HARFORD COUNTY GOVERNMENT
BUREAU OF STORMWATER MANAGEMENT
DEPARTMENT OF PUBLIC WORKS
212 S. BOND STREET, 3RD FLOOR, BEL AIR, MD 21014
PHONE: 410.638.3509 FAX: 410.893.3849

STORMWATER MANAGEMENT AS-BUILT CHECKLIST

PROJECT DESCRIPTION

Project Name

County Contract Number | County Plan Number (SWMENG)

Street Address and/or Road Name

Tax Map No | Parcel No. | Lot No.

OWNER/DEVELOPER/CONSULTANT INFORMATION

OWNER

Name

Address

City, State, Zip Code

Telephone

Email Address

DEVELOPER/CONTRACT PURCHASER

Name

Address

City, State, Zip Code

Telephone

Email Address

SURVEYOR / ENGINEER

Name

Address

City, State, Zip Code

Telephone

Email Address

Engineer-in-Charge

I hereby certify that I have prepared this Stormwater Management As-Built Plan checklist based on my professional opinion that the Reports and Plans represent the as-built conditions for the constructed facilities which meet the approved plans and specifications.

Signature: Engineer-in-Charge | Date:

ENGINEER-IN-CHARGE TO COMPLETE & THE COUNTY TO CONFIRM

LEGEND

check	Provided / Acceptable	A	X	Not Acceptable	NA	Not Applicable
R	Required Not Submitted		INC	Incomplete	NR	Not Reviewed

List **Reminder**: All documents shall be of good quality and clearly legible.

AS-BUILT REPORTS

List 1. Harford County SWM Plan TRANSMITTAL Form #2.
List 2. Project name, address, County Contract Number & date
List 3. Owner's & Developer's name, address & phone number
List 4. Engineer signature, seal, MD certification with expiration date, on as-built certification block.

AS-BUILT STORMWATER MANAGEMENT REPORT

List • AS-BUILT REPORTS items 2, 3 & 4
List 1. Report Title "As-Built Stormwater Management Report"
List 2. Table of Contents. All report pages are to be numbered.
List 3. Updated Project Narrative
List 4. Summary Table showing ESD Target Requirements and ESD provided by each SWM facility
List 5. Red-lined Final ESD calculations for each SWM facility showing all As-Built data as **(BOLD)**
List 6. Surface Area calculations (square feet) of all SWM facilities that have surface storage
List 7. Volume calculations for all ponds and SWM facilities that have surface storage.
List 8. Provide incremental surface area in square feet and the storage & cumulative storage volumes in cubic feet at one-foot contour elevations, including the elevations of the control structure outlets.
List 9. If the elevations of the SWM facility differ from the original design by 0.2 ft or more, outflow calculations shall be submitted. If the as-built volume is less than the approved design, then updated TR-20, HydroCAD or other approved Routing computations shall be included to demonstrate the design requirements have been met with the As-built conditions.
List 10. Drainage Area Map: Modified drainage areas to the SWM facilities are to be clearly presented.
List 11. Harford County Stormwater Management Summary Sheet

AS-BUILT STORMWATER MANAGEMENT CONSTRUCTION REPORT

List • AS_BUILT REPORT items 2, 3 & 4
List 1. Report Title "As-Built Stormwater Management Construction Report"
List 2. Table of Contents. All report pages are to be numbered.
List 3. Complete construction documentation shall be provided for every Stormwater facility:

List Inspection Reports (daily): See Harford County Government Stormwater Management Construction Inspections Engineer-in-Charge (Rev. 2/2015) for requirements.

List Signed copy of the Engineer-in-Charge form(s) for the Project.

List Construction Photographs: See Harford County Stormwater Management Construction Checklist (Rev 07/2024) for the complete listing.

List Geotechnical Reports: Soil Testing, Compaction Certification – Proctor Tests, Atterberg Tests, etc. (Beneath Riser as well as fill for embankments/dam).

List ____ Concrete break test results (cast-in-place items, such as risers, weir walls, etc.)
Plant certified concrete tickets (cradles, headwalls, end walls, weir walls, pervious materials, etc.)

List ____ Harford Soil Conservation District Pond Summary Sheet, if required.

List ____ Shipping tickets for all installed pipe, risers, vaults, nyloplast structures, etc.
Material Certifications & Delivery Tickets: All installed aggregates, clay, planting soil/ bio-soil, etc.

List ____ Material tickets for filter cloth / geotextiles.

List ____ Topsoil testing for any earth disturbance greater than 5 acres.

List ____ Certification of the installed plantings and the delivery tickets for the plantings.

List ____ Stormwater facilities with planting media: Inspection reports, soil type and mix ratios, soil test results (Must be dated within 90 days of media placement), pipe certification, filter cloth specifications, landscaping tickets, lime and fertilizer application rates.

List ____ 4. Copy of latest MDE (Technical Memorandum #16 As-Built Submissions, May 7, 2021) checklist:
A) For Non-378 BMPs; **B)** For Code 378 Small Ponds; **C)** For Code 378 Heritage Ponds

List ____ 5. Appendices: Provide construction related supporting documentation, such as approval correspondence, Approved shop drawings, etc.

List ____ 6. Other Report content as requested.

AS-BUILT PLAN REQUIREMENTS – Existing Constructed Conditions

List ____ 1. Title Drawing Sheet (24" x 36"):

List ____ Project name, address, County Contract Number & date

List ____ Owner's & Developer's name, address & phone number

List ____ Vicinity map (minimum 2000' scale)

List ____ North arrow & date of drawing (all Drawing Sheets)

List ____ Engineer signature, seal, MD certification with expiration date, on as-built certification block.

List ____ Field verification by project Engineer-in-Charge.

List ____ Harford County Approval Block

List ____ Harford County As-built Plan Number: SWMENGAB-_____

List ____ Summary Table showing ESD Target Requirements and ESD provided by each SWM facility.

List ____ Drawing Index

List ____ Other content as requested.

List ____ 2. Site grading / existing conditions plan (minimum 50' scale)

List ____ Topography (1 ft contours) from an on-the-ground survey, with spot elevations on top of embankments, etc. Note: elevations below permanent pool at 1- or 2- foot intervals.

List ____ Date of the survey and name of firm that performed the survey.

List ____ Lot lines and easement lines

List ____ Stormwater Management Easement lines

List ____ Location of Storm Drainage and other utilities

List ____ Label all storm drainage pipes (size, type & slope) and show flow direction arrow

List ____ Label all Stormwater Facilities, including the number as provided on the approved plan.

List ____ Outfall locations showing Headwall, FES, etc. and stone. Label the pipe invert elevation.

List ____ Label all structures with the same number as listed on the approved plan.

List ____ Show & label all stormwater facility features.

List ____ Show maintenance access, fencing and gates.

List ____ Engineer signature, seal, MD certification with expiration date

List ____ Other content as requested.

List 3. Stormwater Facility Plans – General Requirements

- List Plan scale: 1"=20' minimum
- List Topography (1 ft contours) from an on-the-ground survey, with multiple spot elevations on top of embankments and other locations associated with the specific facility.
- List Benchmark: Establish a permanent elevation benchmark at each facility (Riser Structure, Weir Wall, Inlet Headwall, etc.
- List Required content as outlined under the Site grading / existing conditions plan.
- List The two completed County As-Built Inspection Tabulations Checklists: 1: Construction; 2: Tabulations
- List Actual Cross-sections: Top of embankment at inlet, through the facilty, outlet control structure, to the top of embankment, through the outfall or connection to the storm drainage system.
- List Show facility components on the plan & cross-section, with dimensions, sizes and elevations.
- List Label the surface area (square feet) and the surface elevation.
- List Show/label the ESDv water surface elevation (WSEL), 10-yr WSEL, 10-yr freeboard dimension to top of embankment and the 100-yr WSEL, if applicable.
- List Swales: Profile along the length of the swale, including the top of embankment.
- List Swales: Cross-sections at mid-length and at the discharge end (include the ponding data).
- List Engineer signature, seal, MD certification with expiration date
- List Planting Plan with related tables of materials and plants.
- List Other content as requested.

List 4. Drainage area maps for Stormwater facilities, if modified (at a scale that can be easily read).

- List Drainage Areas to be based on updated existing conditions with contours labeled.
- List Clearly show as-built drainage area boundaries, without blocking out plan content.
- List Indicate the design drainage area boundary (finer line and labeled)
- List Label the Drainage Area and provide the area in square ft units and in acre units.
- List Label the Stormwater facility and the discharge point.
- List Engineer signature, seal, MD certification with expiration date

List 5. Stormwater Summary plan

- List Additional Stormwater-related details.
- List Summary Table showing the total approved ESDv, Pe & Rev Target Requirements and the total ESDv, Pe & Rev provided by the as-built facilities.
- List Expanded Stormwater Facility Design Table showing approved design data and data provided by the as-built facilities: SWM number, Location, Drainage Area, Impervious Area, I%, Pe, ESDv, Max ESDv, Rev, Cpv and other facility requirements, such as number of check dams.
- List Engineer signature, seal, MD certification with expiration date

List 6. Maryland State Plane Coordinate System facility location table: Table to list <u>all</u> the Stormwater Facilities by name and Identification numbers (MB-1, RG-1, etc.), Latitude/Longitude and descriptive notes. Generally, the coordinate point should be at the outlet control device (riser, weir wall, headwall, etc.) or other suitable locations, such as the end of a swale, drywell observation well cap, etc. For single lots that have vegetated Rooftop/Non-rooftop disconnects, set coordinate point at the center lower front step.

List 7. Other Drawings as requested.

AS-BUILT PLAN REQUIREMENTS – Red-Line Construction Compliance Plans

List 1. This set of plans will use the CAD drawings from the final approved plans. (Note: Only if the CAD drawings <u>are not available</u> and with the written approval by the County, the plan set can use a crisp, sharp, clean scan of the approved plans with all signatures, professional seals, etc. removed.)

List 2. Red-line format: Small radius red cloud around design items that have changed. Bold Red check marks on Design items that have not changed. Bold Red text for Contour & as-built elevations, etc. Note: since Final Design contours are solid lines, use fine Bold Red dashed lines for as-built contour lines and a thicker Bold Red Dashed lines for Index Contours.
Adjust red-line items to not overwrite / block approved plan content.

List 3. Plan content to include the same data as provided on the Existing Constructed Conditions plans.

List 4. Title Drawing Sheet:

- List Confirm and show the County Contract Number & new date.
- List Update Owner's & Developer's name, address & phone number
- List Engineer signature, seal, MD certification with expiration date, on as-built certification block.
- List Field verification by project Engineer-in-Charge.
- List Harford County Approval Block
- List Harford County As-built Plan Number: SWMENGAB-_____
- List Drawing Index to define the included drawing sheets.

List 5. Site grading / existing as-built conditions plans:

- List Topography (1 ft contours) from an on-the-ground survey, with spot elevations on top of embankments and other locations associated with the specific facility.
- List Date of the survey and name of firm that performed the survey.
- List Adjustments to Stormwater Management Easement lines.
- List Adjusted location of Storm Drainage and other utilities
- List Confirm all stormwater related drainage pipes (size, type & slope) and show flow direction.
- List Engineer signature, seal, MD certification with expiration date.

List 6. Stormwater Facility Plans & Details:

- List The two completed County As-Built Inspection Tabulations Checklists: 1: Construction; 2: Tabulations
- List If not already provided; show Actual Cross-sections: Top of embankment at inlet, through the facility, outlet control structure, to the top of embankment, through the outfall or connection to the storm drainage system.
- List Label the surface area (square feet) and the surface elevation.
- List If not already provided; show ESDv water surface elevation (WSEL), 10-yr WSEL, 10-yr freeboard dimension to top of embankment and the 100-yr WSEL, as applicable.
- List Swales: If not already provided; show profiles and cross sections.
- List Engineer signature, seal, MD certification with expiration date

List 7. Planting Plan: Updated plant list/schedule and quantity. Verified by a Registered Landscape Architect.

List 8. Other content as requested.

ADDITIONAL INSTRUCTIONS

List 1. Submission to include electronic copies (PDF format). Drawing file PDF is to be generated through the CAD program (no scans). File size 75 MB maximum (divide the plan set into multiple sheet groups).

List 2. All submissions must be made through the ePermit Center.

COMMENTS