

## Exhibit X.C.4 (Storm Water):

*Submit as Exhibit X.C.4. a description of plans for management of storm water including any plans to use Institute for Sustainable Infrastructure techniques to minimize impact of storm water and maximize its reuse.*

Stormwater management for the project will be accomplished by a combination of detention, treatment, and conveyance. Detention will likely be achieved mainly through above ground detention features (see Figure 1 – Stormwater Management Figure). A matrix of the accepted practices for stormwater quantity control can be found in Table A, Exhibit VIII.C.17.e. Outlet control structures within these detention systems will be designed to reduce the peak flows to match existing conditions as per the NYSDEC Stormwater Management Design Manual. Stormwater runoff will be treated to the standards set forth in the NYSDEC Stormwater Management Design Manual as well as local requirements. This treatment will be achieved by the use of water quality features. A matrix of the anticipated practices for stormwater quality control can be found in Table B, Exhibit VIII.C.17.e. Stormwater runoff conveyance will be managed by both overland and underground features including roof leaders, conveyance pipe, swales, and landscaped areas. We will evaluate the potential for stormwater capture and reuse.

The stormwater management design for the project will incorporate measures set forth by the Institute for Sustainable Infrastructure Techniques and Section 3.1 of the New York State Stormwater Management Design Manual to minimize impact and maximize reuse of stormwater. The New York State Stormwater Management Design Manual sets forth the requirements for use of green infrastructure techniques. The table below illustrates the anticipated green infrastructure techniques for the project:

Practice	Description	Reason for Applicability
Conservation of natural areas	Retain the predevelopment hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland buffers by restoring and/or permanently conserving these areas on a site.	Wetland areas are located throughout the site. Disturbance of wetlands will be limited as much as possible in order to conserve these natural areas.
Sheetflow to riparian buffers or filter strips	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	Stormwater runoff can be directed via sheetflow to riparian buffers associated with the open waters located on site.
Vegetated open swale	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	Swales will be used in medians for on-site roadways and alongside parking areas.
Tree planting/ tree box	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	Landscaping can be proposed along extents of earthwork to provide bank stabilization and increase development aesthetics. Trees are anticipated to be planted throughout the site and along the main entrance boulevard.

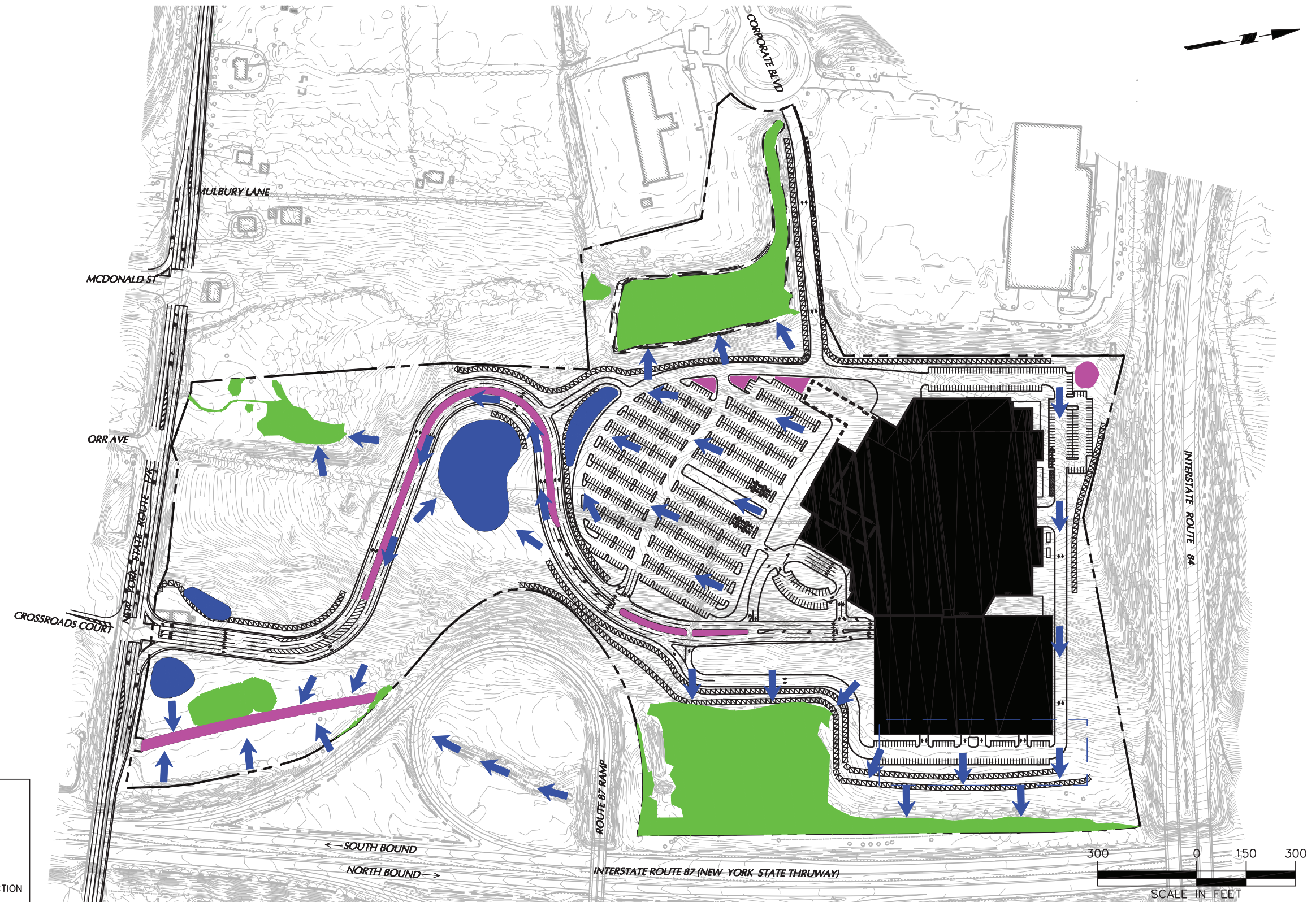
## Exhibit X.C.4 (Storm Water):

Submit as Exhibit X.C.4. a description of plans for management of storm water including any plans to use Institute for Sustainable Infrastructure techniques to minimize impact of stormwater and maximize its reuse.

Practice	Description	Reason for Applicability
Stream daylighting for redevelopment projects	Stream daylight previously-culverted/ piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and helping reduce pollutant loads.	The project is not considered a redevelopment project; however, daylighting the existing culverted/ piped conveyance along the eastern extent of the property into a natural stream can address stormwater green infrastructure and wetland mitigation.
Rain garden	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	Rain gardens are anticipated to be used throughout the site to treat stormwater as close to the source as possible and to be integrated with the landscaping plan.
Concrete unit pavers	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	Permeable pavers are proposed at key areas throughout the site and will be used strategically as part of the holistic stormwater design.

Attachment / Figures

Figure 1 – Stormwater Management



**STORMWATER MANAGEMENT FIGURE**  
**FIGURE 1**

THORNTON TOMASETTI - LANGAN - JAROS BAUM & BOLLES - PERKINS EASTMAN



**Exhibit**  
**X.C.4**