

# Lexington County Checklist for Design of Commercial Developments

REVISED 09/26/2011

**A pre-submittal meeting is required for all sites before plans are submitted for review.**

**Please indicate the location and page number(s) where each item below can be found in your SWPPP or supporting calculations. If an item is not applicable, put N/A. Lexington County reserves the right to modify this checklist at any time.**

**All items required for a design are not included on this checklist. You must refer to the Lexington County Land Development Manual for information on all design requirements.**

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

Checklist Completed by:

Printed

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date: \_\_\_\_\_

## 1. CURRENT COMPLETED APPLICATION FORM/DHEC NOI

- All Commercial Land Disturbance Submittals must be submitted to Ms. Janet Turner at the Community Development Division. She can be reached at 785-8121.
- All items in the checklist should be submitted including One Set of plans and all appropriate fees as shown in Section 2 and Section 3 of this checklist.

## 2. ONE SET OF COMPLETED SITE PLANS FOR INITIAL REVIEW. IF A PROJECT IS IN A MUNICIPALITY IT MUST GO TO THE MUNICIPALITY BEFORE IT IS SUBMITTED TO LEXINGTON COUNTY.

## 3. FEES

**All fees must be paid before the review process will begin.**

Plan review fees can be found on the Public Works Stormwater Division website:  
(<http://www.lex-co.com/Departments/publicworks/index.html>)

## 4. VICINITY MAP

- Include North arrow and scale
- Outlined project location
- Labeled road names

## 5. COVER SHEET

- Project Name
- Engineer's Contact Information (name, mailing address, telephone, fax, email)
- Developer's Contact Information (name, mailing address, telephone, fax, email)
- Contractor's Contact Information (name, mailing address, telephone, fax, email)
- Table of Contents
- Location Map
- Room in the Lower Right Corner for Approval Stamp

## 6. SITE PLAN CHECKLIST

- Size of plans should be 24" x 36"
- Engineer stamp and signature
- Engineering Firm's Certificate of Authorization seal

- Correct Scale and North Arrow
- Contours are to be tied to a know datum, no **assumed** elevations,
- Lot Layout
- Property lines, adjacent landowners' names, and land use conditions.
- Existing and proposed contours for entire disturbed area.
- Limits of disturbed area outlined on the plans.
- Road profiles with existing and proposed ground elevations (if no contours are shown on the plans).
- Construction sequence (include implementation of all stormwater and sediment controls in the first phase of construction).
- Time schedule for each activity on the construction sequence
- Locations of all temporary and permanent control measures
- Details for all temporary and permanent control measures
- Grassing and stabilization specifications
- Maintenance requirements (for temporary and permanent controls, grassing, etc.)
- Construction entrance/exit
- Standard notes (See Item #30 of this checklist)
- Owner's and Developer's Certifications (See Item #31 of this checklist).
- Location map
- Individual lot erosion control plan (applicable to commercial subdivisions)

#### **7. STAKING AND GRADING PLAN**

- Entire Boundaries of property
- Existing conditions
- 2' contours
- Time schedule for each activity on the construction sequence.
- Sight Distances
- Show existing roads and/or commercial drives across the road from the proposed access entrance.
- Entrance Islands (12' from the edge of pavement of existing street. Signs are to be 5' from back of curb, minor drainage system.)
- Call out expulsion curb to be used at islands.
- On storm drain lines show inverts (in and out), diameter, length and slope of pipe

#### **8. DETAILS PLAN**

- Construction entrance
- Inlet Protection (Only metal posts can be used)
- Silt Fence (Show with metal posts and wire backing)
- Headwalls
- Riprap Apron
- Swale/ditch
- All outlet structures
- Include maintenance requirements on all details

#### **9. USGS TOPOGRAPHIC MAP**

- Project boundary outlined
- Route of runoff from site to nearest waterbody shown
- Critical areas downstream of site indicated
- Road names adjacent to site labeled

#### **10. SOILS INFORMATION**

- Project boundary outlined
- Predominate soil types found at the site identified on the plans or on a separate map
- Note: Soils information is available from the Natural Resource Conservation Service through their website: <http://websoilsurvey.nrcs.usda.gov/app/>

### 11. FLOODWAY MAPS/FEMA FLOOD INSURANCE MAP

- Project boundary outlined, if in close proximity of floodplain/floodway
- 100-yr floodplain contour line associated with FEMA and County floodway and floodplain
- Wetland delineation provided by Army Corps of Engineers
- Contact must be made with the Lexington County Flood Plain Manager. Mr. Chris Stone can be reached at 785-8121

### 12. WETLANDS/WATERS-OF-THE-STATE (WOS)

- Delineation of all waters of the State (WoS), including wetlands, shown and labeled on plans
- Additional, separate plan sheet that shows all WoS, on the site and the impacted areas with a description of the activity(s), whether it is permanently or temporary, and any other relevant information.
- If impacts to WoS, outlined areas of impacts and labeled that no work can begin in this area until all necessary USACOE permits and SCDHEC 401 certifications have been obtained.
- Minimum 10' maintenance buffer provided between last row of silt fence and WoS; or, if buffer not provided, then statement from P.E. on plans indicating how silt fence will be installed and maintained without impacts to WoS
- Note: If there are proposed impacts to WoS, then it is advised that you contact the UCACOE (866-329-8187) and/or S.C. DHEC Water Quality Certification, Standards & Wetlands Programs Section (803-898-4300) to determine additional requirements before submitting this NOI.
- Note: If WoS are to be impacted, work cannot be performed in these designated areas until all necessary permits have been acquired.
- Note: If USACOE permit is required for construction of a permanent stormwater management structure, NPDES permit coverage cannot be granted until the USACOE permits and S.C. DHEC 401 Section certificates are obtained.
- Note: SCDHEC recommends a 20-foot buffer between a sediment trap/basin and waters of the State and wetland areas.

### 13. HYDROLOGIC ANALYSIS

- Pre- and post- developed hydrologic analysis calculations for the 2-25 and 100- year storm events at each outfall point.
- Pre- and post- developed volume calculations for the 2- and 10- year storm event
- Post-development discharge velocities
- Drainage area maps that clearly correspond to the calculations.
- Analysis performed at the same points and with the same drainage area for both pre- and post-development.
- Post-development discharges less than pre-development discharges for each outfall point (if not, then see "Detention Waiver" section below).
- Post-development volumes less than pre-development discharges for each outfall point (if not, then see "Volume Waiver" section below).
- Analysis performed using SCS 24-hour, Type II Storm (Rational method not acceptable)
- Used rainfall data from South Carolina DHEC Storm Water Management BMP Handbook

<b>2-Year</b>	<b>5-Year</b>	<b>10-Year</b>	<b>25-Year</b>	<b>50-Year</b>	<b>100-Year</b>
3.6"	4.5"	5.3"	6.4"	7.3"	8.3"

- Note: SC DHEC recommends using the 10% rule for performing analysis. The premise of this rule is that the hydrologic analysis be conducted for the drainage area, where the site in question encompasses 10% of the total drainage area.

### 14. INLET PROTECTION

- Provided at all inlets
- Hay bales not used
- Steel posts and buried fabric shown for filter fabric inlet protection. Wood posts are not allowed.
- Inlet protection details provided for pre-paving and after roadways have been paved.

- Note: SC DHEC recommends that an inlet not have more than one (1) acre draining to it.

#### 15. ENERGY DISSIPATORS/OUTLET PROTECTION

- All outlets stabilized
- Riprap aprons sized appropriately
- Riprap detail shows apron dimensions and stone sizes
- Filter fabric installed beneath all riprap
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#### 16. DISCHARGE POINTS

- Storm drainage or pond outfalls carried to an existing drainage outfall such as a pipe, ditch, etc.
- No new point discharges onto adjacent property where there was not a point discharge previously without providing the adjacent property owner's written permission.
- A recorded discharge agreement is required for all increases in discharge onto adjacent property.
- Level spreaders, plunge pools, etc. provided at the end of the discharge point.
- Provide a 50-foot minimum buffer between the property line and the discharge point
- Outlets do not discharge on fill slopes
- Discharge pipes greater than 24" require headwall with wings
- Headwalls required in major drainage channels
- Rip-rap headwalls are acceptable for pipes less than 24"

#### 17. FILL SLOPES AND/OR EMBANKMENTS

- All slopes stabilized
- Slope drains designed in accordance with the South Carolina DHEC Storm Water Management BMP Handbook
- Slope drains provided where concentrated flows discharge onto a fill slope
- For all slopes steeper than 1.5:1, identification of stabilization practice (e.g., ECB, TRM)
- Measures, in addition to grassing or hydroseeding, include synthetic or vegetative matting, diversion berms, temporary slope drains, etc.
- If retaining walls or fill slopes are to be constructed at the downstream property line, the a 10' buffer must be shown to allow for construction and maintenance. If a 10' buffer is not provided, then provide permission from the adjacent property owner for possible land-disturbing activities on his property.

#### 18. UTILITY LINES

- Limits of disturbance include areas disturbed for water and sewer line installation.
- Inlet protection provided at all existing inlets that receive flows from the disturbed areas; also add this as a note on the plans.
- For all utility lines crossing WoS, narrative and detail showing sediment and erosion control measures provided on plans.
- Note for construction entrances to be provided at all locations where construction traffic accesses a paved roadway.

#### 19. DETENTION ANALYSIS/DESIGN

##### Analysis

- Pond routing using a volume based hydrograph for the 2-, 5-, 10-, 25-, and 100 year SCS 24-hour rainfall event (Drain:Edge, ICPR, HEC-1, SedCAD, HYDRAFLOW, etc. perform full pond routings: TR55 does not perform a full pond routing; rational method cannot be used)
- Hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications of the proposed land disturbing activity, with and without the pond (results of analysis will determine the need to modify the pond design or eliminate the pond requirement-see note in item 10)
- Inputs and outputs from analysis program

- Summary table of the peak inflows, peak outflows, and maximum water surface elevations (WSE) for the 2, 5, 10, 25 and 100-year storm events for each pond
- Stage-storage-discharge relationship for the outlet structure of each detention structure
- If a rating curve for the outlet structure must be generated externally from the analysis program (Drain:Edge, HEC-1, HydroCAD), data and equations used to rate the outlet structure
- As-built of existing detention pond if the site drains to an existing detention pond (see below)
- Note: *SedCAD users please refer to the memo regarding the input of the outlet structures on the DHEC website: <http://www.scdhec.gov/water/html/erfmain.html>*
- Provide downstream offsite analysis

### **Design**

- Detail of outlet structure and cross-section of the dam, including elevations and dimensions that correspond to the calculations.
- Orifice constructability considered (do not specify orifice diameters with increments of less than ¼”).
- Maximum WSE for the 10-year storm event below the emergency spillway with 1-ft of freeboard between maximum WSE for the 10-year storm and the emergency spillway.
- Maximum WSE for the 100-year storm event below the embankment with 1-ft of freeboard between maximum WSE for the 100-year storm embankment.
- Dewatering time calculations for the 10-year storm event (dry ponds must drain completely within 72 hours).
- Bottom of all detention and retention ponds graded to have a slope of not less than 0.5%.
- If the pond is to be used for sediment control during construction, temporary horseshoe-shaped riprap berm in front of any low level outlets during construction provided and shown on the pond detail.
- Permanent maintenance access to all permanent detention structures
- Infiltration systems designed in accordance with S.C. Reg. 72-307.C(11) [specify how items a-j have been addressed.
- Emergency spillways should not be built on fill slopes.
- Note: SC DHEC recommends installation of a trash rack or other debris-screening device on all pond risers.
- Note: SC DHEC recommends a maximum slope of 3:1 on pond embankments to allow for ease of maintenance.
- Note: SC DHEC recommends installation of sediment forebays at each outfall into the detention/ sediment basin.

## **20. PERMANENT STORMWATER MANAGEMENT STRUCTURE MAINTENANCE PLAN**

- Signed agreement from a responsible party accepting ownership and maintenance of the structure. This document needs to be recorded with the Lexington County Register of Deeds.
- Description of maintenance plan to be used
- Schedule of maintenance procedures (e.g. every 6 months)
- Detailed or manufacturer-specific maintenance items for proprietary control devices (oil-water separators, etc.), underground detention structures, and non-traditional stormwater controls (constructed wetlands, bioretention, etc.)
- Typical maintenance items to be addressed:
  - o Grass to be mowed
  - o Trees to be removed
  - o Trash to be removed from within and around the pond outlet structure and outlet pipe to be cleaned, inspected, and repaired, sediment accumulation to be removed from pond
  - o Energy dissipater to be cleaned and repaired
  - o Pond bottom to be regraded to provide proper drainage towards the outlet discharge point and/or energy dissipater to be cleaned and repaired
  - o Emergency spillway, if applicable, to be inspected and repaired erosion on side slopes, if present, to be addressed

- The Department must be notified in writing of any changes in maintenance responsibility for the stormwater devices at the site (include this statement in agreement).
- Specific maintenance items particular to more complex structures

## 21. TMDL/ 303d IMPAIRED WATERBODIES

- List the nearest S.C.DHEC Water Quality Monitoring Station (WQMS) that the site's stormwater discharges drain to and the waterbody on which it is located: \_\_\_\_\_
- Qualitative and quantitative assessment (described in Section 3.4C of SCR100000), if nearest WQMS listed on the 303(d) List of Impaired Waters **and** if site's stormwater construction discharges contain the pollutant of impairment **and** if site disturbs 25 or more acres
- Evaluation of selected BMPs if nearest WQMS listed on the 303(d) List of Impaired Waters **and** if site's stormwater construction discharges contain the pollutant of impairment **and** if site disturbs less than 25 acres
- If Approved TMDL developed for nearest WQMS **and** if site's stormwater construction discharges contain the pollutant of impairment, showed that measures and controls on SWPPP met assumptions and requirements of TMDL (may need to contact Watershed Manager for assistance)
- Qualitative and quantitative assessment that post construction runoff will meet the percent reductions of a TMDL if the project is located in a TMDL watershed as shown in the Lexington County Development Manual
- *Note: Contact Department staff for guidance on selection of BMPs based on pollutant of impairment.*

## 22. NAVIGABLE WATERS

- Extra plan sheet showing impacts to navigable water and description of activity included if S.C. Navigable Waters (SCNW) crossing and separate SCNW permit has not been obtained for all activities
- Note: For NOI's initially submitted to delegated entities, if project has SCNW crossing and if separate SCNW permit has not been obtained for this crossing, then this item will be reviewed by S.C. DHEC before NPDES coverage will be granted.

## 23. PROJECT NARRATIVE

- Scope of project outlined, including a brief description of pre- and post-development conditions.
- Summary table to include:
  - Pre- and post-development flows for the 2- through 25-year storm events
  - Pre- and post-development volumes for the 2 and 10 year storm events
  - Post-development discharge velocities
  - Information on pond performance
- Existing flooding problems in the surrounding area described.

## 24. STABLE CHANNEL CALCULATIONS

- All channels and diversion ditches must be able to handle the 10 year storm event with non-erosive velocities of less than 5 feet per second during construction and post-construction
- Rock check dams provided in temporary diversion
- Installation detail for erosion control blanket (ECB) or turn reinforcement matting (TRM) if ECBs or TRMs to be used.
- All ditches/swales must be double seeded.

## 25. DRAINAGE AREA MAPS

- Provide drainage area map outlining the area draining to all erosion and sediment control BMPs on site. Show existing and proposed contours for the site layout and BMP placement.
- Place calculated design flows on each pipe and BMPs
- Time of concentrations
- Curve numbers for each drainage area.
- Routing hydrographs for the 2,5,10,25, and 100-year storm event
- Pipe capacities for the design storm
- Basin stage/storage and stage discharge calculations
- Pre drainage area map (site without proposed development)
- Post drainage area map (with proposed development)

- Include off-site drainage areas
- Label watershed areas within the drainage area map with (watershed identifier, CN, area, length, slope)
- Velocities for swales
- Down stream analysis

## 26. SEDIMENTOLOGY

- Trapping efficiency calculations showing that all sediment basins/ traps are capable of achieving a sediment trapping efficiency of at least 80% for the 10-year, 24-hour storm event, if more than 10 disturbed acres drain to a common point (stream, lake, etc.)
- Sediment basins provide storage for the 10-year, 24-hour storm event for disturbed conditions or 3600 ft<sup>3</sup>/ acre draining to the basin, if more than 10 disturbed acres drain to a common point (stream, lake, property line, etc.)
- Sediment traps only used for drainage areas of less than 5 acres
- Sediment trap storage calculations, showing that 1800 ft<sup>3</sup>/ total acre draining to each trap is provided below the spillway
- If trapping efficiency calculations are required for sediment traps, then provide peak outflow,  $q_{po}$ , calculations; the 10-year, 24-hour storm event for construction conditions cannot overtop the trap's spillway
- Sediment basins and traps designed for total area draining to them
- Drainage area map outlining the area draining to each basin/ trap
- Copies of figures used to determine  $V_{15}$  (SV-1) and trapping efficiency (ST-1, SB-1, SB-2), if Design Aids from BMP manual are used to determine trapping efficiencies
- Silt fence only used in areas with drainage areas of less than ¼ acre per 100 LF of fence and not used in areas with concentrated flows
- Clean-out stake, marked at 1/3 the designed sediment storage depth, provided in all sediment basins/ sediment traps
- Placement of BMPs (silt fence, inlet protection, construction entrance, rip-rap at outfalls, check dams etc.)
- Notes to include 14 day stabilization clauses (for all disturbed areas)
- Note stating "temporary sediment pond shall be eliminated after 80% of the site is stabilized"
- Note: Consult the SC DHEC BMP Handbook for information on the design of these and other devices.
- Note: The Design Aids in the SC DHEC BMP Handbook cannot be used to determine trapping efficiencies for structures in series. If the flow for the 10-year, 24-hour storm for construction conditions overtops the structure or the structure's spillway, then the Design Aids cannot be used. If multiple soil types are in the area draining to the structure, then the soil type with the smallest  $D_{15}$  for the appropriate depth should be used to determine the settling velocity,  $V_{15}$ ; an average  $D_{15}$  should not be used.

## 27. PERMANENT WATER QUALITY REQUIREMENTS

- Permanent water quality addressed (all projects or LCP that disturb 5 or more acres, projects disturbing less than 5 acres but located in a impaired waters special protection area must address water quality)
- Wet ponds designed to catch the first ½" of runoff from the entire area draining to the pond and release it over at least at 24-hour period.
- Dry ponds designed to catch the first 1" of runoff from the entire area draining to the pond and release it over at least a 24-hour period.
- For areas not draining to a pond, show how permanent water quality requirements were addressed .
- Waters of the U.S./State not used for permanent water quality control (Alternative means of treatment must be used if an existing pond is to be used for water quantity control).

- Note: Other non-traditional stormwater controls such as Bioretention areas, constructed wetlands, etc may be used. Consult the South Carolina DHEC Stormwater Management BMP Handbook for information on the design of these devices.
- Note: Pre-fabricated or proprietary treatment devices are approved on a case-by-case basis if adequate removal efficiency can be demonstrated. Provide pollutant removal efficiency data, preferably from a third-party testing company. Type of system to be used should be based on the ability to remove the pollutants of concern in that area/situation (i.e. bacteria, hydrocarbons, etc.)

## 28. DETENTION WAIVER

- A project may be eligible for a waiver or variance of stormwater management for water quantity control if the applicant can demonstrate that:
  - o The proposed project will have no significant adverse impact on the receiving natural waterway or downstream properties; or
  - o The imposition of peak control requirement for rates of stormwater runoff would aggravate downstream flooding
- Justification and a written request, including the following statement: **“the increased flows will not have a significant adverse impact on the downstream/adjacent properties”** along with the supporting calculations.
- Waiver signed by the project’s Registered Professional Engineer

## 29. AS-BUILTS

- Provided for all previously approved detention ponds that will receive flows from new drainage areas
- Prepared by a South Carolina Licensed Land Surveyor/Engineer
- Grades/contours for pond
- Volumes at each 1 ft stage/storage elevation
- Elevations and dimensions of all outlet structures, including:
  - o Pipe and orifice inverts and diameters
  - o Weir elevations and dimensions
  - o Riser dimensions and elevations
  - o Emergency spillway dimensions and elevations
  - o Locations and inverts for all pipes discharging to the pond
- If the elevations or dimensions of the structures listed above do not match those to be used in the approved plans, certification statement by the project’s engineer indicating that the pond, as built, will function within all applicable standards provided [new analysis of the pond (routing) may be necessary]
- If an as-built survey has not been accepted by the PWSD for a new project draining to the pond, the new project will not be approved until as-built is accepted.
- As-built survey and /or analysis must be submitted and accepted by SC DHEC and/or Public Works Stormwater Division before the NPDES Notice of Termination (NOT) is submitted to SC DHEC.

## 30. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

- Cover and title page
- Project and SWPPP contact information
- Site and activity description including site map
- Identification of potential pollution sources including but not limited to: trash, paint and concrete washout, vehicle maintenance practices, etc.
- Description of controls to reduce pollutants
- Maintenance and inspection procedures
- Records of maintenance activities and inspections
- SWPPP amendments
- SWPPP certifications



### 31. STANDARD NOTES

- If necessary, slopes which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
  - Where stabilization by the 14<sup>th</sup> day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable
  - Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.
- **Choose only one of the following inspection notes:**
  - All sediment and erosion control devices shall be inspected every seven (7) days. Damaged or ineffective devices shall be repaired or replaced, as necessary.

OR
  - All sediment and erosion control devices shall be inspected at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. Damaged or ineffective devices shall be repaired or replaced, as necessary.
- Provide silt fence and/or other control devices, as may be required, to control erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation.
- All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
- The contractor must take necessary action to minimize the tracking of mud onto the paved roadway construction areas. The contractor shall daily remove mud/soil from pavement, as may be required.
- Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or provide an individual plan meeting section R.72-307 of the stormwater management and sediment reduction act. (Not Applicable for Commercial Sites)
- Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment laden water to appropriate traps or stable outlets.
- All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.

- Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in stormwater discharges.

### 32. APPLICANT AND DEVELOPER CERTIFICATIONS

- The following certifications must be signed on the final sets of plans for approval.

#### **Applicant's Certification**

I (We) hereby certify that all clearing, grading, construction, and/or development will be done pursuant to this plan and I (we) are responsible for the land disturbance and related maintenance thereof. Lexington County authorities will be allowed to enter the project site for the purpose of on-site inspections.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Owner/Person Financially Responsible

#### **Designer's Certification**

"I hereby certify that this plan is designed to contain soil on the property concerned to the maximum extent, to provide for the protection of the property and the proposed improvements thereon from the effects of flooding, to provide for the control of the runoff from the property, and that all the provisions for sediment control and storm drainage are in accordance with the Stormwater Management and Sediment Control Ordinance for Lexington County, South Carolina."

\_\_\_\_\_  
Date

\_\_\_\_\_  
Designer's Signature and Certification