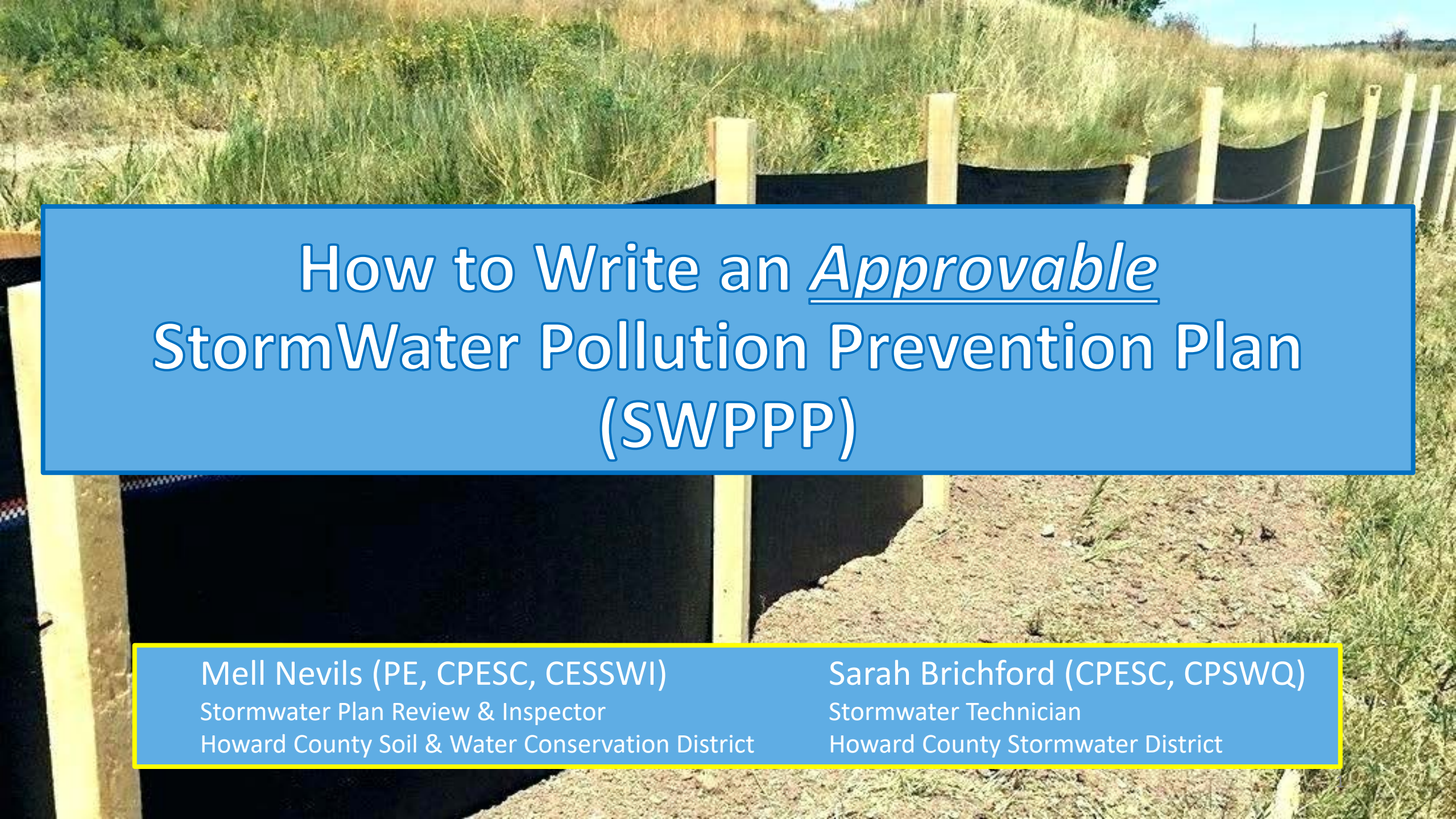

How to Write an *Approvable* StormWater Pollution Prevention Plan (SWPPP)

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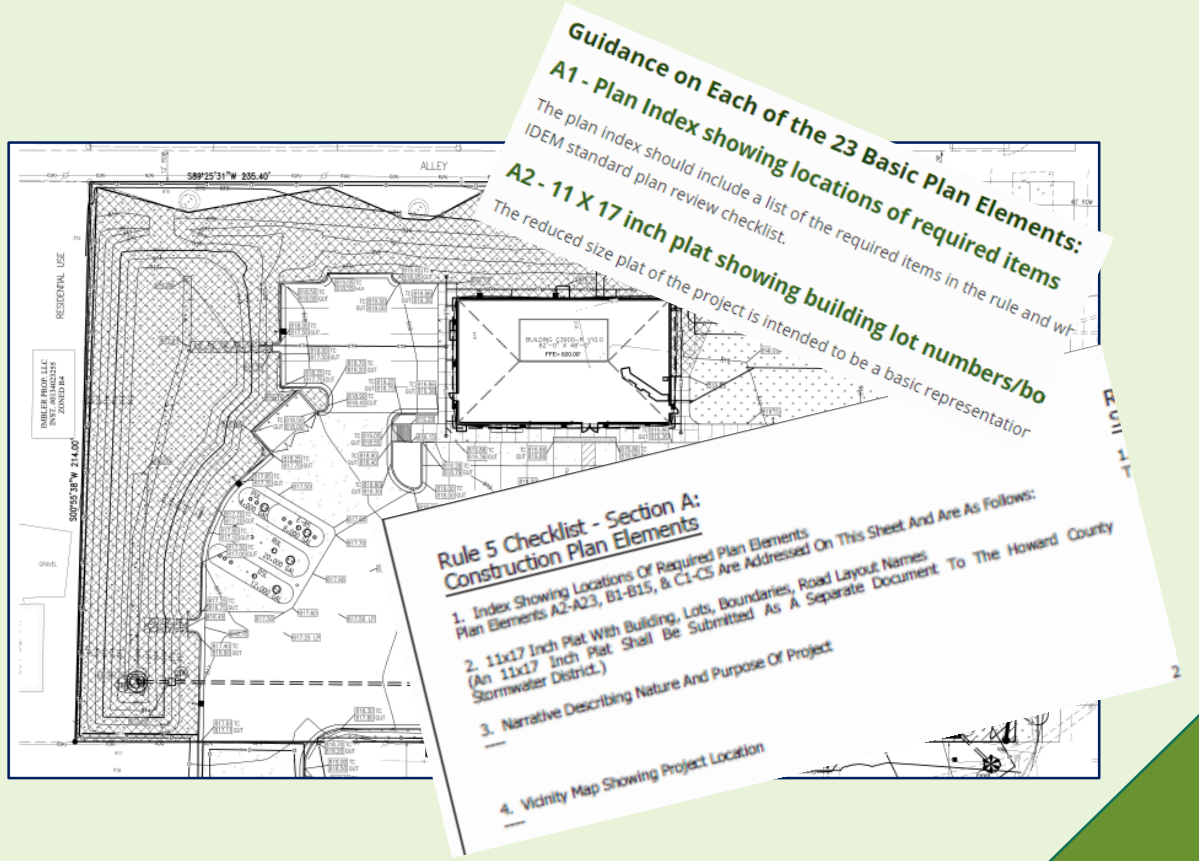
The SWPPP designer should provide all of the information needed by the plan reviewer in an *organized* format that is easy to access and determine if adequate.

- ✓ all required elements including Rule 5 (SWPPP Parts A, B, C) and any local ordinance requirements
- ✓ clear instructions and details for contractor



A SWPPP should include:

- Construction sequence and brief project description
- Erosion and sediment controls to be used during construction
- Pollution prevention and good housekeeping measures
- Post-construction stormwater controls (if required)
- Index to all required elements

A plan design process . . .

Construction Sequence

- Should be unique to the site – *what is this project?*
  - sensitive areas, wetlands, water features
- Should clearly describe basic sequence of events
- Few sentences for a simple plan
- Several paragraphs for a complex plan

(cont.) Construction Sequence

- Pre-construction meeting in advance of any land disturbing activity
  - Site owner, plan designer, contractor, site inspector
- Clearing / grading plan
- Installation of erosion and sediment controls
- Construction phase: start to finish
- Final stabilization of site
- Removal of temporary erosion and sediment controls

Erosion & sediment control

1. Identify the drainage pattern
2. Determine how construction will affect the drainage pattern
3. Identify the erosion and sediment control measures used
4. Provide details for each measure
5. Provide a sequence for installation of measures

Erosion and Sediment Control

1. Identify the Drainage Pattern

- Contours should be at adequate intervals to determine drainage patterns on the site
- Water features such as streams, ponds and wetlands should be identified.
  - on-site and off-site
- Contours may need to extend beyond the Limits of Disturbance or property lines to adequately show
  - on-site drainage
  - effects of disturbance on off-site properties (e.g. flooding)

Erosion and Sediment Control

2. Determine how the land disturbance and construction will affect the drainage pattern

- Limits of disturbance
- Changes in sheet flow
- Changes in concentrated flow
- Inlets and outlets

Erosion and Sediment Control

3. Identify sediment and erosion control measures

- Perimeter controls
  - Silt fence, silt socks, rock berms, compost berms
- Directing runoff
  - Diversions, channels, slope drains
- Erosion control
  - Matting/liners, stone stabilization

Erosion and Sediment Control

3. (cont.) Identify sediment and erosion control measures

- Sediment capture
  - Basins, traps, check dams (straw & rock), construction entrance/exits
- Inlet and outlet protection
  - Dandy bags, rock donuts, silt fence inlet protection, energy dissipaters
- Soil stockpiles
- Stabilization
  - temporary
  - permanent

4. BMP Details

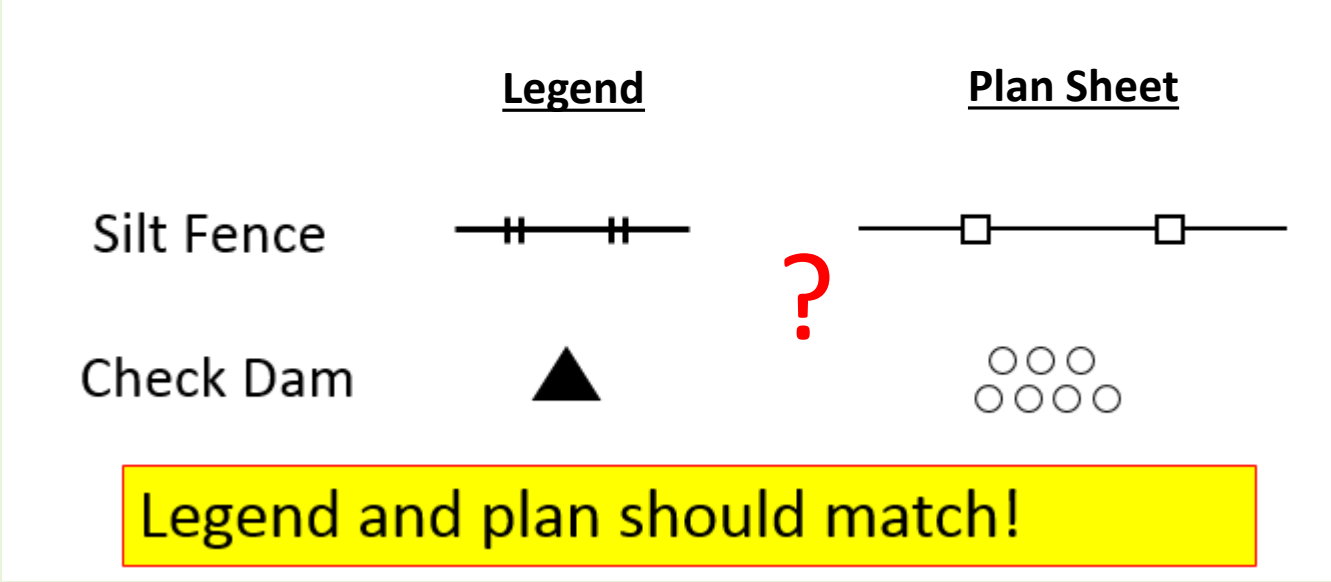
- Each proposed BMP has a detail and/or schedule
- Dimensions are shown for each measure
- Required information is provided for BMP maintenance
  - During construction
  - Post construction

(cont.) BMP Details – Legends and Drawings

- Provide an accurate legend that contains symbols for all measures

or

- Call out each measure on the plan sheet



(cont.) BMP Details - maintenance

- SWPPP should include:
  - instructions on when maintenance is needed for each BMP
  - instructions on how to maintain each BMP
  - Operation & Maintenance (O&M) manuals attached for any post construction BMPs

Pollution Prevention & Good Housekeeping

Material Handling

- Storage of fertilizer
- On-site vehicle maintenance
- Drip pans for equipment
- On-site fueling of equipment
- Fuel tanks

PPGH (cont.)
Material Handling

- Pesticides (including herbicides)
- Trash collection and disposal
- Concrete washout water and waste concrete
  - Concrete truck washout water
  - Water in the concrete washout BMP
  - Empty concrete bags

Post construction BMP specifications

- Description of the pollutants for the proposed project
  - What could be generated from this site?
- Determine the required design specification
  - Federal requirements
  - State requirements
  - Local requirements
- Provide documentation that your plan meets the requirements
  - Drainage calculations, sizing, etc.

Post Construction BMP specifications

- Design and locate each BMP to be sure it meets the requirement
- Maintenance requirements are:
  - adequate
  - understandable and practical
  - include a timeframe for maintenance
- Operation and Maintenance Manuals should be included for all post-construction BMPs

Index to Required SWPPP Elements

Table of contents referencing IDEM Rule 5 elements and local requirements

Guidance on Each of the 23 Basic Plan Elements:

A1 - Plan Index showing locations of required items

The plan index should include a list of the required items in the rule and where they
standard plan review checklist.

A2 - 11 X 17 inch plat showing building lot numbers/boundar

The reduced size plat of the project is intended to be a basic representation of the p
layout, and road names. It is not intended to be a complete representation of the Co
plat is primarily to provide staff a simplified layout of the project that can be used as

The plat should be legible, therefore based on the size of the project it is acceptable

(This item is not required for single-family residential developments of four lots or le

A3 - Narrative describing project nature and purpose:

The plan should include information regarding the nature and purpose of the projec
the narrative to include other plan requirements.

A4 - Vicinity map showing project location:

The plan should include a map that depicts the site in relation to other areas in the c
project site location. Acceptable map types include USGS topographic maps, county
the site location).

A5 - Legal description of the project site:

The legal description of the project site should be identified to the nearest quarter s
longitude and latitude coordinates are not a requirement of the plan; the checklist d

A6 - Location of all lots and proposed site improvements:

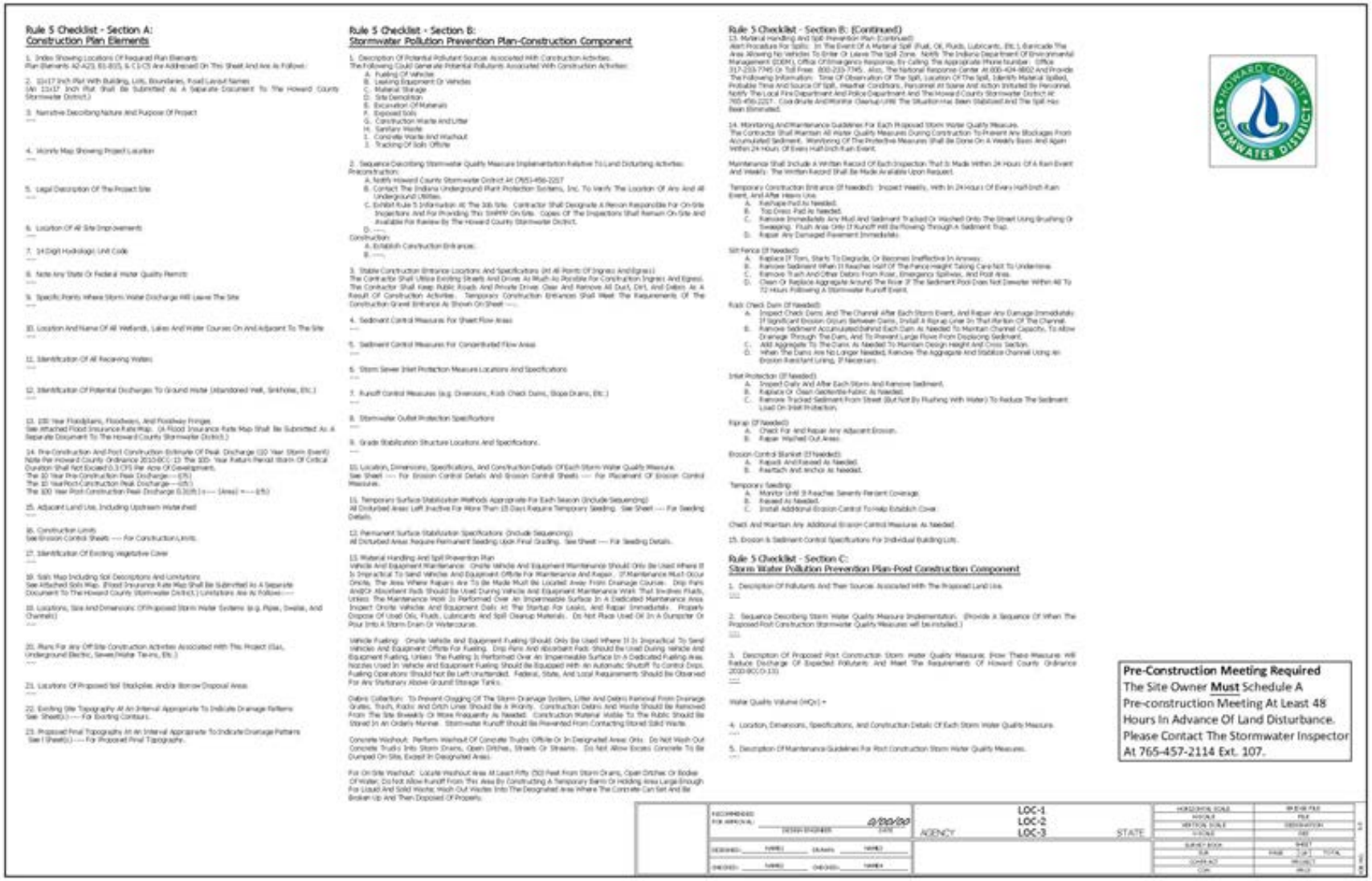
Lot boundaries and numbers are required to be shown on the plan. In addition, the
roads (names, if available), structures, and common areas.

Single lot projects should show the location of any proposed structures.

A7 - Hydrologic unit code:

Index to Required SWPPP Elements

Plan sheet format
CAD file



Rule 5 Checklist - Section A:
Construction Plan Elements

1. Index Showing Locations Of Required Plan Elements
Plan Elements A2-A23, B3-B15, & C1-C5 Are Addressed On This Sheet And Are As Follows:

2. 11x17 Inch Plat With Building, Lots, Boundaries, Road Layout Names
(An 11x17 Inch Plat Shall Be Submitted As A Separate Document To The Howard County Stormwater District.)

3. Narrative Describing Nature And Purpose Of Project
---

4. Vicinity Map Showing Project Location
---

5. Legal Description Of The Project Site
---

6. Location Of All Site Improvements
---

7. 14 Digit Hydrologic Unit Code
---

8. Note Any State Or Federal Water Quality Permits
---

9. Specific Points Where Storm Water Discharge Will Leave The Site
---

10. Location And Name Of All Wetlands, Lakes And Water Courses On And Adjacent To The Site
---

11. Identification Of All Receiving Waters
---

12. Identification Of Potential Discharges To Ground Water (Abandoned Well, Sinkhole, Etc.)
---

13. 100 Year Floodplains, Floodways, And Floodway Fringe
See Attached Flood Insurance Rate Map. (A Flood Insurance Rate Map Shall Be Submitted As A Separate Document To The Howard County Stormwater District.)

14. Pre-Construction And Post Construction Estimate Of Peak Discharge (10 Year Storm Event)
Note Per Howard County Ordinance 2010-ECC-13 The 100- Year Return Period Storm Of Critical Duration Shall Not Exceed 0.3 CFS Per Acre Of Development.
The 10 Year Pre-Construction Peak Discharge ---- (cfs)
The 10 Year Post-Construction Peak Discharge ---- (cfs)
The 100 Year Post-Construction Peak Discharge 0.3(cfs) x ---- (Area) = ---- (cfs)

15. Adjacent Land Use, Including Upstream Watershed
---

16. Construction Limits
See Erosion Control Sheets ---- For Construction Limits.

17. Identification Of Existing Vegetative Cover
---

18. Soils Map Including Soil Descriptions And Limitations
See Attached Soils Map. (Flood Insurance Rate Map Shall Be Submitted As A Separate Document To The Howard County Stormwater District.) Limitations Are As Follows:----

19. Locations, Size And Dimensions Of Proposed Storm Water Systems (e.g. Pipes, Swales, And Channels)
---

20. Plans For any Off Site Construction Activities Associated With This Project (Gas, Underground Electric, Sewer/Water Trench, Etc.)
---

21. Locations Of Proposed Soil Stockpiles And/or Borrow Disposal Areas
---

22. Existing Site Topography At An Interval Appropriate To Indicate Drainage Patterns
See Sheet(s) ---- For Existing Contours.

23. Proposed Final Topography At An Interval Appropriate To Indicate Drainage Patterns
See Sheet(s) ---- For Proposed Final Topography.

Rule 5 Checklist - Section B:
Stormwater Pollution Prevention Plan-Construction Component

1. Description Of Potential Pollutant Sources Associated With Construction Activities:
The Following Could Generate Potential Pollutants Associated With Construction Activities:
A. Fueling Of Vehicles
B. Leaking Equipment Or Vehicles
C. Material Storage
D. Site Demolition
E. Excavation Of Materials
F. Exposed Soils
G. Construction Waste And Litter
H. Sanitary Waste
I. Concrete Waste and Washout
J. Tracking Of Soils Offsite

2. Sequence Describing Stormwater Quality Measure Implementation Relative To Land Disturbing Activities:
Preconstruction:
A. Notify Howard County Stormwater District At (765)-456-2227
B. Contact The Indiana Underground Plant Protection Systems, Inc. To Verify The Location Of Any And All Underground Utilities.
C. Exhibit Rule 5 Information At The Job Site. Contractor Shall Designate A Person Responsible For On-Site Inspections And For Providing This SWPPP On Site. Copies Of The Inspections Shall Remain On Site and Available For Review By The Howard County Stormwater District.
D. ----
Construction:
A. Establish Construction Entrances.
B. ----

3. Stable Construction Entrance Locations And Specifications (At All Points Of Ingress And Egress):
The Contractor Shall Utilize Existing Streets And Drives As Much As Possible For Construction Ingress And Egress. The Contractor Shall Keep Public Roads And Private Drives Clear And Remove All Dust, Dirt, And Debris As A Result Of Construction Activities. Temporary Construction Entrances Shall Meet The Requirements Of The Construction Gravel Entrance As Shown On Sheet ----.

4. Sediment Control Measures For Sheet Flow Areas
---

5. Sediment Control Measures For Concentrated Flow Areas
---

6. Storm Sewer Inlet Protection Measure Locations And Specifications
---

7. Runoff Control Measures (e.g. Diversions, Rock Check Dams, Slope Drains, Etc.)
---

8. Stormwater Outlet Protection Specifications
---

9. Grade Stabilization Structure Locations And Specifications.
---

10. Location, Dimensions, Specifications, And Construction Details Of Each Storm Water Quality Measure.
See Sheet ---- For Erosion Control Details And Erosion Control Sheets ---- For Placement Of Erosion Control Measures.

11. Temporary Surface Stabilization Methods Appropriate For Each Season (Include Sequencing)
All Disturbed Areas Left Inactive For More Than 15 Days Require Temporary Seeding. See Sheet ---- For Seeding Details.

12. Permanent Surface Stabilization Specifications (Include Sequencing)
All Disturbed Areas Require Permanent Seeding Upon Final Grading. See Sheet ---- For Seeding Details.

13. Material Handling And Spill Prevention Plan
Vehicle And Equipment Maintenance: Onsite Vehicle And Equipment Maintenance Should Only Be Used Where It Is Impractical To Send Vehicles And Equipment Offsite For Maintenance And Repair. If Maintenance Must Occur Onsite, The Area Where Repairs Are To Be Made Must Be Located Away From Drainage Courses. Drip Pans And/Or Absorbent Pads Should Be Used During Vehicle And Equipment Maintenance Work That Involves Fluids, Unless The Maintenance Work Is Performed Over An Impermeable Surface In A Dedicated Maintenance Area. Inspect Onsite Vehicle And Equipment Daily At The Startup For Leaks, And Repair Immediately. Properly Dispose Of Used Oils, Fluids, Lubricants And Spill Cleanup Materials. Do Not Place Used Oil In A Dumpster Or Pour Into A Storm Drain Or Watercourse.

Vehicle Fueling: Onsite Vehicle and Equipment Fueling Should Only Be Used Where It Is Impractical To Send Vehicles And Equipment Offsite For Fueling. Drip Pans And Absorbent Pads Should Be Used During Vehicle And Equipment Fueling, Unless The Fueling Is Performed Over An Impermeable Surface In A Dedicated Fueling Area. Nozzles Used In Vehicle and Equipment Fueling Should Be Equipped With An Automatic Shutoff To Control Drips. Fueling Operations Should Not Be Left Unattended. Federal, State, And Local Requirements Should Be Observed For Any Stationary Above Ground Storage Tanks.

Debris Collection: To Prevent Clogging Of The Storm Drainage System, Litter And Debris Removal From Drainage Grates, Trash, Rocks And Ditch Lines Should Be A Priority. Construction Debris And Waste Should Be Removed From The Site Biweekly Or More Frequently As Needed. Construction Material Visible To The Public Should Be Stored In An Orderly Manner. Stormwater Runoff Should Be Prevented From Contacting Stored Solid Waste.

Concrete Washout: Perform Washout Of Concrete Trucks Offsite Or In Designated Areas Only. Do Not Wash Out Concrete Trucks Into Storm Drains, Open Ditches, Streets Or Streams. Do Not Allow Excess Concrete To Be Dumped On Site, Except In Designated Areas.

For On-Site Washout: Locate Washout Area At Least Fifty (50) Feet From Storm Drains, Open Ditches Or Bodies Of Water. Do Not Allow Runoff From The Area By Constructing A Temporary Berm Or Holding Area Large Enough For Liquid And Solid Waste. Wash Out Wastes Into The Designated Area Where The Concrete Can Set And Be Broken Up And Then Disposed Of Properly.

Rule 5 Checklist - Section B: (Continued)

13. Material Handling And Spill Prevention Plan: (Continued)
Alert Procedure For Spills: In The Event Of A Material Spill (Fuel, Oil, Fluids, Lubricants, Etc.), Barricade The Area Allowing No Vehicles To Enter Or Leave The Spill Zone. Notify The Indiana Department Of Environmental Management (IDEM), Office Of Emergency Response, By Calling The Appropriate Phone Number: Office 317-233-7745 Or Toll Free: 800-233-7745. Also, The National Response Center At 800-424-8802 And Provide The Following Information: Time Of Observation Of The Spill, Location Of The Spill, Identify Material Spilled, Probable Time And Source Of Spill, Weather Conditions, Personnel At Scene And Action Initiated By Personnel. Notify The Local Fire Department And Police Department And The Howard County Stormwater District At 765-456-2227. Coordinate And Monitor Cleanup Until The Situation Has Been Stabilized And The Spill Has Been Eliminated.

14. Monitoring And Maintenance Guidelines For Each Proposed Storm Water Quality Measure.
The Contractor Shall Maintain All Water Quality Measures During Construction To Prevent Any Blockages From Accumulated Sediment. Monitoring Of The Protective Measures Shall Be Done On A Weekly Basis And Again Within 24 Hours Of Every Half-Inch Rain Event.

Maintenance Shall Include A Written Record Of Each Inspection That Is Made Within 24 Hours Of A Rain Event And Weekly. The Written Record Shall Be Made Available Upon Request.

Temporary Construction Entrance (If Needed): Inspect Weekly, Within 24 Hours Of Every Half-Inch Rain Event, And After Heavy Use.
A. Refill Pad As Needed.
B. Top Dress Pad As Needed.
C. Remove Immediately Any Mud And Sediment Tracked Or Washed Onto The Street Using Brushing Or Sweeping. Flush Area Only If Runoff Will Be Flowing Through A Sediment Trap.
D. Repair Any Damaged Pavement Immediately.

Silt Fence (If Needed):
A. Replace If Torn, Starts To Degrade, Or Becomes Ineffective In Anyway.
B. Remove Sediment When It Reaches Half Of The Fence Height Taking Care Not To Undermine.
C. Remove Trash And Other Debris From Rear, Emergency Spillway, And Pool Area.
D. Clean Or Replace Aggregate Around The Riser If The Sediment Pool Does Not Dewater Within 48 To 72 Hours Following A Stormwater Runoff Event.

Rock Check Dam (If Needed):
A. Inspect Check Dams And The Channel After Each Storm Event, And Repair Any Damage Immediately. If Significant Erosion Occurs Between Dams, Install A Rip-up Liner On That Portion Of The Channel.
B. Remove Sediment Accumulated Behind Each Dam As Needed To Maintain Channel Capacity, To Allow Drainage Through The Dam, And To Prevent Large Flows From Displacing Sediment.
C. Add Aggregate To The Dams As Needed To Maintain Design Height And Cross Section.
D. When The Dams Are No Longer Needed, Remove The Aggregate And Stabilize Channel Using An Erosion Resistant Lining, If Necessary.

Inlet Protection (If Needed):
A. Inspect Daily And After Each Storm And Remove Sediment.
B. Replace Or Clean Geotextile Fabric As Needed.
C. Remove Tracked Sediment From Street (But Not By Flushing With Water) To Reduce The Sediment Load On Inlet Protection.

Riprap (If Needed):
A. Check For and Repair Any Adjacent Erosion.
B. Repair Washed Out Areas.

Erosion Control Blanket (If Needed):
A. Reposition And Reseed As Needed.
B. Reattach And Anchor As Needed.

Temporary Seeding:
A. Monitor Until It Reaches Seventy Percent Coverage.
B. Reseed As Needed.
C. Install Additional Erosion Control To Help Establish Cover.

Check And Maintain Any Additional Erosion Control Measures As Needed.

15. Erosion & Sediment Control Specifications For Individual Building Lots.

Rule 5 Checklist - Section C:
Storm Water Pollution Prevention Plan-Post Construction Component

1. Description Of Pollutants And Their Source Associated With The Proposed Land Use.
---

2. Sequence Describing Storm Water Quality Measure Implementation. (Provide A Sequence Of When The Proposed Post Construction Stormwater Quality Measures will be Installed.)
---

3. Description Of Proposed Post Construction Storm Water Quality Measure. How These Measure Will Reduce Discharge Of Expected Pollutants And Meet The Requirements Of Howard County Ordinance 2010-ECC-13.)

Water Quality Volume (WQv) =

4. Location, Dimensions, Specifications, and Construction Details Of Each Storm Water Quality Measure.
---

5. Description Of Maintenance Guidelines For Post Construction Storm Water Quality Measures.

Pre-Construction Meeting Required
The Site Owner **Must** Schedule A Pre-construction Meeting At Least 48 Hours In Advance Of Land Disturbance. Please Contact The Stormwater Inspector At 765-457-2114 Ext. 107.

LOC-1
LOC-2
LOC-3
AGENCY
STATE

Discussion

Mell Nevils
Stormwater Plan Review & Inspector
Howard County Soil & Water Conservation District

Sarah Brichford
Stormwater Technician
Howard County Stormwater District