

# CITY of DALLAS

## Standard Drawings

### & Oregon Standard Drawing Amendments

#### Low Impact Development Approaches (LIDA)

- RD950 - Design Steps, General Notes & Growing Medium
- RD951 - LIDA Sizing Form
- RD952 - Flow Through Planter
- RD953 - Infiltration Planter
- RD957 - Rain Garden
- RD959 - Porous Pavement
- RD972 - Standard Street Tree Detail



April 2016



**DESIGN STEPS FOR LIDA FACILITIES:**

1. DETERMINE THE IMPERVIOUS AREA REQUIRING TREATMENT. REFER TO (CHAPTER # OR SPECS?) OF THE STANDARD DESIGN MANUAL FOR ASSISTANCE IN DETERMINING OR CALCULATING THE IMPERVIOUS AREA REQUIRING TREATMENT.
2. DEDUCT IMPERVIOUS AREA LIDA CREDITS. DEDUCT THE SITE AREAS DESIGNED WITH POROUS PAVEMENT OR GREEN ROOFS FROM THE IMPERVIOUS AREA CALCULATED IN STEP 1.
3. IF NEEDED, DESIGN WATER QUALITY/ QUANTITY FACILITIES FOR REMAINING UNTREATED IMPERVIOUS AREA. SIZING FACTORS FOR INFILTRATION BASED LIDA'S ASSUME EXISTING SOIL UNFACTORED INFILTRATION RATE OF GREATER THAN 2 INCHES PER HOUR. EACH FACILITY MUST BE SIZED FOR THE AMOUNT OF IMPERVIOUS AREA DRAINING ONTO IT.
4. THE SIZING FACTORS NOTED IN THIS SECTION ARE TO BE USED TO SIZE EACH LIDA FACILITY TREATING RUNOFF FROM A MAXIMUM OF 15,000 SQUARE FEET OF IMPERVIOUS AREA IN EACH FACILITY. FOR LARGE DEVELOPMENT SITES AND IMPERVIOUS AREAS, A REGIONAL WATER QUALITY/ QUANTITY FACILITY (VEGETATED SWALE, EXTENDED DRY BASIN OR CONSTRUCTED WATER QUALITY WETLAND) OR PROPRIETARY FACILITY MAY BE APPROPRIATE, AS DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.


**GENERAL NOTES:**

1. FOR PLANTING REQUIREMENTS REFERENCE APPENDIX A, PLANTING REQUIREMENTS OF THE CLEAN WATER SERVICES DESIGN AND CONSTRUCTION STANDARDS.
2. FOR FACILITY SIZING REFERENCE STANDARD DRAWING NO. 951, LIDA SIZING FORM.
3. ENERGY DISSIPATERS REQUIRED AT ALL DISCHARGE POINTS INTO THE FACILITY, MINIMUM OF 18"X18"X 6" DEEP, 4" TO 6" CLEAN ANGULAR RIPRAP.
4. DISCHARGES INTO NATIVE SOILS WILL REQUIRE INFILTRATION TESTING COMPLETED BY A REGISTERED DESIGN PROFESSIONAL.

**GROWING MEDIUM NOTES:**

THE GROWING MEDIUM SHALL BE ONE THIRD ORGANIC COMPOST, ONE THIRD GRAVELY SAND AND ONE THIRD TOP SOIL.

1. ORGANIC COMPOST SHALL BE THE RESULT OF BIOLOGICAL DEGRADATION AND TRANSFORMATION OF PLANT DERIVED MATERIALS UNDER CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION, FREE OF VIABLE WEED SEEDS AND STABLE WITH REGARD TO OXYGEN CONSUMPTION AND CARBON DIOXIDE GENERATION, AND OTHERWISE CONFORMING TO THE US COMPOSTING COUNCIL STA COMPOST TECHNICAL DATA: WWW.COMPOSTINGCOUNCIL.ORG. (MAY WANT TO REPLACE WITH ODOT SPEC SHOWN DURING EROSION CONTROL INSPECTION CLASS)
2. GRAVELY SAND SHALL BE 1" MINUS IN CONFORMANCE WITH ASTM C117/C136 (AASHTO T11/T27) STANDARDS WITH A COEFFICIENT OF UNIFORMITY (D60/D10) EQUAL TO OF GREATER THAN 6.
3. TOP SOIL SHALL BE FREE OF WOOD PIECES, PLASTIC, AND OTHER FOREIGN MATTER, CHEMICAL AND BIOLOGICAL POLLUTANTS, AND CONTAIN NO VISIBLE FREE WATER.

				CITY OF DALLAS OREGON STANDARD DRAWING DESIGN STEPS, GENERAL NOTES & GROWING MED.	DRAWING NO.
					RD950
0	Adoption of Standard Drawings	CTG	4/11/2016		
NO.	REVISIONS	BY	DATE		

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# CITY OF DALLAS, OREGON LIDA SIZING FORM

(Include this form with plan submittal)

Project Title: \_\_\_\_\_

Project Address: \_\_\_\_\_

Project Taxlot/ Taxmap #: \_\_\_\_\_

Project Location: \_\_\_\_\_

Contact Name/Title/Company: \_\_\_\_\_

Phone/e-mail: \_\_\_\_\_

**STEP 1: Determine Impervious Area Requiring Treatment**

Total Gross Site Area (acres):  Pre. Dev. Impervious Area (ft):  (X)

Proposed Net New Impervious Area (ft):  (PA) Post Dev. Impervious Area (ft):  (Y)  
 (PA)=(Y)-(X)

**STEP 2: Deduct Impervious Area LIDA Credits**

Porous Pavement (Sq. ft.):  (P)

Green Roof (sq. ft.):  (G)

Other Credits as approved (sq. ft.):  (O)

Total Credits (sq. ft.):  (C)  
 (C)= (P)+(G)+(O)

Impervious Area Requiring Treatment (sq.ft.):  (IA)  
 (IA)=(PA)-(C)

**STEP 3: Size LIDA Facilities for Remaining Impervious Area**

	Impervious Area Treated (sq. ft.)	SF, Sizing Factor	Impervious Area Treated (sq. ft.)
Infiltration Planters/ Rain Garden		0.045	
Flow-through Planter		0.060	
Public Flow-through Planter		0.060	

Total Impervious Area Treated (sq. ft.)  MUST BE EQUAL TO (IA)

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**CITY OF DALLAS OREGON  
STANDARD DRAWING**

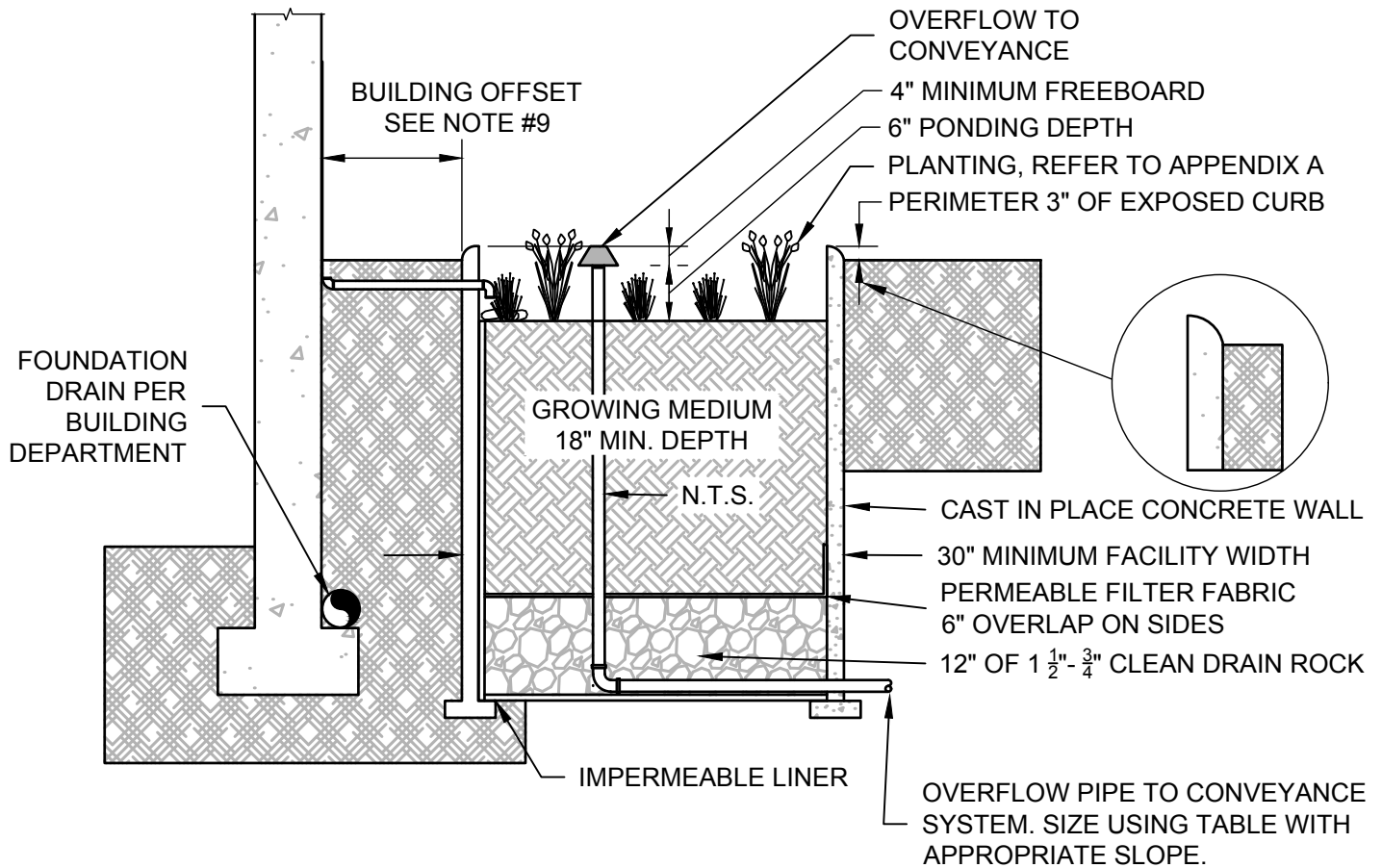
**LIDA SIZING FORM**

DRAWING NO.

**RD951**

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# PRIVATE/ PUBLIC WATER QUALITY & QUALITY TREATMENT



## NOTES:

1. MAXIMUM SLOPE OF PLANTER 0.5%.
2. NO TREES OF DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM PIPING TO FACILITY THROUGH WALL CORE HOLES, MAINTAIN MAXIMUM DISTANCE FROM THE OVERFLOW PIPE AS POSSIBLE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN PLUMPING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTRANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. PERMEABLE FILTER FABRIC REQUIRED BETWEEN LAYERS
7. IMPERMEABLE LINER REQUIRED AT FACILITY BOTTOM AND ON WALLS ADJACENT TO STRUCTURES (AS SHOWN).
8. "PARTIAL" INFILTRATION FACILITIES ARE ENCOURAGED. IMPERMEABLE LINER LOCATED AT FACILITY BOTTOM, MAY BE REMOVED FOR "PARTIAL" INFILTRATION, APPROVAL BY DESIGN PROFESSIONAL AND BUILDING DEPARTMENT REQUIRED.
9. BUILDING OFFSET REQUIRED ONLY WHEN INFILTRATING, 10 FT MINIMUM.
10. MUST BE LOCATED A MINIMUM OF 3 FT FROM ADJACENT PROPERTY LINE.

OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
822	3
1,880	4
3,340	6

OVERFLOW PIPE SIZE (1/4 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
1,160	3
2,650	4
4,720	6



CITY OF DALLAS OREGON  
STANDARD DRAWING

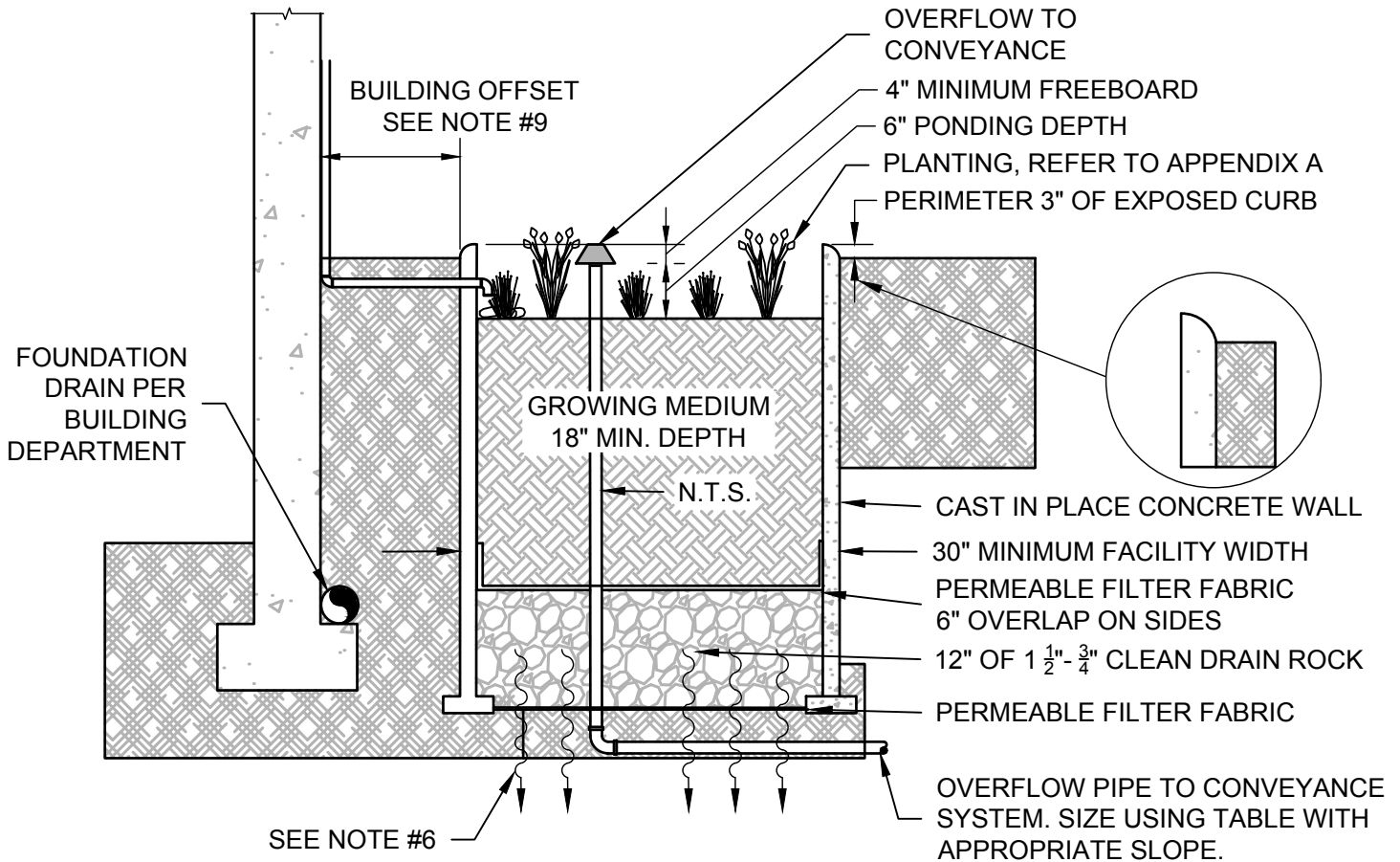
FLOW THROUGH PLANTER

DRAWING NO.

RD952

NO.	REVISIONS	BY	DATE
0	Adoption of Standard Drawings	CTG	4/11/2016

# PRIVATE/ PUBLIC WATER QUALITY & QUANTITY TREATMENT



## NOTES:

1. MAXIMUM SLOPE OF PLANTER 0.5%.
2. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM FLOW INLETS THROUGH WALL CUT OUTS BOTH TO MAINTAIN MAIMUM LINEAR DISTANCE FROM THE OVERFLOW PIPE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN THE PLUMBING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTERANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. SIZING FACTORS, FOR INFILTRATION FACILITIES ASSUME AN UNFACTORED INFILTRATION RATE GREATER THAN 2 IN PER HOUR.
7. MUST BE LOCATED 3' MINIMUM FROM ADJACENT PROPERTY LINE.

### OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)

MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
822	3
1,880	4
3,340	6

### OVERFLOW PIPE SIZE (1/4 in./ft. SLOPE)

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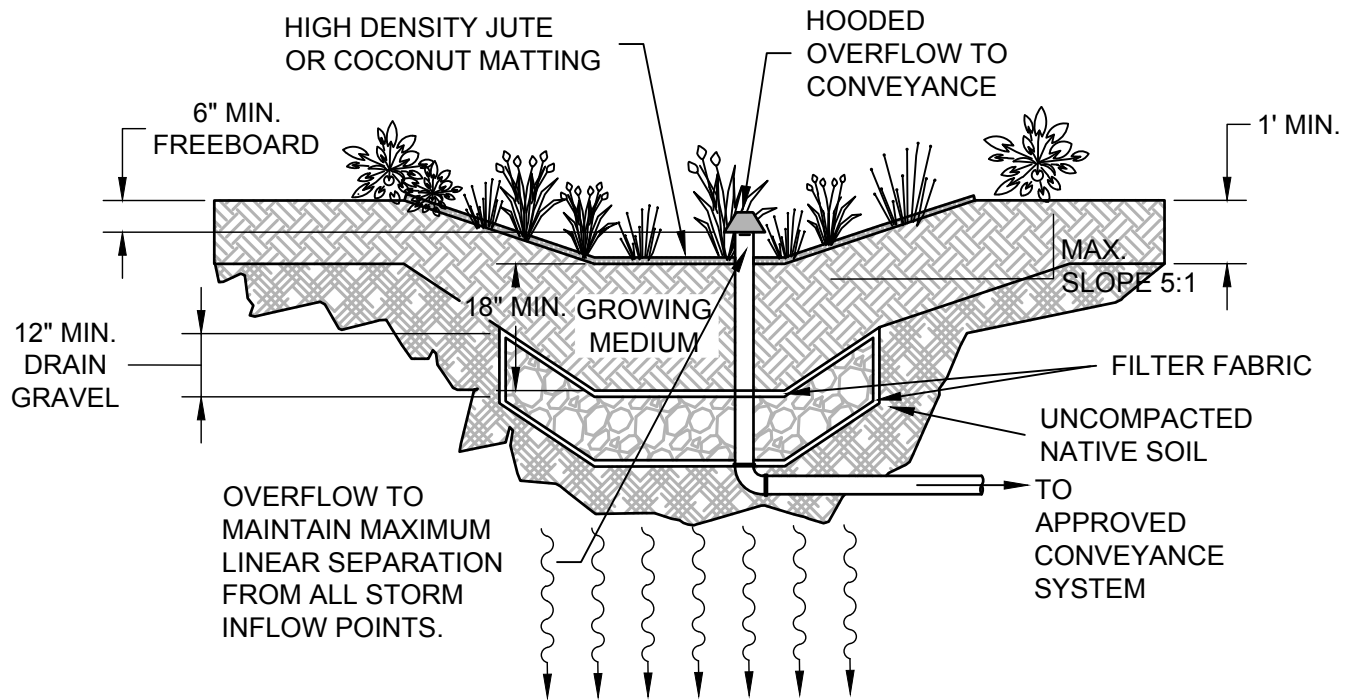
CITY OF DALLAS OREGON  
STANDARD DRAWING

INFILTRATION PLANTER

DRAWING NO.

RD953

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**NOTES:**

1. PROVIDE OVERFLOW CONVEYANCE SYSTEM, OVERFLOW CONVEYANCE HEIGHT TO ALLOW 6" MAXIMUM PONDING, PIPING TO A MINIMUM OF THE PLUMBING CODE OR CONVEY THE 25 YEAR STORM. THE 25 YEAR STORM.
2. FLOW DISSIPATORS SHOULD BE USED IF ENTRY SLOPE TO THE BASIN IS GREATER THAN 5:1.
3. SEPARATION BETWEEN DRAIN GRAVEL AND GROWING MEDIUM SHALL BE PERMEABLE FILTER FABRIC.
4. TREATMENT AREA SHALL HAVE HIGH DENSITY JUTE OR COCONUT MATTING OVER 18" MINIMUM OF GROWING MEDIUM OR BASE STABILIZATION METHOD AS APPROVED BY THE CITY.
5. REFER TO APPENDIX A OF THE STANDARDS DESIGN MANUAL FOR PLANTING REQUIREMENTS.
6. TOP OF BANK OF FACILITY MUST BE LOCATED 10' FROM ANY STRUCTURE AND 3' FROM ADJACENT PROPERTY LINES.

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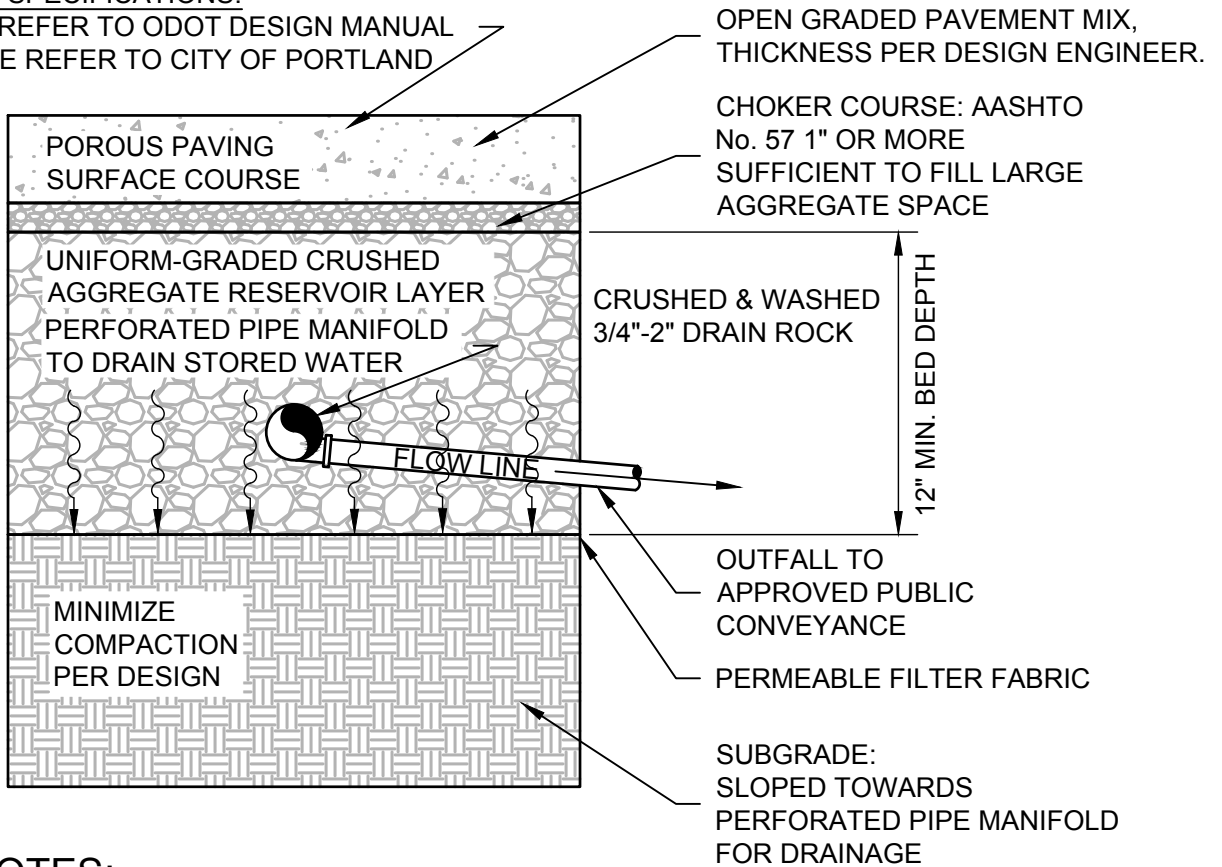
		<p><b>CITY OF DALLAS OREGON</b>  <b>STANDARD DRAWING</b></p>	DRAWING NO.
		<b>RAIN GARDEN</b>	<b>RD957</b>
NO.	REVISIONS	BY	DATE
0	Adoption of Standard Drawings	CTG	4/11/2016

# POROUS PAVEMENT

1:1 IMPERVIOUS AREA DEDUCTION

**MATERIAL SPECIFICATIONS:**

ASPHALT REFER TO ODOT DESIGN MANUAL  
 CONCRETE REFER TO CITY OF PORTLAND

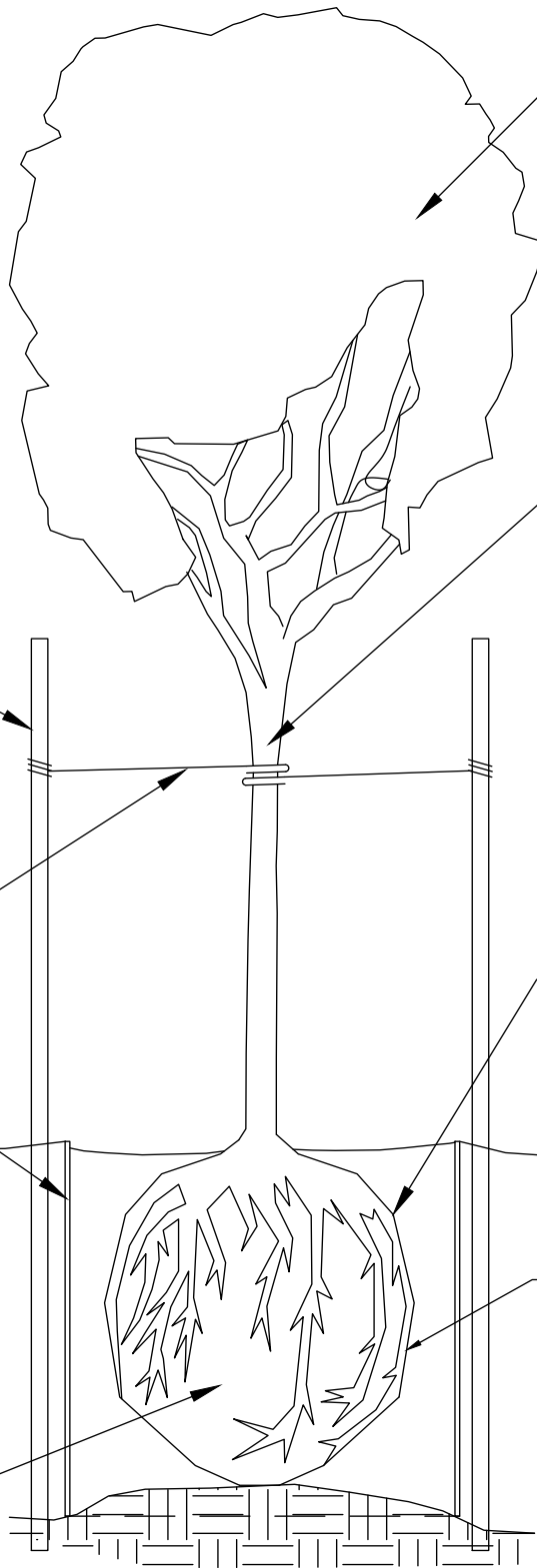
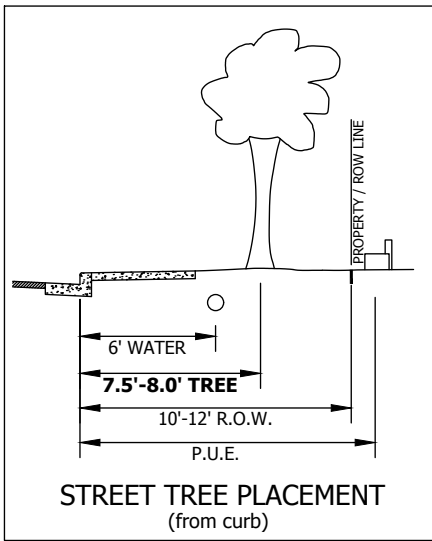


**NOTES:**

1. PAVEMENT SURFACE TO BE CONSTRUCTED WITH HIGH PERMEABILITY (> 8" PER HR).
2. UNIFORM-GRADED CRUSHED DRAIN ROCK BED WITH MINIMUM 40% VOID SPACE.
3. PROVIDE PERFORATED PIPE MANIFOLD IN RESERVOIR LAYER FOR CONVEYANCE, IF UNFACTORED SOIL INFILTRATION RATES LESS THAN 2"/HOUR. SEE PERFORATED PIPE DRAWING NO. 463.
4. NOT RECOMMENDED FOR TRAFFIC SURFACES WITH SLOPE >5%.
5. DO NOT PLACE DRAIN ROCK BED ON COMPACTED FILL AREAS.
6. HIGHEST SEASONAL WATER TABLE MUST BE AT LEAST 5' BELOW RESERVOIR LAYER. STRUCTURE MUST BE 100' AWAY FROM DRINKING WATER WELL. MINIMUM OF 100' AWAY UP SLOPE & 10' AWAY DOWN SLOPE FROM STRUCTURE FOUNDATIONS. A WRITTEN REPORT IS REQUIRED.
7. FLOWS FROM OTHER IMPERVIOUS AREAS SHALL NOT DRAIN TO POROUS PAVEMENT.
8. ONSITE INFILTRATION TESTING REQUIRED BEFORE AND DURING CONSTRUCTION BY A DESIGN PROFESSIONAL.

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		CITY OF DALLAS OREGON STANDARD DRAWING <b>POROUS PAVEMENT</b>	DRAWING NO. <b>RD959</b>
0 Adoption of Standard Drawings CTG 4/11/2016 NO. REVISIONS BY DATE			



Trees shall be healthy, vigorous, and free of decay, defects, injuries, all forms of infestations, or objectionable disfigurement.

Trees shall have a single straight main trunk to 5' height with a minimum clear stem height of 4'. Stem dia. shall be 2" or greater as measured 4' above the root flare.

2"x2" hardwood stakes shall be used to secure the tree. Posts shall be 7' min. Length with a min. Bury of 2'. Posts shall be removed by the contractor 12 months from the planting date.

Trees shall be secured to the posts with Chainlock Tree Tie or equal. Do not over tighten the guys. Use of wire or twine as a guy is not allowed.

Soil mixture shall be four parts by volume of topsoil mixed with one part decomposed organic materials. The tree shall be watered thoroughly to eliminate air pockets and future settling of the planting mixture.

Mechanical root barrier shall be Deeproot UB 18-2 or approved equal. Barrier shall be installed in the "linear" style between the tree and sidewalk per manufacturer's specifications with a min. length of 4' (2 panels) A second row of panels may be required if tree is planted in a planter strip.

During drier months, roughly June to October, deep-root watering at a depth of 30" is recommended. A tree watering-bag may be used for newly planted trees.

Roots shall be loosened prior to planting to avoid girdling of the roots. Root ball shall be placed on an undisturbed soil base to reduce settlement. Remove wire basket & burlap or black felt growing pot prior to placing tree in hole.

DIRECTOR OF PUBLIC WORKS  
ACCEPTANCE

INITIALS DATE

**NOTES:**

1. Trees will be nursery stock and found in either ball & burlap or in container and established through a 1-year growing season.
2. All trees shall be an approved species from City of Dallas approved street tree list.
3. Contact City of Dallas for location of street tree placement.

DEPARTMENT OF ENGINEERING &  
ENVIRONMENTAL SERVICES



STANDARD  
STREET TREE  
DETAIL

NO SCALE

SEPTEMBER 2018

NO. 502