

# Drywell & Infiltration System Standards

for the  
City of Manzanita,  
Tillamook County, Oregon

Prepared 11/30/01  
by the  
City of Manzanita & HLB & Associates, Inc.

Revised 6/04/04

## OVERVIEW

The intent of this standard is to prevent/minimize water runoff from an owner's developed or manipulated property onto adjoining properties.

### Manzanita Zoning Ordinance – Section 4.155

The grading and contouring of the site, and on site drainage facilities, shall be designed so there is no adverse affect on neighboring properties or public rights-of-way.

### Manzanita Comp Plan – Page 27, #4

All roof drains will be required to flow into properly constructed drywells, except in areas where it can be shown that the water table is too high for this to be done effectively, in which case other methods shall be employed. Lot coverage may be reduced and roof drains may be piped into adequate culverts. Roof drains are not to be connected to sanitary sewer lined.

Any combination of approved procedures is acceptable.

See Standard Details attached hereto for installation requirements.

**Stormwater storage capacity required - 1 cubic foot for every 44 square feet of impervious surface.**

**A simplified formula for calculating amount of pipe is needed, if using a perforated pipe system. Length of pipe needed to equal 1 cubic ft. of retention.**

$$144 \div 3.14 (\text{radius in inches})^2$$

**Any system used shall be installed below native/unfilled ground, when constructed on downhill side of sloping lots.**

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# PROCEDURE FOR INSTALLATION AND ACCEPTANCE OF STORMWATER SYSTEM

## New Construction:

1. Include drywell/stormwater detail in building plans during plan review.
2. Obtain appropriate permits before commencing work.
3. Utility Locate required by law – before digging call 1-800-332-2344
4. The City of Manzanita shall inspect and approve the installed system prior to backfill.  
Notify the City of Manzanita 24 hours in advance for required inspection.
5. Deviation from Standard requires written approval from Manzanita Public Works.

**\* Retention ponds are an acceptable method and are encouraged.**

## Additions / Remodels:

1. During plan review, include documentation of current system with regards to capacity and ability to accommodate increased load.
2. If unable to document current system capacity, provide new system for increased load.
3. Obtain appropriate permits before commencing work.
4. Utility Locate required by law – before digging call 1-800-332-2344
5. The City of Manzanita shall inspect and approve the installed system prior to backfill.  
Notify the City of Manzanita 24 hours in advance for required inspection.
6. Deviation from Standard requires written approval from Manzanita Public Works.

**\* Retention ponds are an acceptable method and are encouraged.**

## Retention Ponds

Retention ponds are an accepted form of stormwater control and are encouraged. If above surface retention ponds are used, clean out boxes are not required. Ponds may be planted and manipulated as long as the drainage aspect of the pond is not compromised.

Pond volume is calculated from the bottom of the inlet pipe.

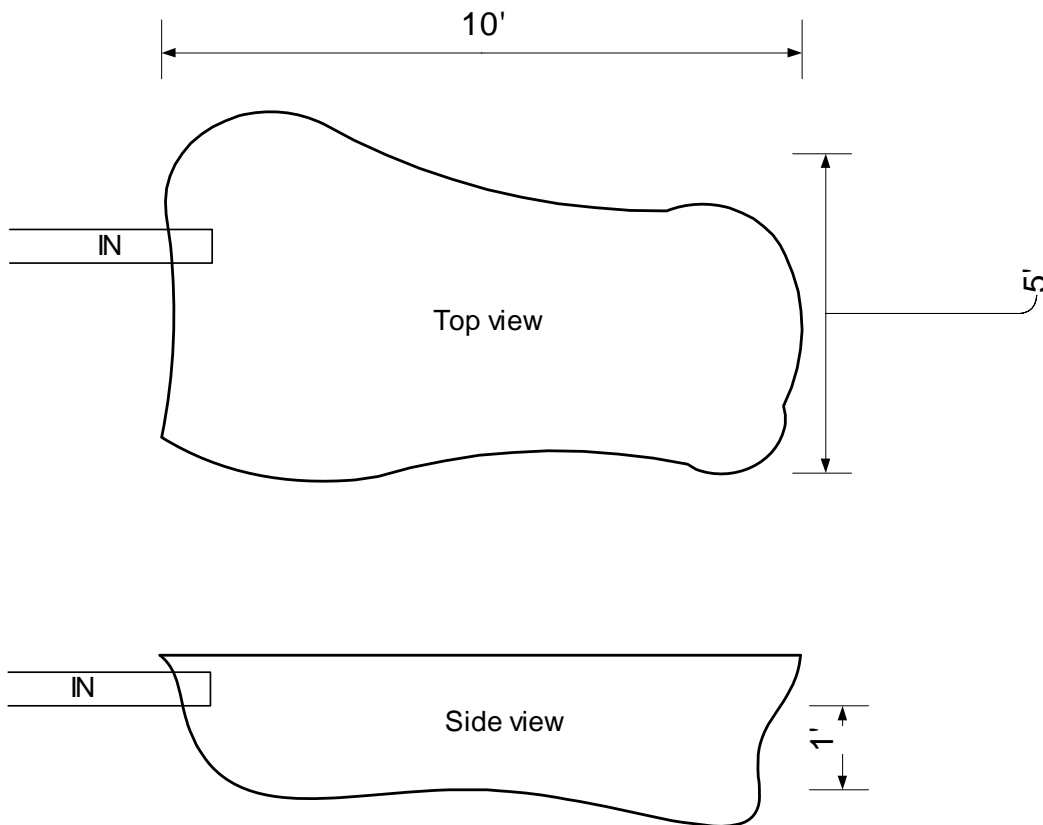
As with the barrel system, edge of ponds shall be at least 5' from the property line.

Pond construction does not need to be exactly as drawn provided it is as large or larger than the plan states.

**Example pond** - The pond below is approximately 10' x 5' x 1' (50 cubic feet). This size pond would service a structure with 2,187 square feet of impervious surface.

Square footage of impervious surface divided by 44 = required cubic feet of storage

$$2,187 / 44 = 49.70$$



**EXAMPLE:**

DRIVEWAY AREA \* 200 SQ. FT.  
 HOUSE ROOF AREA \* 1500 SQ. FT.  
 CONCRETE PATIO OR SIDEWALK AREA \* 0 SQ. FT.  
 TOTAL IMPERVIOUS AREA \* 1700 SQ. FT.

FOR NON-TRAFFIC AREA INSTALLATION, INSTALL ONE 55 GALLON BARREL FOR EVERY 350 SQ. FT. OF IMPERVIOUS SURFACE:  
 $1700/350 = 5$  BARRELS

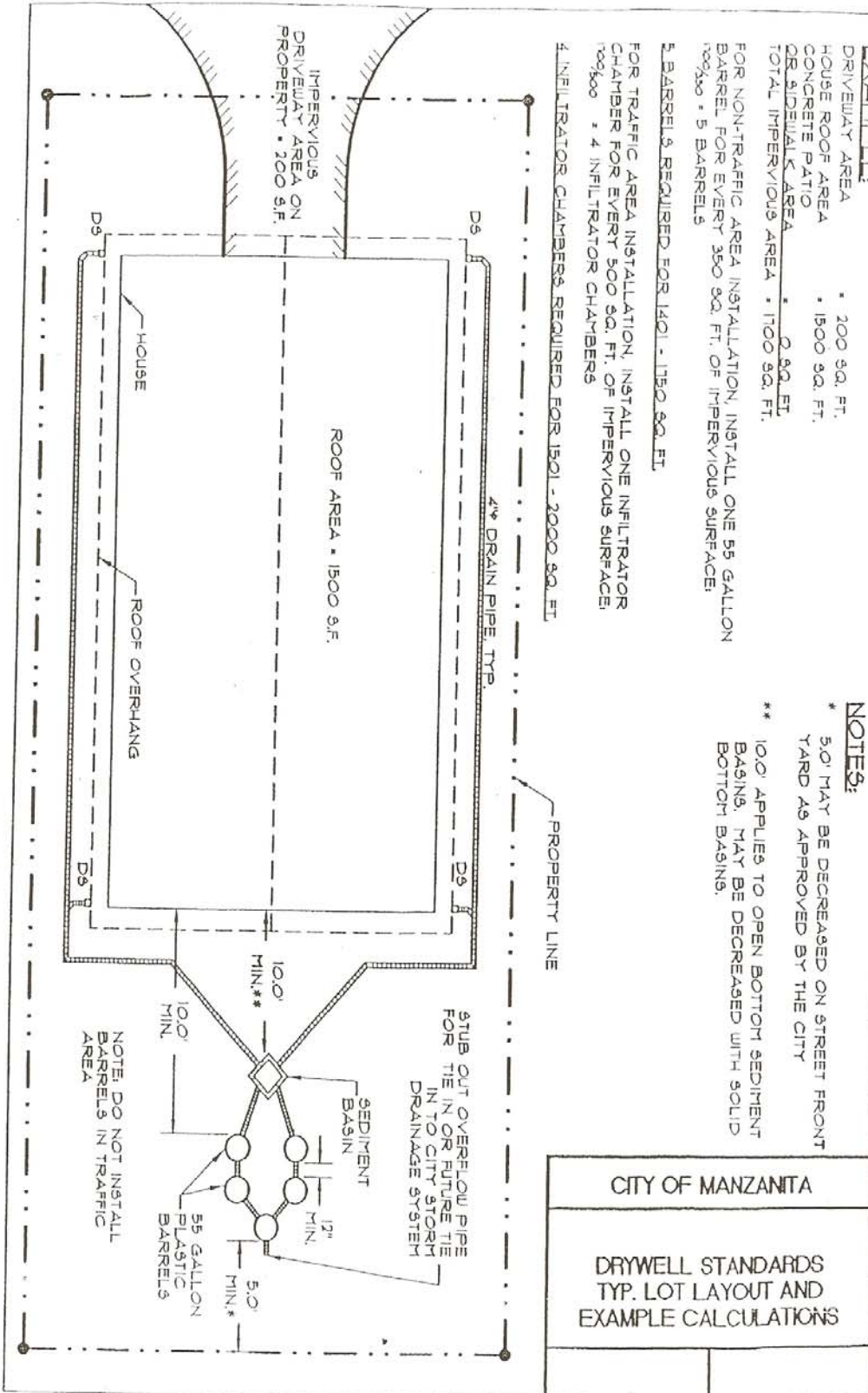
5 BARRELS REQUIRED FOR 1700 - 1750 SQ. FT.

FOR TRAFFIC AREA INSTALLATION, INSTALL ONE INFILTRATOR CHAMBER FOR EVERY 500 SQ. FT. OF IMPERVIOUS SURFACE:  
 $1700/500 = 4$  INFILTRATOR CHAMBERS

4 INFILTRATOR CHAMBERS REQUIRED FOR 1500 - 2000 SQ. FT.

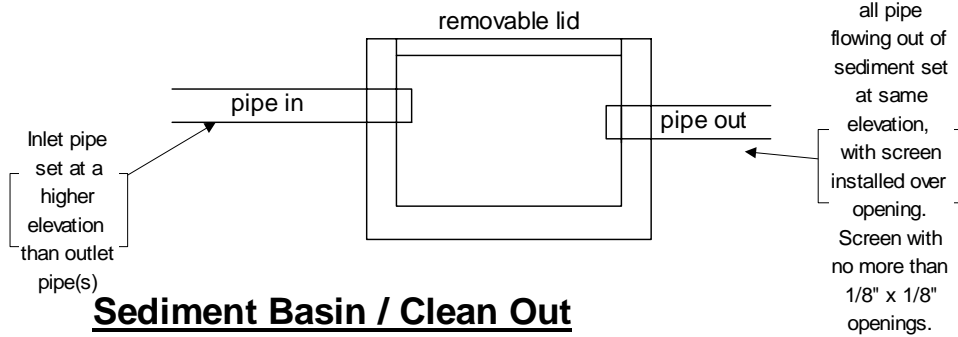
**NOTES:**

- \* 5.0' MAY BE DECREASED ON STREET FRONT YARD AS APPROVED BY THE CITY
- \*\* 10.0' APPLIED TO OPEN BOTTOM SEDIMENT BASINS. MAY BE DECREASED WITH SOLID BOTTOM BASINS.

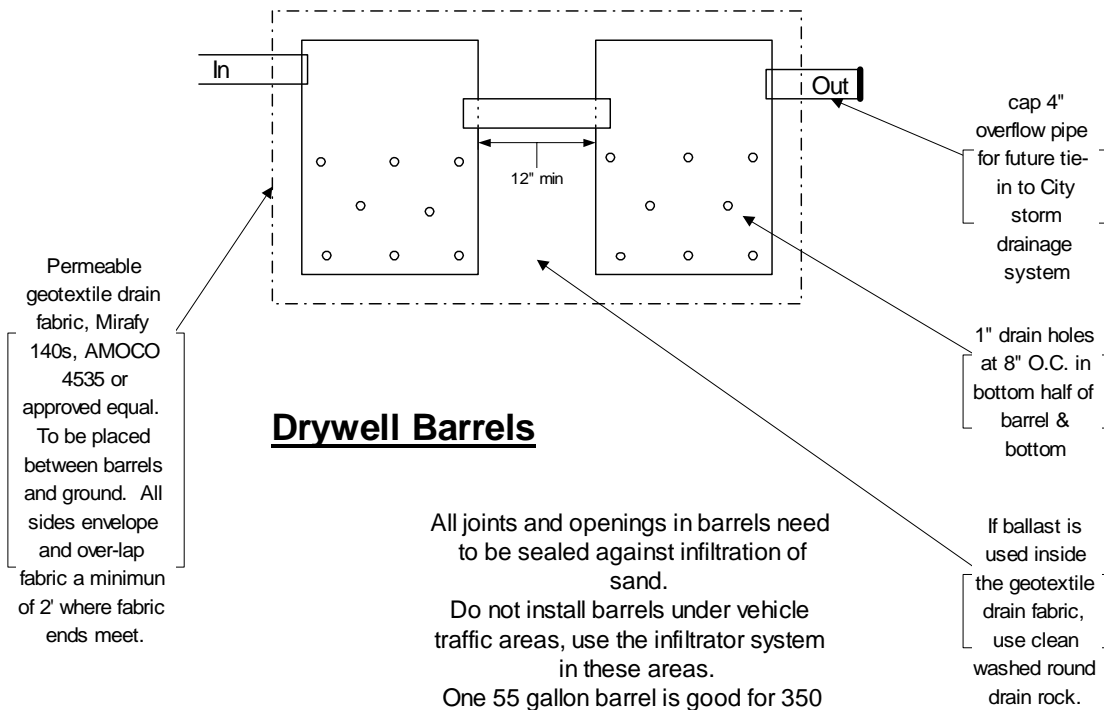


# Sediment basin

Inside dimensions approximately 12" x 12" or larger.  
 Installed with removable lid flush with or higher than surrounding ground.  
 Bottom is optional



## Sediment Basin / Clean Out



## Drywell Barrels

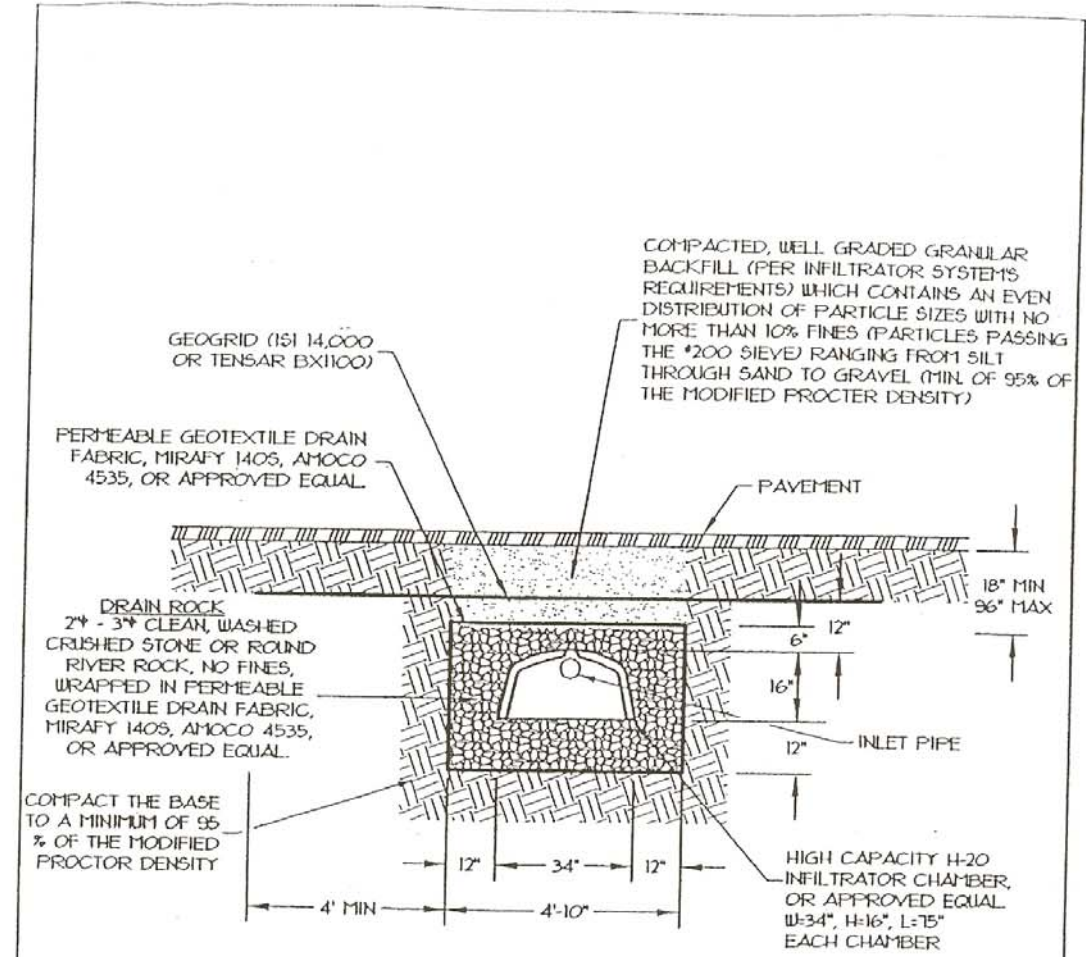
Permeable geotextile drain fabric, Mirafy 140s, AMOCO 4535 or approved equal. To be placed between barrels and ground. All sides envelope and over-lap fabric a minimum of 2' where fabric ends meet.

All joints and openings in barrels need to be sealed against infiltration of sand.  
 Do not install barrels under vehicle traffic areas, use the infiltrator system in these areas.  
 One 55 gallon barrel is good for 350

cap 4" overflow pipe for future tie-in to City storm drainage system

1" drain holes at 8" O.C. in bottom half of barrel & bottom

If ballast is used inside the geotextile drain fabric, use clean washed round drain rock.



NOTE: GEOGRID MUST OVERLAP ON ITSELF AT LEAST 2' WHEN USING MORE THAN ONE ROLL.

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## INFILTRATOR CHAMBER DETAIL

NO SCALE

CITY OF MANZANITA	
DRYWELL STANDARDS TYP. INFILTRATOR CHAMBER	

# City of Manzanita

Building Dept.  
P.O. Box 129  
Manzanita, OR 97130  
(503) 368-5343

## Permit Application for Storm-Water Retention System

( PLEASE PRINT )

Applicant Name \_\_\_\_\_ Phone \_\_\_\_\_

Mailing Address \_\_\_\_\_ Address of site \_\_\_\_\_

City \_\_\_\_\_ T 3 N R 10 W Sec \_\_\_\_\_ Tax Lot \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

### Requirements

- 1) **Provide plans/detailed drawing which includes property corners and location of storm system components. Include system type (infiltrator, pond, barrels, etc), and system capacity calculations.**
- 2) **After permit fee is paid and plans approved, inspection service is available. Notify the Building Dept. to inspect the storm-system prior to backfilling or covering system. 48 hours notice during normal business hours is required when calling for inspection.**
- 3) **Applicant certifies that all applicable rules and regulations will be adhered to.**
- 4) **Any changes in construction from approved plans must be made in writing by applicant and approved by the City.**
- 5) **Sign-off by the City of Manzanita is required prior to final occupancy being granted.**
- 6) **Permit expires one year from date of issuance.**

Applicant Signature \_\_\_\_\_ Date \_\_\_\_\_

Questions? Please contact the Building Dept. @ 503-368-5343

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### OFFICE USE ONLY

Permit fee (\$50.00) received By: \_\_\_\_\_ Check # \_\_\_\_\_ Receipt # \_\_\_\_\_

Permit Granted / Denied Date: \_\_\_\_\_ By: \_\_\_\_\_

Final Inspection: Date: \_\_\_\_\_ By: \_\_\_\_\_

Permit # \_\_\_\_\_