APPENDIX C

POST-CONSTRUCTION STORMWATER MANAGEMENT
PRELIMINARY POST-CONSTRUCTION
STORMWATER MANAGEMENT
(5,000 SF OR GREATER)

For

UCSD OUTPATIENT PAVILION
PROJECT

University of California, San Diego

FD&C NO. 4484

Applicant/Developer:
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Dated: January 28, 2015
DECLARATION OF RESPONSIBLE CHARGE

I, HEREBY DECLARE THAT I AM THE CIVIL ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE COUNTY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITY FOR PROJECT DESIGN.

WILLIAM A. SNIPES  
R.C.E. 50477  
EXP. 06-30-15
The UCSD Outpatient Pavilion project will create more than 5,000 square feet of impervious surfaces and is required to comply with the storm water requirements in accordance with UC San Diego’s Phase II Small MS4 General Permit 2013-0001-DWQ. All Best Management Practices implemented for this project will be reported to the State Water Quality Control Board on an annual basis by UC San Diego. The following are the measures that will be implemented to satisfy the storm water requirements.

**Site Design Measures**

1) Conserve Natural Areas, Soils, and Vegetation  
   a. Preserve significant trees where feasible

2) Minimize Disturbance to Natural Drainages  
   a. Set-back development envelope from drainages  
   b. Restrict heavy construction equipment access to planned green/open space areas

3) Minimize and Disconnect Impervious Surfaces  
   a. Sidewalks and paved surfaces will be directed to landscaping areas and/or bio-retention facilities.  
   b. Rooftop downspouts will connect to landscaping areas and/or bio-retention facilities.

4) Minimize Soil Compaction  
   a. Restrict heavy construction equipment access to planned green/open space areas  
   b. Re-till soils compacted by construction vehicles/equipment.

5) Minimize Erosion from Slopes  
   a. Minimize cut and fill areas to reduce slope lengths.  
   b. Incorporate retaining walls to reduce steepness of slopes or to shorten slopes.  
   c. Convey runoff safely away from top of slopes.

**Low Impact Development (LID) Design Practices**

1) Optimize Site Layout to Minimize Storm Water Related Impacts  
   a. Utilize existing topography to optimize the site layout and reduce the need for grading. Development envelopes were focused in the upper elevations of the site to promote sheet flow and natural surface drainage to BMPs located at lower elevations of the site.

   b. The site layout along existing landforms, avoids excessive grading and disturbance of vegetation and soils, and replicate the site’s existing drainage patterns.

   c. Conserve natural areas and vegetation. Define the development envelope and identify areas most suitable for development and areas that should be left undisturbed.
d. Preserve significant trees, especially native trees and shrubs, and identify locations for planting additional native or drought tolerant trees and shrubs.

2) Minimize Impervious Footprint
   a. Construct sidewalks to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.
   b. Minimize the use of impervious surfaces in the landscape design.

3) Disperse Runoff to Adjacent Landscaping
   a. Rooftop downspouts will connect to landscaping areas and/or bio-retention facilities.
   b. Drain impervious walkways into adjacent landscaping areas where feasible.

4) Landscaping Design
   a. Implement soil amendments. Soil amendments improve the soil’s capacity to retain moisture, which will reduce runoff from the water quality design storm and improve water quality.
   b. Reuse of Native Soils.
   c. Smart Irrigation Systems.
   d. Minimize soil compaction for landscaped areas of the project site designated for storm water treatment.

**Source Control Measures**

1) Use Efficient Irrigation Systems & Landscape Design
   a. Implement rain shutoff devices to prevent irrigation during and after precipitation events.
   b. Reduce irrigation contribution to dry-weather runoff by avoiding spray irrigation patterns where overspray to paved surfaces or drain inlets will occur.
   c. To avoid overwatering and potential irrigation runoff, design irrigation systems to each landscape area’s specific water requirement.
   d. Implement flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
   e. Avoid locating drain inlets in lawn areas, since such inlets tend to be sources of irrigation runoff and the transport mechanism for lawn care products. Design the grading and drainage systems such that drain inlets can be located outside of the lawn area, or include a non-turf buffer around the inlet.
2) Design Outdoor Material Storage Areas to Reduce Pollution Contribution
   a. Placed in an enclosure such as a cabinet, shed, or other structure that prevents contact with rainfall or runoff and prevents spillage to the storm water conveyance system.
   b. Protected by secondary containment structures such as berms, dikes, or curbs when the material storage area includes hazardous materials. The storage area shall be paved and sufficiently impervious to contain leaks and spills and be covered by a roof awning to minimize direct precipitation within the secondary containment area.

3) Employ Integrated Pest Management Principles – Integrated Pest Management (IPM) is an ecosystem-based pollution prevention strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation and use of resistant plant varieties. To eliminate or reduce the need for pesticide use, the following strategies can be used:
   a. Plant pest-resistant or well-adapted plant varieties; and/or
   b. Discourage pests by modifying the site and landscaping design.

4) Provide Storm Water Conveyance System Stamping and Signage
   a. Concrete stamping, or approved equivalent method, shall be provided for all storm water conveyance system inlets and catch basins within the project area.
   b. Language associated with the stamping (e.g., “No Dumping – Drains to Ocean”) must be satisfactory to governing agency. Stamping may also be required in Spanish.

5) Manage Fire Sprinkler System Discharges – For new buildings with fire sprinkler systems, design fire sprinkler systems as follows:
   a. Contain discharges from sprinkler systems’ operational maintenance and testing and convey discharges to the sanitary sewer system.

6) Manage Air Conditioning Condensate – Air conditioning condensate is a source of dry-weather runoff and elevated copper levels. Include design features to manage this pollutant source, such as the following:
   a. Direct air conditioning condensate to the sanitary sewer system; and/or
   b. Direct air conditioning condensate to landscaping areas.

7) Use Non-Toxic Roofing Materials
   a. Avoid the use of galvanized steel or copper for roofs, gutters, and downspouts.
   b. If using such materials, reduce the potential for leaching of metals by applying a coating
or patina.

c. Avoid composite roofing materials that contain copper.

8) Other Source Control Requirements

a. Require implementation of post-construction soil stabilization practices, such as the re-
vegetation of construction sites, in conformance with the approved Landscaping Plan and
Grading Plans.

b. Provide trash receptacles in areas of high pedestrian traffic and in front of retail
convenience stores.

Storm Water Treatment / Baseline Hydromodification Measures

The bioretention facilities for this project were designed based on volume-based criteria as
specified in Section F.5.g.2.b (Numeric Sizing Criteria) of the Permit and fully comply with
hydromodification management requirements (the 85th percentile, 24-hour storm event). A
bioretention facility was designed for each Drainage Management Area (DMA). Low flow
control was sized to meet the lower flow threshold (0.1Q2) since no channel assessment was
performed and the upper limit which is set at the water level of the 10-year storm.

Operation and Maintenance of Storm Water Control Measures

The treatment control BMPs for this project consist of bioretention facilities which are designed
for treating the runoff from the proposed development of the Outpatient Pavilion which will be
constructed under FD&C No. 4484. These facilities will need adequate maintenance to function
as designed. The University of California, San Diego is responsible for the maintenance in
perpetuity for drainage of the proposed development, as well as the maintenance of the
bioretention facilities.