Topic	Relevant Standards	Information or Calculations to Request (if needed)
Soils/Groundwater	1, 2, 3, 7	• Test Pits and/or USGS Soil Survey Data; if no test pits, why? • Field tests for hydraulic conductivity (falling head, double ring infiltrometer) • Frimpter adjustment (if necessary due to lack of redox, weeping used as groundwater, or presence of fill)
Erosion and Sediment Control	1, 2, 6, 7, 8, 9	• Are there any slopes steeper than 3:1? How are they managed? • Are erosion controls being provided to handle the flows being conveyed to them? • Temporary Erosion Controls: temporary diversion berms and flow paths, temporary stormwater basins, dewatering, refueling, stockpiling, etc. • Swale Size Calculations • Channel Protection Volume (CPv) and Channel Capacity Calcs • North American Green Swale Analysis
Conveyance, Hydraulics, Pipe Flow, Channel Flow	1, 2, 6, 7, 8, 9, 10	• How does the system fail; what happens in the event of structure blockage or failure where does backed up water head to? • Hydraulic Design calculations/SSA Model • Swale size calculations
Discharge, Outlet, Outflow	1, 2, 3, 6, 7, 8, 9, 10	• Where are the discharge(s) located • Is the discharge increasing flows to a given area despite a working pre-post development model • LSCSF consideration (land subject to coastal storm flowage)
Infiltration, Recharge, Exfiltration, Hydraulic Conductivity	1, 3, 7, 8	• See “Soils/Groundwater” • Recharge calculations (Rv) • Do structural BMP’s fully drawdown at or before 72 hours/what are the implications of a long drawdown with longer storms or storms in succession? • Does lateral seepage play a concern with the structural BMP
General BMP/SCM Design (Best Management Practice/Structural Control Measure)	1, 2, 3, 4, 7, 8, 9	• Massachusetts Stormwater Handbook – Volume 2 Chapter 2; compare the BMP with DEP guidance to ensure claims regarding treatment and function are in-line with state/local standards • How has green infrastructure been prioritized and how can it be introduced in some capacity with a proposed development lacking in it • Separation to Groundwater and Groundwater Mounding
Water Quality, Treatment, Pollutants, Total Suspended Solids, TMDL	1, 4, 5, 6, 7, 8, 9, 10	• What is being claimed for TSS pretreatment and treatment • TSS Calculations • Phosphorus [if regulated by municipality, starting to become a hot topic for stormwater regulation at the municipal and state level] • Proprietary Treatment and State of Qualifications • Are there areas being developed that are going untreated? • Is there a TMDL associated with a natural resource buffer being affected by this project?
Operation and Maintenance	8, 9, 10	• Who owns each BMP, what are the costs associated with maintenance, how does the site function in perpetuity even with a change in ownership, does the maintenance of the BMP fall in line with DEP guidance (Volume 2 Chapter 2), what is the responsibility of the owner in the instance of a system or component failure

*Reference MassDEP Stormwater Handbook Volume 3 Chapter 1 for further information

Definitions:

(#)-Year Storm – the largest storm with a 1/(#) annual probability of occurring (typically 2, 10, 25, or 100-year in SW Reports)

BMP/SCM – A Best Management Practice (BMP) or a Structural Control Measure (SCM) refers to those approved stormwater management solutions provided by and endorsed by the Massachusetts Stormwater Handbook in Volume 2, Chapter 2. These solutions fall into several categories including Pretreatment, Treatment, Conveyance, Infiltration, and others.

Conveyance – natural or man-made objects that perform the task of transporting stormwater (pipes, channels, swales, etc.)

Discharge – the expulsion of stormwater at a given location

Erosion – the stripping away of surface material due to shear forces created by water, humans, machines, and other things

Exfiltration – Infiltration specifically through a designed stormwater management system

Frimpter Calculation – A calculation method used to adjust an observed water table to a seasonal high groundwater table reading using seasonal factors in association with local well data

Green Infrastructure – natural, vegetated stormwater infrastructure used for stormwater treatment and attenuation

Groundwater – naturally occurring water held in the pores between soil particles.

Groundwater Mounding – The temporary buildup of groundwater in a location due to exfiltration

Hydraulic Conductivity – The ability for water to pass through a given soil media; a measure of infiltration denoted as the "Rawl's Rate". Sands with high porosity that are loose in nature tend to be the most hydraulically conductive materials while clays that are very tightly bound and extremely small in size are the least hydraulically conductive materials.

Hydraulics –the movement of a liquid in a confined space

Infiltration – The permeation of liquid through a soil media

Outlet – The object or drainage infrastructure responsible for discharge

Peak Flow Attenuation – Controlling the peak flow of a storm through a BMP to minimize maximum discharges

Phosphorus – a mineral present in stormwater that is a key component to algification. Phosphorus can come from a multitude of sources including rainfall, fertilizer, road salt, pet waste, and soil particles. Phosphorus is the limiting nutrient in algal growth, meaning you need the least of it relative to other minerals (nitrogen, carbon) to undergo the process (16:1 N/P ratio)

Pre- and Post-Development – Before and after the construction of a proposed project

Proprietary Treatment System – A stormwater quality BMP created by a 3rd party using new, innovative technology

Recharge – the reintroduction of stormwater back into the hydrogeologic system; reintroduction to the groundwater table

Redoximorphic Features – ferrous depletions visible in a soil media that indicate seasonal high groundwater table

Seasonal High Groundwater Table – The highest level for the groundwater table each year (typically somewhere between January and April). It should be noted that groundwater tables in Massachusetts can vary from season to season and year to year and are shown to be rising. Groundwater is heavily affected by a changing climate.

Sedimentation – the result of erosion; the pick-up and placement of soils from one location to another after being stripped from an area

Seepage – The breakout of stormwater through a soil media to the surface

TMDL – Total Maximum Daily Load is a regulatory term used in the Clean Water Act to describe a plan created to restore an impaired body of water. Discharges to or impacts within a resource area designated as an impaired waterway are subject to the performance standards in the TMDL.

Total Suspended Solids – A measurement of the amount of soil particles suspended in water

Weeping – The breakout of groundwater to the surface