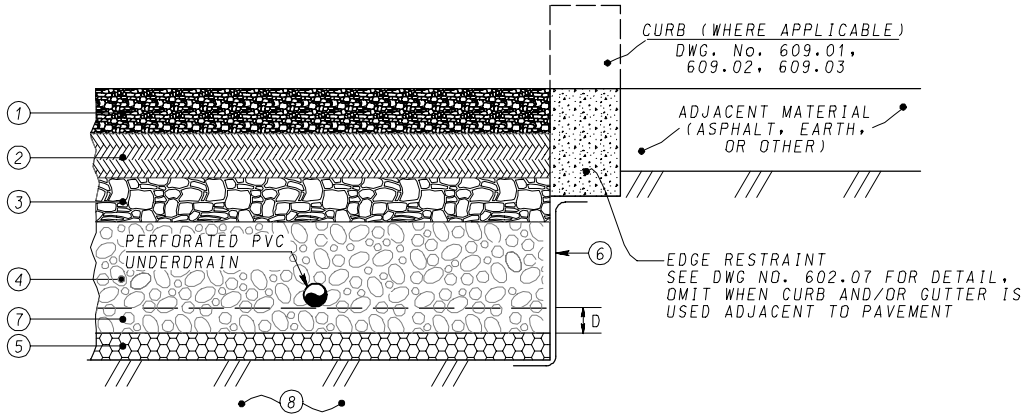
Permeable Pavement Series	414.01	Porous Asphalt Pavement
	508.01	Pervious Concrete Pavement
	509.01	Permeable Interlocking Unit Paver Pavement
	608.06	Permeable Paver Sidewalk
	608.07	Porous Asphalt Pavement Sidewalk
	608.08	Pervious Concrete Pavement Sidewalk
	510.01	Permeable Pavement Elevation - 1
	510.02	Permeable Pavement Elevation - 2
Bioretention Series	630.06	Curb Extension In-Planting Strip Bioretention
	630.07	Curb Extension In-Street Bioretention
	630.04	Bioretention Planter Adjacent to Roadway – No Parking Egress Strip
	630.05	Bioretention Planter Adjacent to Roadway – With Parking Egress Strip
	630.02	Bioswale Adjacent to Roadway
	630.01	Bioretention in Open Area
	602.08	Bioretention Facility Edge Treatment Options -1
	602.09	Bioretention Facility Edge Treatment Options -2
	306.01	Stormwater Facility Underdrain Pipe Risers
	609.10	Inlet and Outlet Details for Curb Extension Bioretention
	609.11	Curb Cut with Splash Block
	609.12	Metal Plate over Curb Cut
	609.13	Curb Cut with Trench Drain
	628.20	Splash Pad Alternatives
	310.17	Overflow Riser with Beehive Grate
	602.10	Concrete Check Dam
	602.11	Composite Wood Check Dam
	602.12	Rock Check Dam
Tree Space Series	611.20	Tree in Sidewalk with Covered Soil Volume
	611.21	Tree in Continuous Strip with Soil Volume under Sidewalk
	611.22	Tree Space Covered Soil Volume Subsurface Drainage Options
	611.23	Covered Soil Volume 1 – Pervious Cover or Impervious Cover with Linear Grate
	611.24	Covered Soil Volume 2 – Impervious Cover with Catch Basin
	611.26	Tree Planting LID Retrofit 1 – Confined Tree Space
	611.27	Tree Planting LID Retrofit 2 –Tree Space with Expanded Soil Volume



MINIMUM PAVEMENT THICKNESSES

PAVEMENT ITEM	CLASS A	CLASS B
(1)	1.5"	3"
(2)	3"	6"
(3)	4"	4"
(4)	6", SEE NOTE 5	12", SEE NOTE 5
(5)	4"	4"

CLASS A: ALLEY, PARKING LANE, LOCAL STREET
CLASS B: COLLECTOR OR ARTERIAL

ROAD /ALLEY SECTION

LEGEND

(1) POROUS ASPHALT SURFACE COURSE

(2) POROUS ASPHALT BASE COURSE

(3) CHOKER LAYER, AASHTO #57, #8, OR APPROVED EQUIVALENT

(4) RESERVOIR LAYER, AASHTO #3, #2, OR #57, OR APPROVED EQUIVALENT

(5) FILTER LAYER (OPTIONAL, SEE NOTE 7), AASHTO #8 OR APPROVED EQUIVALENT

(6) GEOTEXTILE CLASS 2, LOCATED ON SIDES OF PRACTICES ONLY

(7) INFILTRATION SUMP. FOR STANDARD DESIGN, D = 0"
FOR ENHANCED DESIGN, SEE NOTE 6

(8) UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES.
FOR OTHER AREAS, COMPACT AS SPECIFIED IN SPECIFICATION CITED IN NOTE 2.
FOR SOFT SOILS, INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.

NOTES:

1. DETAIL TO BE USED ONLY WHEN APPROVED BY DDOT IPMA AND SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "POROUS ASPHALT PAVEMENT".
2. AGGREGATE LAYERS SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "AGGREGATE BASE COURSE FOR PERMEABLE PAVEMENT".
3. SEE DWG. NO. 510.01 FOR LONGITUDINAL AND CROSS SLOPE REQUIREMENTS ASSOCIATED WITH POROUS ASPHALT PAVEMENT.
4. PVC LINER (MIN. THICKNESS = 30 MIL) MAY BE USED TO PROMOTE WATER RE-USE, PROTECT NEARBY BUILDING FOUNDATIONS AND AVOID INFILTRATION AROUND UTILITIES. SEE DESIGN PLANS.
5. DEPTH OF RESERVOIR LAYER AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS AND PAVEMENT STRUCTURAL DESIGN.
6. ENHANCED DESIGN CONTAINS A WATER STORAGE LAYER AND AN INFILTRATION SUMP BENEATH THE UNDERDRAIN SIZED TO DRAIN THE DESIGN STORM WITHIN 48 HOURS.
7. WHEN FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE CLASS 1 MATERIAL BENEATH RESERVOIR LAYER MEETING CURRENT APPROVED DDOT SPECIFICATION FOR "GEOSYNTHETICS FOR STORMWATER FACILITIES".
8. BOTTOM OF PERVIOUS PAVEMENT STRUCTURE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE, OR ANY BARRIER TO DOWNWARD MIGRATION OF WATER, AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
9. TOP OF PAVEMENT SHOULD BE DESIGNED TO ACHIEVE 1% MINIMUM SLOPE IN ANY DIRECTION.

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

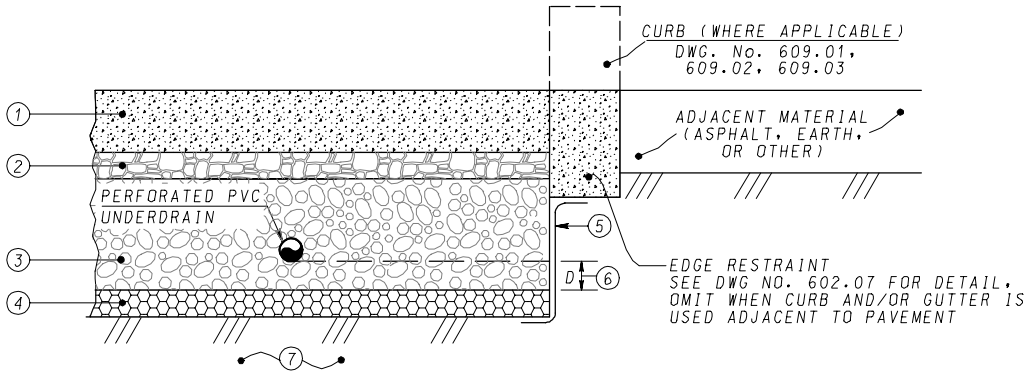
POROUS ASPHALT PAVEMENT

(ROADWAY AND ALLEY)

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 414.01



ROAD /ALLEY SECTION

MINIMUM PAVEMENT THICKNESSES

PAVEMENT ITEM	CLASS A	CLASS B
(1)	6"	8"
(2)	4"	4"
(3)	6", SEE NOTE 5	12", SEE NOTE 5
(4)	4"	4"

CLASS A: ALLEY, PARKING LANE, LOCAL STREET
CLASS B: COLLECTOR OR ARTERIAL

LEGEND

(1) PERVIOUS PORTLAND CEMENT CONCRETE

(2) BASE COURSE, AASHTO #57, #8, OR APPROVED EQUIVALENT

(3) RESERVOIR LAYER, AASHTO #3, #2, OR #57, OR APPROVED EQUIVALENT

(4) FILTER LAYER (OPTIONAL SEE NOTE 7), AASHTO #8 OR APPROVED EQUIVALENT

(5) GEOTEXTILE CLASS 2, LOCATED ON SIDES OF PRACTICES ONLY

(6) INFILTRATION SUMP. FOR STANDARD DESIGN, D = 0"
FOR ENHANCED DESIGN, SEE NOTE 6

(7) UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES.
FOR OTHER AREAS, COMPACT AS SPECIFIED IN SPECIFICATION CITED IN NOTE 2.
FOR SOFT SOILS, INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.

NOTES:

1. DETAIL TO BE USED ONLY WHEN APPROVED BY DDOT IPMA AND SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "PERVIOUS PORTLAND CEMENT CONCRETE PAVEMENT".
2. AGGREGATE LAYERS SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "AGGREGATE BASE COURSE FOR PERMEABLE PAVEMENT".
3. SEE DWG. NO. 510.01 FOR LONGITUDINAL AND CROSS SLOPE REQUIREMENTS ASSOCIATED WITH POROUS ASPHALT PAVEMENT.
4. PVC LINER (MIN. THICKNESS = 30 MIL) MAY BE USED TO PROMOTE WATER RE-USE, PROTECT NEARBY BUILDING FOUNDATIONS AND AVOID INFILTRATION AROUND UTILITIES. SEE DESIGN PLANS.
5. DEPTH OF RESERVOIR LAYER AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS AND PAVEMENT STRUCTURAL DESIGN.
6. ENHANCED DESIGN CONTAINS A WATER STORAGE LAYER AND AN INFILTRATION SUMP BENEATH THE UNDERDRAIN SIZED TO DRAIN THE DESIGN STORM WITHIN 48 HOURS.
7. WHEN FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE CLASS 1 MATERIAL BENEATH RESERVOIR LAYER MEETING CURRENT APPROVED DDOT SPECIFICATION FOR "GEOSYNTHETICS FOR STORMWATER FACILITIES".
8. BOTTOM OF PERVIOUS PAVEMENT STRUCTURE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE, OR ANY BARRIER TO DOWNWARD MIGRATION OF WATER, AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
9. TOP OF PAVEMENT SHOULD BE DESIGNED TO ACHIEVE 1% MINIMUM SLOPE IN ANY DIRECTION.
10. FOR ROADWAY JOINT LAYOUT, REFER TO DDOT DWG. NO. 501.01. FOR ALLEY JOINT LAYOUT, REFER TO DDOT DWG. NO. 503.01.

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

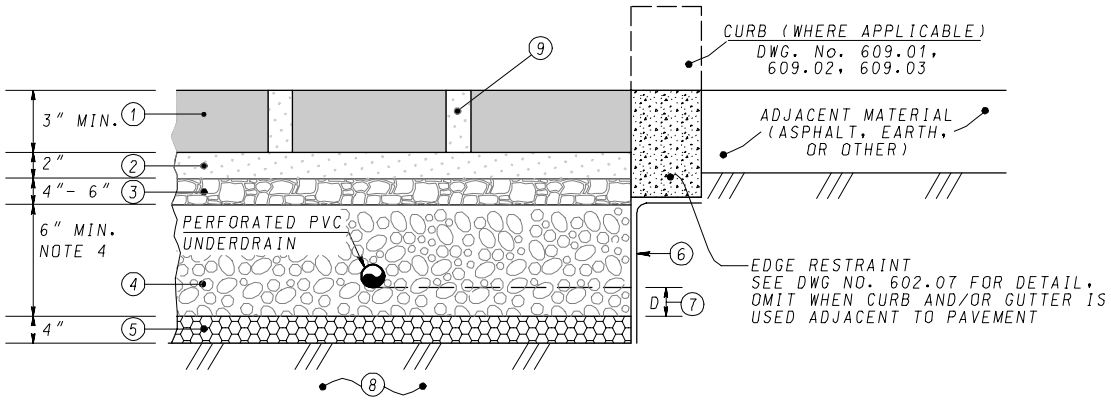
PERVIOUS CONCRETE PAVEMENT

(ROADWAY AND ALLEY)

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 508.01



ROAD /ALLEY SECTION

LEGEND

(1) PERMEABLE INTERLOCKING CONCRETE PAVERS (PICP) OR SIMILAR

(2) BEDDING LAYER, AASHTO #8 OR APPROVED EQUIVALENT

(3) CHOKER LAYER, AASHTO #57, #8, OR APPROVED EQUIVALENT

(4) RESERVOIR LAYER, AASHTO #3, #2, OR #57, OR APPROVED EQUIVALENT

(5) FILTER LAYER (OPTIONAL SEE NOTE 7), AASHTO #8 OR APPROVED EQUIVALENT

(6) GEOTEXTILE CLASS 2, LOCATED ON SIDES OF PRACTICES ONLY

(7) INFILTRATION SUMP. FOR STANDARD DESIGN, D = 0"
FOR ENHANCED DESIGN, SEE NOTE 6

(8) UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES
FOR OTHER AREAS, COMPACT AS SPECIFIED IN SPECIFICATION CITED IN NOTE 2
FOR SOFT SOILS, INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS

(9) JOINT TO BE HAVE $^{1}/_{2}$ INCH MAXIMUM GAP IN ACCORDANCE WITH THE LATEST ADA REQUIREMENTS AND FILLED WITH AASHTO #8 OR APPROVED EQUIVALENT

NOTES:

1. DETAIL TO BE USED ONLY WHEN APPROVED BY DDOT IPMA AND SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "PERMEABLE INTERLOCKING CONCRETE PAVEMENT".
2. AGGREGATE LAYERS SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "AGGREGATE BASE COURSE FOR PERMEABLE PAVEMENT".
3. SEE DWG. NO. 510.01 FOR LONGITUDINAL AND CROSS SLOPE REQUIREMENTS ASSOCIATED WITH POROUS ASPHALT PAVEMENT.
4. PVC LINER (MIN. THICKNESS = 30 MIL) MAY BE USED TO PROMOTE WATER RE-USE, PROTECT NEARBY BUILDING FOUNDATIONS AND AVOID INFILTRATION AROUND UTILITIES. SEE DESIGN PLANS.
5. DEPTH OF RESERVOIR LAYER AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS AND PAVEMENT STRUCTURAL DESIGN.
6. ENHANCED DESIGN CONTAINS A WATER STORAGE LAYER AND AN INFILTRATION SUMP BENEATH THE UNDERDRAIN SIZED TO DRAIN THE DESIGN STORM WITHIN 48 HOURS.
7. WHEN FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE CLASS 1 MATERIAL BENEATH RESERVOIR LAYER MEETING CURRENT APPROVED DDOT SPECIFICATION FOR "GEOSYNTHETICS FOR STORMWATER FACILITIES".
8. BOTTOM OF PERVIOUS PAVEMENT STRUCTURE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE, OR ANY BARRIER TO DOWNWARD MIGRATION OF WATER, AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
9. TOP OF PAVEMENT SHOULD BE DESIGNED TO ACHIEVE 1% MINIMUM SLOPE IN ANY DIRECTION.

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

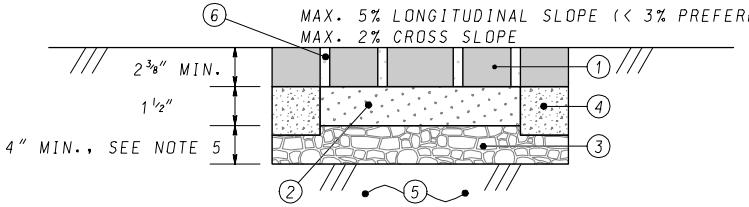
PERMEABLE INTERLOCKING UNIT PAVER PAVEMENT

(ROADWAY AND ALLEY)

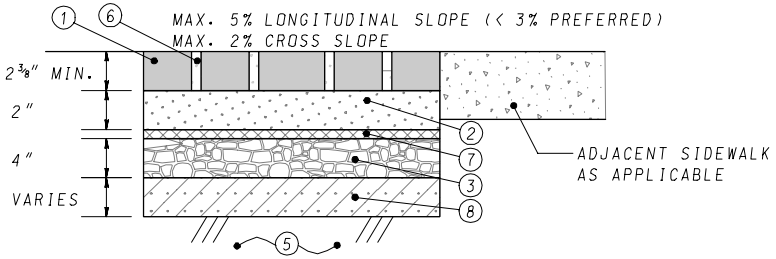
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 509.01



SIDEWALK SECTION



NON-INTERLOCKING PAVERS OVER SAND-BASED STRUCTURAL SOIL

LEGEND

(1) PERMEABLE INTERLOCKING CONCRETE PAVERS (PICP) OR SIMILAR, OR NON-INTERLOCKING PAVERS, AS NOTED, PER ICPI GUIDELINES.

(2) BEDDING LAYER, AASHTO #8 OR APPROVED EQUIVALENT

(3) AGGREGATE BASE, AASHTO #57 OR APPROVED EQUIVALENT

(4) CONCRETE EDGE RESTRAINT, MIN. 4" WIDE; MORTAR OR POLYMER ADHERED PAVERS TO TOP

(5) UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES. FOR OTHER AREAS, COMPACT AS SPECIFIED IN SPECIFICATION CITED IN NOTE 2. FOR SOFT SOILS, INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS. SEE NOTE 8 FOR ALTERNATE DESIGN.

(6) JOINT TO BE HAVE 1/2 INCH MAXIMUM GAP IN ACCORDANCE WITH THE LATEST ADA REQUIREMENTS AND FILLED WITH AASHTO #8 OR APPROVED EQUIVALENT. IN HIGH PEDESTRIAN AREA, MAXIMUM GAP SHALL BE REDUCED AS DESIGNATED IN DESIGN PLANS, PER ICPI GUIDELINES.

(7) GEOGRID, AS APPROVED BY DDOT

(8) SAND-BASED STRUCTURAL SOIL (SBSS)

NOTES:

1. DETAIL TO BE USED ONLY WHEN APPROVED BY DDOT IPMA AND SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "PERMEABLE INTERLOCKING CONCRETE PAVEMENT".
2. AGGREGATE LAYERS SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "AGGREGATE BASE COURSE FOR PERMEABLE PAVEMENT".
3. SEE DWG. NO. 510.01 FOR LONGITUDINAL AND CROSS SLOPE REQUIREMENTS ASSOCIATED WITH POROUS ASPHALT PAVEMENT.
4. PVC LINER (MIN. THICKNESS = 30 MIL) MAY BE USED TO PROMOTE WATER RE-USE, PROTECT NEARBY BUILDING FOUNDATIONS AND AVOID INFILTRATION AROUND UTILITIES. SEE DESIGN PLANS.
5. AGGREGATE DEPTH MAY BE GREATER THAN MINIMUM, AS SHOWN IN DESIGN PLANS TO ACHIEVE ADDITIONAL STORMWATER STORAGE.
6. BOTTOM OF PERVIOUS PAVEMENT STRUCTURE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE, OR ANY BARRIER TO DOWNWARD MIGRATION OF WATER, AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. TOP OF PAVEMENT SHOULD BE DESIGNED TO ACHIEVE 1% MINIMUM SLOPE IN ANY DIRECTION.
8. IN AREAS OF TREE PLANTINGS WHICH CALL FOR SAND-BASED STRUCTURAL SOIL (SSBS), THE SBSS WILL EXTEND UNDER THE AGGREGATE BASE LAYER.

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
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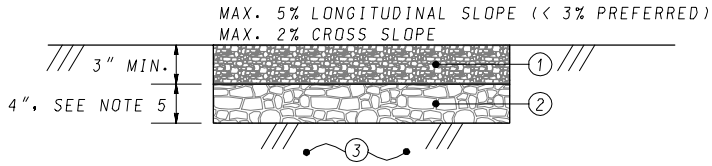
PERMEABLE PAVER SIDEWALK

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 608.06



SIDEWALK SECTION

LEGEND

(1) POROUS ASPHALT SURFACE COURSE

(2) AGGREGATE BASE, AASHTO #57 OR APPROVED EQUIVALENT

(3) UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES. FOR OTHER AREAS, COMPACT AS SPECIFIED IN SPECIFICATION CITED IN NOTE 2. FOR SOFT SOILS, INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.

NOTES:

1. DETAIL TO BE USED ONLY WHEN APPROVED BY DDOT IPMA AND SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "POROUS ASPHALT PAVEMENT".
2. AGGREGATE LAYERS SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "AGGREGATE BASE COURSE FOR PERMEABLE PAVEMENT".
3. SEE DWG. NO. 510.01 FOR LONGITUDINAL AND CROSS SLOPE REQUIREMENTS ASSOCIATED WITH POROUS ASPHALT PAVEMENT.
4. PVC LINER (MIN. THICKNESS = 30 MIL) MAY BE USED TO PROMOTE WATER RE-USE, PROTECT NEARBY BUILDING FOUNDATIONS AND AVOID INFILTRATION AROUND UTILITIES. SEE DESIGN PLANS.
5. AGGREGATE DEPTH MAY BE GREATER THAN MINIMUM, AS SHOWN IN DESIGN PLANS TO ACHIEVE ADDITIONAL STORMWATER STORAGE.
6. BOTTOM OF PERVIOUS PAVEMENT STRUCTURE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE, OR ANY BARRIER TO DOWNWARD MIGRATION OF WATER, AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. TOP OF PAVEMENT SHOULD BE DESIGNED TO ACHIEVE 1% MINIMUM SLOPE IN ANY DIRECTION.

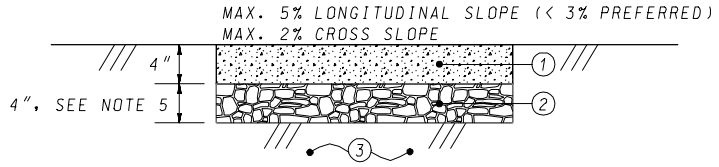
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

POROUS ASPHALT PAVEMENT SIDEWALK

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 608.07



SIDEWALK SECTION

LEGEND

(1) PERVIOUS PORTLAND CEMENT CONCRETE

(2) BASE COURSE, AASHTO #57 OR APPROVED EQUIVALENT

(3) UNCOMPACTED SUBGRADE FOR AREAS DESIGNED AS INFILTRATION PRACTICES. FOR OTHER AREAS, COMPACT AS SPECIFIED IN SPECIFICATION CITED IN NOTE 2. FOR SOFT SOILS, INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.

NOTES:

1. DETAIL TO BE USED ONLY WHEN APPROVED BY DDOT IPMA AND SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "PERVIOUS PORTLAND CEMENT CONCRETE PAVEMENT".
2. AGGREGATE LAYERS SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "AGGREGATE BASE COURSE FOR PERMEABLE PAVEMENT".
3. SEE DWG. NO. 510.01 FOR LONGITUDINAL AND CROSS SLOPE REQUIREMENTS ASSOCIATED WITH POROUS ASPHALT PAVEMENT.
4. PVC LINER (MIN. THICKNESS = 30 MIL) MAY BE USED TO PROMOTE WATER RE-USE, PROTECT NEARBY BUILDING FOUNDATIONS AND AVOID INFILTRATION AROUND UTILITIES. SEE DESIGN PLANS.
5. AGGREGATE DEPTH MAY BE GREATER THAN MINIMUM, AS SHOWN IN DESIGN PLANS TO ACHIEVE ADDITIONAL STORMWATER STORAGE.
6. BOTTOM OF PERVIOUS PAVEMENT STRUCTURE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE, AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. TOP OF PAVEMENT SHOULD BE DESIGNED TO ACHIEVE 1% MINIMUM SLOPE IN ANY DIRECTION.
8. FOR SIDEWALK JOINT LAYOUT, REFER TO DDOT DWG. NO. 608.01. FOR TRAIL JOINT LAYOUT, REFER TO DDOT DWG. NO. 501.01.

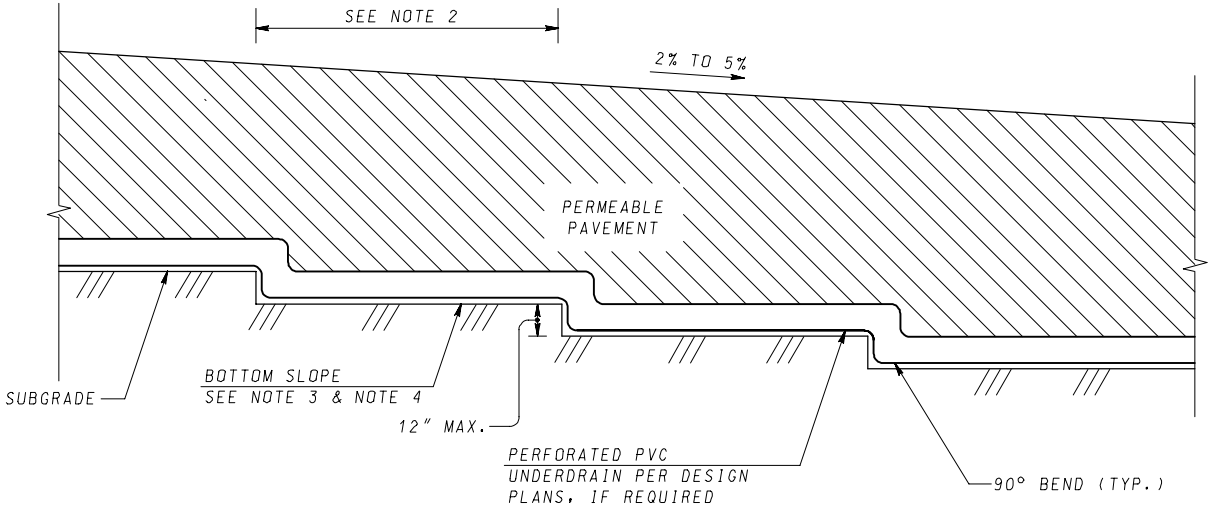
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

PERVIOUS CONCRETE PAVEMENT SIDEWALK

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 608.08

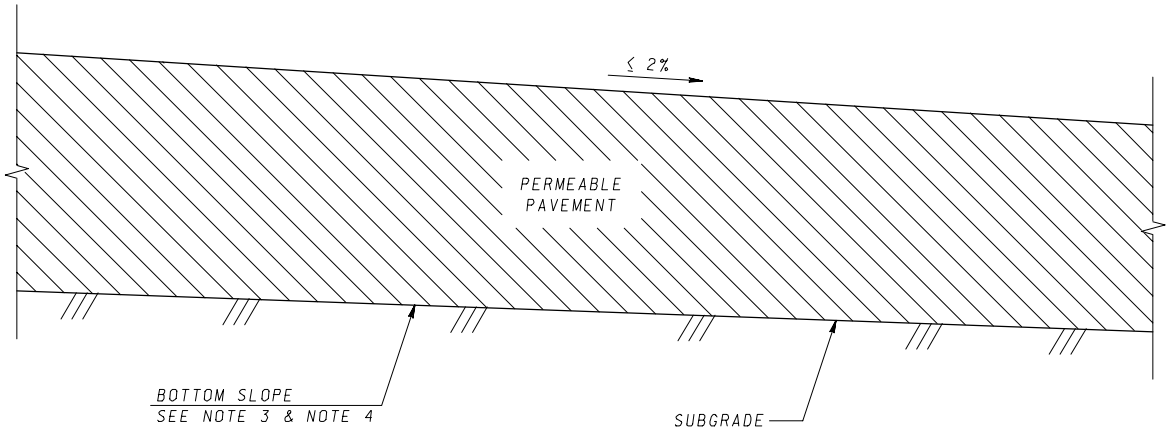


TERRACED SLOPE

LONGITUDINAL SLOPE: 2% TO 5%

NOTES:

1. CHECK DAMS TO BE USED FOR INSTALLATION WITH BOTTOM SLOPES GREATER THAN 2% LONGITUDINALLY, OR AS DIRECTED BY THE CONTRACT DOCUMENTS.
2. DISTANCE BETWEEN STEPS IS ESTABLISHED SO THAT INFILTRATED WATER DOES NOT REACH THE BOTTOM OF AGGREGATE BASE OF PAVEMENT IN EACH CELL. REFER TO THE CONTRACT DESIGN DOCUMENTS FOR SPACING.
3. BOTTOM SLOPE = 0% TO 5% BUT NO STEEPER THAN TOP SLOPE, PER DESIGN PLANS. ENGINEER TO DESIGN SYSTEM TO ACHIEVE STORAGE, DRAW-DOWN, STRUCTURAL, AND FREEZE-THAW REQUIREMENTS. BOTTOM SLOPE DOES NOT HAVE TO BE PARALLEL TO TOP SLOPE.
4. FOR FACILITIES WITH IMPERMEABLE LINER, MINIMUM BOTTOM SLOPE SHALL BE 2% TO DRAIN DRY.
5. TRANSVERSE BOTTOM SLOPES AND CROSS SLOPES SHALL BE $\leq$ 3%.



CONTINUOUS BOTTOM SLOPE

LONGITUDINAL SLOPE: < 2%

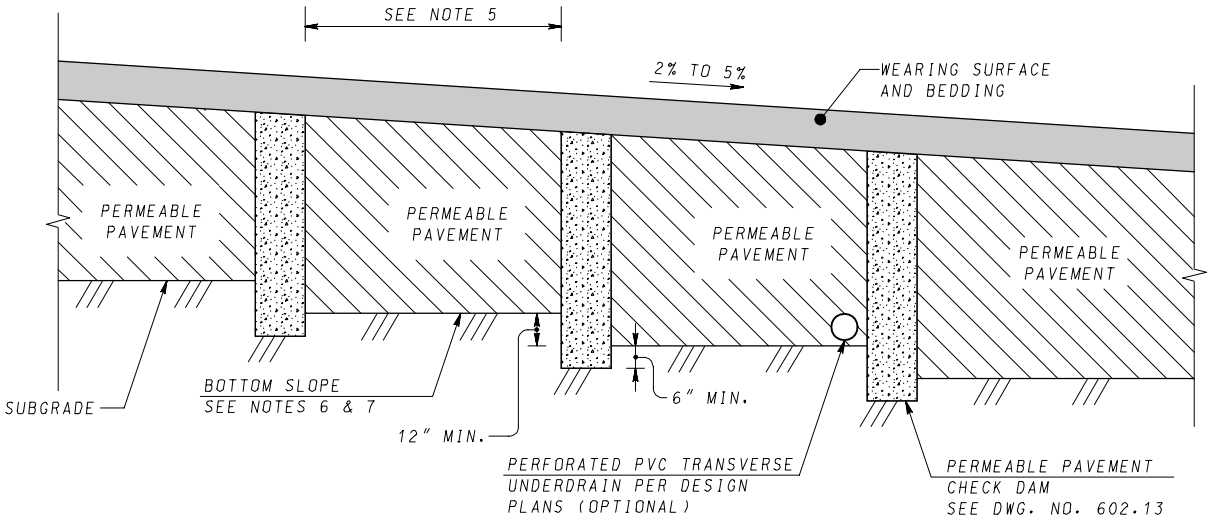
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

PERMEABLE PAVEMENT ELEVATION–2

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 510.02



LONGITUDINAL SLOPE: 2% TO 5%

NOTES:

1. MATERIALS: 4,000 PSI CONCRETE OR COMPACTED BITUMINOUS ASPHALT, PER CONTRACT DOCUMENTS. OTHER TYPES OF EDGE RESTRAINTS, SUCH AS STEEL OR PLASTIC SHALL BE ALLOWED AS APPROVED BY THE ENGINEER, AND BASED ON MANUFACTURER'S RECOMMENDATIONS.

2. PERIMETER RESTRAINTS ARE REQUIRED FOR PERMEABLE INTERLOCKING UNIT PAVER PAVEMENT SYSTEMS. ENGINEER TO DETERMINE IF EDGE RESTRAINTS ARE NECESSARY FOR POROUS ASPHALT AND PERVIOUS CONCRETE INSTALLATIONS.

3. 6" MIN. IS REQUIRED BELOW ADJOINING PAVEMENT SECTIONS WITH A 15" MIN. TOTAL DEPTH OF FOUNDATION ON A STABLE BASE. THE DEPTH CAN BE ADJUSTED TO MATCH AN ADJOINING SUBGRADE.

4. CHECK DAMS TO BE USED FOR INSTALLATION WITH BOTTOM SLOPES GREATER THAN 2% LONGITUDINALLY, OR AS DIRECTED BY THE CONTRACT DOCUMENTS.

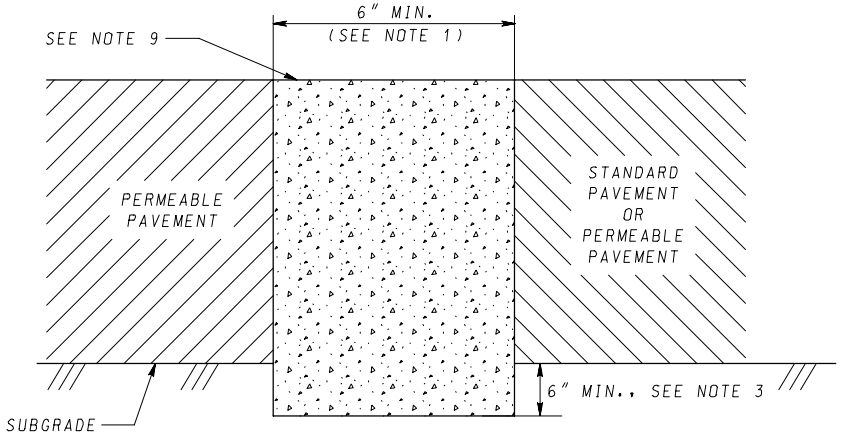
5. DISTANCE BETWEEN CHECK DAMS IS ESTABLISHED SO THAT THE INFILTRATED WATER DOES NOT REACH THE BOTTOM OF AGGREGATE BASE OF PAVEMENT IN EACH CELL. REFER TO THE CONTRACT DOCUMENTS FOR SPACING.

6. BOTTOM SLOPE = 0% TO 5% BUT NO STEEPER THAN TOP SLOPE, PER DESIGN PLANS. ENGINEER TO DESIGN SYSTEM TO ACHIEVE STORAGE, DRAW-DOWN, STRUCTURAL, AND FREEZE-THAW REQUIREMENTS. BOTTOM SLOPE DOES NOT HAVE TO BE PARALLEL TO TOP SLOPE.

7. FOR FACILITIES WITH IMPERMEABLE LINER, MINIMUM BOTTOM SLOPE SHALL BE 2% TO DRAIN DRY.

8. TRANSVERSE BOTTOM SLOPES AND CROSS SLOPES THALL BE ≤ 3%.

9. EDGE RESTRAINTS SHALL BE DAYLIGHTED TO SURFACE. CHECK DAMS SHALL ONLY EXTEND TO BOTTOM OF OPEN GRADED SURFACE COURSE, PER LONGITUDINAL SLOPE DETAIL ON THIS SHEET.



EDGE RESTRAINT /CHECK DAM

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

PERMEABLE PAVEMENT ELEVATION-1

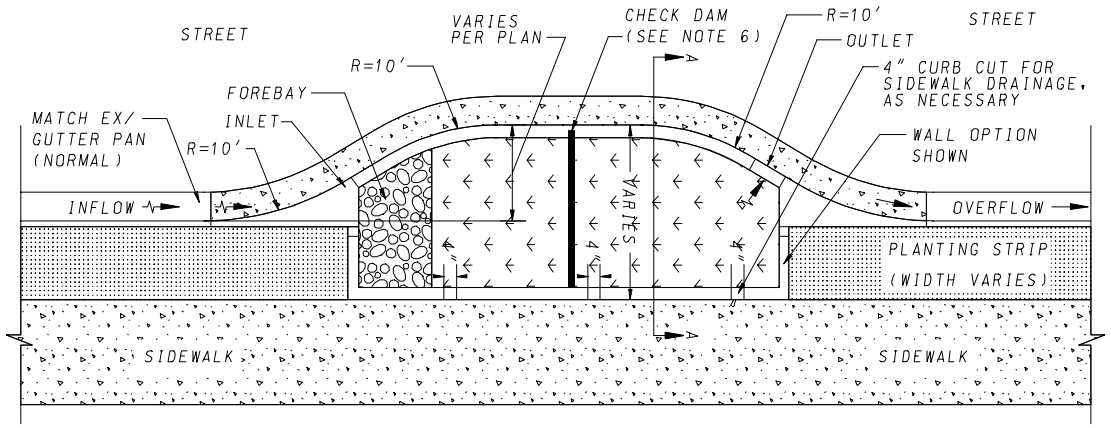
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

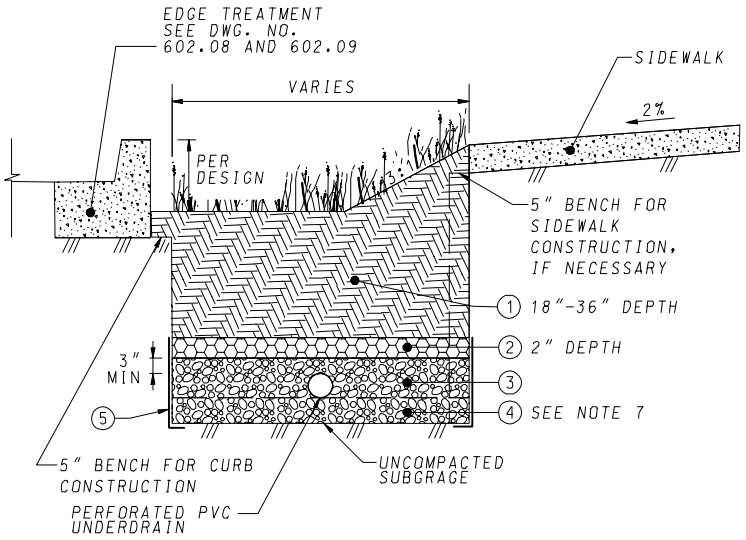
DWG. NO. 510.01

NOTES:

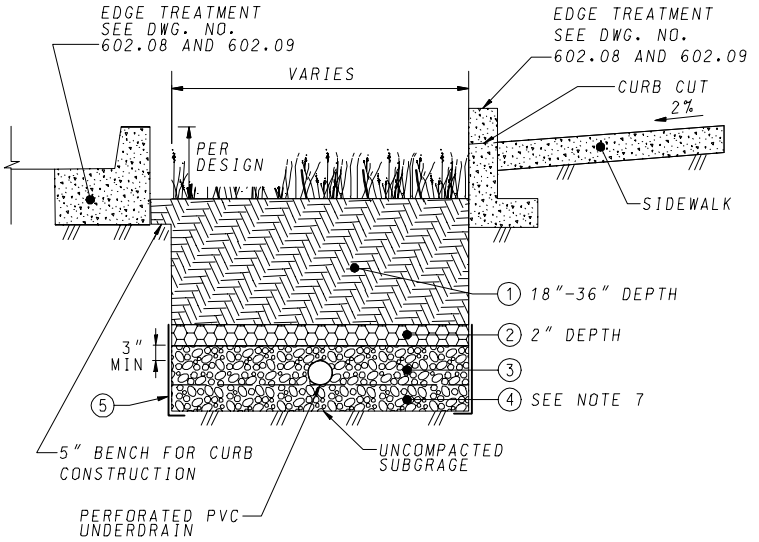
1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "BIORETENTION, PLANTING, AND STRUCTURAL SOILS".
2. LONGITUDINAL SLOPE OF PLANTER MATCHES ROAD.
3. INCLUDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND ELEVATIONS AT EVERY CHECK DAM AND OUTLET.
4. SIDEWALK ELEVATION MUST BE SET ABOVE INLET AND OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. SEE DWG. NO. 609.10 FOR INLET AND OUTLET DETAILS FOR CURB EXTENSIONS.
6. CHECK DAMS REQUIRED AS PER DESIGN PLANS. SEE DWG. NO. 602.09, 602.10, OR 602.11.
7. DEPTH OF INFILTRATION SUMP AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS.



PLAN VIEW



SECTION A-A (SLOPE OPTION)



SECTION A-A (WALL OPTION)

LEGEND:

1. BIORETENTION SOIL
2. CHOKER LAYER, AASHTO #8 STONE
3. AASHTO #57 STONE, DOUBLE WASHED
4. INFILTRATION SUMP, AASHTO #57 STONE, DOUBLE WASHED
5. GEOTEXTILE

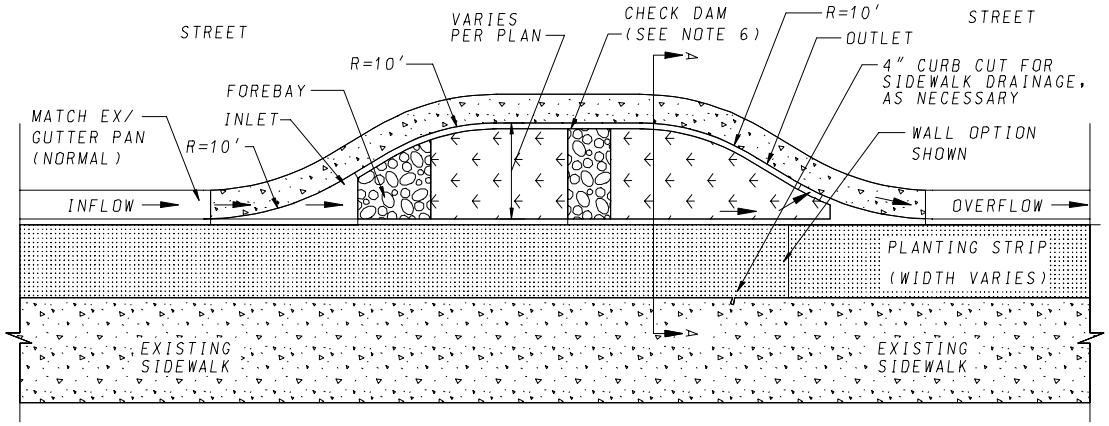
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

CURB EXTENSION BIORETENTION

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

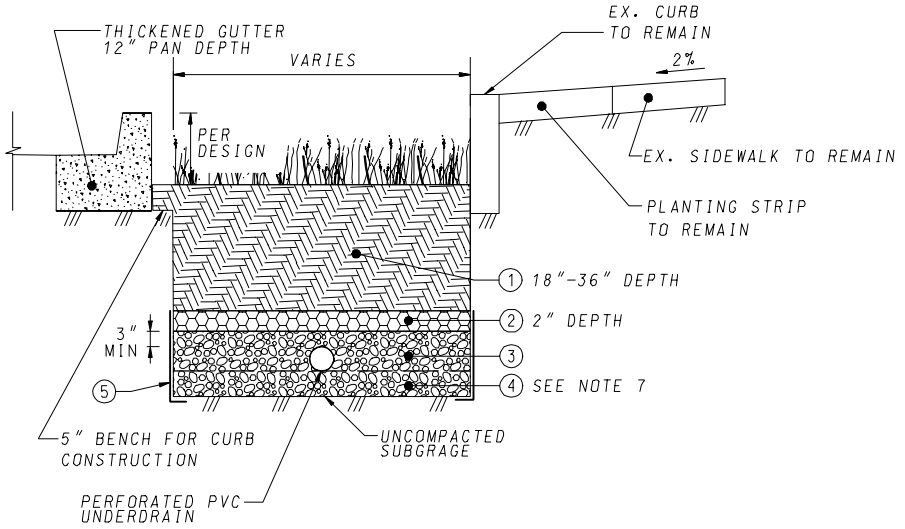
DWG. NO. 630.06



PLAN VIEW

NOTES:

1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "BIORETENTION, PLANTING, AND STRUCTURAL SOILS".
2. LONGITUDINAL SLOPE OF PLANTER MATCHES ROAD.
3. INCLUDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND ELEVATIONS AT EVERY CHECK DAM AND OUTLET.
4. SIDEWALK ELEVATION MUST BE SET ABOVE INLET AND OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. SEE DWG. NO. 609.10 FOR INLET AND OUTLET DETAILS FOR CURB EXTENSIONS.
6. CHECK DAMS REQUIRED AS PER DESIGN PLANS. SEE DWG. NO. 602.09, 602.10, OR 602.11.
7. DEPTH OF INFILTRATION SUMP AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS.



SECTION A-A

LEGEND:

1. BIORETENTION SOIL
2. CHOKER LAYER, AASHTO #8 STONE
3. AASHTO #57 STONE, DOUBLE WASHED
4. INFILTRATION SUMP, AASHTO #57 STONE, DOUBLE WASHED
5. GEOTEXTILE

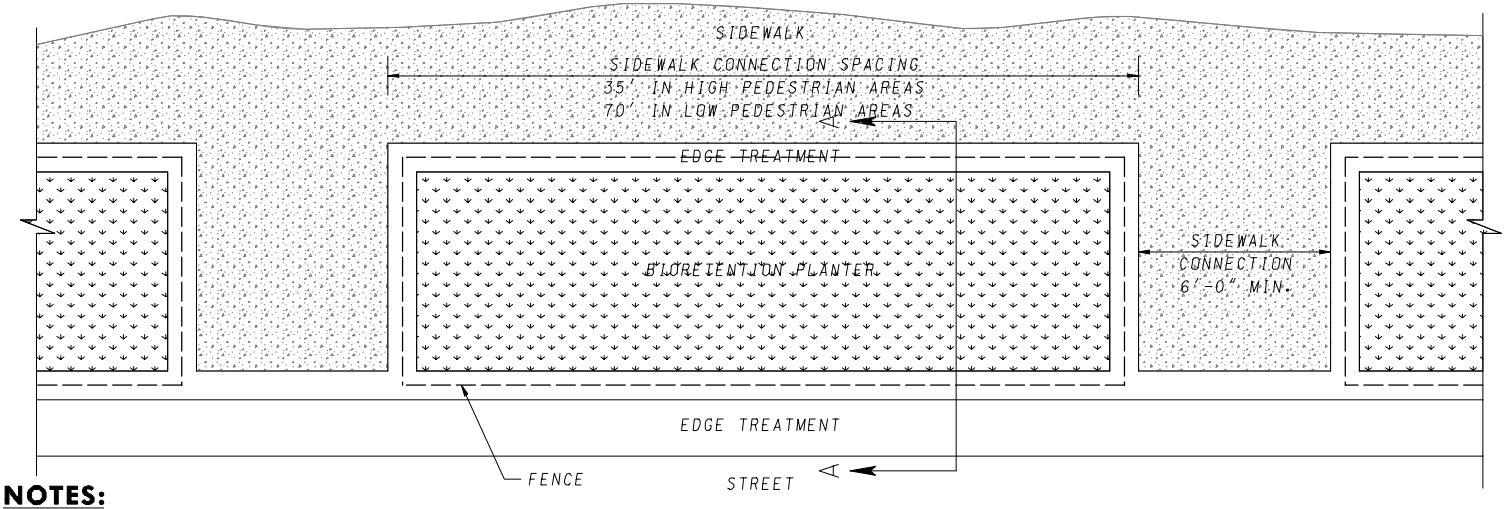
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

CURB EXTENSION IN STREET BIORETENTION

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

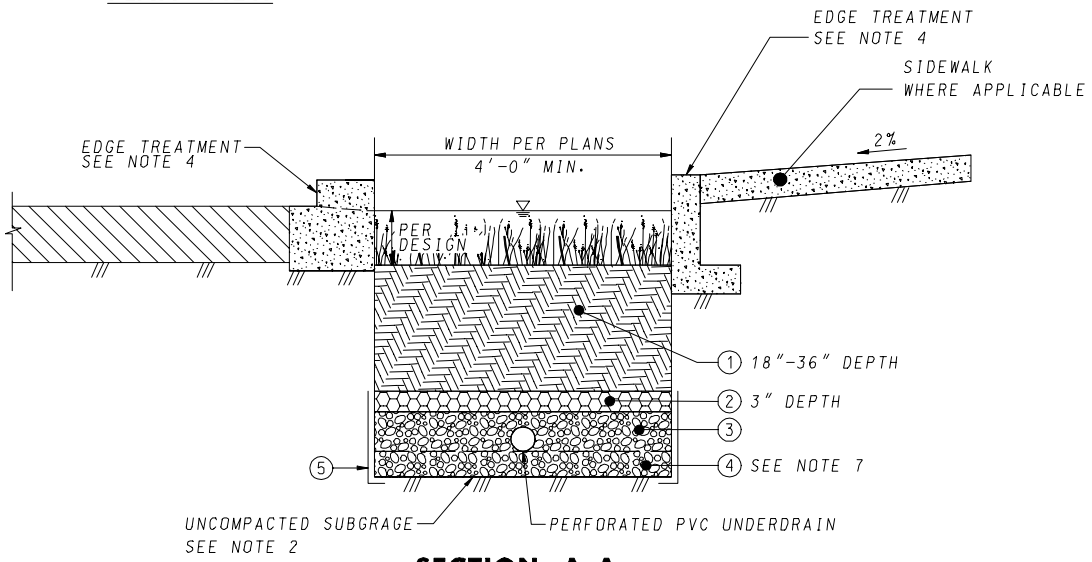
DWG. NO. 630.06



PLAN VIEW

NOTES:

1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "BIORETENTION, PLANTING, AND STRUCTURAL SOILS".
2. SCARIFY SUBGRADE 3" MIN. BEFORE INSTALLATION.
3. SIDE SLOPES STEEPER THAN 3:1, MAY BE ALLOWED; HOWEVER, MUST BE INSTALLED IN ACCORDANCE WITH DDOT SPECIFICATION XXX.
4. FOR EDGE TREATMENT OPTIONS, SEE DWG. NO. 602.08 AND 602.09.
5. TREES AND PLANTINGS SHALL BE INSTALLED IN ACCORDANCE WITH DESIGN PLANS.
6. BOTTOM OF BIORETENTION SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. DEPTH OF INFILTRATION SUMP AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS.



SECTION A-A

LEGEND:

1. BIORETENTION SOIL
2. CHOKER LAYER, SAND & GRAVEL
3. AASHTO #57 STONE, DOUBLE WASHED
4. INFILTRATION SUMP, AASHTO #57 STONE, DOUBLE WASHED
5. GEOTEXTILE

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: _____
DEPUTY CHIEF ENGINEER

APPROVED: _____
CHIEF TRANSPORTATION ENGINEER

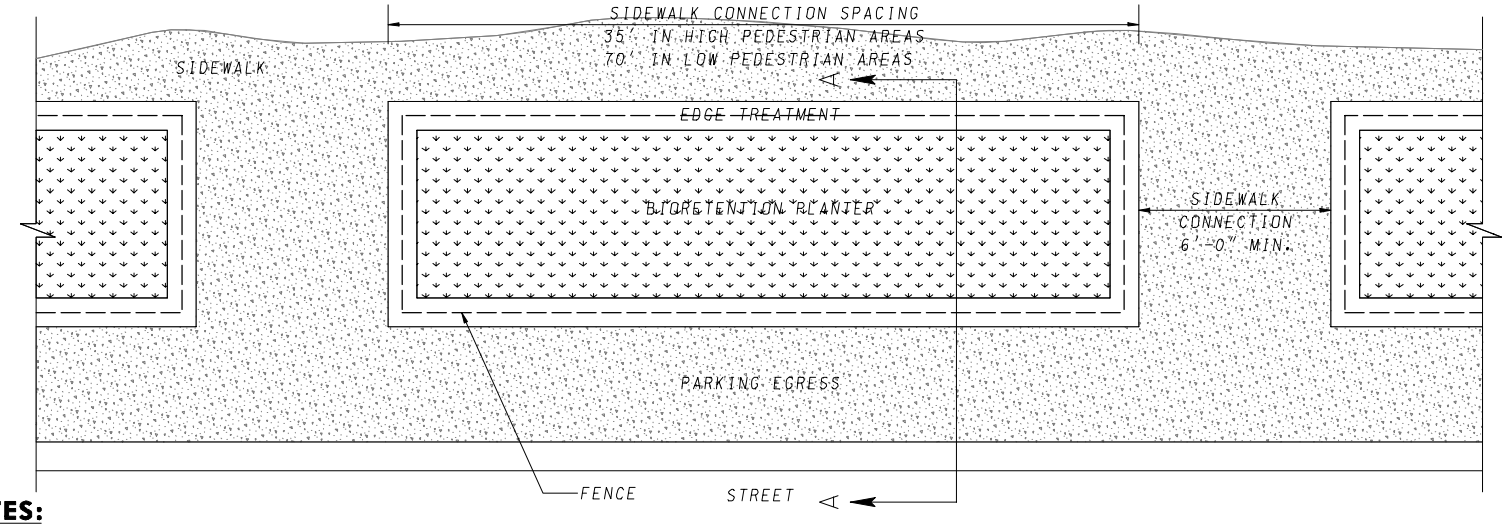
BIORETENTION PLANTER ADJACENT TO ROADWAY-1

(NO PARKING, EGRESS)

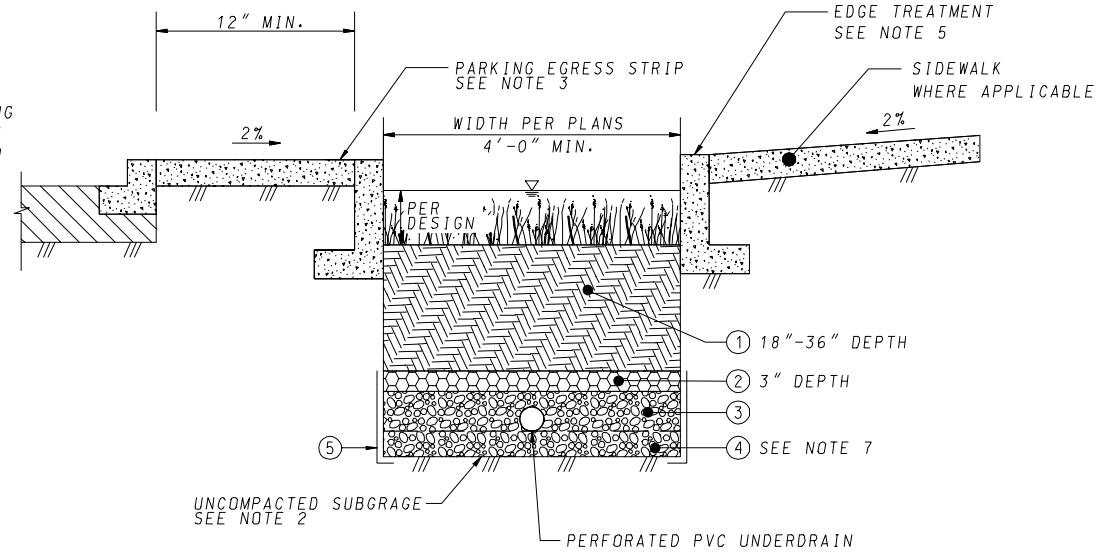
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 630.04



PLAN VIEW



SECTION A–A

NOTES:

1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "BIORETENTION, PLANTING, AND STRUCTURAL SOILS".
2. SCARIFY SUBGRADE 3" MIN. BEFORE INSTALLATION.
3. PARKING EGRESS STRIP REQUIRED WHEN PARALLEL PARKING IS PROVIDED AND WHEN DISTANCE FROM CURB TO BACK OF SIDEWALK ALLOWS FOR SUFFICIENT SPACE. INSTALLATION AND PAYMENT TO BE STANDARD DDOT SIDEWALK.
4. FOR EDGE TREATMENT OPTIONS, SEE DWG. NO. 602.08 AND 602.09.
5. TREES AND PLANTINGS SHALL BE INSTALLED IN ACCORDANCE WITH DESIGN PLANS.
6. BOTTOM OF BIORETENTION SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. DEPTH OF INFILTRATION SUMP AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS.

LEGEND:

1. BIORETENTION SOIL
2. CHOKER LAYER, SAND & GRAVEL
3. AASHTO #57 STONE, DOUBLE WASHED
4. INFILTRATION SUMP, AASHTO #57 STONE, DOUBLE WASHED
5. GEOTEXTILE

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

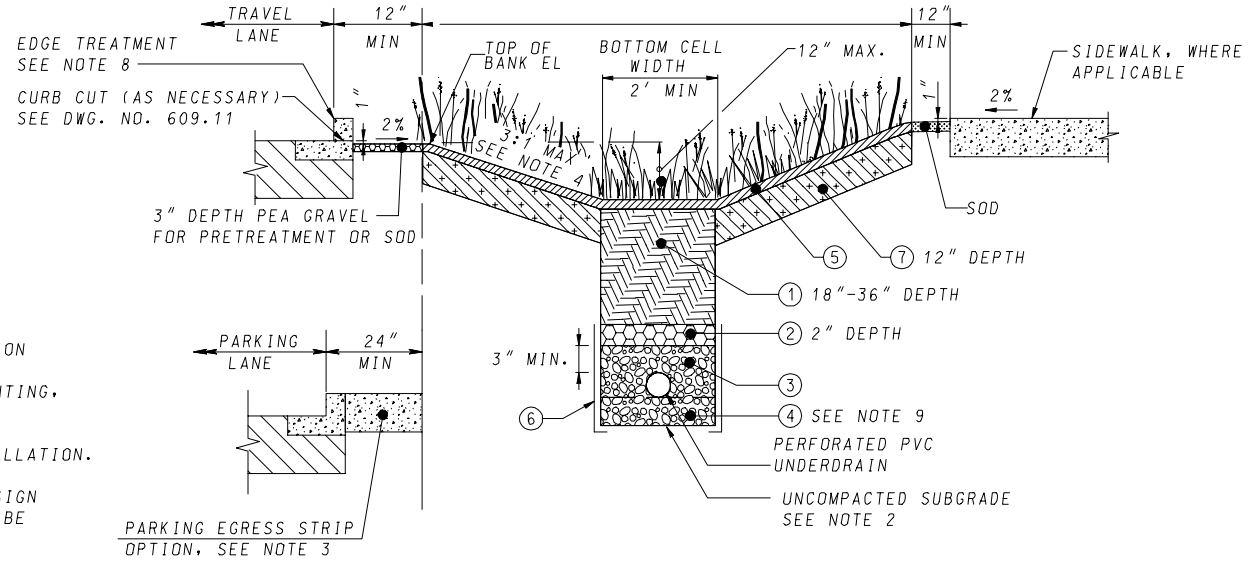
BIORETENTION PLANTER ADJACENT TO ROADWAY–2

(WITH PARKING EGRESS)

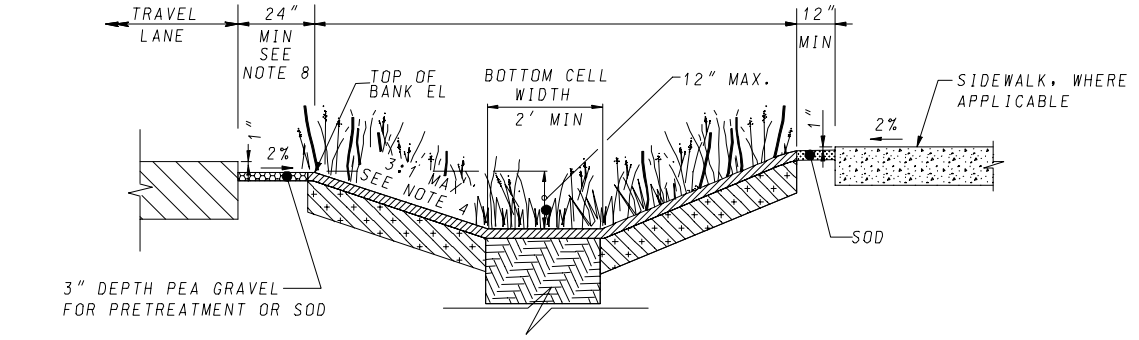
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 630.05



CLOSED SECTION



OPEN SECTION

NOTES:

1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "BIORETENTION, PLANTING, AND STRUCTURAL SOILS".
2. SCARIFY SUBGRADE 3" MIN. BEFORE INSTALLATION.
3. PARKING EGRESS STRIP REQUIRED PER DESIGN MANUAL. INSTALLATION AND PAYMENT TO BE STANDARD DDOT SIDEWALK.
4. SIDE SLOPES STEEPER THAN 3:1, MAY BE ALLOWED; HOWEVER, MUST BE INSTALLED IN ACCORDANCE WITH DDOT SPECIFICATIONS.
5. TREES AND PLANTINGS SHALL BE INSTALLED IN ACCORDANCE WITH DESIGN PLANS.
6. BOTTOM OF BIOSWALE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. INSTALL TRAFFIC BARRIER PER DWG. NO. 605.04, AS NECESSARY BASED ON ROADWAY DESIGN.
8. FOR EDGE TREATMENT OPTIONS, SEE DWG. NO. 602.08 AND 602.09.
9. DEPTH OF INFILTRATION SUMP AS SHOWN ON DESIGN PLANS SHOULD BE SIZED TO ADDRESS STORMWATER MANAGEMENT REQUIREMENTS.

LEGEND:

1. BIORETENTION SOIL
2. CHOKER LAYER, AASHTO #8 STONE
3. AASHTO #57 STONE, DOUBLE WASHED
4. INFILTRATION SUMP, AASHTO #57 STONE, DOUBLE WASHED
5. MULCH
6. GEOTEXTILE
7. PLANT BED SOIL

DATE	APPR.	
REVISED		
ISSUED:		
		REFERENCE

RECOMMENDED: _____
DEPUTY CHIEF ENGINEER

APPROVED: _____
CHIEF TRANSPORTATION ENGINEER

BIOSWALE ADJACENT TO ROADWAY

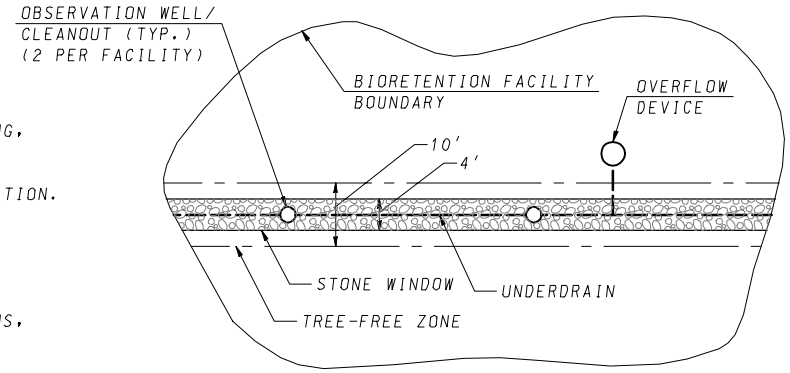
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

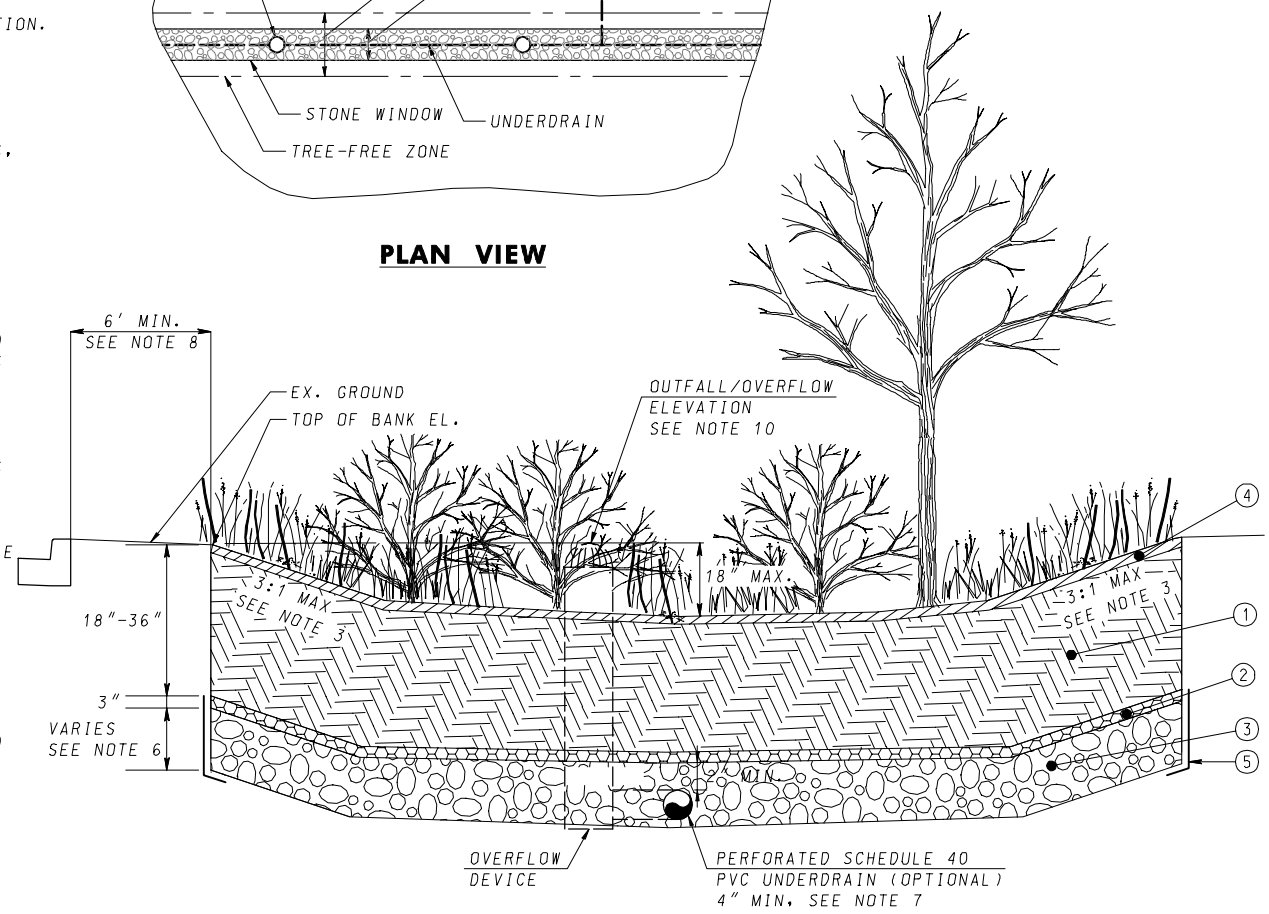
DWG. NO. 630.02

NOTES:

1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET CURRENT APPROVED DDOT SPECIFICATION FOR "BIORETENTION, PLANTING, AND STRUCTURAL SOILS".
2. SCARIFY SUBGRADE 3" MIN. BEFORE INSTALLATION.
3. SIDE SLOPES STEEPER THAN 3:1, MAY BE ALLOWED; HOWEVER, MUST BE INSTALLED IN ACCORDANCE WITH DDOT SPECIFICATION XXX.
4. FOR ALTERNATIVE EDGE TREATMENT CONDITIONS, SEE DWG. NO. 602.07.
5. BOTTOM OF BIOSWALE SHALL BE AT LEAST 2' ABOVE THE SEASONAL HIGH WATER TABLE AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
6. STONE DEPTH SHALL VARY PER DESIGN PLANS, TO ACHIEVE A WATER STORAGE LAYER/ INFILTRATION SUMP, WHEN APPLICABLE, SIZED TO DRAIN THE DESIGN STORM WITHIN 72 HOURS OR LESS.
7. PROVIDE UNDERDRAIN WHEN CALLED FOR PER DESIGN PLANS. TO BE IMPLEMENTED WHEN MEASURED INFILTRATION RATE IS 0.50 INCHES PER HOUR OR LESS.
8. DISTANCE TO ROADWAY MAY BE REDUCED WHEN SIDE OF PRACTICE IS LINED WITH IMPERMEABLE PVC LINER (30 MIL), PER DESIGN PLANS.
9. SEE DWG. NO. 603.01 FOR CLEAN OUT AND OBSERVATION WELL DETAIL.
10. BIORETENTION FACILITY DEPICTED IS ONE WITH AN OVERFLOW STRUCTURE. "OFF-LINE" FACILITIES DESIGNED TO LIMIT INFLOW SO THAT OVERFLOW STRUCTURES ARE NOT REQUIRED ARE ALSO PERMISSIBLE, AS SHOWN ON DESIGN PLANS.



PLAN VIEW



ELEVATION

LEGEND:

1. BIORETENTION SOIL
2. CHOKER LAYER, AASHTO #8 STONE
3. AASHTO #57 STONE, DOUBLE WASHED
4. MULCH
5. GEOTEXTILE, CLASS 2

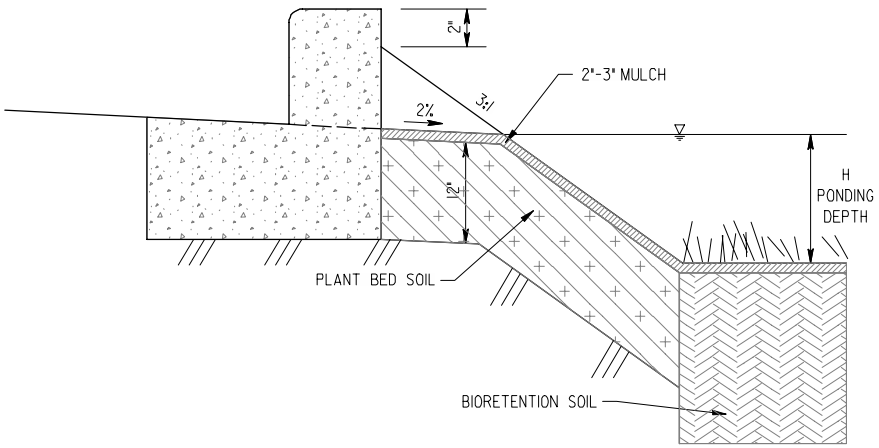
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

BIORETENTION IN OPEN AREA

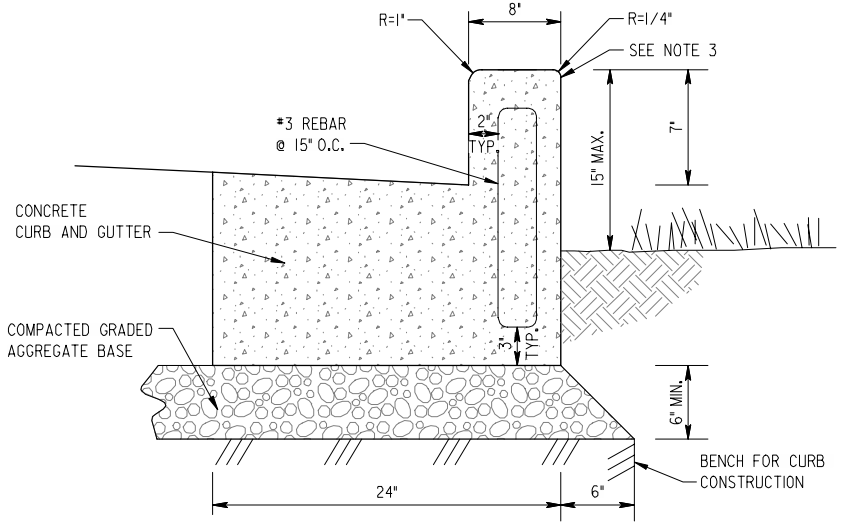
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

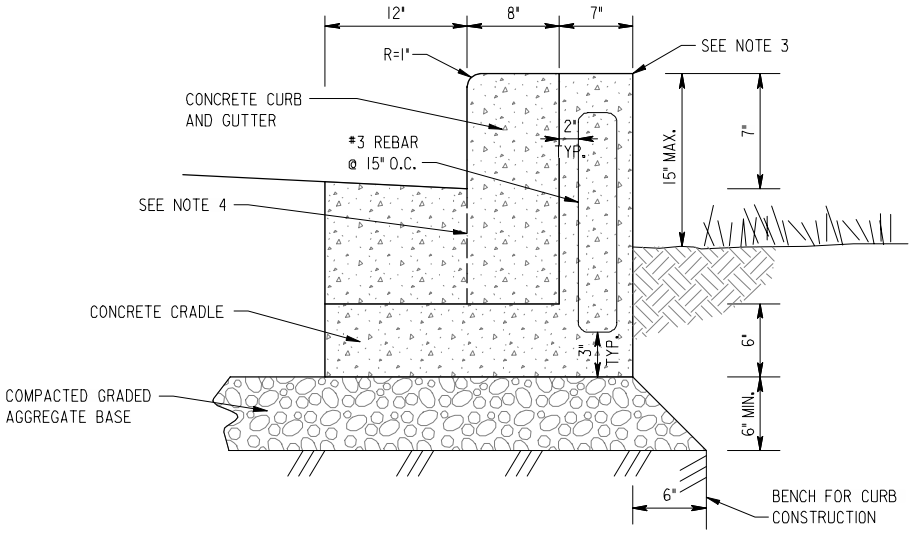
DWG. NO. 630.01



CURB WITH SLOPE



THICKENED CONCRETE CURB AND GUTTER



CURB WITH CONCRETE CRADLE

NOTES:

1. *SPECIFY ONE OF THE EDGE TREATMENT OPTIONS BASED ON SITE CONDITIONS AND CONTSTRAINTS.*
2. *FINISH ALL EXPOSED CONCRETE SURFACES.*
3. *CONDITIONS AT BACK OF CURB VARY AND ARE SHOWN IN DESIGN PLANS.*
4. *WHEN GRANITE CURB IS USED, DASHED LINE INDICATES INTERFACE BETWEEN GRANITE CURB AND CONCRETE GUTTER (WHERE APPLICABLE).*

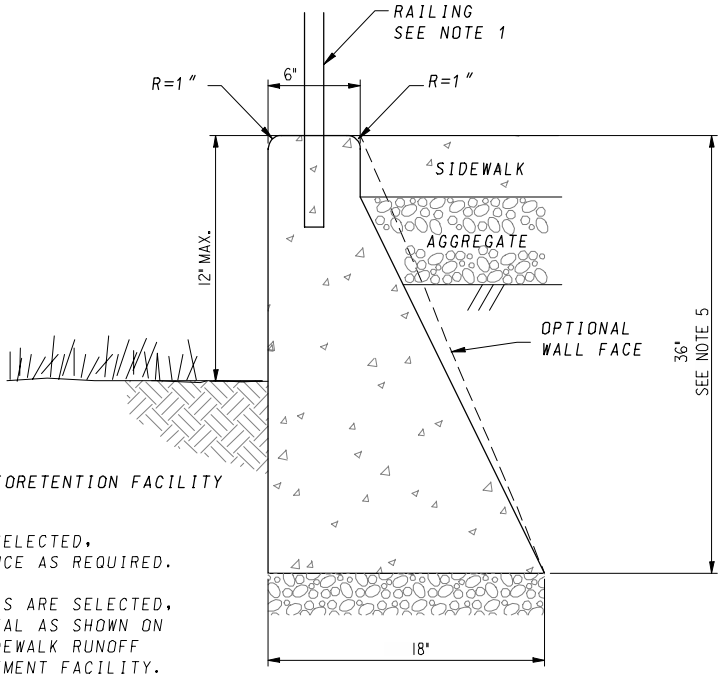
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

BIORETENTION FACILITY EDGE TREATMENT OPTIONS – 1

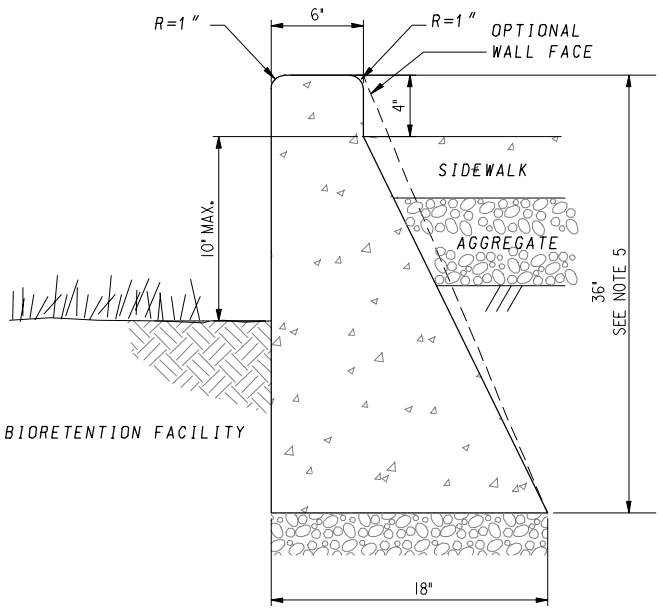
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 602.08



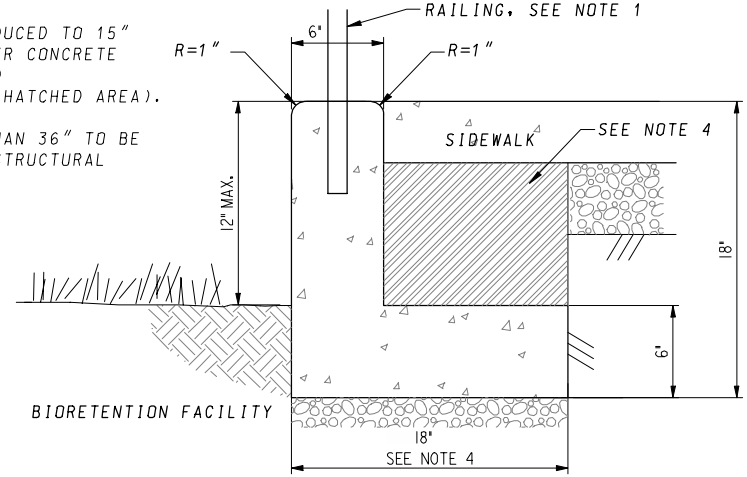
GRAVITY WALL (FLUSH)



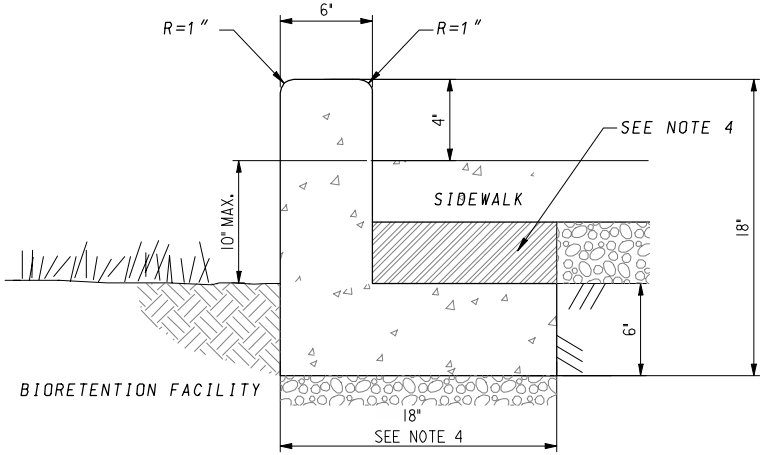
GRAVITY WALL (WITH REVEAL)

NOTES:

1. WHEN FLUSH WALLS ARE SELECTED, PROVIDE RAILING OR FENCE AS REQUIRED.
2. WHEN WALLS WITH REVEALS ARE SELECTED, PROVIDE BREAKS IN REVEAL AS SHOWN ON PLANS TO ALLOW FOR SIDEWALK RUNOFF INTO STORMWATER MANAGEMENT FACILITY.
3. FINISH ALL EXPOSED CONCRETE SURFACES.
4. BASE MAY BE REDUCED TO 15" WIDTH IF THICKER CONCRETE SECTION IS USED (DESIGNATED BY HATCHED AREA).
5. WALLS DEEPER THAN 36" TO BE DESIGNED BY A STRUCTURAL ENGINEER.



L-WALL (FLUSH)

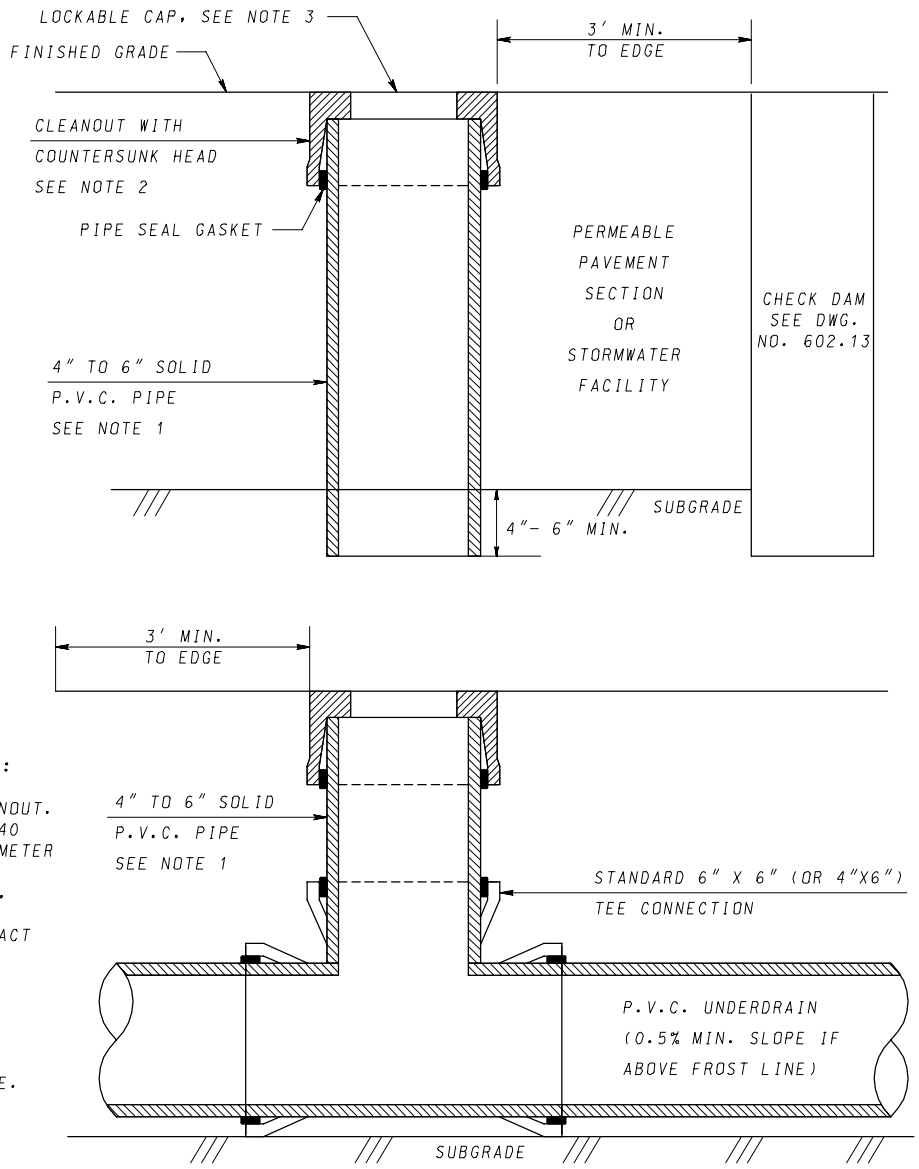


L-WALL (WITH REVEAL)

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER	**BIORETENTION FACILITY EDGE TREATMENT OPTIONS – 2** DRAFT Feb 28 2013
DATE	APPR.			
REVISED			APPROVED: _____	
ISSUED:				
		REFERENCE	CHIEF TRANSPORTATION ENGINEER	

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 602.09



CLEANOUT /OBSERVATION WELL

NOTES:

EACH OBSERVATION WELL / CLEANOUT SHALL INCLUDE THE FOLLOWING:

1. FOR AN UNDERGROUND FLUSH MOUNTED OBSERVATION WELL / CLEANOUT. PROVIDE A TUBE MADE OF NON-CORROSIVE MATERIAL, SCHEDULE 40 P.V.C. OR EQUAL, AT LEAST 3 FEET LONG WITH AN INSIDE DIAMETER OF 4 TO 6 INCHES. PERFORATED PIPE IS REQUIRED FOR ALL OBSERVATION WELLS OR CLEANOUTS USED AS OBSERVATION WELLS.
2. THE TUBE SHALL HAVE A FACTORY ATTACHED BRASS OR HIGH IMPACT PLASTIC HEAD WITH RIBS TO PREVENT ROTATION WHEN REMOVING LOCKABLE CAP.
3. LOCKABLE CAP SHALL BE BRASS AND RATED FOR HS-20 LOADING IN VEHICULAR AREAS, MOUNTED FLUSH TO GRADE. LOCKABLE CAP MAY BE HIGH IMPACT PLASTIC THAT IS UV STABLE IN NON-VEHICULAR LOADING AREA, AT LEAST 6 INCHES ABOVE GRADE.
4. CONCRETE APRONS AROUND CLEANOUTS ARE OPTIONAL.

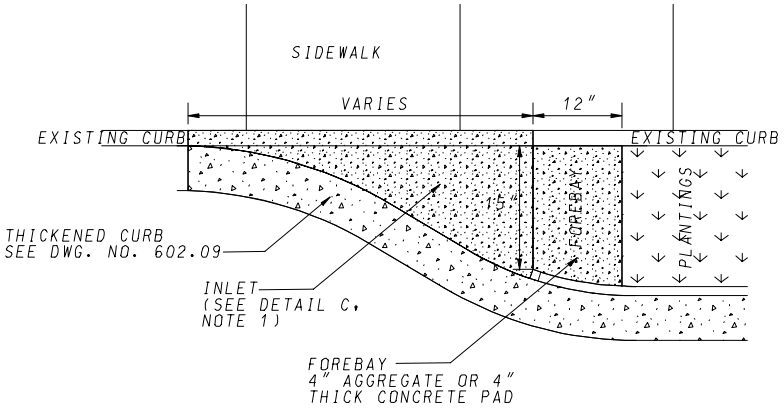
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

STORMWATER FACILITY UNDERDRAIN PIPE RISERS

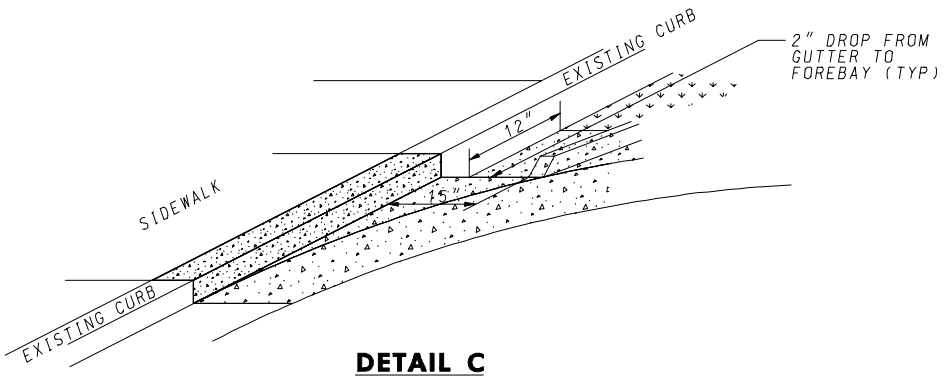
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

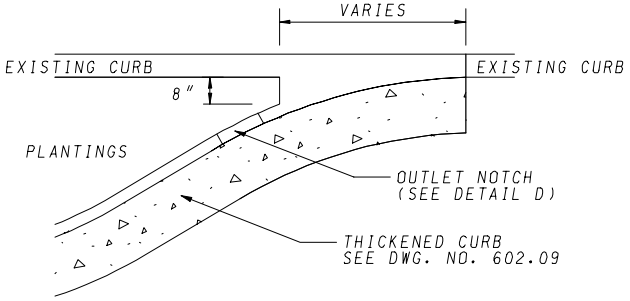
DWG. NO. 603.01



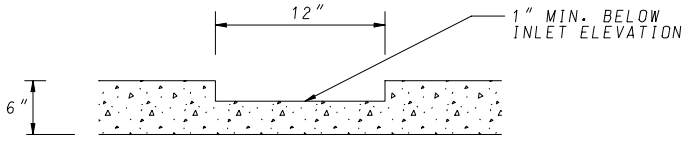
DETAIL A
INLET PLAN VIEW



DETAIL C
INLET ISOMETRIC VIEW



DETAIL B
OUTLET CURB PLAN



DETAIL D
OUTLET NOTCH

NOTES

1. INLET MAY BE MODIFIED TO METER THE AMOUNT OF FLOW ENTRY TO STORMWATER FACILITY

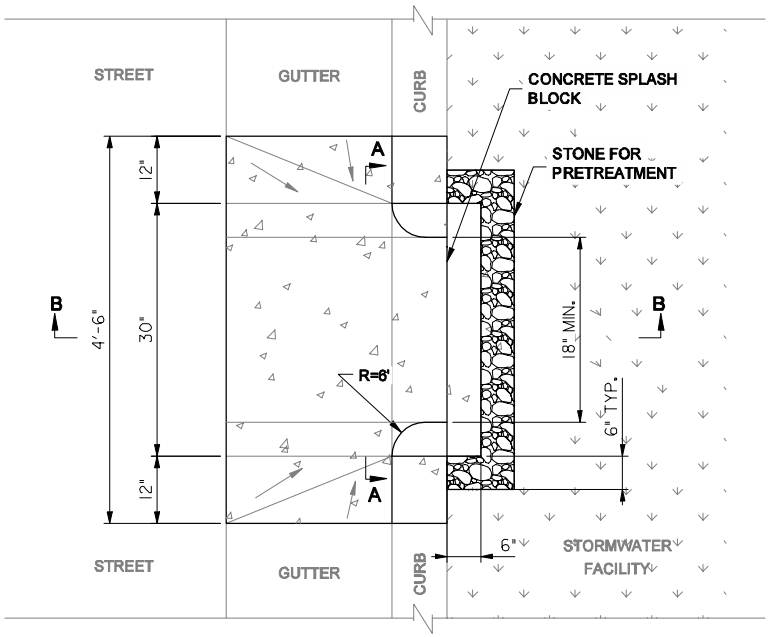
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

INLET & OUTLET DETAILS FOR CURB EXTENSIONS

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

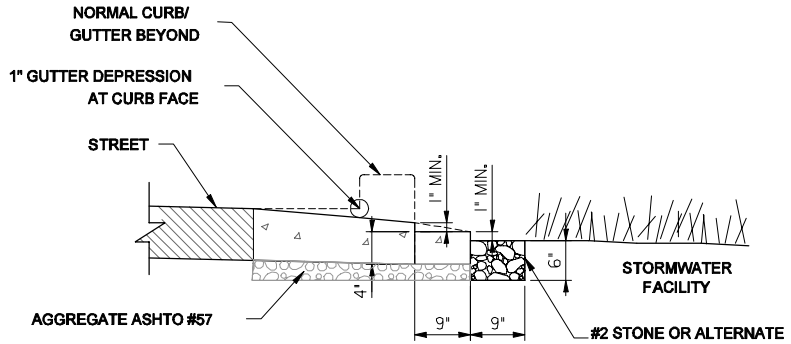
DWG. NO. 609.10



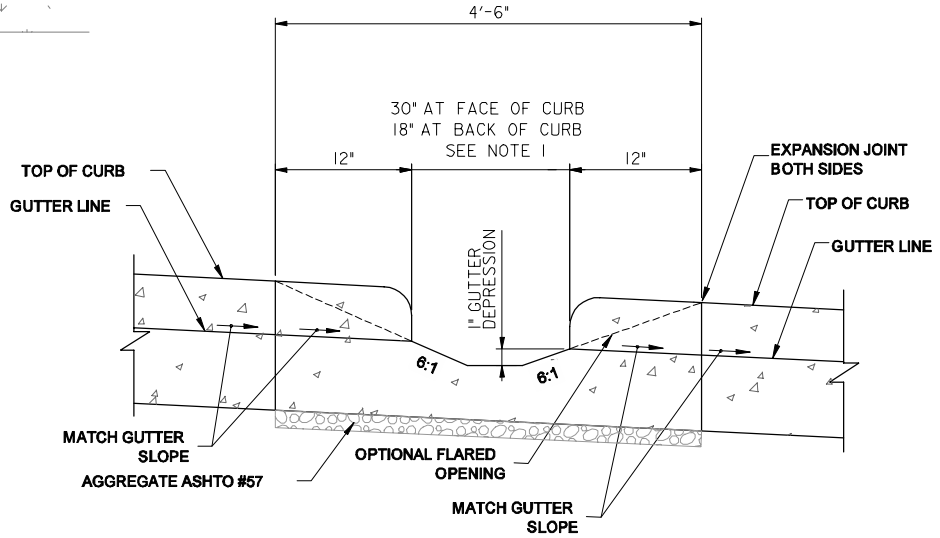
PLAN VIEW

NOTE 1:

CURB OPENING DIMENSION SHOWN IS A MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 1.2" RAINFALL (OFFLINE) OR TO CONTROL SPREAD IN THE GUTTER PAN (ONLINE) PER DDOT DESIGN AND ENGINEERING MANUAL.



SECTION B-B



SECTION A-A

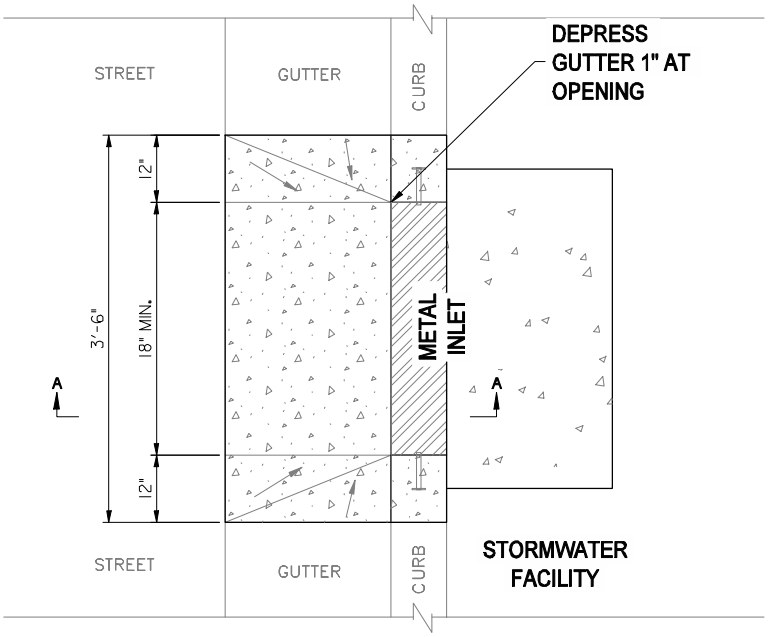
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

CURB CUT WITH SPLASH BLOCK

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

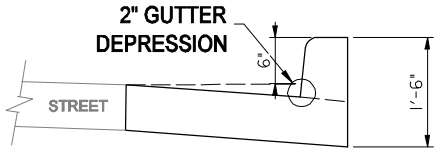
DWG. NO. 609.11



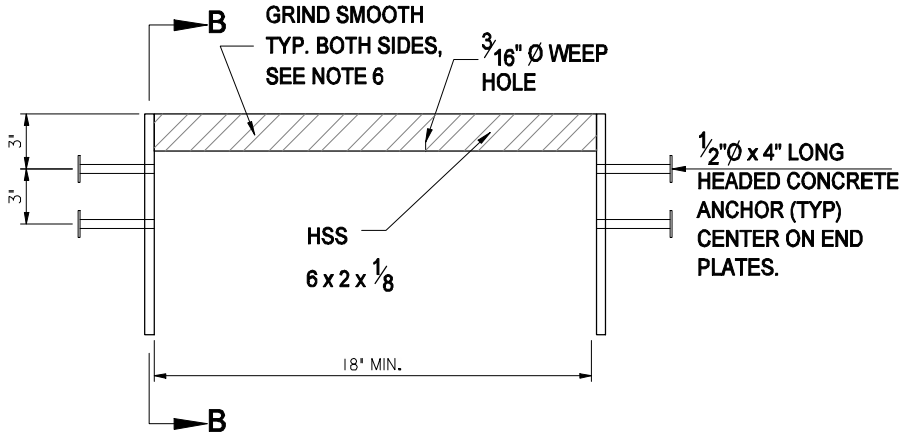
PLAN VIEW

NOTES:

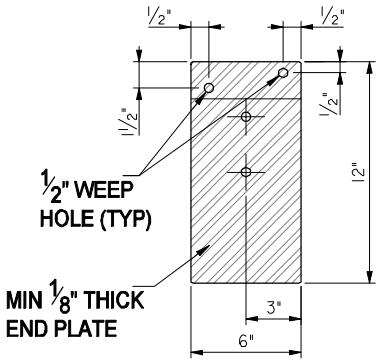
1. HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF ASTM A-108.
2. HSS 6 x 2 x 1/8 CHANNEL SHALL MEET THE REQUIREMENTS OF ASTM A-500 GRADE B.
3. END PLATES SHALL MEET THE REQUIREMENTS OF ASTM A-36.
4. ENTIRE ASSEMBLY SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A-123.
5. DESIGN VERTICAL WHEEL LOAD IS 8.5 KIPS (1/2 OF TANDEM AXLE WEIGHT SPECIFIED IN FHWA-HOP-06-105).
6. SINGLE BEVEL GROOVE WELD.



SECTION A-A



ELEVATION



SECTION B-B

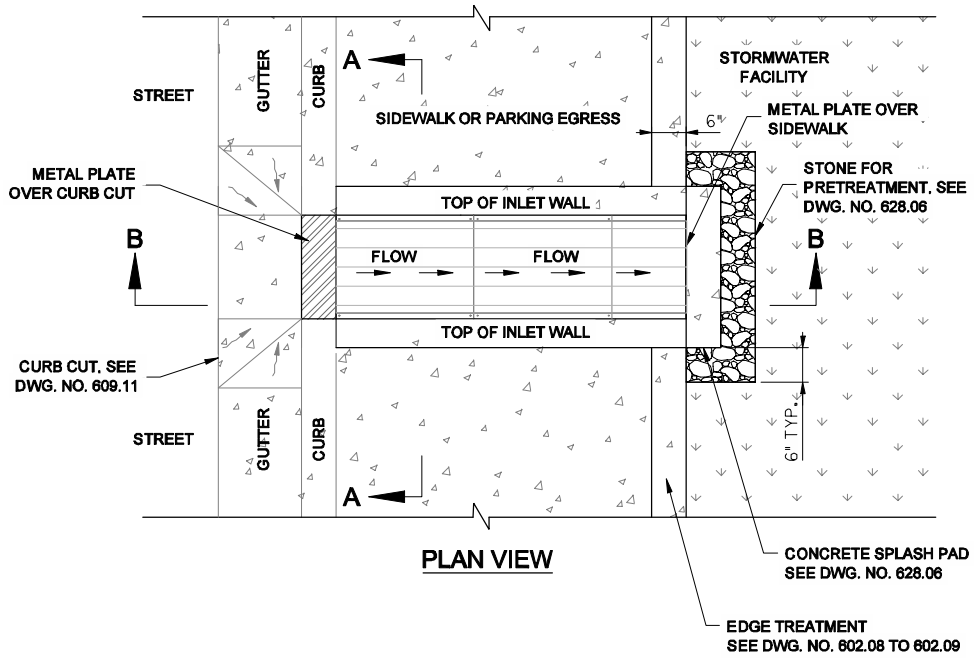
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

METAL PLATE OVER CURB CUT

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

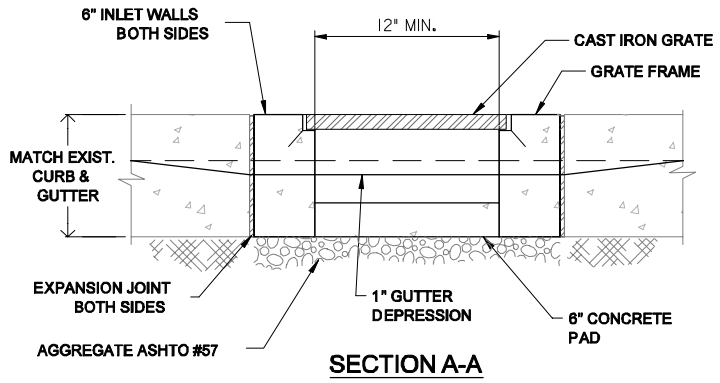
DWG. NO. 609.12



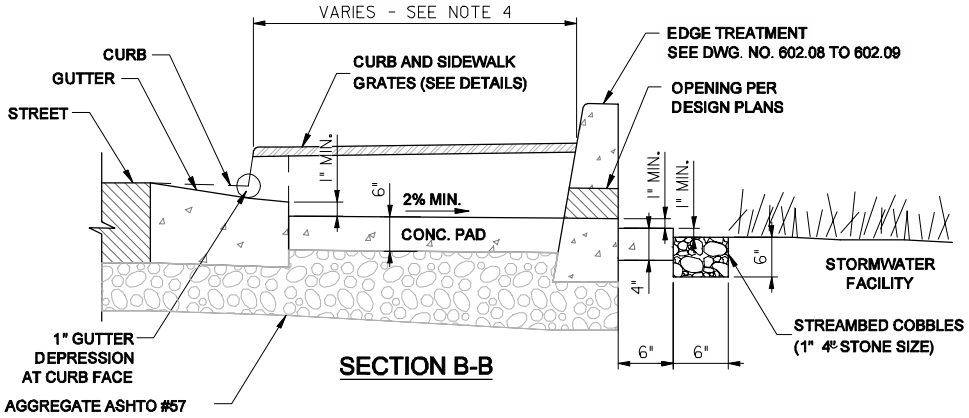
PLAN VIEW

NOTES:

1. CURB OPENING DIMENSION SHOWN IS A MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 1.2" RAINFALL (OFFLINE) OR TO CONTROL SPREAD IN THE GUTTER PAN (ONLINE) PER DDOT DESIGN AND ENGINEERING MANUAL.
2. REFER TO DESIGN PLANS FOR SIZE AND TYPE OF GRATE.
3. GRATE TO BE BOLT DOWN (THEFT PROTECTED) BUT REMOVABLE.
4. FOR DIMENSIONS AND SLOPES, SEE DESIGN PLANS.



SECTION A-A



SECTION B-B

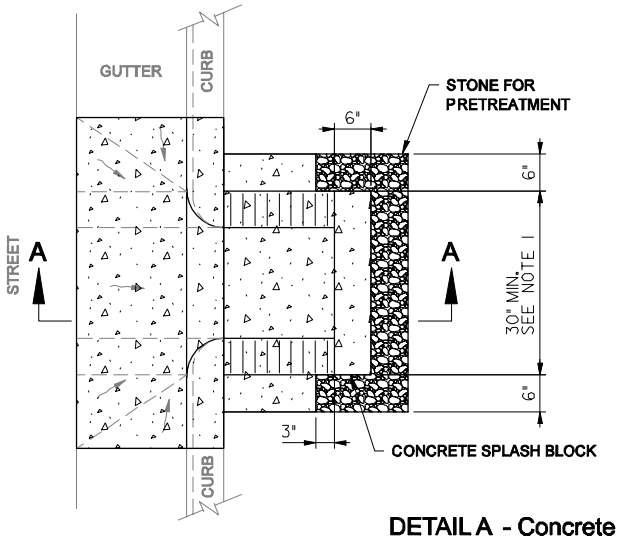
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

CURB CUT WITH TRENCH DRAIN

DRAFT Feb 28 2013

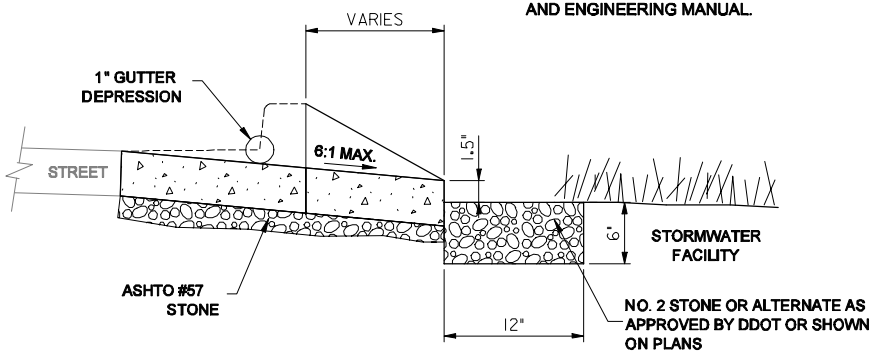
DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.13



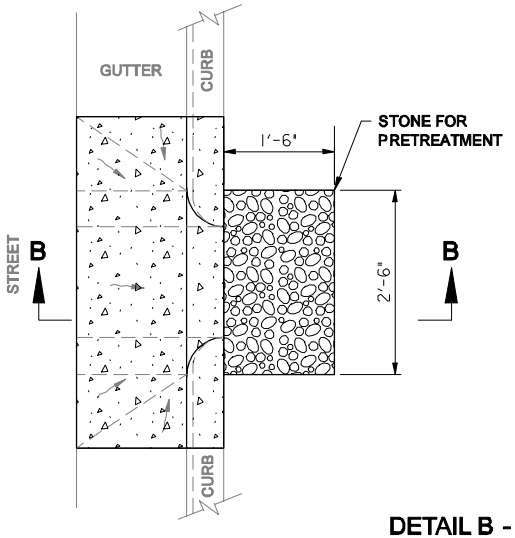
NOTE 1:

CURB OPENING DIMENSION SHOWN IS A MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 1.2" RAINFALL (OFFLINE) OR TO CONTROL SPREAD IN THE GUTTER PAN (ONLINE) PER DDOT DESIGN AND ENGINEERING MANUAL.



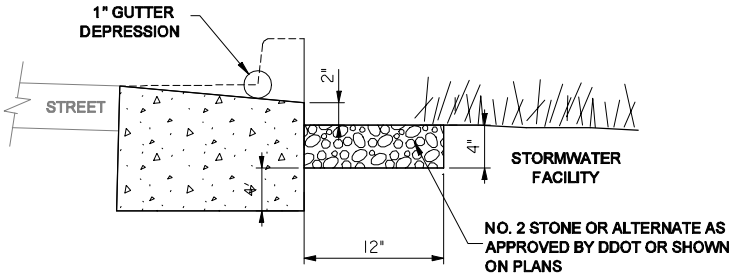
DETAIL A - Concrete Flume with Wingwalls

SECTION A-A



NOTE 1:

CURB OPENING DIMENSION SHOWN IS A MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 1.2" RAINFALL (OFFLINE) OR TO CONTROL SPREAD IN THE GUTTER PAN (ONLINE) PER DDOT DESIGN AND ENGINEERING MANUAL.



DETAIL B - Concrete Flume with Rock Splash Pad

SECTION B-B

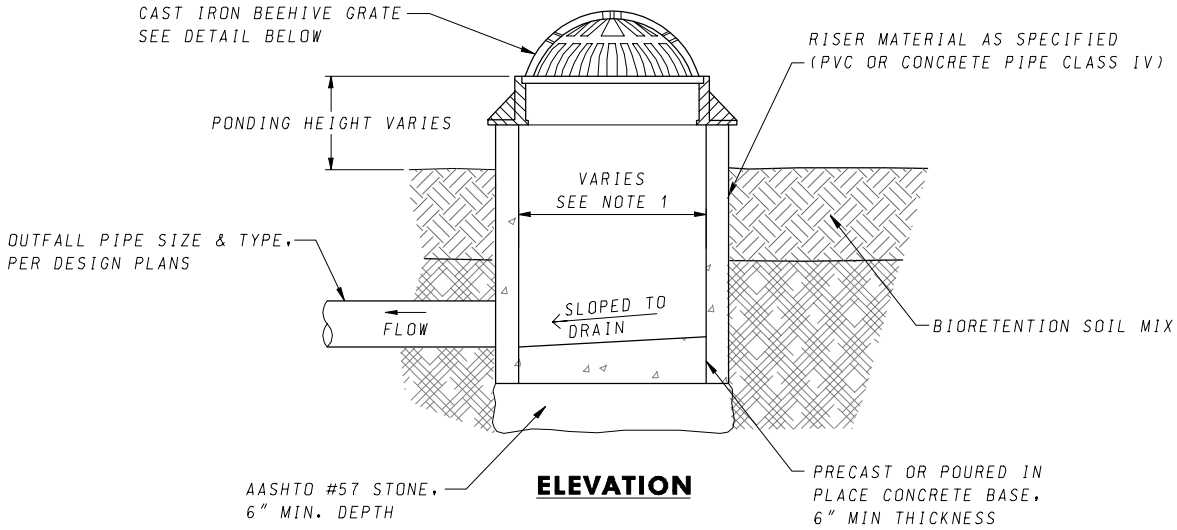
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

SPLASH PAD ALTERNATIVES

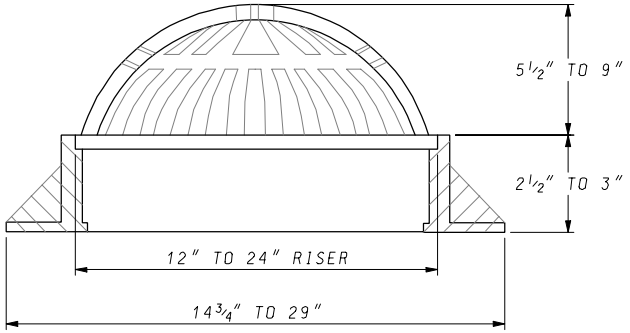
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 628.20



ELEVATION



CAST IRON BEEHIVE GRATE DETAIL

SEE NOTE 1

NOTES:

1. MINIMUM OPENING SIZE IN GRATE SHALL BE 1 1/4" INCHES.
2. SIZE OF GRATE SHALL MATCH SIZE OF THE RISER, PER PLANS, SHALL FIT SNUG AND WATERTIGHT, AND SHALL BE REMOVEABLE FOR MAINTENANCE PURPOSES.

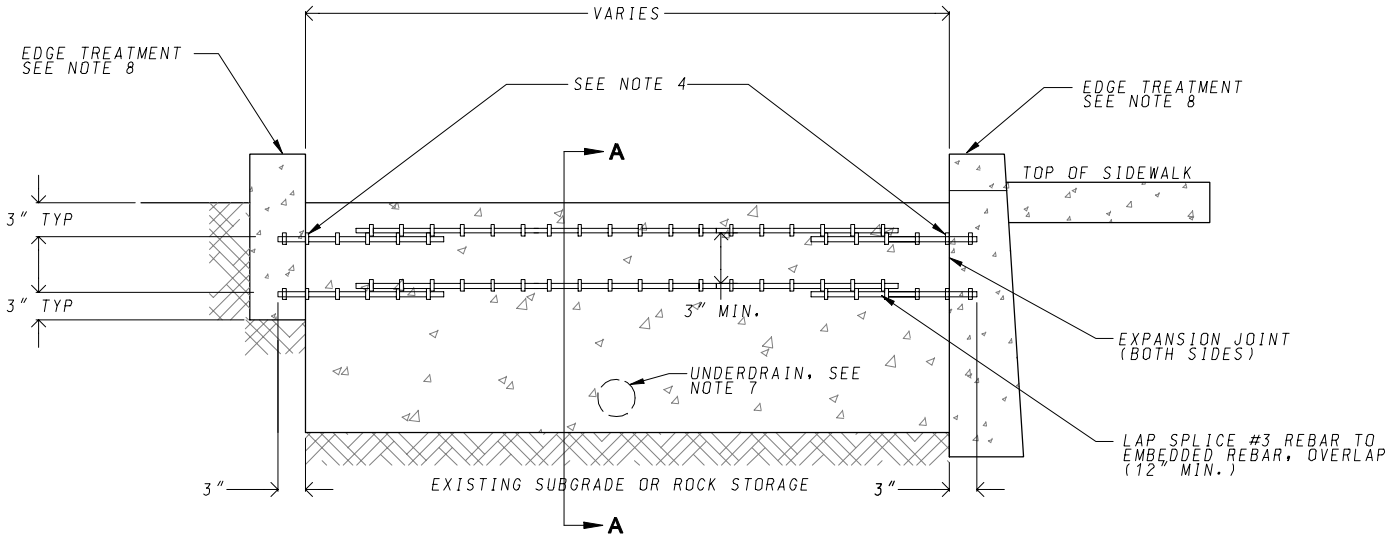
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

OVERFLOW RISER WITH BEEHIVE GRATE

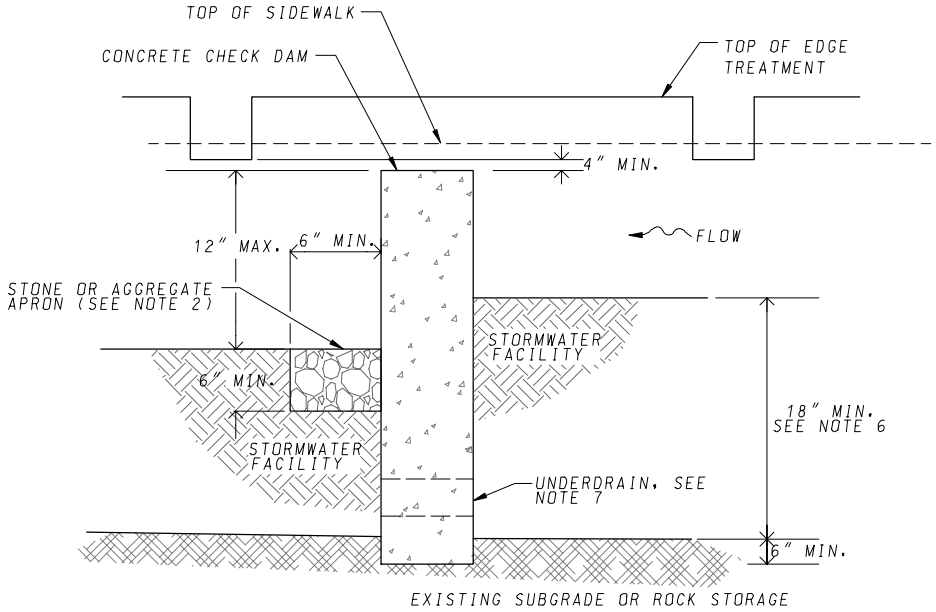
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 310.17



ELEVATION



SECTION A-A

NOTES:

1. LOCATIONS, HEIGHTS, AND WIDTHS OF CHECK DAMS TO BE SPECIFIED IN THE DESIGN PLANS.
2. SIZE OF STONE OR AGGREGATE APRON TO BE SPECIFIED IN THE DESIGN PLANS.
3. CONCRETE CHECK DAM SHALL BE CONTINUOUS (NO JOINTS).
4. EMBED #3 REBAR 3" MIN. INTO CURB OR PLANTER WALL ON BOTH SIDES (2 PER SIDE).
5. THIS CHECK DAM MAY BE USED IN PLANTERS OR CURB EXTENSIONS.
6. DEPTH OF CHECK DAM VARIES DEPENDING ON THE DEPTH OF THE FACILITY.
7. IF PRESENT, UNDERDRAIN TO PASS THROUGH CHECK DAM IN A NON-PERFORATED PVC PIPE.
8. FOR EDGE TREATMENT OPTIONS, SEE DWG. NO. 602.08 AND 602.09.

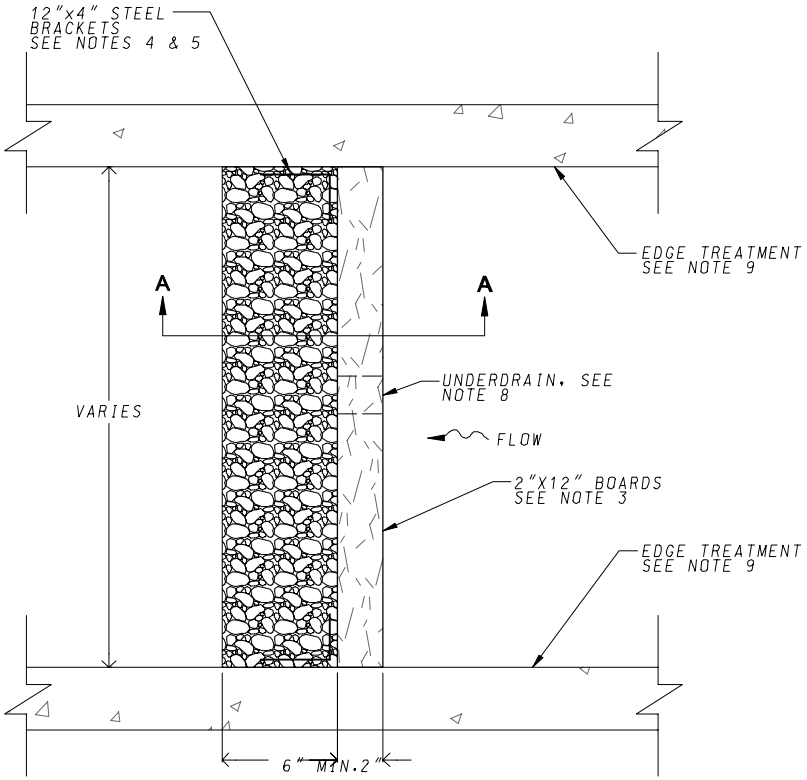
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

CONCRETE CHECK DAM

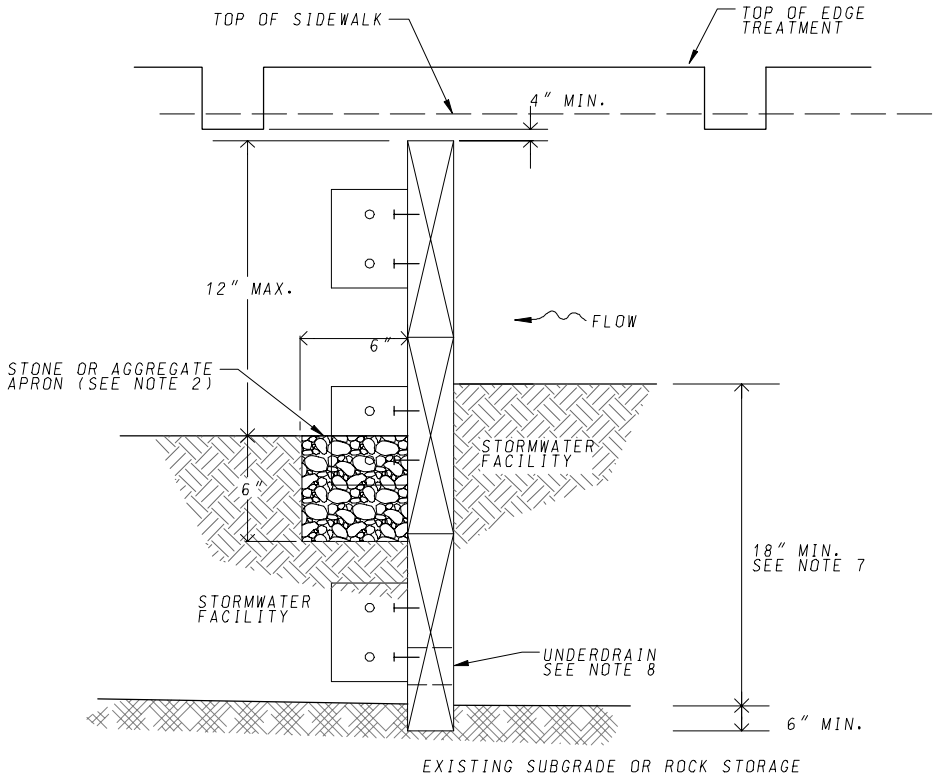
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 602.10



ELEVATION



SECTION A-A

NOTES:

1. LOCATIONS, HEIGHTS, AND WIDTHS OF CHECK DAMS TO BE SPECIFIED IN THE DESIGN PLANS.
2. SIZE OF STONE OR AGGREGATE APRON TO BE SPECIFIED IN THE DESIGN PLANS.
3. BOARDS TO BE COMPOSITE MATERIALS AND CONTINUOUS ALONG ITS LENGTH. OTHER MANUFACTURED PRODUCTS MAY BE USED WITH DDOT APPROVAL.
4. ALL FASTENERS TO BE STAINLESS STEEL OR GALVANIZED.
5. STAINLESS STEEL GALVANIZED L-BRACKET TO BE MADE OF $^{3}/_{16}$" MIN. STEEL.
6. THIS CHECK DAM MAY BE USED IN PLANTERS OR CURB EXTENSIONS.
7. DEPTH OF CHECK DAM VARIES DEPENDING ON THE DEPTH OF THE FACILITY.
8. IF PRESENT, UNDERDRAIN TO PASS THROUGH CHECK DAM IN A NON-PERFORATED PVC PIPE.
9. FOR EDGE TREATMENT OPTIONS, SEE DWG. NO. 602.08 AND 602.09.

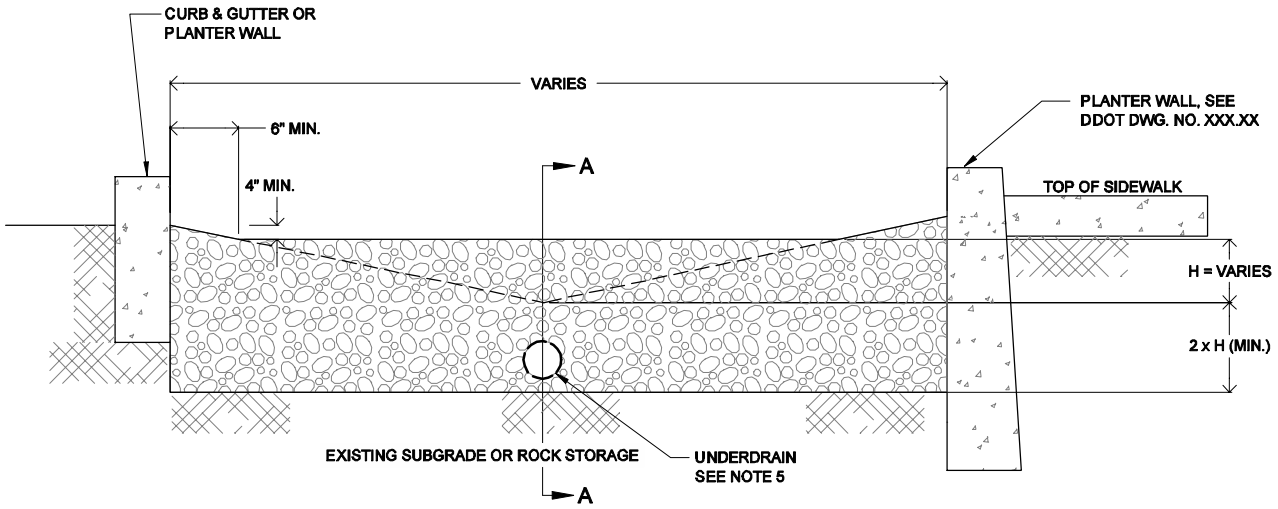
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

COMPOSITE WOOD CHECK DAM

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

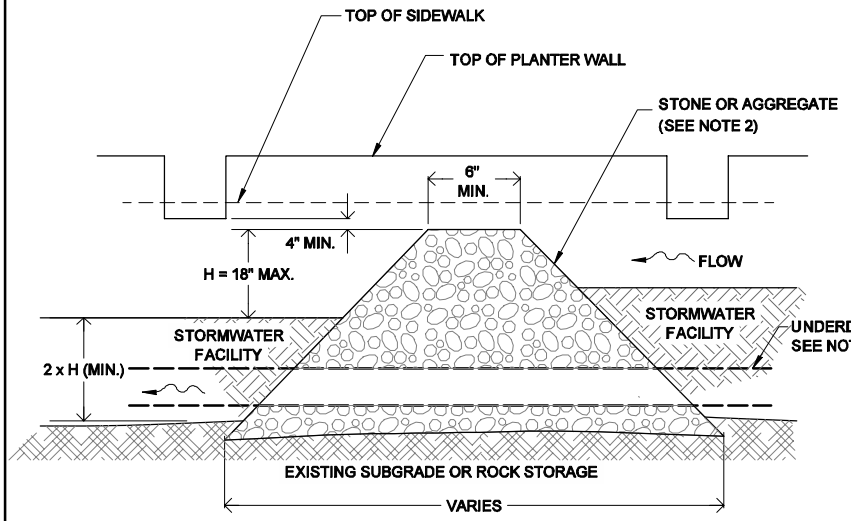
DWG. NO. 602.11



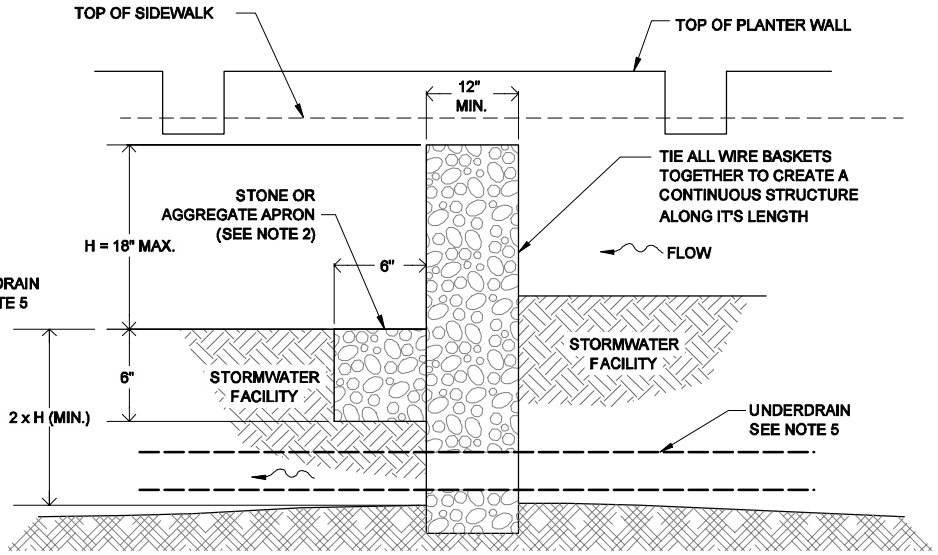
ELEVATION

NOTES

1. LOCATIONS, HEIGHTS, AND WIDTHS OF CHECK DAMS TO BE SPECIFIED IN THE DESIGN PLANS.
2. SIZE OF STONE OR AGGREGATE APRON AND WIRE MESH TO BE SPECIFIED IN THE DESIGN PLANS.
3. THIS CHECK DAM MAY BE USED IN SWALES, PLANTERS, AND CURB EXTENSIONS.
4. DEPTH OF CHECK DAM VARIES DEPENDING ON DEPTH OF FACILITY.
5. IF PRESENT, UNDERDRAIN TO PASS THROUGH CHECK DAM IN A NON-PERFORATED PVC PIPE.



SLOPED SECTION A-A



GABION SECTION A-A

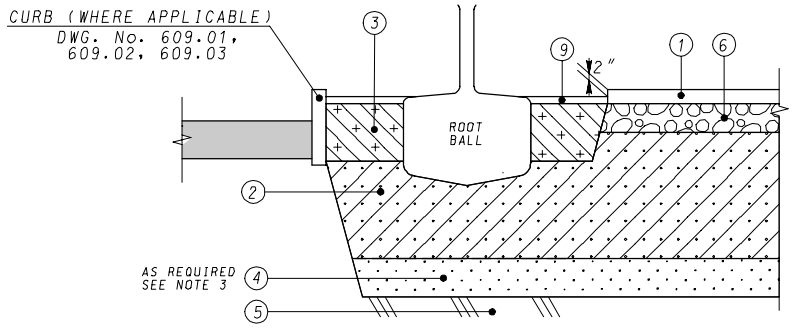
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

ROCK CHECK DAM

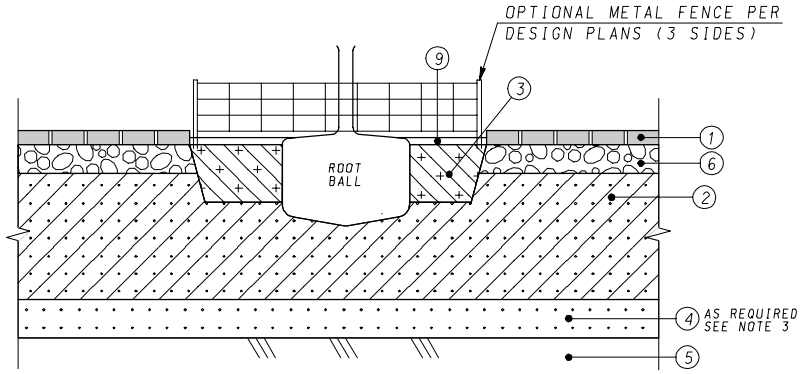
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 602.12



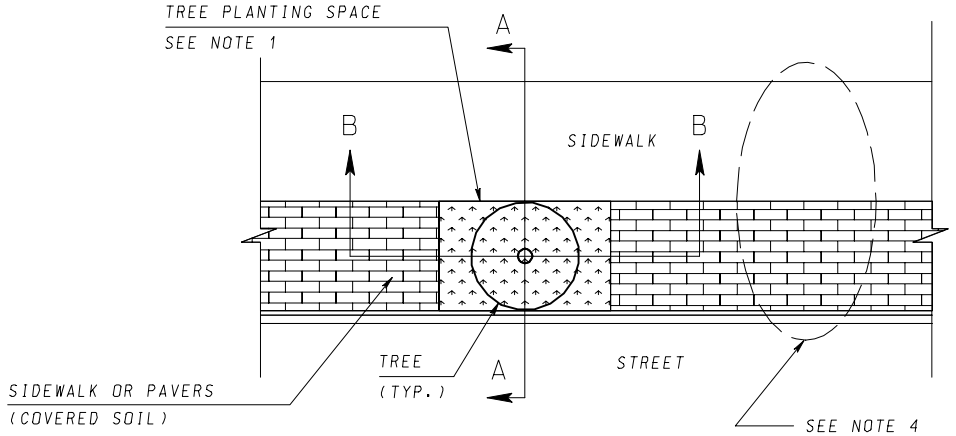
SECTION A–A



SECTION B–B

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSIONS: 4'x6'.
2. MAXIMUM WATERSHED AREA: 4.0 TIMES AREA OF THE OPEN TREE PLANTING AREA.
3. SEE DWG 611.22 FOR BOTTOM SAND LAYER AND SUBSURFACE DRAINAGE REQUIREMENTS.
4. FOR SIDEWALK OVER SBSS DETAIL OPTIONS, SEE DWGS. NO. 611.23 AND 611.24.



PLAN VIEW

LEGEND:

1. SIDEWALK / PAVERS
2. SAND-BASED STRUCTURAL SOIL (SBSS) – 30" MIN.
3. PLANTING SOIL – 12"
4. SAND – 0" TO 12" (AS REQUIRED)
5. SCARIFIED SUBSOIL – 4"
6. CRUSHED STONE, DOUBLE WASHED NO. 57 – 6"
7. CHOKER LAYER
8. GEOTEXTILE
9. MULCH – 3"

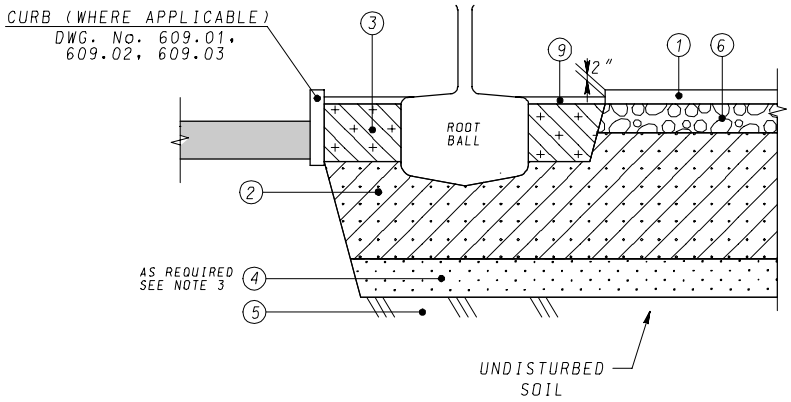
			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

TREE IN SIDEWALK WITH COVERED SOIL VOLUME

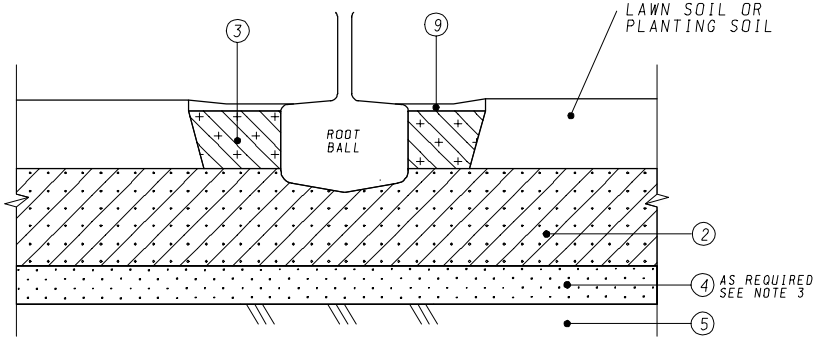
DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

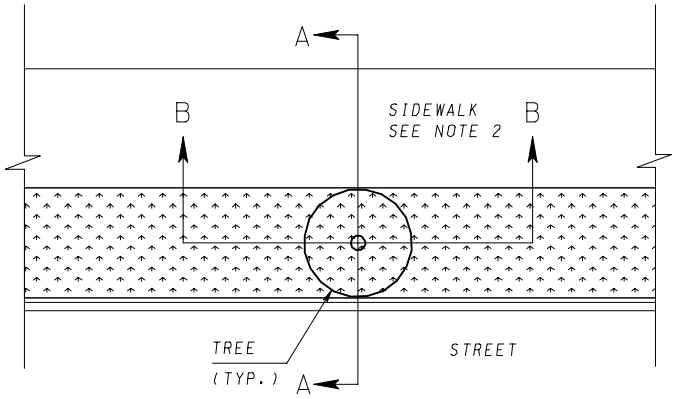
DWG. NO. 611.20



SECTION A–A



SECTION B–B



PLAN VIEW

NOTES:

1. MAXIMUM WATERSHED AREA: 4.0 TIMES AREA OF THE CONTINUOUS PLANTING STRIP.
2. WHERE IMPERVIOUS SIDEWALK WIDTH IS GREATER THAN 8', LINEAR GRATES OR SIDEWALK CATCH BASINS ARE REQUIRED FOR REDISTRIBUTION OF RAIN WATER. SEE DWGS NO. 611.23 & 611.24.
3. SEE DWG 611.22 FOR BOTTOM SAND LAYER AND SUBSURFACE DRAINAGE REQUIREMENTS.

LEGEND:

1. SIDEWALK / PAVERS
2. SAND-BASED STRUCTURAL SOIL (SBSS) – 30" MIN.
3. PLANTING SOIL – 12"
4. SAND – 0" TO 12" (AS REQUIRED)
5. SCARIFIED SUBSOIL – 4"
6. CRUSHED STONE, DOUBLE WASHED NO. 57 – 6"
7. CHOKER LAYER
8. GEOTEXTILE
9. MULCH – 3"

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

TREE IN CONTINUOUS STRIP WITH SOIL VOLUME UNDER SIDEWALK

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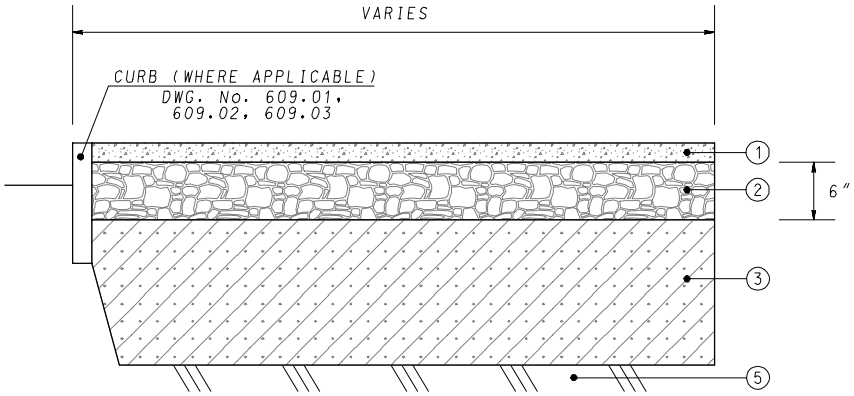
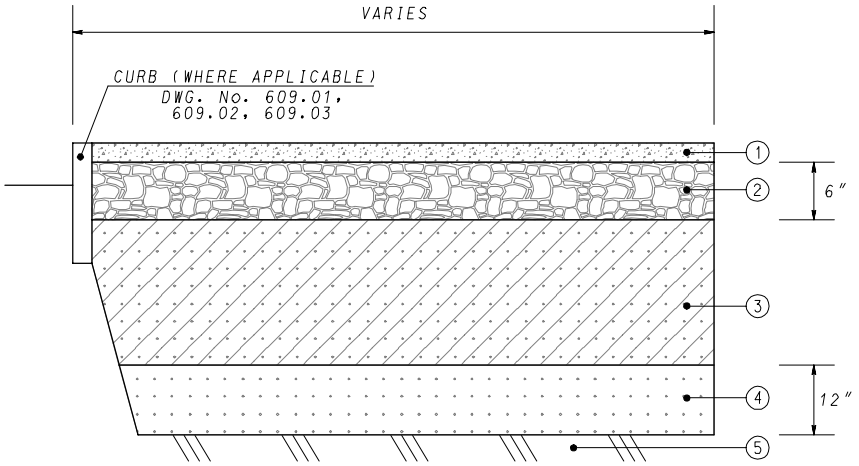
DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.21



SBSS OVER SCARIFIED SOIL

NCRS HYDROLOGIC SOIL GROUP A OR B



SBSS OVER SAND OVER SCARIFIED SOIL

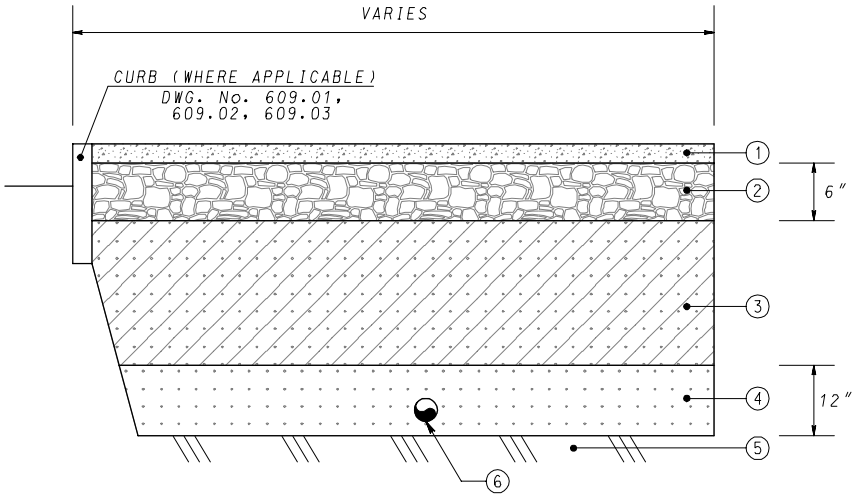
NCRS HYDROLOGIC SOIL GROUP C

NOTES:

1. IF NCRS HYDROLOGIC SOIL GROUP IS A OR B, OR MEASURED SUSBOIL INFILTRATION RATE IS 0.5 IN/HR OR GREATER, SBSS MAY BE PLACED OVER SCARIFIED SUBSOIL.

2. IF NCRS HYDROLOGIC SOIL GROUP IS C, OR MEASURED SUSBOIL INFILTRATION RATE IS BETWEEN THAN 0.14 AND 0.5 IN/HR, SBSS SHALL BE PLACED OVER 12 INCHES OF SAND OVER SCARIFIED SUBSOIL.

3. IF NCRS HYDROLOGIC SOIL GROUP IS D, OR MEASURED SUBSOIL INFILTRATION RATE IS LESS THAN 0.14 IN/HR, PERFORATED 4" PVC UNDERDRAIN WRAPPED IN GEOTEXTILE SHALL BE EMBEDDED IN SAND AND CONNECTED TO THE STORM DRAINAGE SYSTEM.



SBSS OVER SAND WITH DRAIN OVER SCARIFIED SOIL

NCRS HYDROLOGIC SOIL GROUP D

LEGEND:

1. SIDEWALK OR PAVERS
2. CRUSHED STONE - DOUBLE WASHED NO. 57
3. SAND-BASED STRUCTURAL SOIL (SBSS) - 30" MIN.
4. SAND
5. SCARIFIED SUBSOIL - 4"
6. 4" PERFORATED PVC UNDERDRAIN (SCHEDULE 40)

DATE	APPR.		RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
REVISED			APPROVED: _____ CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

TREE SPACE COVERED SOIL VOLUME SUBSURFACE DRAINAGE OPTIONS

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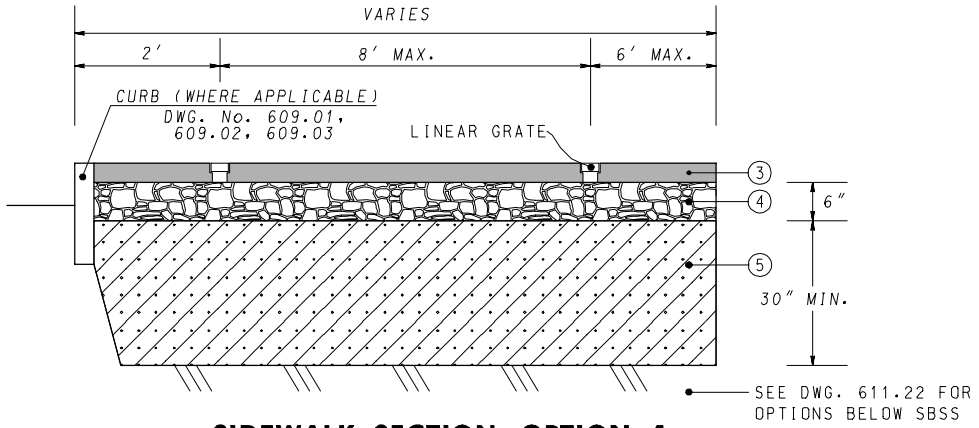
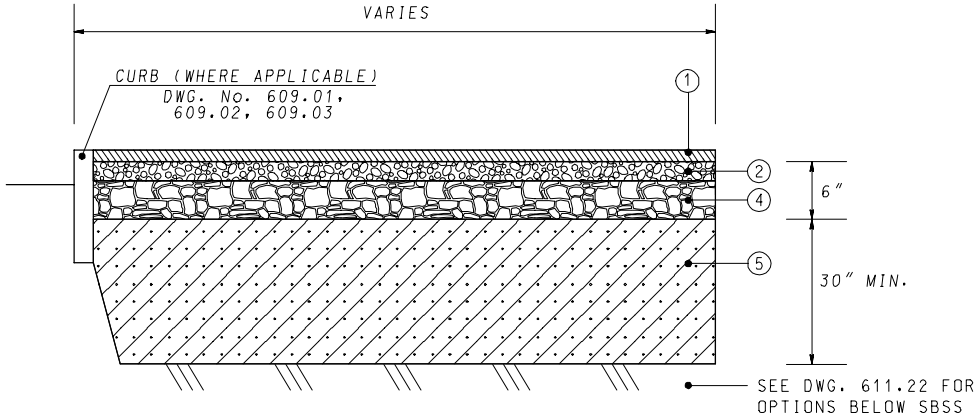
DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.22

NOTE:
FOR PLAN VIEW AND ADDITIONAL DETAIL, SEE DWG. NO. 611.20



SIDEWALK SECTION OPTION 1:
IMPERVIOUS PAVEMENT COVER
WITH LINEAR GRATES



SIDEWALK SECTION OPTION 2:
PERVIOUS PAVEMENT COVER

LEGEND:

1. PERVIOUS PAVEMENT SURFACE/WEARING COURSE
2. PERVIOUS PAVEMENT BEDDING / AGGREGATE BASE
3. IMPERVIOUS SIDEWALK
4. CRUSHED STONE - NO. 57 DOUBLE WASHED AGGREGATE
5. SAND-BASED STRUCTURAL SOIL (SBSS)

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

COVERED SOIL VOLUME 1 – PERVIOUS COVER OR IMPERVIOUS COVER WITH LINEAR GRATES

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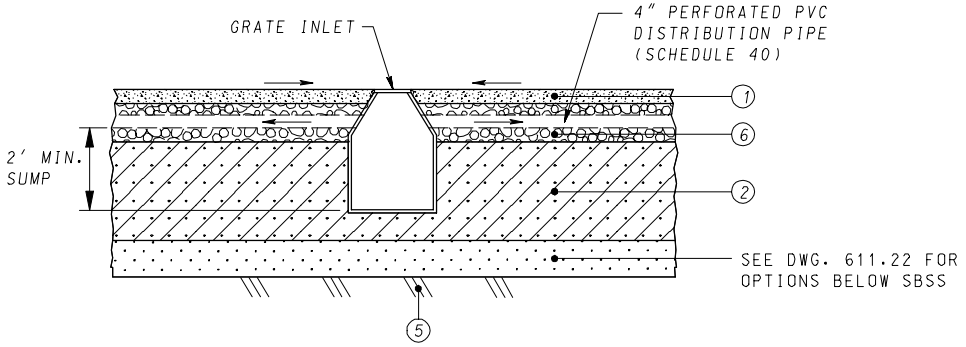
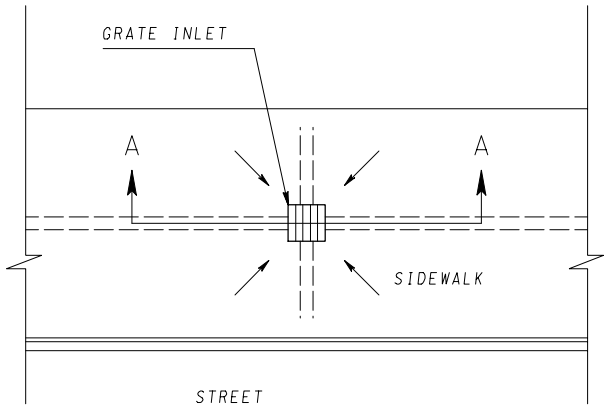
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.23



SECTION A-A



PLAN VIEW

LEGEND:

1. SIDEWALK
2. SAND-BASED STRUCTURAL SOIL (SBSS) - 30" MIN.
3. BIORETENTION SOIL
4. PLANTING SOIL
5. SCARIFIED SUBSOIL - 4"
6. CRUSHED STONE, DOUBLE WASHED NO. 57 - 6"
7. CHOKER LAYER
8. GEOTEXTILE
9. MULCH - 3"

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: _____
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

COVERED SOIL VOLUME 2 - IMPERVIOUS COVER WITH SIDEWALK CATCH BASIN

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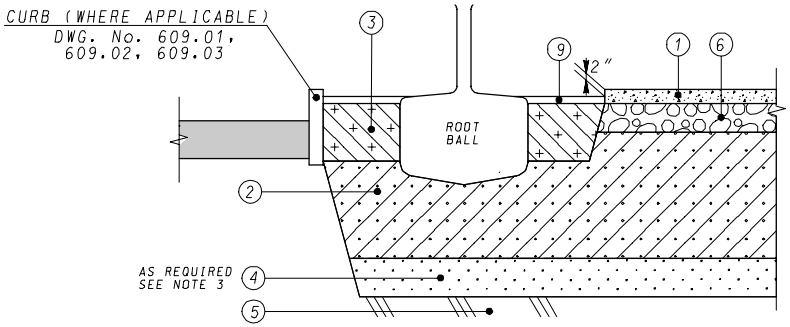
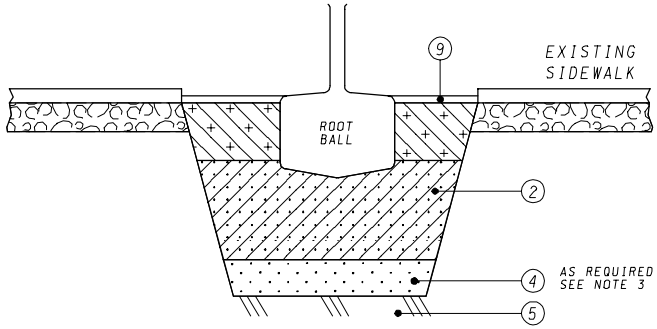
DEPARTMENT OF TRANSPORTATION

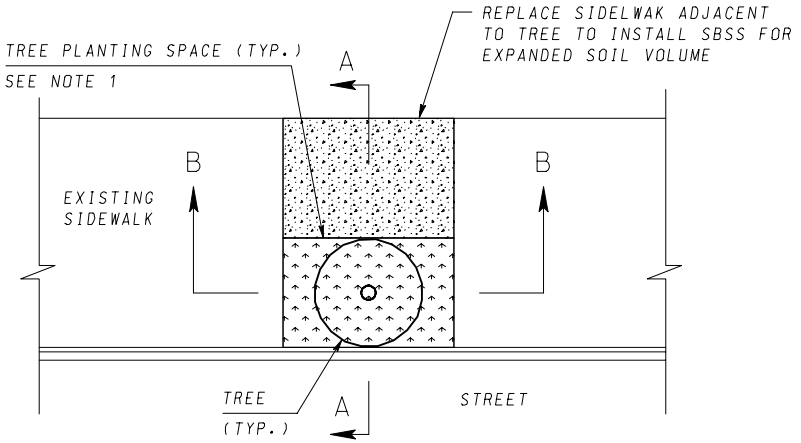
DWG. NO. 611.24



SECTION A–A



SECTION B–B



PLAN VIEW

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSIONS: 6'x9'.
2. MAXIMUM WATERSHED AREA: 4.0 TIMES AREA OF THE OPEN TREE PLANTING AREA.
3. SEE DWG 611.22 FOR BOTTOM SAND LAYER AND SUBSURFACE DRAINAGE REQUIREMENTS.

LEGEND:

1. REPLACED SIDEWALK – TYPE PER DESIGN PLANS
2. SAND-BASED STRUCTURAL SOIL (SBSS) – 30" MIN.
3. PLANTING SOIL – 12"
4. SAND – 0" TO 12" (AS REQUIRED)
5. SCARIFIED SUBSOIL – 4"
6. CRUSHED STONE, DOUBLE WASHED NO. 57 – 6"
7. CHOKER LAYER
8. GEOTEXTILE
9. MULCH – 3"

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

TREE PLANTING LID RETROFIT 1 – CONFINED TREE SPACE

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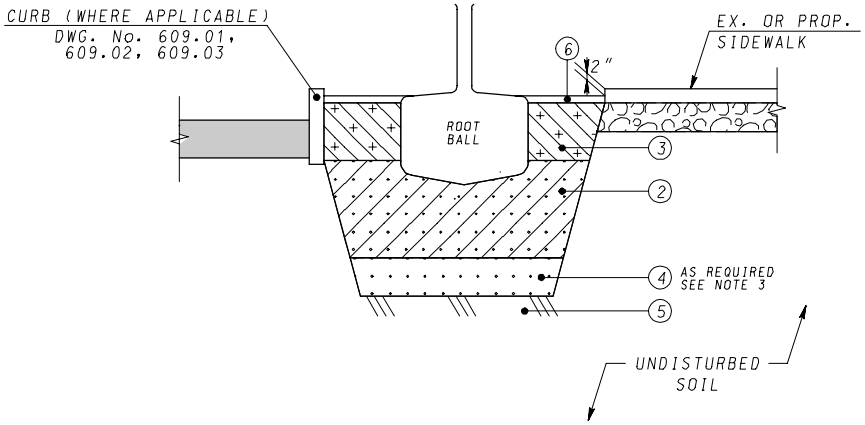
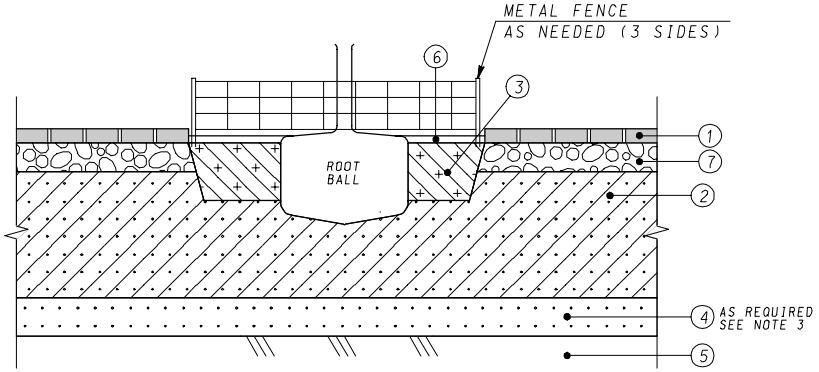
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.26



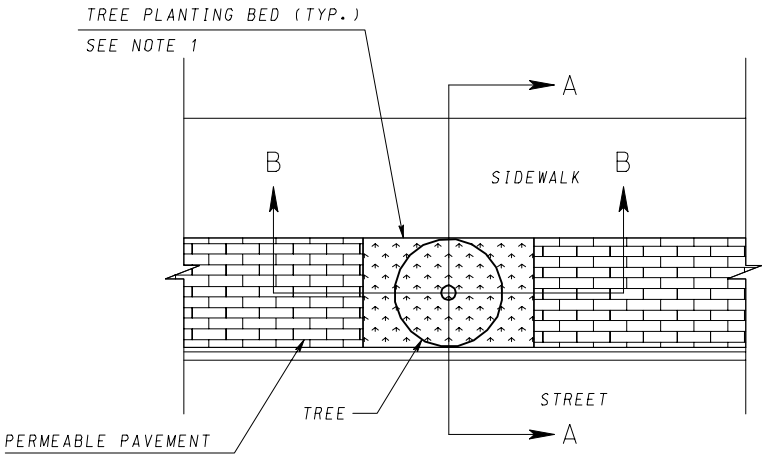
SECTION A–A



SECTION B–B

NOTES:

1. MINIMUM TREE PLANTING BED DIMENSIONS: 4′ x 6′.
2. MAXIMUM WATERSHED AREA: 3.0 TIMES AREA OF THE TREE PLANTING BED.
3. IF SUBGRADE INFILTRATION RATE IS LESS THAN 0.5 INCH PER HOUR, OR IF THE SOILS ARE MAPPED BY USGS AS GROUP C OR D, SAND LAYER IS REQUIRED.
4. SEE DWG 608.06, 608.07, OR 608.08 FOR PERMEABLE PAVEMENT DETAIL OPTIONS.



PLAN VIEW

LEGEND:

1. PERMEABLE PAVEMENT
2. SAND-BASED STRUCTURAL SOIL (SBSS) - 30" MIN.
3. PLANTING SOIL - 12"
4. SAND - 12" (AS REQUIRED)
5. SCARIFIED SUBSOIL - 4"
6. MULCH - 3"
7. PERMEABLE PAVEMENT BASE

			RECOMMENDED: _____ DEPUTY CHIEF ENGINEER
DATE	APPR.		
REVISED			APPROVED: _____
ISSUED:			
		REFERENCE	CHIEF TRANSPORTATION ENGINEER

TREE PLANTING LID RETROFIT 2 TREE SPACE WITH EXPANDED VOLUME

DRAFT Feb 28 2013

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.27