BASMAA URBAN GREENING TYPICAL GI DETAILS
BULBOUT ALTERNATIVE 1
SLOPED SIDES, INLINE OVERFLOW STRUCTURE, CURB CUT INLET TYPE A

NOTES:
1. PROTECT EXISTING UTILITIES AND MAINTAIN MINIMUM SETBACKS AS REQUIRED BY LOCAL UTILITY PROVIDER.
2. PROVIDE UNDERDRAIN WHERE REQUIRED TO MEET THE MINIMUM SURFACE WATER DRAWDOWN TIME, LONGITUDINAL
SLOPE OF PIPE SHALL BE 0.5% MINIMUM.
3. DESIGNER TO SPECIFY OVERFLOW STRUCTURE SIZE AND MATERIAL, WHERE FEASIBLE, CONNECT TO THE EXISTING
STORM DRAIN LATERAL SERVING THE CORNER CATCH BASIN BEING REMOVED, IF ANY.
4. ADHERE TO ALL LOCAL AND FEDERAL ACCESSIBILITY REQUIREMENTS FOR THE SIDEWALK AND CURB RAMP DESIGNS.
   PROVIDE TWO PERPENDICULAR CURB RAMPS AT CORNERS WHEREVER FEASIBLE.

SCALE: 1
DRAWN BY:
CHECKED BY:
DATE: APRIL 14, 2017
SHEET NUMBER: C-1.1
NOTES:

1. AVOID UTILITY CONFLICTS WHEREVER FEASIBLE IN THE SITING OF BIO RETENTION PLANTERS. IF UNAVOIDABLE, PROTECT EXISTING UTILITIES AND MAINTAIN MINIMUM SETBACKS AS REQUIRED BY LOCAL UTILITY PROVIDER.

2. PROVIDE UNDERDRAIN WHERE REQUIRED TO MEET THE MINIMUM SURFACE WATER DRAWDOWN TIME. LONGITUDINAL SLOPE OF PIPE SHALL BE 0.5% MINIMUM. PROVIDE CLEANOUT AT UPSTREAM END AND ANGLE POINTS EXCEEDING 45 DEGREES.

3. DESIGNER TO SPECIFY OVERFLOW STRUCTURE SIZE AND MATERIAL, WHERE FEASIBLE, CONNECT TO THE EXISTING STORM DRAIN LATERAL SERVING THE CORNER CATCH BASIN BEING REMOVED, IF ANY.

4. ADHERE TO ALL LOCAL AND FEDERAL ACCESSIBILITY REQUIREMENTS FOR THE SIDEWALK AND CURB RAMP DESIGNS.

5. PROVIDE PIPE SLEEVES THROUGH PLANTER CURB WALLS AND UNDER SIDEWALK TO ALLOW FOR THE PASSING OF SOLID UNDERDRAIN CONNECTOR PIPES.

6. IF THE GRADES AND EXISTING SITE CONSTRAINTS ALLOW, BIO RETENTION PLANTERS ON EITHER SIDE OF THE CORNER CAN BE HYDRAULICALLY CONNECTED TO OPTIMIZE TREATMENT AREA AND REDUCE THE NUMBER OF CONNECTIONS TO THE STORM SEWER SYSTEM. DESIGNER MUST ENSURE THAT THE HIGHER BIO RETENTION PLANTER CAN POSITIVELY DRAIN TO THE LOWER BIO RETENTION PLANTER WITHOUT FLOODING THE ADJACENT SIDEWALK OR ROADWAY. IF INFEASIBLE, EACH BIO RETENTION PLANTER WILL NEED ITS OWN OVERFLOW STRUCTURE AND CONNECTION TO THE STORM SEWER.

BASMAA URBAN GREENING TYPICAL GI DETAILS
BULBOUL ALTERNATIVE 2
WALLED BIO RETENTION ON BOTH SIDES OF CORNER, CURB CUT INLETS TYPE A & B

DATE: APRIL 14, 2017
SHEET NUMBER: C-1.2
1. AVOID UTILITY CONFLICTS WHenever POSSIBLE IN THE SITING OF BIORETENTION PLANTERS. IF UNAVOIDABLE, PROTECT EXISTING UTILITIES AND MAINTAIN MINIMUM SETBACKS AS REQUIRED BY LOCAL UTILITY PROVIDER.

2. PROVIDE UNDERDRAIN WHERE REQUIRED TO MEET THE MINIMUM SURFACE WATER DRAWDOWN TIME. LONGITUDINAL SLOPE OF PIPE SHALL BE 0.5% MINIMUM.

3. FOR OFF-LINE FACILITIES IN WHICH UNDERDRAINS ARE REQUIRED, DESIGNER TO SPECIFY WHETHER UNDERDRAIN PIPE WILL DIRECTLY CONNECT TO STORM DRAIN MAIN OR TO NEARBY CATCH BASIN STRUCTURE TO MEET CITY REQUIREMENTS.

4. ADHERE TO ALL LOCAL AND FEDERAL ACCESSIBILITY REQUIREMENTS FOR THE SIDEWALK AND CURB RAMP DESIGNS. PROVIDE TWO PERPENDICULAR CURB RAMPS AT CORNERS WHEREVER FEASIBLE.

BASMAA URBAN GREENING TYPICAL GI DETAILS
BULBOUT ALTERNATIVE 3
SLOPED AND WALLED SIDES, CURB CUT INLET TYPE B, CURB CUT OVERFLOW ONLY
NOTES:
1. FOR HORIZONTAL BIKE LANE SHIFT, PROVIDE MAXIMUM 1:5 TRANSITION RATE.
2. PROVIDE UNDERDRAIN WHERE REQUIRED TO MEET THE MINIMUM SURFACE WATER DRAWDOWN TIME. LONGITUDINAL SLOPE OF PIPE SHALL BE 0.5% MINIMUM. PROVIDE CLEANOUT AT UPSTREAM END AND ANGLE POINTS EXCEEDING 45 DEGREES.
3. DESIGNER TO SPECIFY OVERFLOW STRUCTURE SIZE AND MATERIAL. WHERE FEASIBLE, CONNECT TO THE EXISTING STORM DRAIN LATERAL SERVING THE CORNER CATCH BASIN BEING REMOVED, IF ANY.
4. ADHERE TO ALL LOCAL AND FEDERAL ACCESSIBILITY REQUIREMENTS FOR THE SIDEWALK AND CURB RAMP DESIGNS.
5. PROVIDE TRENCH DRAINS THROUGH PLANTER CURB WALLS TO ALLOW FOR THE HYDRAULIC CONNECTION OF SEPARATED BIOTRETENTION PLANTERS AND PIPE SLEEVES FOR THE PASSING OF SOLID UNDERDRAIN CONNECTOR PIPES.

BASMAA URBAN GREENING TYPICAL GI DETAILS
BULBOUT ALTERNATIVE 4
MIDBLOCK BULBOUT WITH RAISED BIKE LANE AND PEDESTRIAN CROSSING

SCALE: 1" = 1'-0"
DRAWN BY: RP
CHECKED BY: ID
DATE: APRIL 14, 2017
SHEET NUMBER: C-1.4
1. SPECIFY DROUGHT-TOLERANT SPECIES THAT CAN TOLERATE STORMWATER INUNDATION AND ADHERE TO LOCAL PLANT LISTS. DO NOT SPECIFY THE PLANTING OF LARGE PLANTS NEAR INLETS OR OUTLETS, OR PLANTS THAT HAVE THE POTENTIAL TO ENCROACH INTO SIDEWALKS OR BIKE LANES.

2. UNDERDRAIN PLACEMENT IS DEPENDENT ON SUBGRADE SOIL CONDITIONS. FOR TYPE B/C SOILS, THE UNDERDRAIN MAY BE ELEVATED TOWARDS THE TOP OF THE AGGREGATE STORAGE LAYER, APPROXIMATELY 3" BELOW BOTTOM OF BIORETENTION SOIL. FOR TYPE D SOILS, THE UNDERDRAIN SHALL BE PLACED 2" ABOVE THE SUBGRADE.
1' (MIN) FROM TRAVEL AND/OR BIKE LANE

ROADWAY WITHOUT PARKING

STANDARD CURB AND GUTTER WITH WALL EXTENSION

18" (MIN) BIORETENTION SOIL MIX (BSM) PER REGIONAL BSM SPECIFICATION

DESIGN PONDING ELEVATION

2"-3" MULCH

BENCH FOR WALL CONSTRUCTION

PLANTER WALL LOAD BEARING LINE, SEE NOTE 2

(E) UTILITY MAIN TO REMAIN IN PLACE

BIORETENTION PLANTING SPECIFIED BY DESIGNER, SEE NOTE 3

2" (MIN) FREEBOARD

SCARIFIED AND UNCOMPACTED SUBGRADE

UNDERDRAIN SEE NOTE 4

SEE NOTE 1

PLANTER WALL LOAD BEARING LINE, SEE NOTE 2

30" MAX

3' (MIN) PLANTER WIDTH

TOP OF PLANTER WALL FLUSH WITH ADJACENT SURFACE

CALTRANS CLASS II PERMEABLE ROCK

2"-6" NOTCH

PLANTING STRIP

6"

12" (MIN)

CONCRETE SIDEWALK

NOTES:

1. PROVIDE THE MINIMUM CLEARANCE/SETBACKS PER THE LOCAL UTILITY PROVIDER'S REQUIREMENTS.

2. PROVIDE LOAD BEARING LINES PER THE GEOTECHNICAL ENGINEER.

3. SPECIFY DROUGHT-TOLERANT SPECIES THAT CAN TOLERATE STORMWATER INUNDATION AND ADHERE TO LOCAL PLANT LISTS. DO NOT SPECIFY THE PLANTING OF LARGE PLANTS NEAR INLETS OR OUTLETS, OR PLANTS THAT HAVE THE POTENTIAL TO ENCROACH INTO SIDEWALKS OR BIKE LANES.

4. UNDERDRAIN PLACEMENT IS DEPENDENT ON SUBGRADE SOIL CONDITIONS. FOR TYPE B/C SOILS, THE UNDERDRAIN MAY BE ELEVATED TOWARDS THE TOP OF THE AGGREGATE STORAGE LAYER, APPROXIMATELY 3" BELOW BOTTOM OF BIORETENTION SOIL. FOR TYPE D SOILS, THE UNDERDRAIN SHALL BE PLACED 2" ABOVE THE SUBGRADE.
NOTES:

1. DESIGNER TO SPECIFY SIZE AND DEPTH OF OVERFLOW STRUCTURE THAT ADHERES TO LOCAL JURISDICTIONAL REQUIREMENTS.

2. SPECIFY DROUGHT-TOLERANT SPECIES THAT CAN TOLERATE STORMWATER INUNDATION AND ADHERE TO LOCAL PLANT LISTS. DO NOT SPECIFY THE PLANTING OF LARGE PLANTS NEAR INLETS OR OUTLETS, OR PLANTS THAT HAVE THE POTENTIAL TO ENCROACH INTO SIDEWALKS OR BIKE LANES.

3. UNDERDRAIN PLACEMENT IS DEPENDENT ON SUBGRADE SOIL CONDITIONS. FOR TYPE B/C SOILS, THE UNDERDRAIN MAY BE ELEVATED TOWARDS THE TOP OF THE AGGREGATE STORAGE LAYER, APPROXIMATELY 3” BELOW BOTTOM OF BIORETENTION SOIL. FOR TYPE D SOILS, THE UNDERDRAIN SHALL BE PLACED 2” ABOVE THE SUBGRADE.