



**PROCEDURES MANUAL  
FOR  
INFRASTRUCTURE DEVELOPMENT**

**City of Shepherdsville  
Shepherdsville, Kentucky**

**June 3, 2013**

# PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT

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## DEFINITIONS

**Basement** – The lowest floor of a structure that is wholly or partly below the ground level.

**Builder** – The individual or corporation that applies for a building permit to construct homes or commercial/industrial structures.

**Composite Drainage Plan** – A component of the Improvement Plans prepared by the Engineer that shows the following:

1. Surface drainage easements on each lot
2. Flow arrows that indicate the direction of surface drainage through each surface drainage easement
3. Sanitary sewers and manholes, and the elevation of the manhole lids
4. Storm sewers and manholes
5. Surface inlets, curb inlets, constructed channels, and stormwater best management practices
6. Flood Protection Elevation for:
  - Lots adjacent to or containing a post-development floodplain
  - Lots adjacent to or containing a constructed channel
  - Lots at the low point of a street if there is no overflow channel
  - Lots adjacent to detention ponds and wet ponds.
7. Environmentally sensitive areas
8. Non-buildable areas such as sinkholes, floodplains, vegetation buffer strips, wetlands, and other environmentally sensitive areas.
9. Alluvial soils.
10. Building setback of 25' from the 100-year post-development floodplain.

**Constructed Channels** – Channels designed by the Engineer as part of the Improvement Plans.

**Contractor** – The individual(s) or corporation(s) hired by the Developer to construct the roads, sanitary sewer facilities, and stormwater facilities.

**Developer** – The individual or corporation that signs the Infrastructure Development Agreement in Appendix A.

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**Engineer** – The Engineer hired by the Developer to design the infrastructure and inspect the construction. The Engineer signs the Infrastructure Development Agreement in Appendix A.

**Environmentally Sensitive Area** – Any area which due to its natural or physical setting may have environmental problems with regard to development. Areas included are (but not limited to) areas of steep slope (over 15%), floodplains, sinkholes, areas of poor soil, improper fills, wetlands, any significant tree or significant tree stands, aquifer recharge areas, and similar areas.

**FEMA** – Federal Emergency Management Agency.

**Flood Protection Elevation (FPE)** – The FPE shall be determined by the Engineer and shall be all of the following:

1. Two feet above the 100-year FEMA floodplain elevation, or two feet above the calculated 100-year post development floodplain elevation, whichever is higher
2. Two feet above the 100-year storm elevation in constructed channels
3. Two feet above 100-year storm elevation at low points of streets if there is no overflow channel
4. Two feet above the 100-year, 24-hour storm elevation in detention ponds and wet ponds.
5. Two feet above the embankment crest of detention ponds and wet ponds.

For all new structures, the lowest floor elevation that is above ground level shall be at or above the FPE. Crawl space entrances, foundation vents, basement window sills, the top landing of outside stairways leading to basements, and other openings to the structure shall be at or above the FPE.

**Improvement Plan** – Design plans and Construction Specifications prepared by the Engineer for the infrastructure in residential, commercial, or industrial developments.

**Infrastructure** – Roads, sanitary sewer facilities, and stormwater facilities.

**CITY** – City of Shepherdsville Kentucky

**Department of Public Works** – Includes the CITY Engineer, Sanitary Sewer Department Supervisor, Public Works Department

**Building Inspection** – A division within Bullitt County

**Surety** – An irrevocable letter of credit in favor of the CITY from a bank with offices in Bullitt County.

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**Warranty Period** – The time period during which the Developer guarantees the work to be free from defective materials or improper workmanship.

The warranty period for roads dedicated to the CITY shall be 1 year from when the final surface course is applied.

For development projects that involve recording a plat, the warranty period for sanitary sewer facilities shall be 3 years from the date of plat recording, and the warranty period for stormwater facilities shall be 1 year from the date of plat recording.

For development projects that do not involve a plat, the warranty period for sanitary sewer facilities shall be 3 years from the date of substantial completion, and the warranty period for stormwater facilities shall be 1 year from the date of substantial completion.

**Written Notice** – First class U.S. mail, E-mail, or fax communication

# PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT

## INTRODUCTION

The Procedures Manual describes how the City of Shepherdsville (CITY) will manage the design and construction of roads, sanitary sewers and pump stations, and stormwater facilities in developing areas. The Procedures Manual applies to:

1. Infrastructure that is financed and constructed by Developers that becomes CITY property for operation and maintenance by the CITY, or
2. Infrastructure that is financed and constructed by Developers that remains private property with the operation and maintenance regulated by the CITY, such as detention ponds on commercial property.

The CITY's past role in the development process has been to check the designs prepared by the Developer's Engineer, provide construction inspection with the CITY staff, and take full ownership responsibility for the facilities upon completion of construction and plat signing. The lack of written guidance and procedures has allowed the process to evolve over time, resulting in unclear responsibilities and expectations for the CITY, Engineer, and Developer. The Procedures Manual, along with a series of Technical Manuals referenced herein, clarifies responsibilities and establishes singular accountability.

Some examples of changes that will occur when the Procedures Manual is implemented are:

1. The CITY of Engineer will not be responsible for the technical accuracy of the design plans; CITY Engineer approval of the plans will be from an administrative basis. Accuracy, completeness, and construction feasibility of designs and construction plans will be the responsibility of the Developer's Engineer as described below. The City Engineer will administer the development process, and rely on the Developer's Engineer to adequately design the infrastructure and comply with the Technical Manuals.
2. The CITY Engineer will not inspect construction of the roads, sanitary sewer facilities, or stormwater facilities. The Developer's Engineer will do this.
3. For subdivided property, the plat will be signed by the CITY when the Developer's Engineer provides a "Certificate of Substantial Completion" to the CITY Engineer.
4. The Developer and Engineer will commit to compliance with the manuals through a written contract with the CITY for each development project.
5. The Developer's Engineer will submit record drawings that comply with the requirements in the manuals.
6. Ownership of new infrastructure will be assumed by CITY after acceptable operation and performance has been demonstrated during a warranty period.

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7. The CITYs' role during home building will be increased to effectively address the problems of covered manholes, improper plumber taps, drainage problems created by improper grading, erosion control, and damage to curbs and sidewalks.

The process is designed to place the CITY in an ownership role from the beginning of the design phase. This will be accomplished by:

- A contract signed by the Developer, Developer's Engineer, and CITY that defines the responsibilities of each party throughout the development process;
- Financial assurance for correcting design errors or omissions through professional liability insurance provided by the Developer's Engineer;
- Enhancing construction quality through full-time construction inspection;
- Financial assurance for correcting defects in construction materials or workmanship through a Performance/Warranty Surety provided by the Developer;
- Preservation of the integrity of new and existing infrastructure during home building; and
- Consistent requirements for all Developers through use of the Technical Manuals for designing, constructing, and inspecting the infrastructure.

The foremost objective of the process is to ensure quality in public infrastructure that is financed and constructed by Developers. The Procedures Manual revises the current process to place the CITY in an administrative role similar to the role it plays in capital projects, i.e. projects financed and constructed by the CITY. This time tested and proven process is described in detail in the American Society of Civil Engineers Manual of Practice entitled *Quality in the Constructed Project*. Implementation of the Procedures Manual and Technical Manuals is expected to achieve CITY's quality objective.

The Procedures Manual is the link between the six Technical Manuals developed to guide technical activities in the infrastructure development process. The Technical Manuals contain the standards for designing, constructing, and inspecting the infrastructure. Each manual lists the information that must be submitted to the CITY Engineer.



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## **APPLICATION OF TECHNICAL MANUALS**

The following Technical Manuals contain the standards for designing, constructing, and inspecting infrastructure in the CITY:

- Construction Inspection
- Geotechnical
- Roadway
- Sanitary Sewer and Pumping Station
- Stormwater
- Structures

The Technical Manuals shall apply to all infrastructure constructed by the CITY or a Developer. The Manuals shall apply to all of the following conditions, including all related structures.

### **Public Roads**

- Roads constructed by the CITY
- Roads constructed by a Developer and dedicated to the CITY

### **Private Roads, Parking Lots, and Access Easements**

- Roads identified by the Subdivision Regulations as a private road
- Access easements that serve more than two properties
- Parking lots and roads in commercial and industrial developments

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## Stormwater Facilities

- The constructed portion of the public drainage system, including pipes, culverts, bridges, retaining walls, headwalls, overland flow channels, swales, and stormwater practices that carry water to the natural portion of the drainage system.
- The natural portion of the public drainage system, including all solid or dashed blue-line streams shown on the USGS topographic maps, reservoirs, lakes, farm ponds, wetlands, a buffer around wetlands, post-development floodplains, FEMA floodplains, a vegetative buffer strip along streams, and a drainage right of way for proper maintenance of the drainage system.
- Detention ponds, retention ponds, and other best management practices constructed by either a Developer or the CITY and required for flood control or water quality control

## Sanitary Sewer System

- Pump stations
- Sanitary sewers on land owned by the CITY
- Sanitary sewers in a CITY easement
- Sanitary sewers that initially serve only one property, but that may be extended in the future to serve additional properties. These sewers will be in an a CITY easement
- Sanitary sewer collectors and laterals on private commercial and industrial property
- Laterals on private residential property

Sanitary sewers that are collector sewer shall be placed in a CITY easement. Collector sewers are sewers that receive flow from laterals and therefore are connected to a manhole on each end. Laterals are sewers that carry flow from a building, or the building cleanout, to the collector.

## Facilities Excluded from Technical Manuals

The following facilities are not regulated or owned by the CITY and therefore are not covered by the manuals:

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**Farm Facilities for Agricultural Purposes**

Farm facilities are intended for agricultural uses and do not need to meet the requirements of the manuals for road, storm drainage, and sanitary sewer construction. If a farm requests approval for development activities, the infrastructure must meet the requirements of the manuals. If existing infrastructure does not meet the required standard, it cannot be used as part of the development.

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## INFRASTRUCTURE DEVELOPMENT PROCESS

### Introduction

The CITY Engineer shall determine which projects will be covered by the procedures in this section of the manual. In general, the procedures discussed in this section shall apply to residential, commercial, or industrial developments that require a Professional Engineer to design the infrastructure and inspect the construction. For these projects, the CITY Engineer shall require the Developer and Engineer to execute an Infrastructure Development Agreement with the CITY. An example contract is contained in Appendix A.

This section describes the interaction of the Developer, Engineer, and the of Public Works Department (through the CITY of Engineer and the Sanitary Sewer Superintendent) in the following phases of the development process:

- Improvement Plans
- Construction of the Infrastructure
- Plat Recording
- Final Inspection of the Infrastructure by CITY

### Improvement Plans

1. The CITY, Developer, and Engineer shall sign the Agreement in Appendix A. If the Developer changes Engineers, the Developer shall notify the CITY Engineer and a new Agreement shall be executed among the CITY, Developer, and Engineer.
2. The CITY of Engineer shall appoint a staff member to function as the Project Coordinator for the proposed development. The Project Coordinator shall be a Licensed Professional Engineer and shall be the contact person for the Developer and the Engineer during the preparation of the Improvement Plans, during construction, and during the final inspection. All communication from the CITY Engineer to the Developer and the Engineer shall be through the Project Coordinator. The Project Coordinator shall be copied on all relevant correspondence that the Engineer may have with regulatory agencies, utility companies, contractors, developers, and others regarding the design and construction of the infrastructure.
3. The CITY Engineer shall clarify the requirements of the Subdivision Regulations, Zoning Ordinance, Technical Manuals, and Standard Drawings when requested by the Engineer or Developer.

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4. The Engineer shall coordinate with local utility companies to complete the design.
5. The Engineer shall coordinate with the CITY Engineer, the Building Inspector, Planning, and other agencies to complete the design.
6. The Engineer shall conduct any studies necessary to evaluate off-site stormwater impacts in accordance with the Stormwater Manual, and shall request information from the CITY Engineer regarding known stormwater problems downstream of the development site. The Engineer shall submit a preliminary report to the Division of Engineering, when the Improvement Plans are 50% complete, describing the impacts of the proposed development and the proposed stormwater facilities to control downstream flooding.
7. The Engineer shall conduct a geotechnical exploration of the site in accordance with the Geotechnical Manual. The Geotechnical Report shall be included in the Improvement Plans.
8. The Engineer shall prepare the Improvement Plans in accordance with the Subdivision Regulations, Zoning Ordinance, Technical Manuals, and Standard Drawings. The Plans shall include information required by the Division of Planning and shown on the Development Plan or Subdivision Plan, such as areas of no disturbance related to tree stands, greenways, wetlands, floodplains, sinkholes, and other environmentally sensitive areas.
9. The Engineer shall prepare construction specifications for the roads, sanitary sewer facilities, and stormwater facilities and submit them as part of the Improvement Plans to the CITY Engineer.
10. The CITY Engineer shall coordinate with the Engineer and other agencies of the CITY to ensure that all Development Plan or Subdivision Plan engineering issues are addressed on the Improvement Plans.
11. The CITY Engineer, in conjunction with the Sanitary Sewer Superintendent, shall:
  - Evaluate off-site sanitary sewer impacts
  - Determine where the proposed development will connect to the CITY sanitary sewer system
  - Determine if the CITY has adequate sanitary sewer transmission capacity for the proposed development

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- Determine if the CITY has adequate sanitary sewer treatment plant capacity for the proposed development

12. The Developer shall be responsible for obtaining the following permits where applicable:

Roadway

- Kentucky Transportation Cabinet right-of-way encroachment
- CITY Street Cut Permit
- CITY Lane Blockage Permit

Stormwater (See Stormwater Manual for more information)

- Federal 404 permit for construction in streams
- Kentucky Division of Water 401 Water Quality Certification
- Kentucky Division of Water Dam Construction Permit
- Kentucky Division of Water Floodplain Construction Permit
- Kentucky Division of Water Stormwater Permit for Construction Activities
- CITY Grading Permit

Sanitary Sewers

- Kentucky Division of Water Approval for Sanitary Sewer Extension

13. KRS 151.320 requires the CITY to concurrently enforce, along with the Kentucky Natural Resources and Environmental Protection Cabinet, state regulations related to construction along or in streams. The United States Code of Federal Regulations Title 44 Section 60.3 requires the CITY to assure that all state and federal permits have been obtained.

Therefore, the Engineer shall obtain the following permits and submit them to the CITY Engineer before construction of the permitted item begins:

- Kentucky Division of Water 401 Water Quality Certification
- Kentucky Division of Water Dam Construction Permit
- Kentucky Division of Water Floodplain Construction Permit

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- Kentucky Division of Water Stormwater Permit for Construction Activities (or evidence of submittal of the Notice of Intent to the Kentucky Division of Water)
  - Federal 404 permit for construction in streams
14. To ensure that the CITY follows the requirements of the National Flood Insurance Program, the CITY Engineer shall:
- Notify the Engineer of the FEMA approvals, if any, that will be required before the CITY Engineer can accept the Improvement Plans;
  - Notify the Engineer of technical data that shall be submitted to the CITY Engineer related to construction in the floodplain; and
  - Submit technical data to FEMA within 6 months after receiving the data from the Engineer.

More information on FEMA requirements is contained in the Stormwater Manual.

15. The CITY Engineer shall set aside specific times of the week for meetings when requested by the Engineer. These times shall include at least two half-days each week and shall be reserved by appointment by the Engineer.
16. The Engineer shall prepare a Composite Drainage Plan of the project (see definitions).
17. The CITY Engineer and the Engineer shall conduct an office or field review when the Improvement Plans are approximately 50% complete. The Engineer shall schedule this meeting with the CITY Engineer. The Engineer shall invite the utility companies to this meeting if necessary.
18. Any disagreements between the Engineer/Developer and the CITY Engineer shall be resolved through a mediation process.
19. The Engineer shall submit Improvement Plans for an administrative review to the CITY Engineer, including an itemized list of estimated construction costs of the infrastructure covered by the Technical Manuals. The unit cost of each construction item shall be determined at the Partnering Workshop.
20. The CITY Engineer shall conduct an administrative review of the Improvement Plans within 10 working days of receiving the plans. The purpose of this review shall be to verify that all items have been submitted as required by the checklist in Appendix B. The review is not to check for design errors by the Engineer. The Engineer shall have sole responsibility for the accuracy of the drawings, calculations, and reports.

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21. The CITY of Engineer shall sign the Compliance Statement in Appendix B within 10 working days of receiving the plans or notify the Engineer and Developer in writing of items that are missing. The plans are considered accepted by the CITY when the CITY Engineer signs the Compliance Statement.
22. The CITY of Engineer shall notify the Developer and the Engineer in writing when the final plans, including the Erosion and Sediment control plan, have been accepted.
23. When the Improvement Plans have been accepted, the CITY of Engineer shall submit a letter to the Kentucky Division of Water stating that the CITY:
  - a. Approves the proposed sanitary sewer system;
  - b. Will assume ownership, operation, and maintenance of the proposed sanitary sewer system upon acceptance of the construction; and
  - c. Has sufficient treatment and transmission capacity for the proposed wastewater flows.
24. The Developer may obtain the CITY Grading Permit before the Improvement Plans are accepted by the CITY of Engineer if:
  - a. The Planning Commission has certified the Development Plan or Subdivision Plan,
  - b. The Erosion and Sediment Control Plan has been accepted by the CITY of Engineer



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## Infrastructure Construction

Developers that are subdividing land must construct the infrastructure and record the lots before the Building Inspector will issue building permits for homes or commercial/industrial structures.

Developers that are not subdividing land may begin structure building while constructing the infrastructure after getting approval from the Planning Commission, CITY Engineer, and the Building Inspector. However, the construction of the infrastructure must be completed before the Building Inspector issues a certificate of occupancy.

The following procedures shall apply to both types of development described above:

1. The Developer shall obtain a Grading Permit when:
  - a. The Planning Commission has certified the Development Plan, or Subdivision Plan;
  - b. The Erosion and Sediment Control Plan has been accepted by the CITY Engineer.
2. The Engineer shall submit Improvement Plans to the utility companies (water, natural gas, electric, cable television, and telephone) before the utility companies begin construction. This information will help the water company maintain the required distance between sanitary sewer pipes and water lines as described in the Sanitary Sewer and Pumping Station Manual.
3. The Engineer shall mark with colored ribbon or fencing the “do not disturb” areas in the field as shown on the Erosion and Sediment Control Plan and the Improvement Plans. The “do not disturb” areas include vegetative buffer strips along streams and around wetlands.
4. The Developer shall erect a project sign at each entrance to the development site. The sign shall identify the name and telephone number of the Developer, Engineer, and Contractor. All calls received by the CITY related to the construction shall be directed to the Developer.
5. The Contractor shall construct the Erosion and Sediment Control practices and shall limit site grading to that necessary to construct the Erosion and Sediment Controls.
6. The Engineer shall provide an on-site resident project representative during construction of the Erosion and Sediment Controls, providing inspection and reports in accordance with the requirements in the Construction Inspection Manual. The Engineer shall submit copies of the daily inspection reports to the CITY Engineer every two weeks. The Engineer shall notify the CITY Engineer in writing when the Erosion and Sediment Control practices are completed.
7. The Engineer shall notify the CITY Engineer, Sanitary Sewer Superintendent, and utility companies when construction of the infrastructure begins. These divisions, along with the

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Engineer and Contractor, shall hold an initial construction meeting within two weeks after construction of the roads, sanitary sewers, and stormwater facilities begins. The Engineer shall also invite the utility companies to this meeting. The purpose of this meeting is to make the divisions and the utility companies aware of the beginning of construction and the construction schedule. The Engineer shall prepare notes of the meeting and submit them to the divisions.

8. The Engineer shall submit the Kentucky Division of Water approval to construct sanitary sewers to the CITY Engineer.
9. The Contractor shall construct the infrastructure in accordance with the accepted Improvement Plans.
10. The Engineer shall provide an on-site resident project representative during construction of the infrastructure, providing inspection and reports in accordance with the requirements in the Construction Inspection Manual. The Engineer shall submit copies of the daily inspection reports to the CITY Engineer every two weeks.
11. The Engineer shall conduct all tests required by the Technical Manuals, including testing of the sanitary sewer lines. The Sanitary Sewer Superintendent shall observe all sanitary sewer testing. The Engineer shall notify in writing the Sanitary Sewers Supervisor and the CITY Engineer 72 hours in advance of conducting the tests.
12. The Sanitary Sewer Superintendent shall observe connections to the sanitary sewer collection or interceptor system. The Engineer shall notify in writing the CITY Engineer and the Sanitary Sewer Superintendent 72 hours in advance of making a connection to the CITY sanitary sewer system.
13. The Sanitary Sewer Superintendent shall observe the startup demonstration of pump stations. The Engineer shall notify in writing the CITY Engineer and the Sanitary Sewer Superintendent 72 hours in advance of startup demonstrations of pump stations.
14. The Engineer shall notify in writing the CITY 72 hours in advance of construction that will impact public streets.
15. The Engineer shall revise the Improvement Plans to reflect field changes. Proposed field changes that materially affect the design performance of the infrastructure shall be considered a major field change and shall be submitted to the CITY Engineer. The CITY Engineer shall conduct an administrative review of the proposed major field change within two working days of receiving it. The purpose of this review shall be to verify that all items have been submitted as required by the checklist in Appendix B. The review is not to check for design errors by the Engineer. The Engineer shall have sole responsibility for the accuracy of the drawings, calculations, and reports. The CITY Engineer shall accept the proposed field change within two working days of receiving it or notify the

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Engineer in writing of items that are missing. The Engineer may authorize minor field changes.

16. The CITY Engineer shall clarify the requirements of the Subdivision Regulations, Zoning Ordinance, Technical Manuals, and Standard Drawings when requested by the Engineer or Developer.
17. Any disagreements among the Engineer/Developer/Contractor, and the CITY Engineer shall be resolved through a mediation process.
18. When the construction is substantially complete, then the procedures on Plat Recording in this manual shall be followed for projects that require lots to be recorded before a building permit is issued by the Building Inspector.
19. When the construction is substantially complete and a plat does not have to be recorded, the following procedures shall be followed:
  - a. The Engineer shall conduct an inspection to determine if the construction is substantially complete. If the Engineer considers the construction “substantially complete” as defined in Appendix D, the Engineer shall prepare the “Certificate of Substantial Completion”, including a punch list of items to be completed or repaired.
  - b. If seeding was not accomplished before December 1, the Developer shall include in the Performance/Warranty Surety the quantities of permanent and temporary seeding required by the Stormwater Manual. Seeding shall be applied between March 1 and March 15. If weather conditions do not permit seeding during this period, then the seeding shall be done as soon as possible after March 15. The Stormwater Manual contains the requirements for temporary and permanent seeding.
  - c. The Division of Building Inspection shall issue a Certificate of Occupancy after the CITY Engineer receives the following information:
    - Certificate of Substantial Completion from the Engineer;
    - The results of all tests required by the Technical Manuals;
    - Construction cost estimate of the infrastructure including the punch list. The cost estimate shall show the items of construction, actual quantities constructed, quantities remaining to be constructed (punch list), and the unit costs that were determined at the Partnering Workshop;
    - Record drawings in paper and electronic (AUTOCAD) form from the Engineer, including a revised Composite Drainage Plan;

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- Digital video of the sanitary sewer system television survey conducted by the Engineer along with a table of lateral stub connections suitable for use by the CITY Engineer when issuing sewer tap permits;
  - Performance/Warranty Surety to complete the construction of the Engineer’s punch list in accordance with Appendix D along with the schedule for completing the construction.
- d. The Engineer shall provide copies of the above items to the Sanitary Sewers Supervisor.
  - e. The CITY Engineer shall conduct a pre-final inspection of the construction within 30 days after the Certificate of Occupancy is issued and notify in writing the Developer and Engineer of their findings.
  - f. The Developer shall complete construction of all punch list items in accordance with the schedule submitted with the plat. The final surface course of pavement shall be constructed after all primary services of utilities requiring street cuts have been installed. The Engineer shall notify the CITY Engineer in writing when the utilities have been installed.
  - g. The Engineer shall continue construction phase services as described in Appendix A until all construction is completed.
  - h. The Engineer shall notify in writing the CITY Engineer and the Developer in writing when all punch list items have been constructed in accordance with the Improvement Plans and Technical Manuals.
  - i. The CITY Engineer shall conduct an inspection to verify that all punch list items have been constructed and shall notify in writing the Engineer and the Developer of their findings.
  - j. The CITY Engineer shall reduce the Performance/Warranty Surety as described in Appendix D.
  - k. The Developer shall include the commercial property owner’s “Agreement to Maintain Stormwater Management Facilities” (Appendix E) in all title conveyance transactions where applicable.
  - l. The Developer shall maintain erosion and sediment controls until grass cover is achieved on 70% of the disturbed land draining to the controls. At that time, the Developer shall remove the controls or convert them to a permanent best management practice if indicated on the Improvement Plans.

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## Plat Recording

1. The CITY Engineer shall coordinate the concurrent review of the plat by the, Building Inspector, Public Works Department, and any other applicable agency. The staff member shall be the central point of contact for the Developer and Engineer to ensure timely review and approval of the plat.
2. The Division of Planning shall maintain a checklist of items that each agency will review on the plat. This checklist shall be made available to Developers and Engineers. The checklist from the CITY Engineer is included in Appendix F.
3. The Engineer shall prepare the plat in accordance with the Subdivision Regulations and the checklists maintained by the Division of Planning. The plat shall show the Flood Protection Elevation where applicable (see definitions).
4. If seeding was not accomplished before December 1, the Developer shall include in the Performance/Warranty Surety the quantities of permanent and temporary seeding required by the Stormwater Manual. Seeding shall be applied between March 1 and March 15. If weather conditions do not permit seeding during this period, then the seeding shall be done as soon as possible after March 15. The Stormwater Manual contains the requirements for temporary and permanent seeding.
5. The Engineer shall conduct an inspection to determine if the construction is substantially complete. If the Engineer considers the construction “substantially complete” as defined in Appendix C, the Engineer shall prepare the “Certificate of Substantial Completion”, including a punch list of items to be completed or repaired.
6. The CITY Engineer shall sign the plat within five working days after receiving the following information:
  - a. Plat prepared by the Engineer that fulfills the engineering requirements established by the Planning Commission
  - b. Certificate of Substantial Completion from the Engineer.
  - c. The results of all tests required by the Technical Manuals
  - d. Construction cost estimate of the infrastructure including the punch list. The cost estimate shall show the items of construction, actual quantities constructed, quantities remaining to be constructed (punch list), and the unit costs that were determined at the Partnering Workshop
  - e. Record drawings prepared by the Engineer in paper and electronic form (AUTOCAD), including a revised Composite Drainage Plan.

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- f. Digital video of the sanitary sewer system television survey conducted by the Engineer along with a table of lateral stub connections suitable for use by the CITY Engineer when issuing sewer tap permits.
- g. Performance/Warranty Surety to complete the construction of the Engineer's punch list in accordance with Appendix D, along with the schedule for completing the construction.

The Engineer shall submit copies of the above items to the Sanitary Sewers Supervisor.

- 7. Within 5 working days of receiving the plat, the CITY Engineer shall notify the Developer, Engineer, and the Division of Planning in writing of the items, if any, that are missing from the plat.
- 8. If it is determined that the plat prepared by the Engineer did not contain all the information required by the CITY, then the Engineer shall be responsible for submitting the required information.
- 9. The Division of Planning shall ensure that all requirements of the Planning Commission have been fulfilled before certifying the plat. Within 5 days of receiving the signed plat from the Division of Engineering, the Division of Planning shall certify the plat or shall notify the Developer and Engineer in writing of missing items or other requirements that have not been met.
- 10. Approval and recording of the plat shall mean the following:
  - a. Constitutes acceptance of the infrastructure for operation and maintenance by CITY, except for roads that lack the final surface course of pavement;
  - b. Does not relieve the Developer from compliance with the requirements of the Procedures Manual or Technical Manuals related to the completed construction;
  - c. Acknowledges the beginning of the Developer's warranty period as described in this manual; and
  - d. Acknowledges CITY's intention to take full ownership responsibility of the public facilities at the end of the warranty period, provided that the infrastructure is in compliance with the Procedures Manual and Technical Manuals.
- 11. The CITY Engineer shall conduct a pre-final inspection of the construction within 30 days after the plat is signed and notify the Developer and Engineer in writing of their findings.
- 12. The Developer shall complete construction of all the punch list items in accordance with the schedule submitted with the plat. The base courses of the roadways shall be installed for at least one year prior to the installation of the final surface course of pavement. The final surface course of pavement shall be constructed only after all primary services of utilities

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requiring street cuts have been installed, and any defective areas of the base courses have been identified by the Engineer and have been corrected or reconstructed (including removal of portions of the pavement to obtain a uniformly compacted base). The Engineer shall notify the CITY Engineer in writing when the utilities have been installed and the Developer wishes to install the final surface.

13. The Engineer shall continue construction phase services as described in Appendix A until all construction is completed.
14. The Engineer shall notify the CITY Engineer and the Developer in writing when all punch list items have been constructed in accordance with the Improvement Plans and Technical Manuals.
15. The CITY Engineer shall conduct an inspection to verify that all punch list items have been constructed and shall notify the Engineer and the Developer in writing of their findings.
16. The CITY Engineer shall reduce the Performance/Warranty Surety as described in Appendix D.
17. The Developer shall include the commercial property owner's "Agreement to Maintain Stormwater Management Facilities" (Appendix E) in all title conveyance transactions where applicable.
18. The Developer shall maintain erosion and sediment controls until grass cover is achieved on 70% of the disturbed land draining to the controls. At that time, the Developer shall remove the pond or convert it to a permanent best management practice if indicated on the Improvement Plans.

# PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT

## Final Inspection by the City

The CITY shall conduct a final inspection of the construction near the end of the warranty period (see definitions) in accordance with the following procedures. The Developer and the Sanitary Sewers Supervisor shall also participate in the final inspection as described below.

1. The CITY Engineer shall:
  - a. Conduct a final inspection of the roads within 1 year after the final surface course is applied
  - b. Conduct a final inspection of the stormwater facilities before the warranty period ends
  - c. Notify the Sanitary Sewers Supervisor in writing six months before the warranty period ends that the sanitary sewers and pump stations need to be inspected
2. The Sanitary Sewers Supervisor shall:
  - a. Conduct an inspection of the sanitary sewers and pump stations within 30 working days of receiving written notice from the CITY Engineer to conduct the inspection, and
  - b. Notify the CITY Engineer in writing within 30 working days of conducting the inspection of repairs that need to be made to the sanitary sewers and pump stations
3. The CITY Engineer shall notify the Developer in writing at least three months before the warranty period ends of repairs that must be made to the roads, sanitary sewers and pump stations, and stormwater facilities resulting from improper workmanship or defective materials.
4. The Developer shall repair roads, sanitary sewers and pump stations, and stormwater facilities identified by the CITY Engineer at any time during the warranty period. The repairs shall be made at least 30 working days before the warranty period ends. The Developer shall notify the CITY Engineer and the Sanitary Sewers Supervisor 72 hours in advance of when repairs will be made.
5. The CITY Engineer shall:
  - a. Inspect the construction of the repairs to roads and stormwater facilities made by the Developer at least 7 days before the warranty period ends;
  - b. Inspect the construction of the repairs to the sanitary sewer system in conjunction with the Sanitary Sewer Supervisor at least 7 days before the warranty period ends;



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- c. Reduce the Performance/Warranty Surety in accordance with Appendix D after the Developer makes all the repairs; and
- d. Call the surety and make the necessary repairs if the Developer does not make the repairs within the time frame listed above.

# PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT

## RESIDENTIAL AND COMMERCIAL/INDUSTRIAL BUILDING CONSTRUCTION

### Introduction

These procedures shall apply to construction on vacant lots recorded after this manual is adopted, and on vacant recorded lots that exist when this manual is adopted. The procedures describe the interaction of the Division of Engineering, Division of Building Inspection in the Department of Public Safety, and the Builders. The Builder is the individual or company who obtains the building permit from the Division of Building Inspection. The Developer and Engineer have no role during home building other than to complete the construction of the infrastructure.

Developers that are subdividing land must construct the infrastructure and record the lots before the Division of Building Inspection issues building permits for homes or commercial/industrial structures.

Developers that are not subdividing land may obtain a building permit while constructing the infrastructure in accordance with the Improvement Plans accepted by the Division of Engineering. However, the construction of the infrastructure must reach substantial completion before the Division of Building Inspection issues a certificate of occupancy.

### Builder Responsibilities

1. Inspect the lot before purchasing it to ensure that there are no covered manholes, damaged curbs, damaged sidewalks, or other damaged infrastructure on the lot that needs to be repaired by the Developer, utility company, or another party. The Builder shall be responsible for repairing any damaged infrastructure that exists on the lot when the Builder purchases it. Any verbal or written agreements between the Builder and another party, such as a Developer, for repairing damaged infrastructure shall not relieve the Builder of the responsibility to make the repairs if the other party fails to make the repairs.
2. Obtain from the CITY Engineer the Composite Drainage Plan (see definitions) for the subdivision or commercial/industrial development prepared by the Developer's Engineer and included in the Record Drawings.
3. Submit a drainage plan for the lot as part of the application for a building permit. The drainage plan shall show the following information:
  - a. Surface drainage easements on the lot;
  - b. Sanitary sewers and manholes on the lot and the elevation of the manhole lids;

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- c. Location of proposed grease traps for food preparation facilities such as restaurants;
  - d. Non-buildable areas on the lot as shown on the Composite Drainage Plan prepared by the Developer's Engineer;
  - e. Storm sewers and manholes on the lot;
  - f. Surface inlets, curb inlets, and constructed channels on the lot;
  - g. Flow arrows that indicate the direction of surface drainage through each surface drainage easement;
  - h. Flow arrows that indicate the direction of proposed surface drainage away from the building line to the surface drainage easement, surface inlet, constructed channel, or curb inlet;
  - i. The Flood Protection Elevation as shown on the Composite Drainage Plan and plat prepared by the Developer's Engineer;
  - j. For lots having a Flood Protection Elevation
    - The elevation of the proposed lowest floor that is above ground level, including the basement floor if it is above ground level on the side facing the floodplain;
    - The elevation of proposed openings to basements or crawl spaces, such as window sills, foundation vents, crawl space entrances, and the top landing of outside stairways leading to basements;
  - k. Building setbacks shown on the plat;
  - l. The location and elevation of the nearest downstream sanitary manhole lid;
4. If the structure will be adjacent to or in a floodplain, construct the home or commercial/industrial structure in accordance with Article 19 of the Zoning Ordinance entitled Floodplain Conservation and Protection.
5. Coordinate with the plumber and state plumbing inspector to construct the home or commercial/industrial structure as follows:
- a. For structures with a concrete slab floor (and without a basement), the top of slab elevation shall be at least 1 foot above the nearest downstream manhole lid elevation.
  - b. For structures with a crawl space, the lowest floor elevation shall be at least 1 foot above the nearest downstream manhole lid elevation.

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- c. For structures with a basement (including split foyer residential housing) having plumbing fixtures in the basement that include, but not limited to, a shower, washing machine, toilet, bathtub, sink, or floor drain, then:
  - The lowest floor that is not a basement shall be at an elevation at least 1 foot above the nearest downstream manhole lid elevation.
  - The basement floor elevation shall be at least 1' above the nearest downstream manhole lid elevation, or else the plumbing fixtures in the basement shall discharge through a sewage pump to the house gravity sewer at an elevation at least 1' above the nearest downstream manhole lid. The installation of the pump shall be in accordance with the state plumbing code.
6. Notify the CITY Engineer when the plumber proposes to connect the lateral to the CITY sanitary sewer system, and leave the connection uncovered until the CITY Engineer inspects it.
7. Construct and maintain erosion controls on the lot in accordance with the requirements of the building permit issued by the Building Inspector.
8. Ensure that manholes are not covered, damaged, or filled during construction. The Builder shall obtain approval from the CITY Engineer before raising or lowering a manhole lid and frame.
9. Ensure that the final grading on the lot does not fill or excavate the drainage easement, or otherwise alter the drainage pattern on the lot.
10. Repair curbs, sidewalks, and other infrastructure damaged by the Builder.
11. Inspect the work of utility companies on the lot to ensure that they repair curbs, sidewalks, or other infrastructure they damage. However, the Builder shall be ultimately responsible for repairing any damages that the utility company fails to repair.
12. Ensure that other parties, such as building supply companies, repair curbs, sidewalks, or other infrastructure they damage while delivering materials. However, the Builder shall be ultimately responsible for repairing any damages that the other party fails to repair.
13. For lots with a Flood Protection Elevation, submit to the Division of Building Inspection a certification from Registered Land Surveyor stating that:
  - a. The lowest floor elevation, including the basement floor if it is above ground level on the side facing the floodplain, is at or above the Flood Protection Elevation.

# **PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT**

- b. The lowest elevation of openings to the structure, such as window sills, foundation vents, crawl space entrances, and the top landing of outside stairways leading to basements, is at or above the Flood Protection Elevation;
14. Notify the CITY Engineer in writing when construction is complete and schedule an on-site meeting with the CITY Engineer to inspect the lot. The CITY Engineer shall meet with the Builder within 5 working days of being notified that the construction is complete.

## **Division of Building Inspection Responsibilities**

1. Issue building permits that include the erosion and sediment control requirements for the builder.
2. Issue certificates of occupancy after receiving the certification from a registered land surveyor stating that:
  - a. The elevation of the lowest floor, including basements, that is above ground level is at or above the flood protection elevation shown on the plat and Composite Drainage Plan, and
  - b. The lowest elevation of openings to the structure, such as window sills, foundation vents, crawl space entrances, and the top landing of outside stairways leading to basements, is at or above the flood protection elevation shown on the plat and Composite Drainage Plan.
3. Provide a copy of the lot drainage plan to the Division of Engineering.

## **City Engineer's Responsibilities**

1. Inspect every two weeks the erosion controls constructed by the Builder and notify the Builder in writing to correct observed erosion problems within 2 working days.
2. Ensure that the plumber makes the proper connection to the CITY sanitary sewer service fitting that was constructed by the Developer's Contractor. The CITY Engineer shall notify plumbers in writing to repair improper connections within 5 working days. Plumbers who fail to make repairs shall be subject to the enforcement actions described in this manual.
3. Coordinate with the state plumbing inspector the inspection of sewer pipe construction, including service laterals.
4. Review residential lot drainage plans submitted by the Builder and work with the Builder to resolve any problems that may occur during construction.
5. Inspect the installation of grease traps for food preparation facilities such as restaurants.

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6. Conduct a final inspection of the lot within 5 working days after the Builder notifies them in writing that the construction is complete and final grading is complete. The final inspection shall be conducted as follows:
  - a. Inspect the lot for covered manholes and notify the Builder in writing to uncover manholes within 10 working days.
  - b. Inspect the lot to confirm compliance with the lot drainage plan, and notify the Builder in writing to correct any observed drainage problems within 10 working days.
  - c. Inspect for damaged curbs and sidewalks and notify the Builder in writing to make necessary repairs within 10 working days.
  - d. Inspect for erosion problems on the lot and notify the Builder in writing to correct the problem within 10 working days.
  - e. Inspect for other damaged infrastructure on the lot and notify the Builder to repair the infrastructure within 10 working days.
  - f. Complete the Lot Inspection Checklist in Appendix G.

# PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT

## Enforcement

Certain staff in the Divisions of Engineering and Sanitary Sewers shall have the authority to issue written citations for violations of specific provisions of the Zoning Ordinance, Subdivision Regulations, and the Code of Ordinances. Examples of the types of violations which may be cited are:

- Damaged curbs and sidewalks
- Covered manholes
- Alteration of the surface drainage
- Unauthorized fill in the floodplain
- Lack of erosion and sediment control
- Improper plumber taps
- Improper discharge to the stormwater or sanitary sewer system
- Other damage to the infrastructure

It is intended that the Infrastructure Administrative Hearing Board will be used as the primary means to achieve compliance. This five member citizen board has the authority to impose fines for violations and those fines increase for repeated violations during any twelve-month period. Violations that are not corrected within the specified time-period may be abated by the CITY, with the cost of the abatement recoverable through liens on the violator's property.

In addition, the CITY reserves the authority to cite the violator to District Court, to seek a restraining order or injunctive relief, to order the stoppage of work, or to order other action as necessary to correct a violation. Further information concerning enforcement may be found in the Code of Ordinances, the Zoning Ordinance and the Subdivision Regulations.

# PROCEDURES MANUAL FOR INFRASTRUCTURE DEVELOPMENT

## MAINTENANCE RESPONSIBILITIES

The following maintenance responsibilities apply to infrastructure constructed after this manual is adopted.

### Roads

The CITY shall maintain all roads after the final surface course of pavement has been applied, unless the road is identified as an access easement or private road. For the purposes of maintenance, roads shall not include sidewalks and curbs which are the responsibility of the property owner to maintain.

### Sanitary Sewer Facilities

The CITY shall own and maintain all pump stations. The CITY shall maintain all collector sewers on residential and commercial/industrial property. Collector sewers are sewers that receive flow from laterals and therefore are connected to a manhole on each end. Laterals are sewers that carry flow from a building, or the building cleanout, to the collector.

The CITY will not maintain laterals. The CITY will also not maintain private sanitary sewer collection and treatment systems.

### Stormwater Facilities

The CITY shall own and maintain all detention ponds, extended detention ponds, wet ponds, infiltration basins, and constructed wetlands in new single family residential and two family residential developments. In new multifamily developments, such facilities shall be owned and maintained by the CITY if they are on a separate lot with access to a public street. All other property owners shall own and maintain stormwater best management practices on their property. The maintenance requirements are contained in the Stormwater Manual.

The CITY shall be responsible for maintaining the major structural items in the public drainage system easement. These items shall include pipes, paved channels, and headwalls. In residential areas, minor maintenance like mowing shall be the responsibility of the property owner. For commercial, industrial, and high density residential areas, the property owner shall be responsible for all maintenance.

Property owners shall not construct anything in the public drainage system, including the waters and post-development floodplains of Bullitt County adjoining their property, which will impede the flow of water.



**APPENDIX A**

**INFRASTRUCTURE DEVELOPMENT  
AGREEMENT**

APPENDIX A  
Infrastructure Development Agreement for Development Plan Projects

This Agreement is made and entered at Shepherdsville, Kentucky this \_\_\_\_\_ day of \_\_\_\_\_ by and between:

\_\_\_\_\_ hereinafter referred to as the Developer (whether an individual, partnership, or corporation);

\_\_\_\_\_ hereinafter referred to as the Engineer (whether an individual, partnership, or corporation); and the City of Shepherdsville, Kentucky, hereinafter referred to as the CITY.

Whereas the Developer intends to develop a parcel of land in the CITY known as:

\_\_\_\_\_ hereinafter referred to as the Project; and whereas the Developer intends to construct infrastructure that will be owned, operated, and maintained by the CITY (or regulated by the CITY);

Whereas the Engineer has been retained by the Developer to provide planning, design, and construction phase engineering services related to the infrastructure, including the provision of a Resident Project Representative;

Whereas the CITY intends to furnish urban services to the above described Project and will, upon transfer of ownership to the CITY of the infrastructure necessary to provide the services, undertake the operation and maintenance of said infrastructure.

Therefore, the Developer, the Engineer, and the CITY agree as follows:

The CITY shall:

1. Comply with the requirements of the Procedures Manual for Infrastructure Development.
2. Make decisions and carry out its responsibilities in a timely manner so as not to delay the services of the Engineer or the Developer

The Developer shall:

1. Comply with the requirements of the Procedures Manual for Infrastructure Development.
2. Negotiate the fee for the services of the Engineer. The services of the Engineer shall be provided at the Developer's sole cost. If the Developer changes engineers, the Developer shall notify the Division of Engineering and a new Agreement shall be executed among the CITY, Developer, and the Developer's replacement engineer, in which event the Engineer shall have no further obligations under this Agreement.

3. Select a Construction Contractor to construct the infrastructure in accordance with the Contract Documents. The Developer shall bear the full cost for the services of the Construction Contractor.
4. Conduct periodic inspections of the Work during construction to ensure that the Work is proceeding satisfactorily.
5. Deliver to the CITY Engineer a Performance/Warranty Surety in accordance with the requirements of the Procedures Manual for Infrastructure Development.
6. Provide to the CITY Engineer complete access to the work during design and construction.
7. Convey all right, title, and interest in the facilities to the CITY without cost to the CITY and without encumbrances of any nature in such a form or documents as deemed necessary by the CITY, when said infrastructure has been accepted by the Division of Engineering.
8. Obtain all local, state, and federal permits.
9. Procure and maintain Commercial General Liability Insurance providing coverage at least as broad as Insurance Services Office Form CG-0001 (07/98) with:
  - a. Combination of primary and umbrella coverage limits of not less than \$1,000,000 per occurrence and a \$2,000,000 aggregate for bodily injury and property damage.
  - b. Endorsements naming as additional insureds, "The City of Shepherdsville, Kentucky, its elected and appointed officials, employees, agents, boards, consultants, assigns, volunteers and successors in interest."
  - c. Endorsement that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice, to City of Shepherdsville, 634 Conestoga Parkway, PO Box 400, Shepherdsville, Kentucky 40165.

The Engineer shall:

1. Comply with the requirements of the Procedures Manual for Infrastructure Development.
2. Prepare Improvement Plans, Construction Specifications, and other Contract Document Items in accordance with the CITY Engineer Technical Manuals.
3. Provide construction phase services as described in Attachment A-1.
4. Prepare record drawings of the infrastructure and submit one copy (minimum) each to the CITY Engineer, the CITY, the Developer, and the Contractor.
5. Be responsible for the technical accuracy of its services, and the documents resulting therefrom, and acknowledge and agree that the CITY shall not be responsible for discovering deficiencies therein.

## INFRASTRUCTURE DEVELOPMENT AGREEMENT

6. Attend meetings with the City Council, and neighborhood meetings as required during the course of the project.
7. Meet the following business requirements
  - a. Individual licensure in good standing with the Kentucky Board of Registration for Professional Engineers and Land Surveyors;
  - b. Firm licensure in good standing as an Engineering company in Kentucky, if work is to be accomplished other than as a sole practitioner;
  - c. Coverage under a license to do business in the CITY;
8. Procure and maintain professional liability insurance providing coverage at least or broad as current ISO form with the following provisions:
  - a. \$1,000,000 per occurrence with Business Interruption exposure covered.
  - b. Endorsement that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice, to the City of Shepherdsville, 634 Conestoga Parkway, PO Box 400, Shepherdsville, Kentucky 40165.
9. Procure and maintain Commercial General Liability Insurance providing coverage at least as broad as Insurance Services Office Form CG-0001 (07/98) with:
  - a. Combination of primary and umbrella coverage limits of not less than \$1,000,000 per occurrence and a \$2,000,000 aggregate for bodily injury and property damage.
  - b. Endorsements naming as additional insureds, "The City of Shepherdsville, its elected and appointed officials, employees, agents, boards, consultants, assigns, volunteers and successors in interest."
  - c. Endorsement that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice, to City of Shepherdsville, 634 Conestoga Parkway, PO Box 400, Shepherdsville, Kentucky 40165.

If all valid and collectible insurance were exhausted, the following indemnification clause shall be invoked:

*To the fullest extent permitted by law, each party to this Agreement shall indemnify and hold harmless the other parties, their officers, directors, partners and employees from and against any and all costs, losses and damages (including but not limited to all fees and charges of attorneys and design professionals, and all court, arbitration or other dispute resolution costs) caused by its negligent acts, errors or omissions, or those of its officers, directors, partners, employees, agents or consultants in the performance of its duties and responsibilities under this Agreement. To the fullest extent permitted by law, each party's total liability to the other parties shall not exceed the percentage share that party's negligence bears to the total negligence of all parties hereto and all other negligent entities or individuals.*

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

This Agreement shall be governed and construed in accordance with the laws of the Commonwealth of Kentucky. Any action at law, suit in equity, or judicial proceeding for the enforcement of this Agreement or any provision thereof shall be instituted and maintained in any court of competent jurisdiction only in the County of Bullitt, Commonwealth of Kentucky.

The CITY, the Engineer, and Developer each binds itself and its partners, successors and assigns to the other parties to this Agreement and neither the CITY, the Engineer or the Developer shall assign, sublet, or transfer its interest in this Agreement without the written consent of the others. Nothing herein shall be construed as creating any personal liability on the part of any officer, director, employee, agent, of any public body which may be a party hereto, nor shall it be construed as giving any rights or benefits hereunder to anyone other than the CITY, the Engineer, and the Developer.

If any section, clause, or provision of this Agreement shall be held invalid, such holding of invalidity shall not affect the validity of any remaining section, clause, paragraph, portion, or provision of this Agreement.

This Agreement, together with Attachment A-1 hereto, supersedes any previous agreements, oral or written, between the CITY, the Engineer, and Developer and represents the entire agreement between the parties regarding the infrastructure constructed under this Agreement; provided, however, that Developer and Engineer may enter into a separate agreement, to which CITY is not a party, addressing in greater detail the relationship between Developer and Engineer relative to the project. No other agreements or representations, oral or written, have been made by the CITY, the Engineer, or Developer relative to this Agreement.

This Agreement may not be altered, modified, or amended except in writing properly executed by an authorized representative of the CITY, the Engineer, and Developer.

Developer:

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Engineer:

By: \_\_\_\_\_

DATED MAY 3, 2013  
CITY OF SHEPHERDSVILLE KENTUCKY

**INFRASTRUCTURE DEVELOPMENT  
AGREEMENT**

Name: \_\_\_\_\_

Title: \_\_\_\_\_

CITY:

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

## ATTACHMENT A-1

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- Definitions
- Construction Phase Engineering Services
- Duties, Responsibilities of Resident Project Representative

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

## DEFINITIONS

### Defined Terms

Wherever used in this Agreement and printed with initial or all capital letters, the terms listed below have the meanings indicated, which are applicable to both the singular and plural thereof:

**Contract Documents** - Documents that establish the obligations of the parties engaged in construction and include the following:

- Infrastructure Development Agreement
- CITY Standard Drawings
- CITY Procedures Manual for Infrastructure Development
- Improvement Plans prepared by the ENGINEER
- Construction Specifications prepared by the ENGINEER
- Work Change Directives
- Field Orders
- ENGINEER's written interpretations and clarifications
- CITY Technical Manuals: Construction Inspection, Geotechnical, Roadway, Sanitary Sewer and Pumping Station, Stormwater, and Structures

Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents.

**Contractor** - An individual or entity with whom Developer enters into an agreement to construct the infrastructure.

**Defective** - An adjective which, when modifying the work, refers to Work that is unsatisfactory, faulty, or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents.

**Documents** - Data, reports, Drawings, Specifications, Record Drawings, and other deliverables, whether in printed or electronic media format, provided or furnished in appropriate phases by ENGINEER to Developer pursuant to this Agreement.

**Drawings** - That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings are not Drawings as so defined.



# INFRASTRUCTURE DEVELOPMENT AGREEMENT

***ENGINEER's Consultants*** - Individuals or entities having a contract with ENGINEER to furnish services with respect to this Project as ENGINEER's independent professional associates, consultants, subcontractors, or vendors. The term ENGINEER includes ENGINEER's Consultants.

***Field Order*** - A written order issued by ENGINEER which directs minor changes in the Work.

Full-Time Representation by the Resident Project Representative (RPR) - Full-Time representation shall mean the representation necessary to enable the ENGINEER to execute the Certificate of Substantial Completion and shall include at a minimum, but not be limited to, observation by the Resident Project Representative of the following:

- Bedding, laying, and initial backfilling of storm sewer and sanitary sewer pipe
- Installing headwalls and stilling basins
- Installing sanitary and stormwater manholes
- Installing curb box inlets, surface inlets, and other drainage structures
- Constructing pump stations
- Constructing embankment for detention/retention ponds
- Constructing and installing the principal and emergency spillways in detention/retention ponds
- Constructing road subgrade
- Constructing road granular base and pavement/concrete courses
- Placing structural concrete, including reinforcement
- Constructing channels and installing channel lining
- Constructing erosion and sediment control facilities

***Laws and Regulations; Laws or Regulations*** - Any and all applicable laws, rules, regulations, ordinances, codes, standards, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

***Record Drawings*** - The Drawings as issued for construction on which the ENGINEER, upon completion of the Work, has shown changes which ENGINEER considers significant based on record documents furnished by Contractor to ENGINEER and which were annotated by Contractor to show changes made during construction.

***Resident Project Representative*** - The authorized representative of ENGINEER assigned to assist ENGINEER at the Site during the Construction Phase. The Resident Project representative will be ENGINEER's agent or employee and under ENGINEER's supervision. As used herein, the term Resident Project Representative includes any assistants of Resident Project Representative agreed to by Developer.

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

***Samples*** - Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

***Shop Drawings*** - All drawings, diagrams, illustration, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to ENGINEER to illustrate some portion of the Work.

***Site*** - Lands or areas indicated in the Contract Documents as being furnished by Developer upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands furnished by Developer which are designated for use of Contractor.

***Specifications*** - That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

***Substantial Completion*** - The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof. Substantial completion shall mean the installation, and any required testing, of the following:

## Roads

- Granular base, tack coat, and bituminous pavement (except the 1-inch surface course)
- Curb and gutter
- Concrete pavement

## Sanitary Sewers

- Pipes, manholes, and pump stations

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

## Stormwater Facilities

- Pipes
- Manholes
- Curb inlets and surface inlets
- Headwalls and stilling basins, along with any fencing required
- Constructed channels with channel lining, including concrete where required
- Detention ponds, including the principal spillway and emergency spillway
- Erosion Control and Sediment Control

The stormwater system must be completed to the point that it functions as designed on the Improvement Plans. Individual components may be included in the Performance/Warranty Surety if they do not materially affect the performance of the system.

**Work** - The entire completed construction or the various separately identified parts thereof required to be provided under the Contract Documents with respect to this Project. Work includes and is the result of performing or furnishing labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and all equipment into such construction, all as required by the Contract Documents.

**Work Change Directive** - A written directive to Contractor signed by Developer, upon recommendation of the ENGINEER, ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies.

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

## CONSTRUCTION PHASE ENGINEERING SERVICES

A. Upon successful completion of the Improvement Plans, the ENGINEER shall:

1. *General Administration of Construction Contract.* Consult with Developer and act as Developer's representative. All of Developer's instructions to Contractor will be issued through ENGINEER who shall have authority to act on behalf of Developer in dealings with Contractor to the extent provided in this Agreement, except as otherwise provided in writing.
2. *Selecting an Independent Testing Laboratory.* Assist Developer in the selection of an independent testing laboratory to perform all inspections, tests, and approvals of Samples, materials and equipment required by the construction Contract Documents, prior to their incorporation into the Contractor's work, with appropriate interpretation thereof.
3. *Pre-Construction Conference.* Along with the Resident Project Representative, participate in a Pre-Construction Conference prior to commencement of Work at the Site.
4. *Baselines and Benchmarks.* As appropriate, establish baselines and benchmarks for locating the Work which in ENGINEER's judgment are necessary to enable the Contractor to proceed.
5. *Visits to Site and Observation of Construction.* In connection with observations of the Work of Contractor while it is in progress:
  - a. Make visits to the Site at intervals appropriate to the various stages of construction, as ENGINEER deems necessary, but at least every two weeks, in order to observe as an experienced and qualified design professional the progress and quality of the various aspects of Contractor's work. Such visits and observations by ENGINEER are not intended to be exhaustive or to extend to every aspect of the work in progress, but rather are to be limited to spot checking, selective sampling and similar methods of general observation of the work based on ENGINEER's exercise of professional judgment as assisted by the Resident Project Representative. Based on information obtained during such visits and such observations, ENGINEER shall determine in general if such work is proceeding in accordance with the Contract Documents and ENGINEER shall keep Developer informed of the progress of the work.
  - b. The purpose of ENGINEER's visits, and representation by the Resident Project Representative at the Site, will be to enable ENGINEER to better carry out the duties and responsibilities assigned to and undertaken by ENGINEER during the Construction Phase, and, in addition, by the exercise of ENGINEER's efforts as an experienced and qualified design professional, to express an informed professional opinion that the completed Work of Contractor will

## INFRASTRUCTURE DEVELOPMENT AGREEMENT

conform in general to the Contract Documents and that the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents has been implemented and preserved by Contractor. ENGINEER shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct or have control over Contractor's work nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences or procedures of construction selected by Contractor, for safety precautions and programs incident to the work of Contractor or for any failure of Contractor to comply with laws, rules, regulations, ordinances, codes or orders applicable to Contractor's furnishing and performing the Work. Accordingly, ENGINEER neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with the construction contract documents.

6. *Defective Work.* During such visits and on the basis of such observations, ENGINEER shall have authority to recommend to Developer that Contractor's work be disapproved and rejected while it is in progress if ENGINEER believes that such work will not produce a completed Project that conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.
7. *Clarifications and Interpretations; Field Orders.* Issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of the work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. ENGINEER may issue Field Orders authorizing minor variations from the requirements of the Contract Documents.
8. *Work Change Directives.* Recommend Work Change Directives to Developer, as appropriate, and shall prepare Work Change Directives as required.
9. *Shop Drawings and Samples.* Review and approve or take other appropriate action in respect to Shop Drawings and Samples and other data which Contractor is required to submit, but only for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. Such reviews and approvals or other action will be completed within 14 days of receipt of Contractor's submittal by ENGINEER and will not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions and programs incident thereto.
10. *Substitutes.* Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor.
11. *Inspection and Tests.* Require such special inspections or tests of the work as deemed reasonably necessary, and receive and review all certificates of inspections, tests and approvals required by laws, rules, regulations, ordinances, codes,

## INFRASTRUCTURE DEVELOPMENT AGREEMENT

orders or the Contract Documents. ENGINEER's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests or approvals comply with the requirements of the Contract Documents. ENGINEER shall be entitled to rely on the results of such tests.

12. *A Disagreements between Developer and Contractor.* Render formal written decisions on all claims of Developer and Contractor relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work. In rendering such decisions, ENGINEER shall be fair and not show partiality to Developer or Contractor and shall not be liable in connection with any decision rendered in good faith in such capacity.
  13. *Contractor's Completion Documents.* Receive and review maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Contract Documents, certificates of inspection, tests and approvals, and marked-up record documents including Shop Drawings, Samples, and other data approved as provided under paragraph A.9.
  14. *Record Drawings.* Prepare and furnish to Developer a set of reproducible Project Record Drawings showing appropriate record information based on Project documentation received from RPR and Contractor.
  15. *Substantial Completion.* Following notice from Contractor that Contractor considers the entire Work ready for its intended use, conduct an inspection to determine if the Work is substantially complete. If the ENGINEER considers the Work substantially complete, ENGINEER shall deliver a certificate of Substantial Completion to Developer, CITY, and Contractor. The Certificate of Substantial Completion shall be prepared in accordance with the requirements of the Procedures Manual for Infrastructure Development.
- B. ENGINEER shall provide the services of a Resident Project Representative (RPR) at the Site to assist ENGINEER and to provide more extensive observations of such work on a full-time basis. The furnishing of such Resident Project Representative services will not extend ENGINEER's responsibilities or authority beyond the specific limits set forth elsewhere.
- C. *Limitation of Responsibilities.* ENGINEER shall not be responsible for the acts or omissions of any Contractor, or any of their subcontractors, vendors, suppliers, or of any other individual or entity performing or furnishing any of the Work. ENGINEER shall not be responsible for any Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

# INFRASTRUCTURE DEVELOPMENT AGREEMENT

## DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF RESIDENT PROJECT REPRESENTATIVE

### **Resident Project Representative**

- A. ENGINEER shall furnish a Resident Project Representative ("RPR"), assistants and other field staff to assist ENGINEER in observing progress and quality of the Work.
- B. Through such additional observations of Contractor's work in progress and field checks of materials and equipment by the RPR and assistants, ENGINEER shall endeavor to provide further protection for Developer against defects and deficiencies in the Work. However, ENGINEER shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over Contractor's work nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences or procedures selected by Contractor, for safety precautions and programs incident to the Work, for any failure of Contractor to comply with Laws and Regulations, applicable to Contractor's performing and furnishing the Work, or responsibility of construction for Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.
- C. The duties and responsibilities of the RPR are limited to those of ENGINEER and are further limited and described as follows:
  1. *General:* RPR is ENGINEER's agent at the Site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the Contractor's work in progress shall in general be with ENGINEER and Contractor, keeping Developer advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Developer with the knowledge of and under the direction of ENGINEER.
  2. *Schedules:* Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by Contractor and consult with ENGINEER concerning acceptability.
  3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
  4. *Liaison:*
    - a. Serve as ENGINEER's liaison with Contractor, working principally through Contractor's superintendent and assist in understanding the intent of Contract Documents; and assist ENGINEER in serving as Developer's liaison with Contractor when Contractor's operations affect Developer's on-site operations.
    - b. Assist in obtaining from Developer additional details or information, when required for proper execution of the Work.

## INFRASTRUCTURE DEVELOPMENT AGREEMENT

5. *Interpretation of Contract Documents*: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by ENGINEER.
6. Shop Drawings and Samples:
  - a. Record date of receipt of approved Shop Drawings and Samples.
  - b. Receive samples which are furnished at the Site by Contractor, and notify ENGINEER of availability of Samples for examination.
  - c. Advise ENGINEER and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample for which RPR believes that the submittal has not been approved by ENGINEER.
7. *Modifications*: Consider and evaluate Contractor's suggestions for modification, in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to Contractor in writing decisions as issued by ENGINEER.
8. Review of Work, Rejection of Defective Work, Inspections, and Tests:
  - a. Conduct on-Site observations of Contractor's work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Report to ENGINEER whenever RPR believes that any part of Contractor's work in progress will not produce a completed Project that conforms generally to the Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of that part of Contractor's work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
9. Inspections, Tests, and System Startups:
  - a. Consult with ENGINEER in advance of scheduled major inspections, tests, and systems startups of important phases of the Work.
  - b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Developer's and CITY's personnel, and that Contractor maintains adequate records thereof.
  - c. Observe, record, and report to ENGINEER appropriate details relative to the test procedures and systems startups.



## INFRASTRUCTURE DEVELOPMENT AGREEMENT

- d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.

### 10. Records:

- a. Maintain at a local office orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all Work Change Directives, Field Orders, additional Drawings, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, Shop Drawing and Sample submittals received from and delivered to Contractor and other Project related documents.
- b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the job Site, weather conditions, data relative to questions of, Field Orders, Work Change Directives, or changed conditions, Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.
- c. Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.
- d. Maintain records for use in preparing Project documentation.
- e. Upon completion of construction, furnish original set of all RPR Project documentation to ENGINEER.

### 11. Reports:

- a. Furnish to ENGINEER periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to ENGINEER proposed, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Furnish to ENGINEER and Developer copies of all inspection, test, and system startup reports.
- d. Report immediately to the ENGINEER the occurrence of any Site accidents, any hazardous environmental conditions, emergencies, or acts of God endangering the Work, and property damaged by fire or other causes.

- 12. Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that material and equipment certificates, maintenance and operation manuals and other

## INFRASTRUCTURE DEVELOPMENT AGREEMENT

data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to ENGINEER for review and forwarding to Developer prior to payment for that part of the Work.

### 13. Completion:

- a. Before ENGINEER issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction, with a copy to ENGINEER, who shall provide same to the Developer.
- b. Observe whether Contractor has had performed inspections required by Laws and Regulations applicable to the Work, including but not limited to those to be performed by public agencies having jurisdiction over the Work.
- c. Participate in a final inspection in the company of ENGINEER, Developer, and Contractor and prepare a final list of items to be completed or corrected.
- d. Observe whether all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance and issuance of the Certificate of Substantial Completion.

### A. Limitations of Authority of RPR

Resident Project Representative shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items), unless authorized by ENGINEER.
2. Exceed limitations of ENGINEER's authority as set forth in the Agreement or the Contract Documents.
3. Undertake any of the responsibilities of Contractor, subcontractors, suppliers, or Contractor's superintendent.
4. Advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work unless such advice or directions are specifically required by the Contract Documents.
5. Advise on, issue directions regarding or assume control over safety precautions and programs in connection with the activities or operations of Developer or Contractor.
6. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
7. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by ENGINEER.

## **GENERAL PROCEDURES for COMMERCIAL PROJECTS**

Beginning June 1, 2013, the City of Shepherdsville will follow new procedures established by the CITY Engineer. A basic outline regarding the new procedures is shown below.

For developments that involve public infrastructure improvements (infrastructure within a CITY easement), the design engineer shall submit the following information to the CITY and the CITY Engineer:

- 1) Signed Infrastructure Development Agreement
- 2) Signed Improvement Plan Compliance Statement
- 3) Certified preliminary subdivision/final development plan.
- 4) Grading, erosion control and sediment control plan (see chapter 11 in Stormwater Manual).
- 5) Stormwater management plans and design calculations (see chapters 5-10 in Stormwater Manual).
- 6) Street plans and profiles (if applicable).
- 7) Pavement design (if applicable).
- 8) Storm sewer and/or sanitary sewer plans and profiles (if applicable).
- 9) Sanitary sewer/pump station/force main design calculations (if applicable).
- 10) Geotechnical report (if applicable).
- 11) Construction specifications.

The CITY Engineer will conduct an administrative review to determine if all the required information has been submitted. The CITY Engineer will notify the design engineer if additional information is required. If all the information has been submitted, the CITY of Engineer will accept the plans and notify the Building Inspector that a grading permit and/or building permit may be issued.

After all applicable permits have been issued and all applicable fees have been paid, construction may begin. During construction, the design engineer shall provide inspection services for all public infrastructure improvements being constructed.

## **GENERAL PROCEDURES for COMMERCIAL PROJECTS**

After construction is complete, Building Inspector will issue a certificate of occupancy only after the CITY Engineer has received the following information from the design engineer:

- 1) A certificate of substantial completion from the design engineer.
- 2) Any test results from the design engineer.
- 3) A cost estimate of all infrastructure improvements for the entire project.
- 4) Record drawings of all public infrastructure improvements.
- 5) A videotape of sanitary sewer main lines constructed.
- 6) A surety (bond) from the developer. For projects where the cost estimate of the public infrastructure improvements is less than \$25,000, a \$2,500 surety (bond) will be required. For projects where the cost estimate of the public infrastructure improvements is greater than \$25,000, the surety (bond) will be established according to the procedures outlined in the Procedures Manual.
- 7) A signed maintenance agreement from the owner for stormwater best management practices.

For developments that involve private infrastructure improvements (infrastructure that is not within a CITY easement), the design engineer (or other licensed design professional) shall submit the following information to the Division of Engineering:

- 1) A signed Improvement Plan Compliance Statement
- 2) Certified preliminary subdivision/final development plan (if applicable).
- 3) Grading, erosion control and sediment control plan (if applicable).
- 4) Stormwater management plan and design calculations (if applicable). Detention basin fill embankments containing water greater than four (4) feet at the potential breach location shall be designed by a licensed professional engineer. The engineer shall also be responsible for inspection and certification of proper construction of the fill embankment.

The CITY Engineer will conduct an administrative review to determine if all the required information has been submitted. The CITY Engineer will notify the design engineer (or other licensed design professional) if additional information is required. If all the information has been submitted, the CITY Engineer will accept the plans and notify the Building Inspector that a grading permit and/or building permit may be issued.

After all applicable permits have been issued and all applicable fees have been paid, construction may begin. During construction, the design engineer (or other licensed design professional) shall provide inspection services for all private infrastructure improvements being constructed. The

## GENERAL PROCEDURES for COMMERCIAL PROJECTS

Building Inspector will issue a certificate of occupancy only after the Engineer has received the following information:

- 1) A statement from the design engineer (or other licensed design professional) certifying that any constructed private infrastructure improvements will function as designed and that the constructed detention volume meets the designed detention volume.
- 2) A signed maintenance agreement from the owner for stormwater best management practices.
- 3) Following are some additional requirements for commercial developments that involve private infrastructure improvements only:

Developments less than 1 acre:

- 1) Detention will not be required if the storm sewer system receiving the outfall from the development has sufficient capacity as defined in Chapter 1 of the Stormwater Manual.
- 2) Detention will not be required if the peak stage in the detention basin receiving the outfall from the development does not increase more than 0.1’.
- 3) If detention is required, it must be sized according to the Stormwater Manual.
- 4) Permanent water quality best management practices (BMPs) will not be required for sites that disturb less than 1 acre. However, erosion control will be required.

Developments greater than 1 acre:

- 1) Detention will be required unless otherwise directed by the CITY Engineer.
- 2) Water quality best management practices (BMPs) will be required unless otherwise directed by the CITY of Engineer. BMPs other than those listed in the Stormwater Manual may be permitted if the design engineer (or other licensed design professional) can demonstrate that the proposed BMP will meet the water quality control objectives in the Stormwater Manual.

Other general requirements that you should be aware of are:

- 1) RCP is required for all public storm sewer systems (and all systems that have the potential to become public). The pipe material for private storm sewer systems will be up to the discretion of the design engineer (or other licensed design professional) except for the segment of pipe that connects to a public storm sewer system which must be RCP.
- 2) In areas where drainage problems are known to exist, the CITY Engineer shall notify the design engineer (or other licensed design professional) that oversizing detention basins, or

## **GENERAL PROCEDURES for COMMERCIAL PROJECTS**

other measures designed to mitigate stormwater impacts from the development, may be required.

- 3) The location and elevation of the nearest downstream sanitary sewer manhole lid shall be shown on all applications for a building permit.
- 4) The lowest plumbing fixture shall be at least 1' foot above the nearest downstream sanitary sewer manhole lid, or else a sewage pump shall be installed in accordance with the requirements in the Procedures Manual.
- 5) The location and elevation of any 100 year FEMA floodplain and calculated post development floodplain on the site shall be shown on all plans.
- 6) The lowest opening of any structure shall be 2' feet above any 100 year FEMA floodplain or calculated post development floodplain.
- 7) No grading work shall be permitted within a 100 year FEMA floodplain.
- 8) The Division of Engineering will inspect the construction of entrances, any connection to a public storm sewer, and silt and erosion control measures.

# Plat Checklist

Plat Name \_\_\_\_\_

Final (Y/N) \_\_\_\_\_ Amended (Y/N) \_\_\_\_\_ # \_\_\_\_\_

Engineer's Stamp (Y/N) \_\_\_\_\_ Land Surveyor Stamp (Y/N) \_\_\_\_\_

Engineer's Certification and Signature \_\_\_\_\_

Owner's Certification and Signature \_\_\_\_\_ City Engineer's Certification \_\_\_\_\_

Zone \_\_\_\_\_ Length of Streets \_\_\_\_\_ Number of Lots \_\_\_\_\_

Bonded (Y/N) \_\_\_\_\_ Additional Fees Due? \_\_\_\_\_

Street Cross Sections (Y/N) \_\_\_\_\_ Cul-de-sac Detail (Y/N) \_\_\_\_\_

As Builts: Sanitary: On site \_\_\_\_\_ Off site \_\_\_\_\_

Street: On site \_\_\_\_\_ Off site \_\_\_\_\_

Storm: On site \_\_\_\_\_ Off site \_\_\_\_\_

Easements: On site \_\_\_\_\_ Off site \_\_\_\_\_

Easement Maintenance Note (Y/N) \_\_\_\_\_ Detention Maintenance Note (Y/N) \_\_\_\_\_

Floodplain Shown(Y/N) \_\_\_\_\_ Flood Protection Elevations (Y/N) \_\_\_\_\_

Alluvial Soils Shown (Y/N) \_\_\_\_\_

Building Setback of 25' from the Floodplain Shown (Y/N) \_\_\_\_\_

Drainage Easements Shown (Y/N) \_\_\_\_\_

Vegetative Buffer Strip Shown (Y/N) \_\_\_\_\_

Monument Description Complete (Y/N) Reference Meridian Identified (Y/N) \_\_\_\_\_

Sinkhole Non-Building Area Date of Survey and Signature Date (Y/N) \_\_\_\_\_

Unadjusted Error of Closure (Y/N) \_\_\_\_\_ Adjustment Statement (Y/N) \_\_\_\_\_

Bearings and Distances: On Plat Accuracy Survey Class A (Y/N) \_\_\_\_\_

Have the requirements from the Improvement Plans been placed on the plat? (Y/N) \_\_\_\_\_

Comments: \_\_\_\_\_

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## **PROCEDURES FOR COMPUTING PERFORMANCE/WARRANTY SURETY**

The Performance/Warranty Surety shall be sufficient to complete all construction items identified by the Engineer on the punch list submitted with the certificate of substantial completion, and to repair infrastructure due to improper workmanship or defective materials during the warranty periods.

### **Warranty Period**

The warranty period is the time period during which the Developer guarantees the work to be free from defective materials or improper workmanship.

The warranty periods for roads dedicated to the City of Shepherdsville shall be as follows:

- a. For the base courses, the warranty period shall begin at the time of substantial completion and extend until the application of the final course of asphalt, but in no case shall the warranty period be less than one year.
- b. For the final course of asphalt, the warranty period shall be 1 year from when the final surface course is applied.

For development projects that involve recording a plat, the warranty period for sanitary sewer facilities shall be 3 years from the date of plat recording, and the warranty period for stormwater facilities shall be 1 year from the date of plat recording.

For development projects that do not involve a plat, the warranty period for sanitary sewer facilities shall be 3 years from the date of substantial completion, and the warranty period for stormwater facilities shall be 1 year from the date of substantial completion.

### **Surety Amount**

The surety shall be computed as follows:

100% of the punch list items, plus

10% of the cost estimate of the completed project infrastructure, including roads, sanitary sewer facilities, and stormwater facilities, plus

20% of the sum of the above items to cover contingencies

The Engineer shall compute the surety based on the quantities of materials and the unit costs determined the City Engineer.

### **Punch List Items**

The following items include, but are not limited to, the items that shall appear on the punch list if they are not constructed before substantial completion:

- Constructing the final surface course of pavement
- Seeding and mulching areas of disturbed land



- Conducting maintenance on ponds, channels, and streams
- Constructing sidewalks
- Constructing handicap ramps
- Mortaring pipes in headwalls
- Adjusting manholes
- Cleaning the storm sewer system
- Adding steps, mortaring steps, and grouting lift lugs in manholes
- Repairing or replacing curbs that are damaged by the infrastructure construction. This does not include damage caused by Builders after the date of substantial completion. The builders shall be responsible for repairing curbs that they damage.
- Removing erosion and sediment controls or converting them to permanent best management practices
- Constructing trash racks
- Constructing fences between agricultural land and the project site

The items above shall be completed in accordance with the schedule submitted along with the certificate of substantial completion. All items shall be completed within 1 year except the final surface course of pavement, sidewalks, and removal/conversion of sediment ponds.

### **Total Project Cost Estimate**

The cost estimate of the total project infrastructure shall show the unit cost items and the actual quantities of construction for roads, sanitary sewer facilities, and storm water facilities. For the purpose of establishing the amount of the surety, the total project cost shall not include such items as site excavation, rock removal, trench rock for the sanitary sewer, testing of the sanitary sewers, turn lanes constructed on state right-of-way or other similar items.

### **Reduction in Surety for Projects That Require Plat Recording**

The surety may be reduced as follows:

First Reduction – The City Engineer will conduct an inspection 30 days after the plat is recorded. At this time, the surety may be reduced by an amount equal to the punch list items that have been completed.

Second Reduction – One year after the plat is recorded, the surety may be reduced by an amount equal to the punch list items that have been completed, and reduced by 10% of the total cost of the stormwater facilities.

Third Reduction – Two years after the plat is recorded, the surety may be reduced by an amount equal to the punch list items that have been completed. If the final surface course has been applied for at least one year, then the surety may also be reduced by an amount equal to 10% of the total cost of the final course of asphalt.

Fourth Reduction – Three years after the plat is recorded, the surety may be reduced by an amount equal to the punch list items that have been completed, and reduced by 10% of the total cost of the sanitary sewer facilities. If the final surface course has been applied for at least one year, then the surety may also be reduced by an amount equal to 10% of the total cost of the final course of asphalt (if it has not been previously reduced).

### **Reduction in Surety for Projects That Do Not Involve Plat Recording**

The surety may be reduced as follows:

First Reduction – The Division of Engineering will conduct an inspection 30 days after the date of substantial completion. At this time, the surety may be reduced by an amount equal to the punch list items that have been completed.

Second Reduction – One year after the date of substantial completion, the surety may be reduced by an amount equal to the punch list items that have been completed, and reduced by 10% of the total cost of the stormwater facilities.

Third Reduction – Two years after the date of substantial completion, the surety may be reduced by an amount equal to the punch list items that have been completed. If the final surface course has been applied for at least one year, then the surety may also be reduced by an amount equal to 10% of the total cost of the final course of asphalt.

Fourth Reduction – Three years after the date of substantial completion, the surety may be reduced by an amount equal to the punch list items that have been completed, and reduced by 10% of the total cost of the sanitary sewer facilities. If the final surface course has been applied for at least one year, then the surety may also be reduced by an amount equal to 10% of the total cost of the final course of asphalt (if it has not been previously reduced).

## **IMPROVEMENT PLAN SUBMITTAL CHECKLIST**

The items below shall be submitted to the Division of Engineering.

1. Plans stamped and signed by a Licensed Professional Engineer employed by the engineering firm that signed the Infrastructure Development Agreement.
2. Compliance statement signed by the Developer and Engineer.
3. Certified Preliminary Subdivision/Development Plan.
4. Grading, Erosion, and Sediment Control Plan.
5. Street Plans and Profiles.
6. Pavement Design.
7. Storm sewer and sanitary sewer plans and profiles.
8. Storm sewer, inlet spacing, culvert, and constructed channel design calculations.
9. Stormwater best management practices plans, cross sections, and design calculations.
10. Sanitary sewer design calculations.
11. Pump station/force main design calculations.
12. Geotechnical Report.
13. Construction Specifications.
14. Composite Drainage Plan.
15. Structural drawings and details (bridges, box culverts, retaining walls, etc.).
16. Post development floodplain and supporting analyses.
17. Lists of permits, prepared by the Engineer, that will be obtained by the Developer or Engineer.
18. Offsite easements or property notification.

Items 1-4 shall be submitted if a Grading Permit is requested separate from the Improvement Plans.

**CERTIFICATE OF SUBSTANTIAL COMPLETION**

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DATE OF ISSUANCE \_\_\_\_\_

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DEVELOPER \_\_\_\_\_

Contact: \_\_\_\_\_

Project: \_\_\_\_\_

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This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To: The City of Shepherdsville Kentucky \_\_\_\_\_

And To \_\_\_\_\_

DEVELOPER

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The Work to which this Certificate applies has been inspected by the Engineer (through fulltime representation as defined in the Infrastructure Development Agreement), and that Work is hereby declared to be substantially complete and in accordance with the Contract Documents.

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**DATE OF SUBSTANTIAL COMPLETION**

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of DEVELOPER to complete all the Work in accordance with the Contract Documents.

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The responsibilities between the City of Shepherdsville and DEVELOPER for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

City of Shepherdsville: \_\_\_\_\_

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DEVELOPER:

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This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of DEVELOPER'S obligation to complete the Work in accordance with the Contract Documents.

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Executed by ENGINEER on \_\_\_\_\_  
Date

\_\_\_\_\_  
ENGINEER

By: \_\_\_\_\_  
(Authorized Signature)

DEVELOPER accepts this Certificate of Substantial Completion on \_\_\_\_\_  
Date

\_\_\_\_\_  
DEVELOPER

By: \_\_\_\_\_  
(Authorized Signature)

City of Shepherdsville accepts this Certificate of Substantial Completion on \_\_\_\_\_  
Date

By: \_\_\_\_\_  
(Authorized Signature)

## ***Substantial Completion***

Substantial Completion shall mean the time at which the work has progressed to the point where, in the opinion of Engineer, the work is sufficiently complete, in accordance with the Improvement Plans and Technical Manuals, so that the work can be utilized for the purposes for which it is intended. This includes the following:

### Roads

- granular base, tack coat, and bituminous pavement (except the 1-inch surface course)
- curb and gutter
- concrete pavement

### Sanitary Sewers

- Pipes, manholes, and pump stations shall be installed and shall have passed all tests required by the Sanitary Sewer/Pumping Station Manual and the Construction Inspection Manual

### Stormwater Facilities

- Pipes
- Manholes
- Curb inlets and surface inlets
- Headwalls and stilling basins, along with any fencing required
- Constructed channels with channel lining, including concrete where required
- Detention ponds, including the principal spillway and emergency spillway
- Erosion Control and Sediment Control

The stormwater system must be completed to the point that it functions as designed on the Improvement Plans. Individual components may be included in the Performance/Warranty Surety if they do not materially affect the performance of the system.