residential developments, stormwater management facility is located within the development common place. No part of the facility should be located on private property or within development setbacks and R/W.
- 20. Stormwater management facility construction requires minimum setback of 20 feet from property line for residential developments, 30 foot from public rights-of-way, 100 to 250 foot from a private well, and 50 foot from a septic tank/leach field. Non-residential stormwater management facility construction requires all grading, discharge piping and velocity dissipation within the property line.
- 21. Discharge pipe must be no closer to the project site's property line than the greater of the distance necessary to construct any velocity protection or a flow distance equal to six (6) pipe diameters.
- 22. Stormwater management facilities shall be shown on their own lots.
- 23. Within the access easement, a 15-foot-wide road shall be graded at a maximum 20% grade to provide access to the facility. The road shall be grassed or paved. The road shall extend to the bottom of the pond when the pond is greater than 10 feet deep or 50 feet wide.
- 24. Show forebay (0.1 inches per impervious acre) and micropool (25-30% of net WQ_v) including calculations if applicable.
- 25. Provide a complete stormwater management facility profile detail sheet including compaction requirements, 25 and 100-year water surface elevations, structure and freeboard elevations, anti-seepage collar, outlet control structure, and emergency spillway details. Outlet control structure detail will show water quality and channel protection orifice elevations.
- 26. Provide a trash rack and/or skimmer hood at the outlet control structure in accordance with the current edition of the *Georgia Stormwater Management Manual (GSMM)*.
- 27. Identify the type of stormwater management facility (wet or dry). The City's Stormwater Local Design Manual has different requirements for wet and dry ponds. Provide a seeding schedule for extended detention wet pond. Refer to current edition of GSMM for details.
- 28. Add note to plan: "Stormwater management facility, outlet structures, and temporary sediment pond features are to be constructed and fully operational prior to any other construction or grading."
- 29. Add note to plan: "Developer is to clean out accumulated silt in detention pond at end of construction when disturbed areas have been stabilized."
- 30. Add appropriate note to plan:

- a. Residential – “City of Perry assumes no responsibility for overflow or erosion of natural or artificial drains beyond the extent of the street right-of-way, or for the extension of culverts beyond the point shown on the approved and recorded subdivision plat. The “property owner” and/or HOA have responsibility outside the right-of-way and/or easement.”
- b. Commercial – “City of Perry assumes no responsibility for overflow or erosion of natural or artificial drains beyond the extent of the street right-of-way, or for the extension of culverts beyond the point shown on the approved and recorded plan. City of Perry does not assume the responsibility for the maintenance of pipes in drainage easements beyond the county right-of-way.”

31. Drainage Easements widths shall be in accordance with the following Chart:

EASEMENTS FOR STORM DRAIN PIPES PIPE SIZE (FT)	MAXIMUM PIPE INVERT DEPTH (FT) MINIMUM EASEMENT WIDTH (FT)												
	4	5	6	7	8	9	10	11	12	13	14	15	16
NA	4	5	6	7	8	9	10	11	12	13	14	15	16
1.25	20	20	20	20	20	25	25	30	30	30	35	35	40
1.5	20	20	20	20	20	25	25	30	30	30	35	35	40
2.0	20	20	20	20	20	25	25	30	30	30	35	35	40
2.5	20	20	20	20	25	25	25	30	30	35	35	35	40
3.0	20	20	20	20	25	25	25	30	30	35	35	35	40
3.5	NA	20	20	20	25	25	30	30	30	35	35	40	40
4.0	NA	20	20	20	25	25	30	30	30	35	35	40	40
4.5	NA	NA	20	25	25	25	30	30	35	35	35	40	40
5.0	NA	NA	20	25	25	25	30	30	35	35	35	40	40
5.5	NA	NA	NA	25	25	30	30	30	35	35	40	40	40
6.0	NA	NA	NA	25	25	30	30	30	35	35	40	40	40

- 32. Indicate Minimum Floor Elevations (MFE) adjacent to major drainage ways or structures. MFE’s shall be a minimum of 18 inches above 100-year flood elevation.
- 33. Plan meets requirements for stormwater management in accordance with the current edition of GSMM and *Stormwater Local Design Manual*
- 34. An approved Residential Drainage Plan (RDP) is required prior to issuance of a building permit on those lots labeled "RDP". An approved Hold and Release Affidavit is required on those lots labeled “RDP” or Residential Drainage Study (RDS). An elevation certificate is required on lots labeled “RDP-E” or RDS-E”.
- 35. Acknowledgement:
The City of Perry will not issue a land disturbance permit until we receive documentation from the Corps of Engineers that an Individual Permit or a Letter of Permission authorizes the proposed encroachment in wetland areas. We also must receive a copy of the approved PCN letter from the Corps of Engineers, if applicable.

- 36. Acknowledgement:
The City of Perry will not issue a land disturbance permit until we receive documentation from Georgia EPD pertaining to Stream Buffer Encroachments that do not meet the Stream Buffer Exemption.
- 37. Pipe material in public right-of-way shall be either reinforced concrete pipe (RCP) or ADS HP Storm Pipe. Pipe material under roadways over 30 inches shall be constructed of reinforced concrete pipe (RCP).
- 38. Provide curb and gutter details in stormwater management design.
- 39. For standalone water quality unit use, provide product design and details, specifications regarding materials and design, performance and third-party testing, maintenance requirements, installation and other general notes, and profiles.

STORMWATER HYDROLOGY REPORT

Section 1. Report Format

1.1 Does the Hydrologic & Hydraulic Report contain the following information:

<u>Provided</u>	<u>Missing</u>	
<input type="checkbox"/>	<input type="checkbox"/>	Name of the Development
<input type="checkbox"/>	<input type="checkbox"/>	Name of the Developer
<input type="checkbox"/>	<input type="checkbox"/>	Location Map of the Site referencing the nearest major road
<input type="checkbox"/>	<input type="checkbox"/>	Stormwater Impact Certification
<input type="checkbox"/>	<input type="checkbox"/>	Seal of the Professional having prepared the Report

1.2 Does the Hydrologic & Hydraulic Report contain the following sections:

<u>Provided</u>	<u>Missing</u>	<u>N/A</u>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing Conditions Hydrologic Analysis
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post Development Hydrologic Analysis
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stormwater Management System Design
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Downstream Analysis
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Erosion & Sedimentation Control Plan
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Planting Plan (if applicable)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operations & Maintenance Plan

Section 2. Existing Conditions Hydrologic Analysis

2.1 This section should provide the reader with a comprehensive evaluation of the site conditions prior to development of the project.

2.2 Narratives - A narrative and supporting calculations of the pre-development conditions of the site as related to stormwater management should be provided to determine the current characteristics of the site.

- Written description of the existing conditions found on the site
- Name of the receiving waters from which runoff drains to after leaving the site
- Analysis of runoff provided by off-site areas upstream of the project site
- Methodologies, assumptions, site parameters and supporting design calculations used in the analyzing the existing conditions site hydrology

2.3 Existing Conditions Map - A map documenting the following elements should be provided with the following information if applicable.

- Topography (2 feet or less contour interval) of existing site conditions
Perennial / intermittent streams, wetlands, lakes and other surface water features
- Drainage basin delineations showing the location of each drainage sub-basin
- Drainage basin delineations for each contributing drainage basin upstream of the project site on an appropriate map (USGS Quadrangle, etc.)
- Existing stormwater conveyances and structural control facilities
- Soil types including hydrologic soil groups
- Direction of flow and discharge points from the site including sheet flow areas

2.4 Existing Conditions Tables - Tables documenting the following information should be provided if applicable.

- A table listing the acreage, soil types and land cover characteristics for each sub-basin
- A table listing the peak runoff rates and total runoff volumes from each sub-basin
- A table listing the peak runoff rates and total runoff volumes for each drainage area upstream of the project site

Section 3. Post-Development Hydrologic Analysis

3.1 The post-development hydrologic analysis should provide the reader with a comprehensive evaluation of the anticipated site conditions following development of the project. The designer should provide the following information with this element of the report:

3.2 Narratives - A narrative and supporting calculations of the post-development conditions of the site as related to stormwater management should be provided to determine the future stormwater characteristics of the site.

- Written description of the existing conditions found on the site
- Stormwater calculations for water quality, channel protection and post construction detention for each sub-basin affected by the project
- Documentation and calculations for any applicable site design credits that are being utilized
- Methodologies, assumptions, site parameters and supporting design calculations used in the analyzing the post development conditions site hydrology
- If water quality requirements are being met by mechanical separation, provide 3rd party testing that demonstrates 80% TSS reduction at a flow rate greater than or equal to the runoff rate for a 1.2" storm event for the specified product

3.3 Post Development Conditions Map - A map documenting the following elements should be provided with the following information if applicable.

- Topography (2-ft or less contour interval) of proposed site conditions
Perennial / intermittent streams, wetlands, lakes and other surface water features
- Drainage basin delineations showing the location of each drainage sub-basin
- Proposed stormwater conveyances and structural control facilities
- Direction of flow and discharge points from the site including sheet flow areas
- Location and boundaries of proposed natural feature protection areas

3.4 Post Development Conditions Tables - Tables documenting the following information should be provided if applicable.

- A table listing the acreage, soil types, impervious surface area and land cover characteristics for each sub-basin
- A table listing the peak runoff rates and total runoff volumes from each sub-basin
- A table listing the peak runoff rates and total runoff volumes for each drainage area upstream of the project site
- A table listing the peak discharge rates, total runoff volumes and peak elevations for all detention ponds studied.

Section 4. Stormwater Management System

4.1 The stormwater management system section should provide the reader with a comprehensive description of the proposed stormwater management system components on site. The designer should provide the following information with this element of the report:

4.2 Narratives - A narrative and supporting calculations describing the on-site stormwater management controls to be utilized. This narrative should include appropriate narratives / tables demonstrating compliance with the various stormwater management requirements outlined in the post-development article of the stormwater ordinance and local design manual.

- Narrative describing that appropriate and effective structural stormwater controls have been selected
- Design calculations and elevations for all existing and proposed stormwater conveyance elements including stormwater drains, pipes culverts catch basins, channels, swales and areas of overland flow
- Identify tailwater condition used in the stormwater system design

Section 5. Downstream Analysis

- 5.1 The downstream analysis should provide the reader with a comprehensive picture of the downstream areas and their capacity to accommodate stormwater runoff from the proposed development.
- 5.2 Narratives -- A narrative and supporting calculations for a downstream peak flow analysis using the ten-percent rule necessary to show safe passage of the post-development design flows downstream. This narrative should include appropriate descriptions / tables for points of interest such as culverts and channel constrictions downstream of the project where increases in stormwater runoff rates could be of concern.
- 5.3 A map(s) illustrating the location, type and specifications of all stormwater management components to provide stormwater management for the proposed site.
 - Drainage basin delineations showing the point at which the contributing area of the project represents 10% of the total drainage basin area
 - Identify culverts, channels and other structural stormwater controls that the stormwater runoff must pass through prior to the 10% point identified previously

Section 6. Erosion & Sedimentation Control Plan

- 6.1 The Erosion and Sedimentation Control Plan should be included in the report demonstrating the plan to effectively mitigate stormwater impacts during construction. The following elements should be included in the section of the report:
 - All elements specified in the Georgia Erosion and Sediment Control Act and local ordinances and regulations
 - Sequence / phasing of construction and temporary stabilization measures
 - Temporary structures that will be converted into permanent stormwater controls

Section 7. Planting Plan

- 7.1 If necessary, a planting plan should be included for all stormwater controls that utilize vegetation as part of the functional design.

Section 8. Operations & Maintenance Plan

- 8.1 A narrative of what maintenance tasks will be required for the stormwater controls specified for the site as well as the responsible parties. Additionally, the report will need to identify access and safety issues for the site.

Water Distribution Design

- 1. PVC pipe material should be specified as shall be PVC Class 150, DR 18, C-900 for 12 inches and smaller and Class 235, DR 18, C-905 for 14 inches and larger. All PVC pipe less than 2" shall be Schedule 40 unless otherwise noted.
- 2. Ductile iron pipe material should be specified as conforming to ANSI A21.50 (AWWA C-150) latest revisions and ANSI A21.51 (AWWA C-151) latest revision. For sizes 12 inches and smaller, pipe shall be pressure class 350 minimum. For sizes 16 inches and larger, pipe shall be pressure class 250 minimum.
- 3. Ductile iron fittings shall be specified as being compact weight, short body ductile iron fittings for 350 psi water pressure plus water hammer, conforming to ASA Specification A21.10 with mechanical joints conforming to ASA Specification A21.11.
- 4. Plans should include water main bedding details including backfill requirements for paved and non-paved areas.
- 5. Specify top of outer diameter (O.D.) pipe shall have a minimum cover of 48 inches.
- 6. Show and label all existing and proposed valves.
- 7. Show and label every existing and proposed fire hydrant. Spacing requirements are 500 feet for residential and 300 feet for commercial.
- 8. Water mains terminating on cul-de-sac streets shall be designed in accordance with the City's standard detail entitled "Cul-de-sac Water Line Detail".
- 9. Water mains on streets less than 500 feet in length may be 6 inches in diameter. If the possibility exists that the line will be extended or looped in the future, an 8 inches diameter line is required. Any line over 500' requires an 8" diameter main.
- 10. Plans should include details for thrust blocking. Thrust blocking should be shown for bends exceeding 11 ¼ degrees, crosses with one opening plugged, and all tees.
- 11. Plans should state a requirement for plastic marking tape installed over all water pipe, being buried 1 foot below the ground surface above the water line. Statement should require tape to be blue in color and at least two inches (2") wide and shall bear the printed identification "Caution: Buried Water Line Below."
- 12. Plans should state a requirement for tracer wire for all non-metallic water main pipe and water service tubing. Statement should require 12-gauge, insulated, copper wire be placed on the pipe crown for detection purposes.
- 13. Plans should state that prior to the placement of pavement, each valved section of newly laid pipe shall be subjected to a leakage and pressure test. For any section being tested, the pressure applied shall be such that at the highest point in the section, the pressure shall be 150 psi or at least 50 psi

above the normal operating pressure at this point, whichever is greater. The test shall be witnessed by representatives of the City and recorded on a circular chart recorder provided by the City.

- 14. Plans should require disinfection of newly laid water mains in accordance with AWWA C651, noting the samples of the water shall be taken by the Contractor in the presence of City of Perry representatives and delivered to a state approved lab for bacteriological analysis. The Contractor shall contact the City of Perry 48 hours prior to sampling time.
- 15. Specify methods and tie-in location with existing mains (i.e. tapping sleeve and valve – labeled with size).
- 16. Show proposed water meter and size. Water meters shall be installed at most 3 feet past the property line.
- 17. Show note “All water and sewer construction shall be in accordance with the current edition of The City of Perry’s Water and Sanitary Sewer Specification.”
- 18. Water service pipe from the meter to a building/structure that is installed under a driveway, traffic lane, parking lot, etc. requires a casing pipe. Casing size is dependent on service size.
- 19. The top of the barrel of the pipe shall have a minimum cover of 48 inches. Whenever water mains cross existing sanitary sewer lines, a minimum vertical separation of 18 inches must be maintained between the two pipes.
- 20. PVC water mains under highways require steel casing pipe that shall be Schedule 30 steel pipe manufactured from steel conforming to ASTM A-139, Grade B. Size and thickness are as follows:

UNDER HIGHWAYS

Carrier Pipe PVC (C-900) Pipe Diameter, Inches	Minimum Casing Diameter, Inches	Casing Wall Thickness, Inches
4	8	0.250
6	12	0.250
8	14	0.250
10	16	0.250
12	18	0.250

- 21. Plan meets requirements for water distribution in accordance with the current edition of The City of Perry’s Water and Sanitary Sewer Specification.

Sanitary Sewer Design

- 1. Provide plan and profile view of sanitary sewer mains and manholes. Information shall include pipe sizes, materials, easements, slopes, and top and invert elevations.
- 2. PVC pipe material should be specified as meeting all the requirements of ASTM D-3034 SDR 35 unless otherwise determined by the City to have greater wall thickness.
- 3. Ductile iron pipe should be specified as conforming to AWWA C151 and shall be a minimum of Pressure Class 350.
- 4. Ductile iron pipe shall be used when the cover over the pipe is less than three feet, when the sanitary sewer line crosses under a storm drain line and the vertical separation between the two lines is less than 18 inches, and when the depth of cover over the pipe is greater than 15 vertical feet.
- 5. Sanitary sewer services shall be located in the center of proposed residential lots. Ten-foot separation is required between the water service and sanitary sewer service.
- 6. Sewers should be located at least 10 feet horizontally from existing or proposed water mains. Sanitary sewer should maintain 18 inches vertical separation from existing or proposed water mains. If vertical separation cannot be met, plans should document conflict resolution details.
- 7. Plans should include sanitary sewer pipe bedding details including backfill requirements for paved and non-paved areas.
- 8. Provide requirements for pipe deflection testing and air testing including statement that all testing must be conducted in the presence of a City representative.
- 9. Maximum distance between manholes for sewers 16 inches or less shall not be greater than 400 feet. Sewers 18 inches and larger may have a maximum manhole spacing of 500 feet. Manholes shall be installed at the end of each line, at all changes in grade, pipe size, alignment and at all intersections. A minimum 0.1 foot drop is required across each manhole.
- 10. A drop manhole shall be required if the invert of sewer entering manhole is 24 inches or more than the manhole invert.
- 11. Precast manholes shall be a standard 4 feet inside diameter for pipe sizes 8 inches to 12 inches, and 5 feet inside diameter for pipe sizes 15 inches to 36 inches.
- 12. Provide manhole testing requirements including statement that all testing must be conducted in the presence of a City representative.
- 13. Identify method and location of connection to existing wastewater infrastructure. Connections to existing sanitary sewer main should be made by drilling and existing manhole or placing a doghouse manhole over existing main. No blind connections to sanitary sewer mains are allowed.
- 14. Add note to plans: "All water and sewer construction shall be in accordance with the current edition

of The City of Perry’s Water and Sanitary Sewer Specification.”

- 15. Plan meets requirements for sanitary sewer and manholes in accordance with the current edition of The City of Perry’s Water and Sanitary Sewer Specification
- 16. If necessary, plan should provide detail for dumpster pad enclosure with details including fence/gate material and dimensions, bollard locations and dimensions, sewer cleanout location, and grading requirements.
- 17. For sanitary lift station, the developer shall coordinate with ESG, Inc. and the City for wastewater system capacity and design requirements such as development flow calculations, wet well design, type of pumps, back-up emergency generator, dedicated easements for station and force main, civil site layout, safety issues, etc. Engineer of Record shall submit a Sanitary Lift Station Design Form found at the end of this checklist executed by the City and ESG prior to initial submission.
- 18. PVC sanitary sewer lines under highways and railroads require steel casing pipe that shall be Schedule 30 steel pipe manufactured from steel conforming to ASTM A-139, Grade B. Size and thickness are as follows:

UNDER HIGHWAYS

Carrier Pipe PVC (C-900) Pipe Diameter, Inches	Minimum Casing Diameter, Inches	Casing Wall Thickness, Inches
4	8	0.250
6	12	0.250
8	14	0.250
10	16	0.250
12	18	0.250

UNDER RAILROADS

Carrier Pipe PVC (C-900) Pipe Diameter, Inches	Minimum Casing Diameter, Inches	Casing Wall Thickness, Inches
6	14	0.250
8	18	0.250
10	20	0.250
12	22	0.250

Roadway Design

- 1. Provide proposed horizontal layout and vertical profile.
- 2. Provide all existing topography and features within 50 feet, minimum, of the proposed or existing right-of-way or additional topography as needed to provide adequate information related to known drainage issues or to supplement design assumptions.
- 3. Identify road names and right-of-way widths.
- 4. Provide proposed grades of roadways.
- 5. Identify fillet radii.
- 6. Provide horizontal curve data.
- 7. All dead-end streets shall end with a cul-de-sac. Phasing of construction shall provide temporary cul-de-sacs for street that temporarily dead ends.
- 8. Provide centerline stations, bearings, and distances. Provide equality stations and intersections.
- 9. Vertical curve profiles shall have stations and elevations labeled at every 25 feet within the curves.
- 10. Identify stations and elevations of intersections in profile.
- 11. Identify sight distance and all underground utilities (water, sewer, gas, storm, power) in profile.
- 12. Identify all existing and proposed road signs.
- 13. Identify pavement marking requirements.
- 14. Identify typical pavement section and curb and gutter details (fire lane, parking areas, streets, thickness, subgrade, etc.).
- 15. Identify intersections, driveway, and island curb radii.
- 16. Identify all sidewalks and barrier free ramps, including dimensions.
- 17. Identify existing, proposed, future streets and drives.
- 18. Provide right-of-way corner clips and sight visibility easements if applicable.
- 19. Identify water, sewer, and stormwater infrastructure with paving stations and top of curb elevations at center of structures.
- 20. Clarify drainage by flow arrows at crests, sages, ridges, intersections, and valley gutters.
- 21. Show driveway locations for all lots adjacent to storm inlets.

- 22. Show sidewalk layout.
- 23. Provide handicap parking, ramp, signage, crosswalk, and striping details.
- 24. If permanent bike rack is to be installed, details need to be provided.
- 25. Development inside Georgia Department of Transportation (GDOT) right-of-ways shall adhere to applicable GDOT standards and details.

Natural Gas Design

- 1. Indicate depth of all existing natural gas facilities within the proposed construction limits.
- 2. Show location and elevation of all existing natural gas facilities on all required profiles.
- 3. Show and provide all necessary or required natural gas easements.
- 4. Provide any required natural gas Relocation Agreements fully executed by the City and Developer.
- 5. Provide the following notes on the utility sheet if the project involves the installation or relocation of any natural gas facilities:
- 6. Provide pipe size and material for gas main and service installations per development and lot.
- 7. Construction shall adhere to the Georgia Public Service Commission regulations and standards.



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Additional Review Submission Form

Project Name:

Submission Date:

Submission Number:

Engineer of Record and Company Name:

Please provide responses to reviewer’s comments below. Future reviews will be based on reviewed comments and responses. Additional comments outside of this checklist may be required to be addressed in the future depending on the nature of the project.

Engineer of Record’s Responses to Reviewer’s Comments:

Please continue responses on next page if necessary...



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Civil Development Variance Request Form

Project Name:

Submission Date:

Variance Request Number:

Engineer of Record and Company Name:

Please complete Variance Request Form for each variance requested and approved by the City. The form must be completed and submitted along with the initial development review documents.

What is the current City standard (water, sewer, roadway, stormwater, gas, etc.)?

Why is the variance being requested?

Design description of variance:

Has the variance detail/plan been included? Yes No

VARIANCE REQUEST APPROVAL

Engineer of Record Signature

Date

City Signature

Date



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Sanitary Lift Station Design Form

Project Name:

Submission Date:

Engineer of Record and Company Name:

Please complete Sanitary Lift Station Design Form executed by the City prior to initial submission.

City's Acknowledgement of Available Capacity

Included Not Included

Summary of Design Calculations

Summary of Design Standards (please complete and check box that applies)

- Wet Well Size and Capacity Included Not Included
- Type of Station (Duplex, Triplex) Included Not Included
- Type of Pumps Included Not Included
- Emergency Generator Included Not Included
- Supporting Design Calculations and Attachments Included Not Included

Other Design Requirements

SANITARY LIFT STATION DESIGN REVIEW

Engineer of Record Signature

Date

City Signature

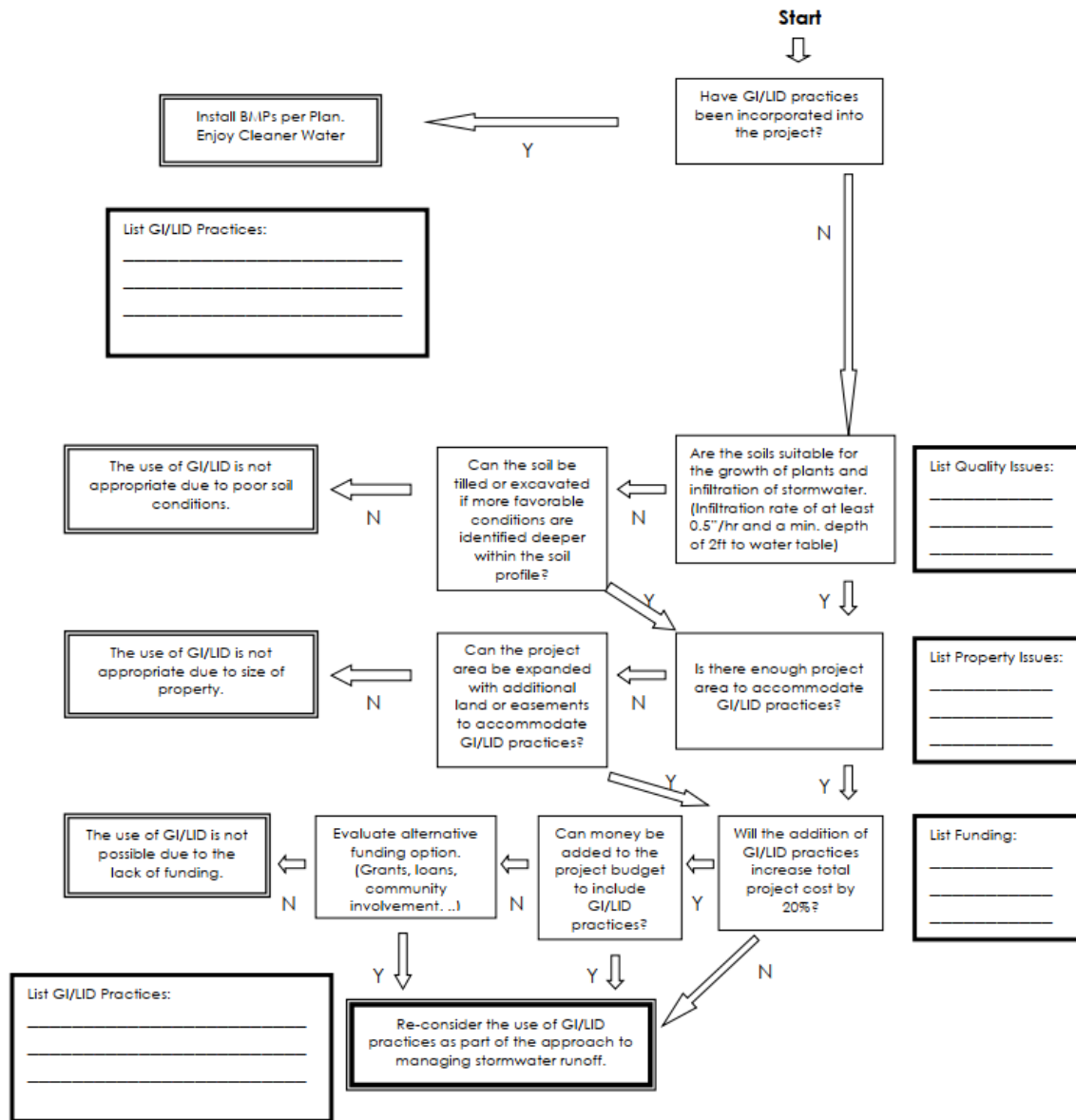
Date



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Green Infrastructure/Low Impact Development (GI/LID) Evaluation

FACILITY NAME:	ANALYSIS BY:
FACILITY LOCATION:	FACILITY TYPE:
DATE OF ANALYSIS:	



 Engineer of Record Signature Date City Signature Date