

## **DRAINAGE FACILITIES CERTIFICATION CHECKLIST FOR SUBDIVISIONS (RESIDENTIAL/COMMERCIAL)**

Please fill in all applicable items in the Certification Form for Commercial, Multi-Family and Single Family Subdivisions.

- ✓ Use "OK" for items checked or actual numbers for items verified/surveyed in the field.
- ✓ Use "N/A" for items that are not applicable to the site that is being certified.
- ✓ Please provide an As-Built set of full size prints as well as PDF's showing the following:

### **A. Detention Facilities Certification**

#### 1. Pond Certification

- Provide Topographic Records and Volume Verification Calculations
- Provide Pond Cross-Sections and Spot Elevations (especially @ Pond Embankment and Pond Flow Line)
- Positive Fall to Pan (if applicable)
- General Pond Grading including all Side-Slopes
- Invert Elevation
- Forebay Construction and Elevation
- Spillway Weir (Location, Elevation, Height, Opening Width)
- Placement and size of riprap or alternative permanent erosion control measures
- Orifice Plate and/or Water Quality Outlet Structure Installation
- Water Quality Capture Volume (Volume Required, Volume Provided and Water Surface Elevation)
- Berm and Embankment Compaction Level
- Subsurface Media for Water Quality Ponds and Swales

#### 2. Swales

- Location (are they within easement?)
- Dimension and Cross-Section Verification

- Longitudinal Slopes and Side-Slopes
- Spot Elevations
- Permanent Erosion Control Measures (drop structures, riprap, lining)
- Tie-in to Storm Lines, Pans, Curbs, or other appurtenances
- Required Minimum Freeboard, Provided Freeboard
- Landscaping Infringement on Flow Line?

### 3. Pipes

- Size and Type
- Slopes (As-Built and comparison to 0.4% Minimum)
- Pipe Capacity Calculations (if slopes are significantly altered from design)
- Invert Elevations
- Installation and Backfill
- Cover
- Encasement and Clearance from other nearby utility lines
- Joints Type and construction

### 4. Concrete Pan Channels

- Size
- Slope
- Cross Section
- Thickness
- Elevations

### 5. Inlets

- Size and Type
- Size of Opening (or name of Standard Detail used)

- Grate Elevation
- Invert Elevation
- Box Size

6. Street Cross-Pans

- Size
- Type
- Grade
- Elevations
- Cross-Sectional Depth
- Tie-in to Curb and Gutter

7. Culverts

- Size
- Type
- Invert Elevations
- Headwalls or Wing Walls

8. Sub-Drains

- Size
- Type (Perforated/Solid)
- Cover
- Backfill
- Geo-Textile Liners
- Clean-Outs

9. Curb Cuts

- Size

- Tie-in to Swale, Pipe or other appurtenances

**B. Certification of Grade Elevations Adjacent to Drainage Facilities**

- Minimum Opening Elevations
- Top of foundation Elevations
- Comparison to 100-year Water Service Elevations
- Comparison to Freeboard Elevations and Base Floodplain Elevations-BFE

**C. Certification of Erosion Control Measures**

1. Permanent BMP Measures:

- Permanent Vegetation (no more than 6" bare spots and weeds under control)
- Riprap or alternative permanent erosion material
- Riprap Bedding
- Cut-Off Walls or Channel Drop Structures Cross-Sections
- Sediment Basins
- Water quality ponds/Sand Filter/Bio Retention Construction and liners
- Permanent Netting Mats or Blankets
- Mulching and Seeding

2. Temporary BMP Measures:

- Mulching and Seeding
- Temporary BMP Measures as shown on Erosion Control Plan

**D. Post-Construction Site Cleanup:**

- Construction Debris Clean-Up
- Smoothing of Ruts in ALL Construction Areas
- Reseeding of ALL Areas Affected by Construction Activities

**E. Statement of Compliance:**

This certification is signed and stamped and by signing this form the Engineer(s) attests that they have inspected the site and to the best of their knowledge the as-built conditions of the drainage facilities are as described in the above form and in the As-Built plans enclosed.

Failure to properly disclose all known information could result in the rejection of this certification and prevent the release of any and all Building Permits and/or Certificates of Occupancy within this development.

**F. Signature and Stamp by a Colorado Registered Professional Engineer**