

# Record Drawing Checklist

City of Charleston, SC



Department of Public Service – Engineering  
Revised - 2017



## What is Record Drawing Review?

The record drawing review is completed by the Engineering and Stormwater Divisions to assure that compliance with the approved construction drawings has been met during the actual construction process. Record drawings are required for all public facilities located within the City's rights-of-way. These include public streets, sidewalks, curbs/curb and gutter, stormwater and other utility facilities. The Contractor shall designate one set of original approved drawings for use as record drawings; they shall be kept current by the Contractor and must be available to the City upon request. Any change from the original approved construction drawings shall be clearly marked on these record drawings as described below (see Appendix B). Record drawings are also used to supply the City of Charleston with actual constructed information for reference during future projects which may build upon the design of existing features.

## Responsibility

### Contractor

The contractor shall maintain a full-sized set of approved construction drawings on site, and during construction, accurately mark these plans with as-constructed information indicating all field changes affecting various civil, mechanical, electrical, and other items of work as well as locations as actually installed. Clear and concise notes, shop drawings and sketches should accompany changes marked on these plans. These field managed record drawings should be provided to the Contractor's Engineer to assist in the preparation of the final record drawings.

### City Inspector

Perform routine inspection to ensure that the record drawings are current and properly done, and that major changes, if any, have received the appropriate approvals before implementation.

### Contractor's Engineer

Upon completion and concurrence by the City Inspector, record drawings must be certified by the Contractor's Engineer that the record drawing accurately represents existing field conditions, and that the project was constructed in conformance with the standards, dimensions and specifications of the approved project plans.

### Developer/Owner

As part of the dedication package and upon completion of public improvements, the developer/owner and/or their representative must call for a final inspection and submit two (2) complete sets of record drawings to the City of Charleston Engineering Division. The inspector and the contractor will do a walk-through of the project and develop a punch-list of items to be completed. Additional punch list items may be generated based on record drawing review. The developer/owner and/or their representative shall submit to the Engineering and Stormwater Division, two (2) full size hard copies and one electronic PDF format copy of the final record drawings properly certified by a registered professional engineer registered in South Carolina and a licensed land surveyor registered in South Carolina if not one in the same.



## Record Drawing Requirements

### Engineering:

#### General:

- ◆ The Contractor's Engineer shall certify that, at the time of the final inspection, the site was completed in substantial accordance with the approved construction drawings and specifications. Any deviations from the original approved construction drawings shall be noted on the record drawings.
- ◆ The Contractor's Engineer certification shall be based upon on-site observation of construction (scheduled and conducted by the professional engineer of record or a by a project representative under direct supervision) and review of record drawings, with field measurements and verification as needed, for the purpose of determining the work was completed in accordance with original approved construction drawings, information and specifications.
- ◆ The record drawings are to be based on the approved construction drawings and revised to reflect any changes made during construction. Both the original design and constructed condition must be clearly shown. The drawings need to be clearly labeled as "record" drawings.
- ◆ Engineer's statement (with embossed or wet seal and with an original signature on each sheet) shall verify that record drawings reflect the true conditions in the field.
- ◆ Street names shall be on all streets. All easements and rights-of-ways shall be shown and clearly labeled.
- ◆ If the utility system is to be private (not to be dedicated to City), then so state on each sheet.
- ◆ The location and elevation of the benchmark referenced will be shown on the drawing. If the referenced benchmark is not within the project, then a complete description of its location will be provided to assist in future locating.
- ◆ The locations and description of any utility lines and other installations of any kind or other description known to exist within the construction area. The location includes dimensions to permanent features.
- ◆ The locations and dimensions of any changes to buildings and structures.
- ◆ Correct grade or alignment of roads.
- ◆ Correct elevations to changes made in site grading.
- ◆ Changes in details of design or additional information such as approved placement details, pipe sizes, material changes, etc.
- ◆ Where drawings and/or specifications allow options, only the option actually used in the construction shall be shown on the record drawings.
- ◆ The location and description of any safety features such as guardrails, attenuators, etc.

#### Streets, Sidewalks, Ramps, Curbs, Gutters and Others:

- ◆ Show all rights-of-way or easement lines, clearly labeled public or private.
- ◆ Provide typical offset dimensions from property, rights-of-way or easement lines.
- ◆ ADA ramp or curb opening installation that deviate from original plans shall be noted on record drawings.
- ◆ Provide special detail drawings or shop drawings where installations were not shown on original drawings due to field conditions or where required for clarity.
- ◆ Monuments installed or encountered within the project.



- ◆ Locate and describe all installed regulatory or warning signage and pavement markings within the project.
- ◆ Location and species information on installed street trees and lighting fixtures.
- ◆ Locate irrigation lines, controllers, sprinkler heads, backflow devices, pressure reducing valves, meters, supply sources and tap locations using two directions. Swing ties should be made from objects that are permanent in nature.
- ◆ Location, type, material and reinforcement, height, drainage systems and foundation information of all retaining walls.
- ◆ Note any changes to the alignment, either vertically or horizontally, of curb & gutter, sidewalk, pavers or any other surface improvement.
- ◆ Provide crown line spot elevations approximately on 100-foot stations, or as field conditions warrant.
- ◆ Horizontal Improvements/Parking Layout.
- ◆ Locate and describe all surface parking areas. Provide description as to surface material.
- ◆ Locate and describe all installed regulatory or warning signage and pavement markings within the project. Any deviations from the approved construction drawings shall be noted.
- ◆ Locate all sidewalks and ADA pedestrian access features. Provide material type and width.
- ◆ Show all rights-of-way or easement lines, clearly labeled.
- ◆ Special detail drawings will be required where installations were not as shown on original drawings due to field conditions or where required for clarity.

## Stormwater (Section 2.8.2 of SDSM):

### Piped Drainage Systems (2.8.2.1)

- ◆ Enter actual values beside planned values on the approved construction plans.
- ◆ Show elevations to the nearest 0.01'. Actual elevations within 0.10' of the planned values are sufficient except where higher accuracy is needed to indicate positive flow.
- ◆ Diameter, material and class of all pipes.
- ◆ Type of joint of all pipes (O-Ring, T&G, etc.).
- ◆ Invert of pipe at outfall and all structures.
- ◆ Slope and lengths of all pipe.
- ◆ Structure type and elevations (top of grate, throat elevation, etc.).
- ◆ Location of all pipe and structures in relation to drainage easements on plan view.
- ◆ Centerline roadway elevations at all low points and other stormwater crossings.
- ◆ Length, depth, and width of all outfall protection as specified.
- ◆ Profiles of as constructed pipe and structures in relation to as constructed finished grade. Show all crossing pipes (sanitary, water, gas, etc.) as applicable with separation distance. This includes above and below crossings.

### Open Channel Drainage Systems (2.8.2.2)

- ◆ Enter actual values beside planned values on the approved construction plans.
- ◆ Show elevations to the nearest 0.10' except where higher accuracy is needed to indicate positive flow.
- ◆ Actual elevations within 0.10' of the planned values are sufficient except where higher accuracy is needed to indicate positive flow.
- ◆ Slope of all open channels.



- ◆ For swales 1' or less in depth, show actual side slopes and spot invert elevations at a frequency of at least every 100'.
- ◆ For swales or ditches greater than 1' in depth, show top of bank and toe of slope designations and elevations at a frequency of at least every 100'.
- ◆ For ditches 3' or greater in depth, generate actual 1' contours.
- ◆ Location of ditch or swale in relation to drainage easements on plan view.
- ◆ Length, depth, and width of all outfall protection or other erosion control as specified.

### Stormwater Management Pond or Basin (2.8.2.3)

- ◆ Enter actual values beside planned values on the approved construction plans.
- ◆ Show elevations to the nearest 0.01'. Actual elevations within 0.10' of the planned values are sufficient except where higher accuracy is needed to indicate positive flow.
- ◆ Sufficient elevations along top of dam/pond to verify design elevation.
- ◆ Sufficient elevations along toe of slope and bottom of pond to verify design elevation.
- ◆ Generate actual 1' contours and provide a stage-volume table to confirm design volume.
- ◆ Verify pond slopes and vegetative cover.
- ◆ Location, elevations, slopes, and dimensions of all orifices, weirs, spillways, trash racks or any other aspects of outfall control.
- ◆ Location, dimensions, and elevations of emergency spillway.
- ◆ Outfall protection location and dimensions.
- ◆ Water elevation in pond at time of survey, if applicable.
- ◆ Provide location, dimensions, make or brand, model, serial number and maintenance manual for any engineered water quality treatment devices.



# Record Drawing Checklist

## 1. GENERAL

Project	Details
<b>Project Name:</b> <i>(w/Section # and Phase #)</i>	
<b>Project TMS #:</b>	
<b>City ID #:</b>	
<b>Project Developer:</b> <i>(w/name, address, email &amp; phone #)</i>	
<b>Engineer of Record:</b> <i>(w/name, address, email &amp; phone #)</i>	

Project Reviews	1 <sup>st</sup> Review	2 <sup>nd</sup> Review	3 <sup>rd</sup> Review	4 <sup>th</sup> Review				
<b>Reviews By (initials):</b>								
<i>Engineering:</i>								
<i>Stormwater:</i>								
<b>Submittal Dates:</b>								
<b>Review Dates:</b>								
<i>Engineering:</i>								
<i>Stormwater:</i>								
<b>Comments Provided to applicant:</b>								
<i>Engineering:</i>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>
<i>Stormwater:</i>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>



## 2. ENGINEERING RECORD DRAWINGS

General Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review		
	Yes	No	Yes	No	Yes	No	Yes	No	
<b>Requirements</b>									
<i>a. The Engineer shall certify that, at the time of the final inspection, the site was completed in substantial accordance with the approved construction drawings and specifications. Any deviations from the original approved construction drawings shall be noted on the record drawings.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>b. The Engineer's certification shall be based upon on-site observation of construction (scheduled and conducted by the professional engineer of record or a by a project representative under direct supervision) and review of record drawings, with field measurements and verification as needed, for the purpose of determining the work was completed in accordance with original approved construction drawings, information and specifications.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>c. The record drawings are to be based on the approved construction drawings and revised to reflect any changes made during construction. Both the original design and constructed condition must be clearly shown. The drawings need to be clearly labeled as "Record" drawings.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>d. Engineer's statement (with embossed or wet seal and with an original signature on each sheet) shall verify that record drawings reflect the true conditions in the field.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>e. Street names shall be on all streets. All easements and right-of-ways shall be shown and clearly labeled.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>f. If the utility system is to be private (not to be dedicated to City), then so state on each sheet.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



General Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<i>g. The location and elevation of the benchmark referenced will be shown on the drawing. If the referenced benchmark is not within the project, then a complete description of its location will be provided to assist in future locating.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>h. The locations and description of any utility lines and other installations of any kind or other description known to exist within the construction area. The location includes dimensions to permanent features.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>i. The locations and dimensions of any changes to buildings and structures.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>j. Correct grade or alignment of roads.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>k. Correct elevations to changes made in site grading.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>l. Changes in details of design or additional information such as approved placement details, pipe sizes, material changes, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>m. Where drawings and/or specifications allow options, only the option actually used in the construction shall be shown on the record drawings.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>n. The location and description of any safety features such as guardrails, attenuators, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>								

Streets, Sidewalks, Ramps, Curbs, Gutters and Others Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>Requirements</b>								
<i>a. Show all right-of-way or easement lines, clearly labeled public or private</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>b. Provide typical offset dimensions from property, right-of-way or easement lines.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>c. ADA ramp or curb opening installation that deviate from original plans shall be noted on record drawings.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





Streets, Sidewalks, Ramps, Curbs, Gutters and Others Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<i>d. Provide special detail drawings or shop drawings where installations were not shown on original drawings due to field conditions or where required for clarity.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>e. Monuments installed or encountered within the project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>f. Locate and describe all installed regulatory or warning signage and pavement markings within the project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>g. Location and species information on installed street trees and lighting fixtures.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>h. Locate irrigation lines, controllers, sprinkler heads, backflow devices, pressure reducing valves, meters, supply sources and tap locations using two directions. Swing ties should be made from objects that are permanent in nature.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>i. Location, type, material and reinforcement, height, drainage systems and foundation information of all retaining walls.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>j. Note any changes to the alignment, either vertically or horizontally, of curb &amp; gutter, sidewalk, pavers or any other surface improvement.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>k. Provide crown line spot elevations approximately on 100-foot stations, or as field conditions warrant.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>l. Horizontal Improvements/Parking Layout.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>m. Locate and describe all surface parking areas. Provide description as to surface material.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>n. Locate and describe all installed regulatory or warning signage and pavement markings within the project. Any deviations from the approved construction drawings shall be noted.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>o. Locate all sidewalks and ADA pedestrian access features. Provide material type and width.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>p. Show all right-of-way or easement lines, clearly labeled.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Streets, Sidewalks, Ramps, Curbs, Gutters and Others Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<i>q. Special detail drawings will be required where installations were not as shown on original drawings due to field conditions or where required for clarity.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>r. Location, type, material and reinforcement, height, drainage systems and foundation information of all retaining walls.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>								

### 3. STORMWATER RECORD DRAWINGS (section 2.8.2 of SDSM)

As part of the project closeout process, a full size hard copy and one electronic PDF format copy of the record drawings, properly identified, executed, and certified shall be delivered to the Engineering Division. File format, data standards, and other information shall conform to the current data submittal requirements as issued by the City of Charleston GIS Division. Additionally, the record drawings for stormwater facilities shall contain the following information:

2.8.2.1 Piped Drainage Systems Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>Requirements</b>								
<i>a. Enter actual values beside planned values on the approved construction plans.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>b. Show elevations to the nearest 0.01'. Actual elevations within 0.10' of the planned values are sufficient except where higher accuracy is needed to indicate positive flow.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>c. Diameter, material and class of all pipes.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>d. Type of joint of all pipes (O-Ring, T&amp;G, etc.).</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>e. Invert of pipe at outfall and all structures.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>f. Slope and lengths of all pipe.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>g. Structure type and elevations (top of grate, throat elevation, etc.)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>h. Location of all pipe and structures in relation to drainage easements on plan view.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>i. Centerline roadway elevations at all low points and other stormwater crossings.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>j. Length, depth, and width of all outfall protection as specified.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



2.8.2.1 Piped Drainage Systems Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<i>k. Profiles of as constructed pipe and structures in relation to as constructed finished grade. Show all crossing pipes (sanitary, water, gas, etc.) as applicable with separation distance. This includes above and below crossings</i>								
<b>Comments:</b>								

2.8.2.2 Open Channel Drainage System Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>Requirements</b>								
<i>a. Enter actual values beside planned values on the approved construction plans.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>b. Show elevations to the nearest 0.1' except where higher accuracy is needed to indicate positive flow.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>c. Actual elevations within 0.1' of the planned values are sufficient except where higher accuracy is needed to indicate positive flow.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>d. Slope of all open channels.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>e. For swales 1' or less in depth, show actual side slopes and spot invert elevations at a frequency of at least every 100'</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>f. For swales or ditches greater than 1' in depth, show top of bank and toe of slope designations and elevations at a frequency of at least than every 100'.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>g. For ditches 3' or greater in depth, generate actual 1' contours.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>h. Location of ditch or swale in relation to drainage easements on plan view.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>i. Length, depth, and width of all outfall protection or other erosion control as specified.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>								



2.8.2.3 Stormwater Management Pond or Basin Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>Requirements</b>								
<i>a. Enter actual values beside planned values on the approved construction plans.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>b. Show elevations to the nearest 0.01'. Actual elevations within 0.10' of the planned values are sufficient except where higher accuracy is needed to indicate positive flow.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>c. Sufficient elevations along top of dam/pond to verify design elevation.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>d. Sufficient elevations along toe of slope and bottom of pond to verify design elevation.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>e. Generate actual 1' contours and provide a stage-volume table to confirm design volume.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>f. Verify pond slopes and vegetative cover.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>g. Location, elevations, slopes, and dimensions of all orifices, weirs, spillways, trash racks or any other aspects of outfall control.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>h. Location, dimensions, and elevations of emergency spillway.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>i. Outfall protection location and dimensions.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>j. Water elevation in pond at time of survey, if applicable.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>k. Provide location, dimensions, make or brand, model, serial number and maintenance manual for any engineered water quality treatment devices.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>								



2.8.2.4 Certifications Statement Item/Description	1 <sup>st</sup> Review		2 <sup>nd</sup> Review		3 <sup>rd</sup> Review		4 <sup>th</sup> Review	
	Yes	No	Yes	No	Yes	No	Yes	No
<b>Requirements</b>								
The record drawing must include the following statements if the Engineer of record and the Surveyor of record are not one in the same:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><i>"I hereby sign and affix my seal to certify to the best of my knowledge that the comprehensive stormwater management system and road infrastructure as constructed is in substantial conformance with the standards, dimensions and specifications of the approved construction drawings."</i></p> <p>_____ Date _____</p> <p>SC Registered Professional Engineer (Reg. No.)</p>								
<p><i>"The dimensions shown on the record drawings were obtained in accordance with the requirements of the minimum standards manual for the practice of land surveying in South Carolina. The horizontal dimensions shown are within ±1 foot tolerance. Vertical dimensions are accurate to within ±0.01 foot."</i></p> <p>_____ Date _____</p> <p>SC Registered Land Surveyor (Reg. No.)</p>								
If the South Carolina registered Engineer and Surveyor are one in the same, the record drawing must include the following statement:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><i>"I hereby sign and affix my seal to certify to the best of my knowledge that this record drawing accurately represents existing field conditions and that the comprehensive stormwater management system and road infrastructure as constructed is in substantial conformance with the standards, dimensions and specifications of the approved construction drawings."</i></p> <p>_____ Date _____</p> <p>SC Registered Professional Engineer (Reg. No.)/Surveyor (Reg. No.)</p>								
<b>Comments:</b>								