

# STORMWATER C.3 COMPLIANCE

## DESIGNING SUCCESSFUL PLANT PALETTES FOR BIORETENTION FACILITIES



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CARDUCCI & ASSOCIATES, INC.

- CARDUCCI & ASSOCIATES, INC
- INFLUENCES ON PLANTING DESIGN
- WHAT NOT TO DO
- CASE STUDY: EL CERRITO CITY HALL



## INFLUENCES ON THE PLANTING DESIGN

- MAINTENANCE CONSIDERATIONS
- DESIGN CONSIDERATIONS
- CONSTRUCTION CONSIDERATIONS
- MAXIMIZE THE GREEN - MINIMIZE THE PAVING



- PLANT MAINTENANCE REQUIREMENTS - MINIMIZE
- TRASH REMOVAL - HIDE AND REMOVE
- EROSION REPAIR - REPAIR (CHECK AFTER STORM)
- YEARLY SOIL MAINTENANCE - ASSESSMENT
- LIFECYCLE OF SOIL REPLACEMENT - MANAGE AND PLAN
- MUNICIPALITY REQUIREMENTS - CLOSING LOOPHOLES

STORMWATER TREATMENT AND DETENTION MEASURES  
MAINTENANCE AGREEMENT

This Stormwater Treatment and Detention Measures Maintenance Agreement ("Agreement") is entered into this \_\_\_\_\_ date of \_\_\_\_\_, 200\_\_ by and between the Town of Atherton, a municipal corporation, (" Town") and [insert name of property owner] , a \_\_\_\_\_, (the "Property Owner").

RECITALS

**WHEREAS**, on February 19, 2003, the Regional Water Quality Control Board, San Francisco Bay Region, adopted Order R2-2003-0023, CAS002992 1, reissuing the San Mateo Countywide National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit for the San Mateo Countywide Clean Water Program, for which the Town of Atherton is a permittee; and

**WHEREAS**, Provision C.3.e.ii. of this NPDES permit, and as it may be amended or reissued, requires the Town to provide minimum verification and access assurances that all treatment and detention measures shall be adequately operated and maintained by persons and entities responsible for the stormwater treatment and detention measures; and

**WHEREAS**, property Owner is the owner of real property commonly known as ("Property"), and more particularly described in the attached Exhibit A, upon which stormwater treatment and detention measures are located or to be constructed, as shown in Exhibit B (the "Site Plan"); and

**WHEREAS**, the Property Owner, its administrators, co-owners, executors, successors, heirs, assigns or any other persons, including any homeowners association (hereinafter collectively referred to as "Property Owner") recognizes that the stormwater treatment and detention measure(s) more particularly described and shown on Exhibit B, of which full- scale plans and any amendments thereto are on file with the Planning and/or Engineering Department of the Town of Atherton must be installed and maintained as indicated in this Agreement and as required by the NPDES permit.

**WHEREAS**, the Town and the Property Owner agree that the health, safety and welfare of the citizens of the Town require that the stormwater treatment and detention measure(s) detailed in the Site Plan shall be constructed and maintained on the Property; and



- **GRADING:**
  - FLAT AT TOP AND BOTTOM
  - SLOPE TO DRAIN AND UNDER DRAIN
- **DRAINAGE:** SET DRAINS PROPERLY, MINIMIZE STANDING WATER
- **SOILS:** WHERE DO THEY GO (NOT ON SIDE SLOPE)
- **IRRIGATION:** WHAT, WHERE, WHEN (AS NEEDED)
- **MULCH:** WHEN, WHERE (NO FLOAT/CLOG)
- **ENERGY DISSIPATION:** PREVENT EROSION



## CONSTRUCTION CONSIDERATIONS

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- PREVENTING EROSION
- PROTECTING THE SOIL
- ESTABLISHING THE PLANTS — PLANTS NEED WATER



SOILS



IRRIGATION PLACEMENT



RAISE DRAIN



EROSION



CATCH BASIN FILLED



NON-ORGANIC MULCH



EROSION

## PALETTE OF MATERIALS

- SOIL
- WATER
- PLANTS

## GOALS

- HEALTHY, LIVING SOIL
- HEALTHY, THRIVING PLANTS
- ECOLOGICAL DESIGN
- PROMOTE BIODIVERSITY





BEFORE



KEARNEY STREET



SAN PABLO AVENUE

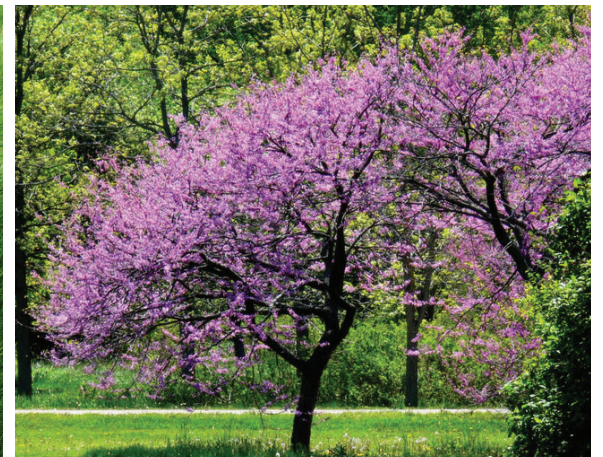
NOW



SAN PABLO AVENUE

## DESIGNING THE PALETTE

- NATURAL PLANT ASSOCIATIONS
- NATIVE PLANTS
- VARIATION IN PLANT TYPES
- GRASSES
- NATIVE SOD
- SUB-SHRUBS
- PERENNIALS
- TREES
- SELF-SOWING ANNUALS
- PLANTS THAT SUPPORT WILDLIFE
- NATURALISTIC PLANTING



## DESIGNING THE PALETTE

- PLANTING THE BASIN
- PLANTS THAT LIKE WET FEET
- PLANTS THAT CAN TAKE OCCASIONAL INUNDATION
- DROUGHT TOLERANCE
- PLANTS THAT HOLD SOIL IN PLACE
- ACCENT PLANTING
- SEASONAL PLANTING
- BIODIVERSITY/DIVERSE PLANT PALETTE



# EXAMPLE PLANT PALETTES

## SHADE RIPARIAN



- CAREX TUMULICOLA
- CARPENTERIA CALIFORNICA
- CORNUS STOLONIFERA
- HEUCHERA SPP
- JUNCUS PATENS
- ROSA CALIFORNICA
- SIDALCEA SPP

## SUN FILTRATION



- ACHILLEA MILLEFOLIUM
- ARCTOSTAPHYLOS
- CAREX TUMULICOLA
- CERCIS OCCIDENTALIS
- JUNCUS PALLIDUS
- JUNCUS PATTEN
- STIPA TENUISSIMA
- VERBENA LILACINA
- NO-MOW FESCUE

## STREETSCAPE FILTRATION



- ACER MACROPHYLLUM
- MUHLENBERGIA RIGENS
- SALVIA LEUCANTHA

## SHADE FORMAL FILTRATION



- AQUILEGIA FORMOSA
- EQUISETUM HYEMALE
- IRIS DOUGLASIANA
- JUNCUS PATTEN

## PARKING LOT FILTRATION



- ARBUTUS SPP
- LEYMUS CONDENSATUS 'CANYON PRINCE'
- STIPA TENUISSIMA

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# THANK YOU

