MD501.06 Exhibit MD1 SMALL POND DESIGN CHECKLIST

ProjectName_____

Engineering Firm_____ Date Submitted_____

_____Vicinity Map _____ Pond Summary Sheet (MD-ENG-14) _____ Pond Class

REVIEW INDEX
R (required, not submitted)
NA (not applicable)
X (submitted)

I. PLAN REVIEW OF POND AT SCALE OF 1" = 50' OR LESS

_____A. Existing and final contours (2' interval maximum)
_____B. Locations of test borings and benchmark
_____C. Inflow channels slope over fall protection (detail required)
_____D. Outflow pipe, outlet protection, outfall channel
_____E. Property lines and names of adjacent owners
_____F. Low flow channel (detail required)
_____G. Emergency spillway and outlet channel
_____H. Stationing
_____I. Easements
_____J. Scale and north arrow
_____K. Legend
_____L. Sediment control (current Standards and Specs)

II. SOILS INVESTIGATION

_____A. Borings along centerline of dam and in the borrow area
_____B. Use of Unified Soil Classification System
_____C. Log on dam profile and plan view

III. HYDROLOGY

_____A. Drainage area map (1" = 200' scale or less)
_____1.Existing and ultimate D. A. limits delineated
_____2.Existing and ultimate time of concentration paths shown
_____3.Existing and ultimate land uses delineated

_____B. Soils map (site delineated on Soil Survey)

IV. CROSS-SECTION OF DAM THROUGH PRINCIPAL SPILLWAY

_____A. Existing ground

_____B. Proposed ground surface

_____1.Slopes of dam sides (S_1 + S_2 = 5:1minimum)
_____2.Top width

_____C. Cutoff trench
_____1.Bottom width (4' minimum)
_____2.Side slopes (1:1 maximum steepness)
_____3.Depth (4' minimum)
_____4.Type of Soil to be used (GC, CL, CH, SC)

_____D. Impervious Core (if dam is impervious)

_____1.Top width
_____2.Side Slopes
_____3.Height
_____4.Type of Soil to be used (GC, CL, CH, SC)

_____E. Riser or similar structure

_____1.Inside diameter
_____2.Gage (or thickness if concrete)
_____3.Depth of embedding in base (if base is concrete)
_____4.Trash rack (detail needed)
_____5.Antivortex device (in trash rack detail)
_____6.Riser Base
_____a.Length, width thickness
_____b.Gage (if metal)

_____F. Weir

_____1.Base Dimensions
_____2.Crest Lengths
_____3.Thickness
_____4.Depth of embedding in earth (4'min. vert.; 5'min. horiz.)
_____5.Materials (Conc. Mix no. 3; Reinforcement)

_____G. Orifice or similar structure

_____1.Diameter
_____2.Anti-clogging device or trash rack

_____H. Pipe (round)

_____1.Inside diameter
_____2.Material
_____3.Length
_____4.Slope
_____5.Saturated length

_____I. Phreatic line (4:1 slope)

_____J. Antiseep collars (size and loction of pipe) (detail required)

_____K. Bedding (if pipe is concrete) (detail required)

_____L. Emergency spillway (dotted line at crest elevation)

____M. Outlet protection

____N. Elevations:
_____1.Top of dam (includes required freeboard)
_____2.Crest of emergency spillway
_____3.Crest of riser or weir(s) and other openings
_____4.Design storm – 100 year and permanent pool elevations
_____5.Top of impervious core
_____6.Bottom of cutoff trench
_____7.Bottom of pond
_____8.Bottom of weir
_____9.Inlet and outlet inverts of pipe and/or low orifice
____10.Specification of construction height and settled height for dam construction

V. <u>EMERGENCY SPILLWAY (IF APPLICABLE)</u>

_____A. Located on natural ground or cut or protection provided

_____B. Existing ground

_____C. Profile of spillway
_____1.Inlet, control and outlet sections
_____2.Slopes
_____3.Design Discharge and velocity

_____D. Cross-section of spillway

VI. PROFILE ALONG CENTERLINE OF DAM

_____A. Top of dam (constructed and settled)
_____B. Location of emergency and principal spillways
_____C. Existing ground
_____D. Proposed ground
_____E. Top of core
_____F. Cutoff trench
_____G. Horizontal control

VII. DESIGN

_____A. Runoff computations

_____1. Soils Hydrologic Groups
_____2. Existing RCN
_____3. Proposed RCN
_____4. Time of concentration (existing and proposed)
_____5. Allowable discharge

_____B. Routings (TR-20 or TR-55)

_____1. Required volume of storage computations
_____2. Stage vs. storage curve and table for facility
_____3. Stage vs. discharge curve and table
_____4. Routings
_____a. 2- year storm
_____b. 10-year storm
_____c. 100-year storm

_____C. Outlet protection computations

_____D. Antiflotation comps (factor of safety = 1.2)

_____E. Stability computations for weirs (bearing, sliding, overturning)

_____F. Antiseep collar sizing

VIII. CONSTRUCTION SPECIFICATIONS (per MD-378, January 2000)

_____A. Site preparation
_____B. Earthfill
_____C. Structural backfill
_____D. Pipe conduit
_____E. Concrete
_____F. Stabilization

IX. NOTES

_____A. Structure classification
_____B. Hydrologic criteria
_____C. Drainage area to facility stated in acres

X. CERTIFICATION

_____A. Engineer's (signed and sealed)
_____B. Developer's (signed)
_____C. As-built

GENERAL COMMENTS:

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Marked Plans_____yes _____no

(Additional comments provided on a marked set of plans also need to be addressed. Plans must be returned with next submittal.)

Plans reviewed by _____ Date_____