



# BERKELEY COUNTY

## ENGINEERING DEPARTMENT

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### **WARRANTY ACCEPTANCE OF ROADWAYS AND DRAINAGE SYSTEM CONSTRUCTION**

The following steps are to be followed in placing completed roadway and drainage system construction under warranty:

#### **WARRANTY INSPECTION**

When, in the opinion of the Project Engineer, roadway and drainage system construction is substantially complete, he or she will submit record drawings, a copy of the recorded (or final) Subdivision Plat, and a "Construction Completion Certification" stating that all construction has been completed in accordance with the approved plans and the Berkeley County Subdivision Regulations. The checklist for the record drawings is included in the **Appendix**.

He will also request that a warranty inspection be scheduled within 15 days. (Every effort will be made to schedule the inspection as soon as practicable).

At the time of the warranty inspection, the following conditions must be satisfied:

1. Streets and gutters must be swept and clean.
2. Ditches, swales, ponds, drainage pipes, and drainage structures must be cleared of sediment and debris.
3. Grassed areas must be adequately maintained and mowed prior to inspection. Note that an adequate stand of permanent grass must be established within all areas of rights-of-way and drainage easements disturbed by construction including shoulders, ditches, swales, and ponds. However, temporary grassing may be acceptable in areas of rights-of-way and drainage easements that will be subsequently sodded.
4. Manhole covers and grates must be opened for inspection.
5. Traffic signs and street signs must be installed.

Failure to satisfy these conditions will be cause to postpone the inspection.

The Project Engineer or his representative must be present for the warranty inspection. It is generally recommended that a representative of the Contractor, and the Developer also be present.

Within one week following completion of the warranty inspection, the Developer will be notified in writing that the project was found to be acceptable or he will be advised of the need to correct specific deficiencies observed during the warranty inspection.

As-built electronic drawing files (pdf files on a CD-Rom) must be submitted following approval of paper as-built drawings.

## **WARRANTY ACCEPTANCE**

After the warranty inspection, the following steps are to be followed in placing completed construction under warranty:

1. Correct all deficiencies noted during the warranty inspection and any subsequent follow-up inspection.
2. Provide a "Schedule of Values" for completed construction. Berkeley County will review the values, and reconcile the final amounts with the Project Engineer.
3. Submit the "Warranty Period Agreement". The agreement will be executed by Berkeley County and returned.
4. Submit the warranty period security in the form of a Letter of Credit, Bond, or Cashier's Check, in the amount of 20% of the "Schedule of Values" of the constructed improvements, as stated in the Agreement.
5. Upon receipt of the security, Berkeley County will issue a letter accepting the improvements under warranty.

Acceptable forms of the "Schedule of Values", Construction Completion Certification, "As Built" Certification, Warranty Period Agreement, Warranty Period Letter of Credit, and Warranty Period Bond are contained in the **Appendix**. Variations of these forms should be reviewed in advance with the Engineering Department to avoid delays in initiating the warranty period.

## **WARRANTY PERIOD**

The Developer shall guarantee the roadways, storm drainage system and sidewalks free from defects and failures, and to maintain the improvements for a period of two years following Berkeley County's acceptance of the project under warranty.

The Developer shall provide financial security in the form of a no-contest irrevocable letter of credit, a performance and payment bond underwritten by an acceptable South Carolina licensed corporate surety, or a cashier's check, in an amount equal to at least 20% of the value of the constructed improvements, based on information provided by the Developer and agreed to by the County Engineer. The security shall allow Berkeley County to draw funds as needed to correct defects or perform maintenance during the warranty period, and

to extend the warranty period, if needed, in order to complete correction of defects discovered during the warranty period.

The County Engineer will notify the Developer if repair or maintenance is required during the warranty period. The Developer shall have 30 days to submit an acceptable schedule of corrective actions and begin the corrective actions. However, no repairs within the pavement shall be made without the approval of the County Engineer. If the repair/maintenance is not completed within the approved schedule, Berkeley County will draw funds from the security to take corrective actions or for reimbursement. The warranty period will be automatically extended until the corrective actions are completed. Defects determined to be matters of public safety may be corrected without notice and Berkeley County will be reimbursed from the security.

Installation of utilities, landscaping, and/or other encroachments within rights of way or easements will require a Berkeley County encroachment permit prior to commencing any work.

During the two-year warranty period, the developer shall be responsible for maintenance of the roads and drainage systems, including but not limited to the following:

1. Repair/replacement of defective work or materials;
2. Repair/replacement of damaged or missing work or materials;
3. Mowing and maintaining grassed shoulders, slopes, ponds, and other disturbed areas;
4. Maintaining unobstructed gutters, pipes, ditches, and drainage structures.

Prior to the expiration of the two-year warranty period, a final inspection will be conducted. If no deficiencies are found during the inspection, or during the warranty period, the warranty period will end on the final day of the specified warranty period and Berkeley County will assume maintenance responsibilities for the roads and drainage systems. However, if deficiencies are found, the warranty period is automatically extended until all corrections are completed and approved.

## **APPENDIX**

1. Record Drawings Checklist
2. Schedule of Values
3. Construction Completion Certification
4. "As Built" Certification
5. Warranty Period Agreement
6. Warranty Period Letter of Credit
7. Warranty Period Bond

## RECORD DRAWINGS CHECKLIST

Prior to the warranty inspection the Project Engineer shall submit to the County Engineer one complete set of record drawings with each page of the set sealed by a licensed professional and showing the constructed improvements. These record drawings shall include the following:

1. "As built" certification.
2. "As built" of all roadways showing:
  - Road name, rights-of-way width, and pavement width.
  - Location of traffic signs, and any special features such as guardrails, retaining walls, existing trees, and landscaping.
  - Horizontal alignment and stationing of the roadways within the rights-of-way.
  - Centerline pavement spot elevations for roadways with normal crown, curb and gutter sections.
  - Centerline pavement spot elevations, and ditch flow line elevations for roadways with normal crown, and open ditch sections.
  - Edge of pavement spot elevations within roundabouts.
  - Edge of pavement spot elevations at all medians and divided roadway sections.
  - Edge of pavement spot elevations around all cul-de-sacs and thumbnails
  - Spot elevations across intersections and valley gutters.
  - Edge of pavement spot elevations along the intersection curve radius at all intersections.
3. "As built" of all superelevated roadways with cross sections at every 50' interval showing:
  - Centerline pavement elevations.
  - Edge of pavement elevations.
  - Roadway cross slopes.
  - Shoulder widths and slopes beyond the edge of pavement.
  - Top of bank elevations of roadside ditches (foreslope and backslope where it ties with existing grade).
  - Flow line elevations of roadside ditches.
4. "As built" profiles of all roadways including:
  - Centerline elevation at a maximum of 50' interval.
  - Centerline elevation of all cul-de-sacs and thumbnails.
  - Roadway centerline longitudinal slope.
  - Flow line elevations and longitudinal slopes of roadside ditches.

5. "As built" horizontal alignment and elevations of all storm drainage pipes, structures, outfall ditches, and swales within the rights-of-way and/or drainage easements including:
  - Widths of drainage easements.
  - Pipe sizes and materials.
  - Location of all storm drainage pipes and structures.
  - Invert elevations of all pipes entering and exiting structures.
  - Bottom elevation, top elevation, weir elevation, grate elevation and/or rim elevation for all storm drainage structures.
  - Profiles and longitudinal slopes of outfall ditches including flow line elevation, and top of bank elevation at a maximum of 50' interval.
  - Flow line spot elevation of swales at a maximum of 50' interval.
  
6. "As built" horizontal alignment and elevations of all storm water management basins, ponds, and pond outfall structures including:
  - Top of bank spot elevations around basins and ponds.
  - Bottom spot elevations around inlet pipes, outfall structures, and within the basins/ponds as necessary to adequately define bottom grades and sediment buildup.
  - Normal water surface elevation of basins and ponds.
  - Invert elevation and dimensions of all orifices/weirs in the outfall structure.
  - Bottom and top elevation of outfall structures.
  - Pipe size, material, and invert elevation of outfall pipes.
  - Control elevations and dimensions of emergency spillways.
  
7. "As built" plans of water and sanitary sewer including:
  - Horizontal alignment of all lines and structures within rights-of-way and easements.
  - Pipe sizes and materials.
  - Invert elevations of all sanitary sewer pipes entering and exiting the manholes.
  - Bottom elevation, top elevation and/or rim elevation of all the sanitary sewer manholes.
  - Location of all hydrants, valves, and water meters.

## SCHEDULE OF VALUES (Example)

Company Letterhead

Name of the Project

Date

Road Names:

Martha Parkway: STA 0+00 to STA 28+00

Bonnie Boulevard: STA 0+00 to STA 15+00

Sonia Street: STA 0+25 to STA 19+25.30

Laura Lane: STA 12+70 to STA 22+50.25

Carla Court: STA 0+50 to STA 12+50.25

<b>Item</b>	<b>Cost</b>
Site Preparation	\$100,000.00
Earthwork	\$150,000.00
Fine Grading and Base	\$100,000.25
Curbing	\$50,000.25
Paving	\$75,000.00
Drainage System	\$200,000.25
Sidewalks	\$50,000.25
Other (street signs & grassing)	\$25,000.00

Total Construction Cost = \$750,001.00

20% Maintenance Bond = \$150,000.20

**CONSTRUCTION COMPLETION CERTIFICATION**

I, \_\_\_\_\_, am a Registered Professional Engineer, No. \_\_\_\_\_, in the State of South Carolina, and I hereby certify that all roadway, drainage, and other facilities for \_\_\_\_\_ have been constructed in substantial accordance with the design and plans approved by Berkeley County, and in accordance with the Berkeley County Subdivision Regulations.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

(Professional Seal)

**"AS BUILT" CERTIFICATION**

I, \_\_\_\_\_, am a Registered Professional  
\_\_\_\_\_, No. \_\_\_\_\_,  
in the State of South Carolina, and I hereby certify that the information contained  
on these plans truly and accurately represents the actual lines, locations, and  
grades of the constructed improvements for \_\_\_\_\_  
\_\_\_\_\_.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

(Professional Seal)

**WARRANTY PERIOD AGREEMENT**

This Agreement, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2008, by and between Berkeley County, and \_\_\_\_\_, hereinafter referred to as "Developer/Subdivider", for the project identified as \_\_\_\_\_, which is further described on plans prepared by \_\_\_\_\_.

The Developer/Subdivider of the project acknowledges and agrees to guarantee the roadways, storm drainage system and sidewalks free from defects and failures, and to maintain the improvements for a period of two years following Berkeley County's acceptance of the project under warranty.

The Developer/Subdivider shall provide financial security in the form of a no-contest irrevocable letter of credit, a performance and payment bond underwritten by an acceptable South Carolina licensed corporate surety, or a cashier's check, in an amount equal to at least 20% of the value of the constructed improvements, based on information provided by the Developer/Subdivider and agreed to by the County Engineer. The security shall allow Berkeley County to draw funds as needed to correct defects or perform maintenance during the warranty period, and to extend the warranty period, if needed, in order to complete correction of defects discovered during the warranty period.

The County Engineer will notify the Developer/Subdivider if repair or maintenance is required during the warranty period. The Developer/Subdivider shall have 30 days to submit an acceptable schedule of corrective actions and begin the corrective actions. However, no repairs within the pavement shall be made without the approval of the County Engineer. If the repair/maintenance is not completed within the approved schedule, Berkeley County will draw funds from the security to take corrective actions or for reimbursement. The warranty period will be automatically extended until the corrective actions are completed. Defects determined to be matters of public safety may be corrected without notice and Berkeley County will be reimbursed from the security.

Installation of utilities, landscaping, and/or other encroachments within rights of way or easements will require a Berkeley County encroachment permit prior to commencing any work.

The value of the improvements has been determined to be \$\_\_\_\_\_ . Therefore, the amount of the financial security shall be \$\_\_\_\_\_ .

BERKELEY COUNTY

(DEVELOPER/SUBDIVIDER)  
(Address)

\_\_\_\_\_  
County Engineer

\_\_\_\_\_  
(Typed Name)  
(Title)

**IRREVOCABLE STANDBY LETTER OF CREDIT NO. (#)**

BENEFICIARY:  
BERKELEY COUNTY  
POST OFFICE BOX 6122  
MONCKS CORNER, SC 29461-6120

APPLICANT:  
(Developer name)  
(Developer address)

PROJECT: \_\_\_\_

AMOUNT: \$\_\_\_\_

DATE OF EXPIRY: \_\_\_\_

We, (Name and address of financial institution), hereby issue our IRREVOCABLE LETTER OF CREDIT NO. \_\_\_\_ in your favor for the account of the above referenced Applicant up to the aggregate amount of \$\_\_\_\_.

The LETTER OF CREDIT is available for payment by presentation of your drafts at sight drawn on us bearing the clause: "DRAWN UNDER (Financial institution) LETTER OF CREDIT NO. \_\_\_\_, and accompanied by the following:

Statement from Berkeley County upon presentation of your drafts stating that (Developer) has failed to perform in accordance with the terms of our agreement, including maintenance and repair of roads, drainage system, and sidewalks for the property/project identified as (Name of project). We are therefore entitled up to the sum of \$\_\_\_\_ to maintain and/or correct work related to the project.

All drafts must indicate the number and date of this credit.

We hereby engage with you that drafts drawn under and in compliance with the terms of this Credit will be duly honored upon presentation of documents to us in or before the expiration date of this LETTER OF CREDIT. The expiration date shall be extended by 60 days if Berkeley County, as beneficiary of the Irrevocable Letter of Credit No. \_\_\_\_, shall provide notice to (Financial institution) of claim prior to the Date of Expiry.

(Financial Institution)

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

(Name)  
(Position)

**WARRANTY PERIOD BOND**

BOND NO.: \_\_\_\_

PRINCIPAL AMOUNT: \$\_\_\_\_

PROJECT: \_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that we (Name & address of developer) as Principal, and (Name & address of surety), a corporation duly admitted to conduct business as a corporate surety in the state of South Carolina, as Surety, are held and firmly bound unto Berkeley County, Post Office Box 6122, Moncks Corner, SC 29461-6120, as Obligee, in the penal sum of \$\_\_\_\_, lawful money of the United States of America, for the payment of which well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, (Name of developer) has agreed to maintain, repair, and correct deficiencies associated with roads, drainage system, and sidewalks constructed for (Name of project), in (Location of project).

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall fail to perform in accordance with the terms of the agreement, the Surety, upon receipt of a written notice of the Obligee stating that the Project has not been maintained, repaired and/or deficiencies have not been corrected, shall pay the Obligee such amount up to the Principal amount of this Bond which will allow the Obligee to perform the work or will reimburse the Obligee for work performed in accordance with the agreement.

This obligation shall remain in force for the duration of the warranty period including extensions.

Signed, sealed and dated this \_\_\_\_ day of \_\_\_\_, 2008.

(Name of developer)  
PRINCIPAL

(Name of surety)  
SURETY

By: \_\_\_\_\_  
(Name/Title)

By: \_\_\_\_\_  
(Name/Title)