APPENDIX E

EXAMPLE DETAIL DRAWINGS
NOTES:

1. SIZE AND DEPTH PER SWMM E&W BMP T5.30 (BIO-INFILTRATION SWALE) OR LOCAL EQUIVALENT.
2. PROVIDE OVERFLOW STRUCTURE PER LOCAL JURISDICTION REQUIREMENTS.
3. THE VOLUME CONTAINED BY THE SWALE MUST BE SUFFICIENT TO TREAT THE WATER QUALITY VOLUME PRIOR TO OVERFLOWING.
4. DESIGN FACILITY TO DRAIN COMPLETELY WITHIN 72 HOURS.
5. TREES OR DEEP ROOTED VEGETATION ARE NOT RECOMMENDED OVER UTILITIES.
6. SIDE SLOPE 2.5H:1V MAX. (RECOMMENDED). SEE LOCAL JURISDICTION REQUIREMENTS.

MAX. PONDING DEPTH (6”-12” TYP.)
DROUGHT TOLERANT PLANTINGS
MULCH LAYER 2-3” THICK
BIORETENTION SOIL MIX MIN. 12” THICK
ROAD PARKING WITH 2’ GRAVEL SHOULDER

BOTTOM WIDTH 1” MIN.
CURB INLET
ROAD/PARKING WITH CURB
CONCRETE APRON OR ROCK PAD AT INLETS (EXTENDED TO BOTTOM OF SWALE)
MIN. FREEBOARD 6” (RECOMMENDED). CHECK LOCAL JURISDICTION REQUIREMENTS.

EASTERN WASHINGTON LID GUIDANCE MANUAL

BIORETENTION W/O UNDER-DRAIN DRAWING #101
NOTES:

1. SIZE AND DEPTH PER SWMM EW BMP T5.30 (BIO-INFILTRATION SWALES) OR LOCAL EQUIVALENT.

2. PROVIDE OVERFLOW STRUCTURE PER LOCAL JURISDICTION REQUIREMENTS.

3. THE VOLUME CONTAINED BY THE SWALE MUST BE SUFFICIENT TO TREAT THE WATER QUALITY VOLUME PRIOR TO OVERFLOWING.

4. UNDER-DRAIN MUST BE SUFFICIENT TO DRAIN FACILITY COMPLETELY WITHIN 72 HOURS. UNDER-DRAIN DISCHARGE PIPE MUST BE A MINIMUM OF 6" DIAMETER WITH 0.5% SLOPE.

5. TREES OR DEEP ROOTED VEGETATION ARE NOT RECOMMENDED OVER UTILITIES.

6. SIDE SLOPE 2.5H:1V MAX. (RECOMMENDED). SEE LOCAL JURISDICTION REQUIREMENTS.
CONSULT LOCAL JURISDICTION FOR MINIMUM/MAXIMUM SLOPES AND MINIMUM WIDTHS FOR ROADWAYS, SHOULDERS, SIDEWALKS, LANDINGS, ETC.

**ROADWAY BIORETENTION ON ONE SIDE**

**ROADWAY BIORETENTION ON BOTH SIDES**

EASTERN WASHINGTON LID GUIDANCE MANUAL

BIORETENTION IN TYPICAL ROADWAY SECTIONS DRAWING #103
NOTES:
1. NOT INTENDED FOR PUBLIC RIGHT OF WAY WITHOUT PRIOR APPROVAL.
2. 30” MIN. FACILITY LENGTH TO BE CALCULATED BASED ON DESIGN FLOWS.
3. VEGETATION SHALL BE DROUGHT TOLERANT.
4. TREES OR DEEP ROOTED VEGETATION ARE NOT RECOMMENDED.
5. SIZING BY NATIVE SOIL INFILTRATION RATE REQUIRES CALCULATIONS BASED ON PERCOLATION TEST RESULTS.
6. STORM FLOW INLETS THROUGH WALL CUT OUTS AND DOWN SPOUTS. BOTH TO MAINTAIN MAXIMUM HORIZONTAL DISTANCE FROM THE OVERFLOW PIPE.
7. PLANTER HEIGHT ABOVE GROUND AND DEPTH BELOW GROUND PER DESIGN. 2” MINIMUM ABOVE OVERFLOW OR BY DESIGN.
8. OVERFLOW PIPE SHALL BE DESIGNED TO ACCOMMODATE DESIGN STORM. EMERGENCY OVERFLOW ROUTE MUST BE DOCUMENTED.
9. CHECK LOCAL REQUIREMENTS FOR GEOTECHNICAL ENGINEERING REVIEW OF FACILITY PROXIMITY TO BUILDING & DEPTH BELOW BUILDING FOOTING.
NOTES:
1. NOT INTENDED FOR PUBLIC RIGHT OF WAY WITHOUT PRIOR APPROVAL.
2. 30" MIN. FACILITY LENGTH TO BE CALCULATED BASED ON DESIGN FLOWS.
3. VEGETATION SHALL BE Drought Tolerant.
4. TREES OR DEEP ROOTED VEGETATION ARE NOT RECOMMENDED.
5. SIZING BY NATIVE SOIL INFILTRATION RATE REQUIRES CALCULATIONS BASED ON PERCOLATION TEST RESULTS.
6. STORM FLOW INLETS THROUGH WALL CUT OUTS AND DOWN SPOUTS. BOTH TO MAINTAIN MAXIMUM HORIZONTAL DISTANCE FROM THE OVERFLOW PIPE.
7. PLANTER HEIGHT ABOVE GROUND AND DEPTH BELOW GROUND PER DESIGN. 2" MINIMUM ABOVE OVERFLOW OR BY DESIGN.
8. OVERFLOW PIPE SHALL BE DESIGNED TO ACCOMMODATE DESIGN STORM. EMERGENCY OVERFLOW ROUTE MUST BE DOCUMENTED.
9. CHECK LOCAL REQUIREMENTS FOR GEOTECHNICAL ENGINEERING REVIEW OF FACILITY PROXIMITY TO BUILDING & DEPTH

FOUNDATION DRAIN PER BUILDING CODE

FACILITY WIDTH (SEE NOTE 2)

CONCRETE OR ROCK SPLASH PAD AT ALL INLETS

ROOF DRAIN

OVERFLOW TO CONVEYANCE (SEE NOTE 8)

6" MAX. POND DEPTH (SEE NOTE 7)

STRUCTURAL WALL

BIORETENTION SOIL MIX 18" MIN. THICK

AGGREGATE FILTER BLANKET

1 1/2" TO 3" DRAIN ROCK

WATER PROOF PIPE PROTECTION

OVERFLOW TO APPROVED CONVEYANCE SYSTEM OR INFILTRATION STRUCTURE. 4" MIN. DEPTH OF LATERAL TO SERVE PROPERTY OR MATCH DESIGN. 4" MIN. DIAMETER SEE NOTE ).

PERFORATED PIPE UNDERDRAIN MANIFOLD RUNS LENGTH OF FACILITY AND VERTICALLY POSITIONED IN DRAIN ROCK LAYER PER DETENTION DESIGN (4" MINIMUM DIAMETER)
1. NOT INTENDED FOR PUBLIC RIGHT OF WAY WITHOUT PRIOR APPROVAL. ENGINEERING DESIGN REQUIRED FOR STORMWATER AND STRUCTURE FUNCTIONS.

2. PAVEMENT SURFACE WITH SIGNIFICANT PERMEABILITY (>8" PER HR).

3. PROVIDE SLOTTED PIPE MANIFOLD IN RESERVOIR LAYER FOR CONVEYANCE, IF REQUIRED SUBGRADE INFILTRATION RATES LESS THAN 2"/HOUR.

4. NOT RECOMMENDED FOR TRAFFIC SURFACES WITH SLOPE >5%.

5. DO NOT COMPACT EXISTING SUBGRADE.

6. SUBGRADE SLOPED TO SLOTTED PIPE (IF REQUIRED) FOR DRAINAGE.

7. CONSULT WITH QUALIFIED GEOTEchnICAL ENGINEER IF HIGH GROUNDWATER IS SUSPECTED.

8. SIGNAGE IDENTIFYING POROUS PAVEMENT REQUIRED.
NOTES:

1. NOT INTENDED FOR PUBLIC RIGHT OF WAY WITHOUT PRIOR APPROVAL.

2. PROVIDE DRAINAGE MANIFOLD IF MINIMUM SUBGRADE INFILTRATION OF 2"/HOUR IS NOT AVAILABLE.

3. CONSULT WITH QUALIFIED GEO TECHNICAL ENGINEER IF HIGH GROUNDWATER IS SUSPECTED.

4. PAVERS TO BE HELD IN PLACE BY STRUCTURAL RETAINING BORDER AT THE OUTER EDGES OF THE AREA TO BE PAVED.
   PROVIDE CUT-OUTS IF TOP OF RETAINER ABOVE GRADE.

5. DO NOT COMPACT EXISTING SUBGRADE. SUBGRADE SLOPED TO SLOTTED PIPE (IF REQUIRED).