AEC STORM WATER MANAGEMENT PROCEDURES-ABBREVIATED

1. PRE-DESIGN PHASE

Kickoff Meeting

- ***Note:*** *storm water goals are set at programming phase.*
- Discuss U-M storm water management plans and requirements (umstormwaterplanning@umich.edu)
- Storm Water Best Management Practices (BMPs)
- Discuss maintenance concerns and storm water outlet
- Confirm minimum soil boring/test pit requirements
- Review regulatory requirements

Soils Evaluation

- Geotechnical firm to determine site's suitability for retention (infiltration)
- Soil borings and infiltration testing to be performed at potential design depths
- Deep borings to be performed for investigation of soil composition and identification of water table

Preliminary Basis of Design (BOD)

- Project Team to create and document evolution of storm water management strategies:
  - Project name/number
  - General site description
  - Map with drainage boundary, including off-site drainage impacts
  - On-site drainage infrastructure
  - Adjacent projected drainage impacts
  - Water table elevation
  - Status of presence of known contaminated soils
  - Soil characteristics data
  - Evaluate drainage outlet capacity
  - List of preliminary BMP options with cost/benefits identified. Recommend viable options to pursue.

Meeting Minutes

- Project Team to record and distribute meeting minutes, including documenting action items/decision points

2. CONCEPTUAL DESIGN

Preliminary Basis of Design

- Update information to include:
  - Limit of total earth disturbance
  - Volume of runoff (CF) generated on-site to be managed for multiple storm events
  - Brief drainage narrative describing proposed system
  - Infiltration/retention options
  - Feasibility of on-site infiltration/retention to meet permit requirements and effectively manage storm water or other options to be considered
  - Conceptual design storm water management target volume calculations (permit requirements and 100-year/24-hr storm event)
  - Potential options for managing storm water preliminary volume calculations for each option and at various storm events
  - ***Above and beyond:*** Identify opportunities for maximizing storm water on-site infiltration
  - Indicate and address existing site flooding issues
  - Verify no impacts to upstream, downstream, adjacent properties - identify need for no rise analysis
  - Expand and update BMP list with calculations
  - Conceptual layout for storm water management options and proposed drainage collection system

Meet With Storm Water Team

- Project Team and Storm Water Team to review information and determine best approach to schematic design
- Initiate internal review of regulatory requirements (City of Ann Arbor or Washtenaw County)

Meeting Minutes

- Project Team to record and distribute meeting minutes, including documenting action items/decision points

3. SCHEMATIC DESIGN

Soils Evaluation/ Verification

- Infiltration testing to be performed at actual storm water infiltration proposed design locations and design depths

Update Basis of Design

- Update BOD to include:
  - Proposed topography to be affected by construction
  - Storm Water Management Plan incorporating post-construction permit requirements, BMPs and Soil Erosion and Sedimentation Control Procedures (SESC)
  - Schematic design layout for drainage collection system
  - Calculations used in designing storm water management systems components
  - Update cost/benefit analysis
  - Overall storm water management system (grading plan)

Meet With Storm Water Team

- Review plan refinements and calculations
- Review preliminary submittals (plans, and calcs with narrative) for regulatory requirements
- Follow U-M plan format for storm water management

Meeting Minutes

- Project Team to record and distribute meeting minutes, including documenting action items/decision points

4. DD, CD, CONSTRUCTION AND POST CONSTRUCTION

Update Basis of Design

- Update BOD
- Provide storm water management plans meeting U-M and regulatory format for graphics, narrative, and calcs

Meet With Storm Water Team

- Meet with Storm Water Team as necessary and if there are changes to storm water management approach

AEC Project Review

- Follow AEC plan review process
- Follow post-construction storm water permit requirements
- Follow SESC design requirements

Regulatory Agency Submittal

- Follow AEC requirements for City of Ann Arbor plan submittal
- Work with EH&S and Storm Water Team if external agency regulatory requirements

Meeting Minutes

- Project Team to record and distribute meeting minutes, including documenting action items/decision points

Complete Storm Water Management Procedure is available here.