

# **City of Watsonville**

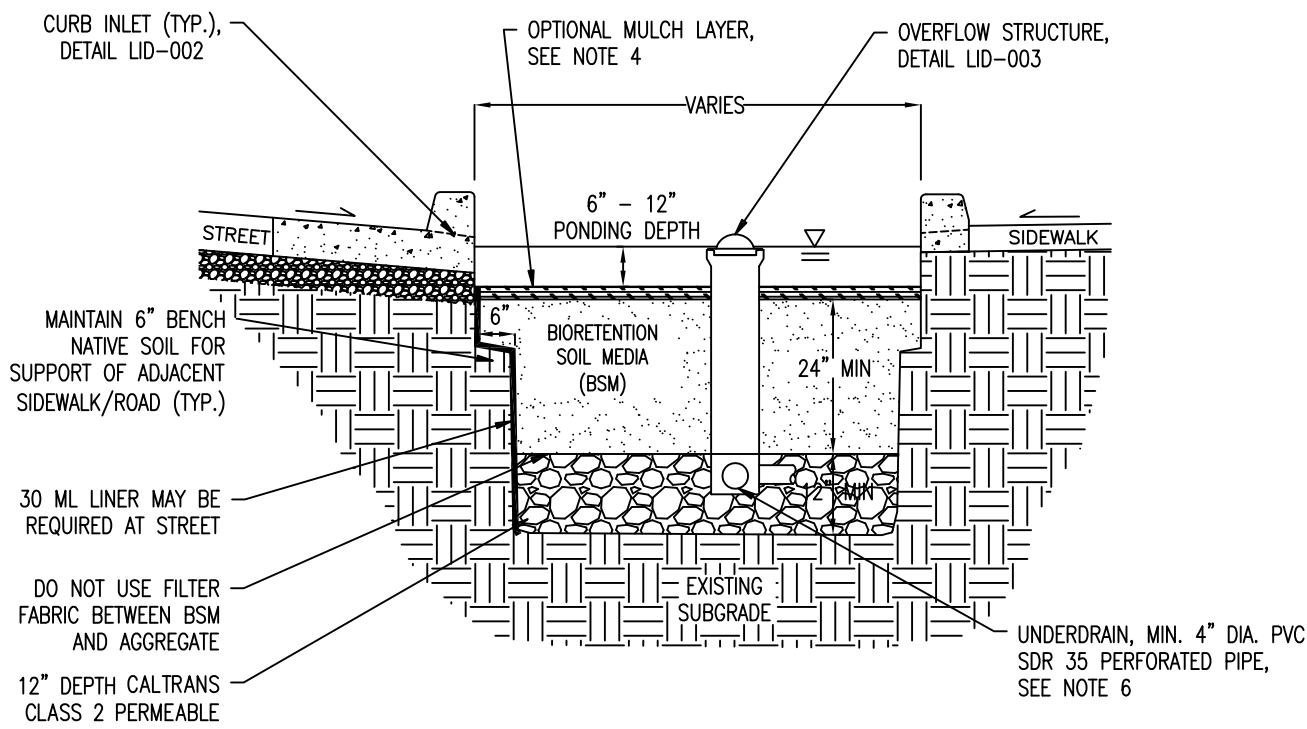
## **PUBLIC IMPROVEMENT STANDARDS**



CITY OF  
WATSONVILLE

CITY OF WATSONVILLE PUBLIC WORKS & UTILITIES DEPARTMENT


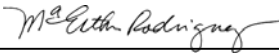
MAY 28, 2013  
RESOLUTION 76-13 (CM)

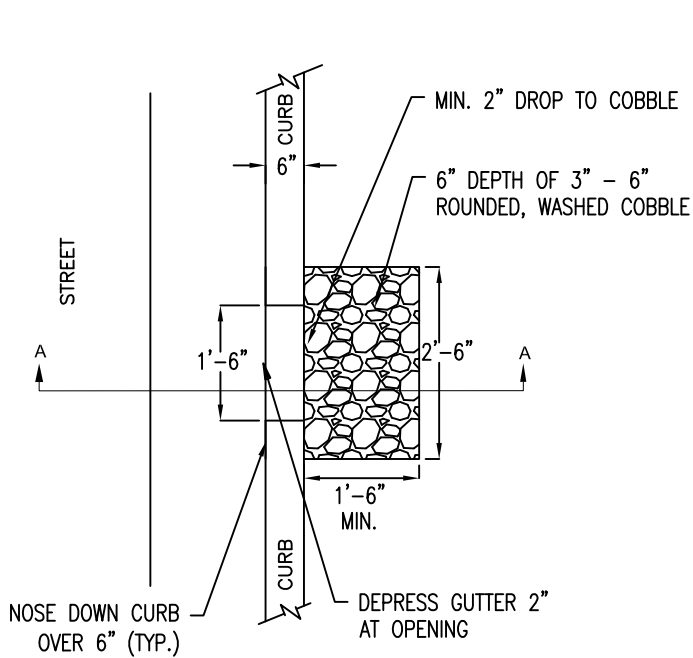


**NOTES**

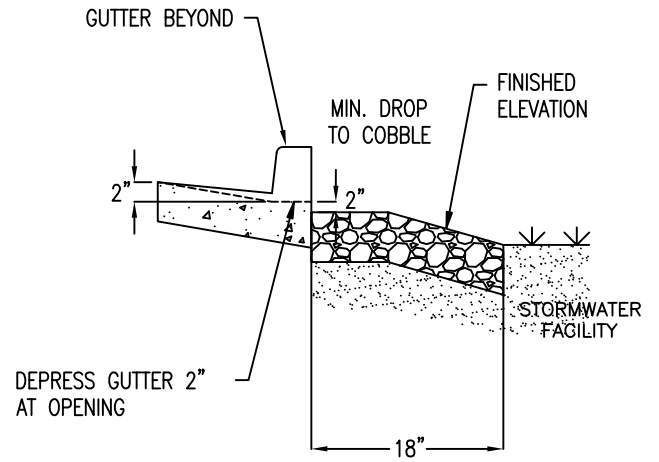
1. PROVIDE CAPPED, THREADED PVC CLEANOUT FOR UNDERDRAIN, 4" MIN. DIA. WITH SWEEP BEND.
2. BIORETENTION SOIL MEDIA (BSM) PER BASMAA SPECIFICATION OF SOILS FOR BIOTREATMENT OR BIORETENTION FACILITIES.
3. PLANT SELECTION PER DETAIL LID-004A,B.
4. OPTIONAL MULCH LAYER SHALL BE 2"-3" OF AGED, STABILIZED, AND NON-FLOATING MULCH.
5. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
6. INSTALL UNDERDRAIN WITH HOLES FACING DOWN. UNDERDRAIN DISCHARGE ELEVATION SHALL BE NEAR TOP OF AGGREGATE LAYER. UNDERDRAIN SLOPE MAY BE FLAT.
7. COMPACT BSM IN 6" LIFTS WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING.
8. A 3:1 MAX. SLOPE SHALL BE USED FOR BIORETENTION FACILITIES WITH SLOPED SIDES.

**CITY OF WATSONVILLE PUBLIC WORKS & UTILITIES DEPARTMENT**

NOT TO SCALE		LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT STANDARD DETAILS <b>STREET BIORETENTION FACILITY</b> (FLAT/PLANTER, NO ON-STREET PARKING SIDEWALK, WITH UNDERDRAIN)	DRAWN: <b>4/13</b>	REV.:
			RESOLUTION No. <b>76-13 (CM)</b>	
DRAWN BY: <b>M.P.</b>	CITY OF WATSONVILLE	 MARIA ESTHER RODRIGUEZ, CITY ENGINEER	DRAWING No. <b>LID-001</b>	
CHECKED BY: <b>T.S.</b>				



PLAN VIEW





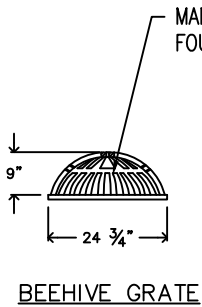
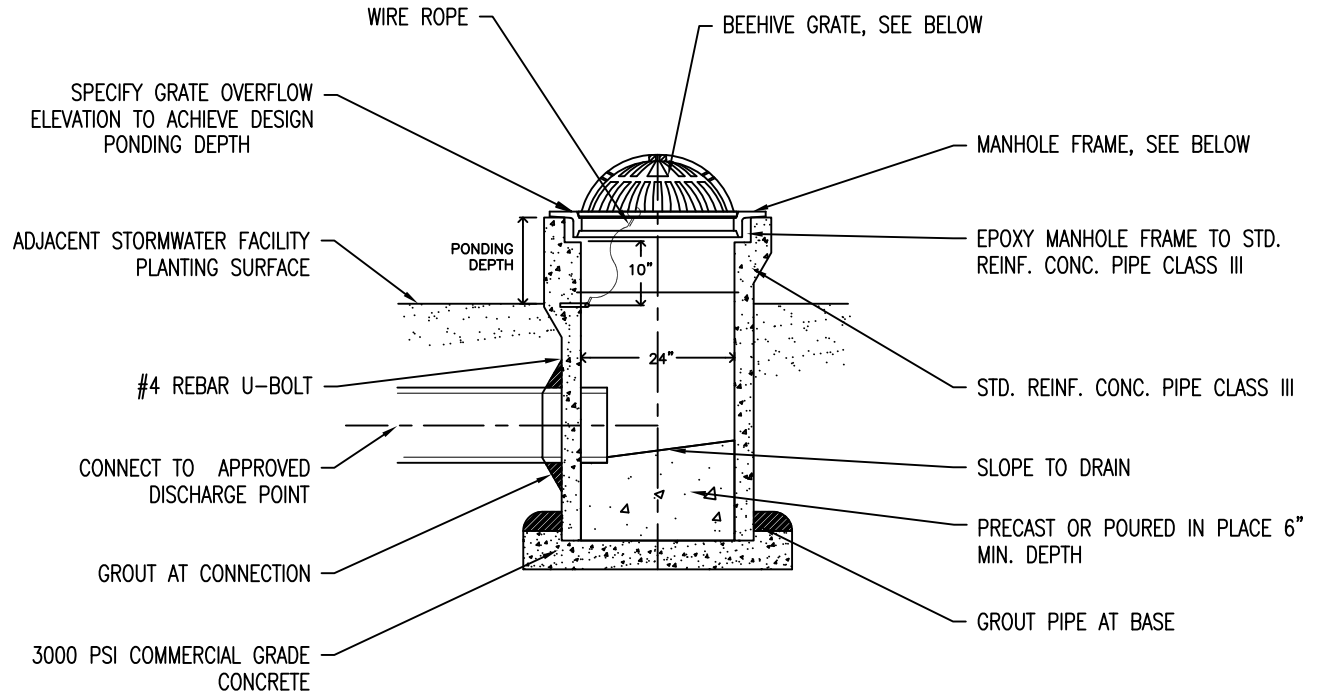
SECTION A-A

NOTES

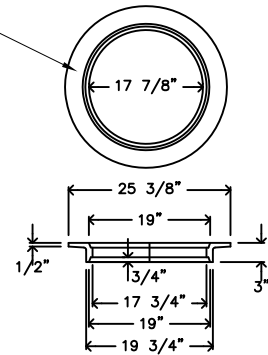
1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES OR FLAT BOTTOMS.
2. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.
3. CURB CUT INLET SPACING SHALL BE 20 FEET. CURB CUT INLET SPACING FOR GUTTERS WITH A LONGITUDINAL SLOPE GREATER THAN 4% MUST BE APPROVED BY ENGINEER.

CITY OF WATSONVILLE PUBLIC WORKS & UTILITIES DEPARTMENT

NOT TO SCALE	 <p>CITY OF WATSONVILLE</p>	<p>LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT STANDARD DETAILS</p> <p><b>CURB CUT INLET WITH GRAVEL ENERGY DISSIPATION</b></p>	DRAWN: <b>4/13</b>	REV.:
DRAWN BY: <b>MP</b>			RESOLUTION No. <b>76-13 (CM)</b>	
CHECKED BY: <b>TS</b>		 <p>MARIA ESTHER RODRIGUEZ, CITY ENGINEER</p>	DRAWING No. <b>LID-002</b>	


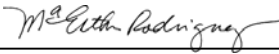


MANHOLE RING AND BEEHIVE GRATE MH25BH BY OLYMPIC FOUNDRY OR APPROVED EQUAL



24"x4" REVERSIBLE MANHOLE FRAME

CITY OF WATSONVILLE PUBLIC WORKS & UTILITIES DEPARTMENT

NOT TO SCALE	 CITY OF WATSONVILLE	LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT STANDARD DETAILS <b>OVERFLOW STRUCTURE          WITH BEEHIVE GRATE</b>	DRAWN: <b>4/13</b>	REV.:
DRAWN BY: <b>MP</b>			RESOLUTION No. <b>76-13 (CM)</b>	
CHECKED BY: <b>TS</b>		 MARIA ESTHER RODRIGUEZ, CITY ENGINEER	DRAWING No. <b>LID-003</b>	


**TREES**

Native	Scientific Name	Common Name	Planting Area	Height	Spread	Exposure	Type	Bioretention Characteristics							Notes	
								Plant Inundation Zone A	Plant Inundation Zone B	Small Planting Strips (<5' wide)	Large Planting Strips (>5' wide)	Tolerates Periodic Inundation	Tolerates Prolonged Dry Periods	Requires Good Drainage		Wind Tolerant
X	Cercis occidentalis	Western Redbud	Small	20'	20'	Full Sun	Deciduous		X	X		X	X			Small tree or large shrub, tolerates clay, winter wet, drought, flowers stronger with fros
X	Chilopsis linearis	Desert Willow	Small	25'	30'	Full Sun	Deciduous		X		X	X	X		X	Tolerates alkaline soil, sand, clay, seasonal flooding and drought, not coastal conditional
X	Platanus racemosa	California Sycamore	Large	40'-80'	40'-70'	Full Sun	Deciduous		X							Tolerates sand and clay soils, seasonal flooding, needs space to grow, avoid underground water/sewer pipes
X	Quercus agrifolia	Coast Live Oak	Medium	25'-60'	40'-70'	Full Sun- Shade	Deciduous		X		X	X	X	X	X	Tolerates drought and winter wet conditions, mature trees produce significant litter limiting understory plantings, need space to grow

**SHRUBS**

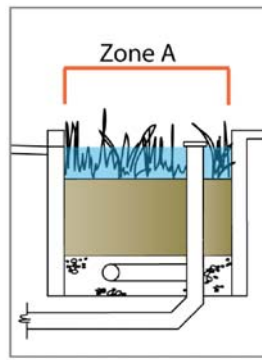
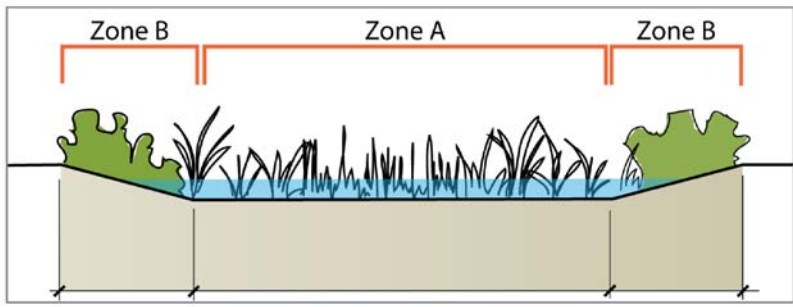
Native	Scientific Name	Common Name	Height	Spread	Exposure	Type	Bioretention Characteristics							Notes		
							Plant Inundation Zone A	Plant Inundation Zone B	Small Planting Strips (<5' wide)	Large Planting Strips (>5' wide)	Tolerates Periodic Inundation	Tolerates Prolonged Dry Periods	Requires Good Drainage		Wind Tolerant	
X	Baccharis pilularis consanguinea	Coyote Brush	3'-6'	5'	Sun	Evergreen		X	X	X	X	X			X	Adaptable evergreen shrub, provides quick cover and bank stabilization, tolerant of coastal conditions, alkaline soil, sand, clay and seasonal wet
X	Heteromeles arbutifolia	Toyon, Christmas Berry	6'-10'	4'-5'	Sun	Evergreen		X		X	X				X	Tolerates sand, clay and serpentine soils, seasonal water with good drainage
X	Iris douglasiana	Douglas Iris	3'	1'-2'	Full Sun- Partial Shade	Grass		X	X		X					Tolerates sand, clay and serpentine soils, seasonal wet (but not soggy) soils and drought
X	Myrica californica	Pacific Wax Myrtle	15'	15'	Sun	Evergreen		X	X		X				X	Large shrub or small tree, tolerates coastal conditions, sand, clay and seasonal inundation
X	Rosa californica	California Rose	3'-6'	3'-5'	Sun-Partial Shade	Deciduous	X	X	X	X	X	X				Tolerates a wide variety of soils, seasonal flooding and some drought, spreads aggressively, avoid edges of walkways because of thorns
X	Sambucus mexicana	Mexican Elderberry	8'-12'	8'	Sun-Partial Shade	Deciduous		X		X	X				X	Large shrub to tree, tolerates clay, seasonal flooding and drought, good wildlife food source
X	Solidago californica	California Goldenrod	1'-4'	1'-4'	Full Sun- Partial Shade	Herbaceous Perennial		X	X	X	X	X				Tolerates poor soils, seasonal wet and drought, can spread aggressively if over irrigated

**CITY OF WATSONVILLE PUBLIC WORKS & UTILITIES DEPARTMENT**

<p>NOT TO SCALE</p> <p>DRAWN BY: <b>MP</b></p> <p>CHECKED BY: <b>TS</b></p>		<p>LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT STANDARD DETAILS</p>	<p>DRAWN: <b>4/13</b></p>	<p>REV.:</p>
		<p><b>LID RECOMMENDED PLANT LIST</b> (TREES AND SHRUBS)</p>	<p>RESOLUTION No. <b>76-13 (CM)</b></p>	
		<p><i>Maria Esther Rodriguez</i> MARIA ESTHER RODRIGUEZ, CITY ENGINEER</p>	<p>DRAWING No. <b>LID-004A</b></p>	

GROUNDCOVER AND VINES

Native	Scientific Name	Common Name	Height	Spread	Exposure	Type	Bioretention Characteristics						Notes
							Plant Inundation Zone A	Plant Inundation Zone B	Tolerates Periodic Inundation	Tolerates Prolonged Dry Periods	Requires Good Drainage	Tolerates Mowing	
	Carex divulsa	Berkeley Sedge, Grey Sedge	12"-18"	12"-18"	Full Sun-Partial Shade	Grass	X	X	X	X			Tolerates foot traffic, some drought and boggy soils
X	Carex pansa	California Meadow Sedge	6"-8"	N/A	Full Sun-Partial Shade	Grass	X	X	X		X		Good lawn substitute, tolerates wide range of growing conditions, seasonal inundation, drought, foot traffic and mowing
X	Carex praeegracilis	Clustered Field Sedge	3'-4'	2'-3'	Full Sun-Partial Shade	Grass	X		X	X	X		Useful lawn substitute and bank stabilizer, good planted in masses, tolerates wide range of growing conditions, foot traffic and mowing, may look weedy when mixed with other plants
X	Carex spissa	San Diego Sedge	6"-8"	N/A	Full Sun-Partial Sun	Grass	X	X	X		X		A large grass, tolerates alkaline soil, clay, serpentine, seasonal inundation, and deer
	Chondropetalum tectorum	Small Cape Rush	2'-3'	3'-4'	Full Sun-Partial Sun	Grass	X	X	X	X	X		A tough, attractive reed-like plant, tolerates boggy or clay soils and drought once established, Chondropetalum elephantinum is a much larger species
X	Festuca rubra 'molate'	Molate Red Fescue	Up to 10"	4"-40"	Full Sun-Partial Shade	Evergreen Perennial	X	X	X		X		A tufted, spreading bunchgrass, good lawn substitute, provides erosion control, tolerates wet conditions, but looks best with regular water, tolerates drought once established
X	Juncus effusus	Soft Rush	1'-2'	1'-2'	Full Sun-Partial Shade	Grass	X		X				Tolerates poor drainage, heavy soils, needs more supplemental water than Juncus patens
X	Juncus patens	Wire Grass, Blue Rush	2'-3'	Running	Full Sun	Grass	X		X	X			Strong performance in bioretention ares, tolerates poor drainage, seasonal inundation, drought, shade
X	Leymus condensatus	Canyon Prince Wild Rye	1'-2'	N/A	Partial Shade	Grass		X	X	X			tolerates drought, wet, but not soggy soils, looks best with supplemental irrigation, spreads by rhizomes
X	Muhlenbergia rigens	Deer Grass	6'-8'	6'-8'	Full Sun-Partial Shade	Evergreen Shrub	X	X	X				A large grass, tolerates sandy and clay soils, seasonal inundation, best when cut back annually to remove old thatch



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			<p>RESOLUTION No. <b>76-13 (CM)</b></p> <p>DRAWING No. <b>LID-004B</b></p>	
DRAWN BY: <b>MP</b>				
CHECKED BY: <b>TS</b>				