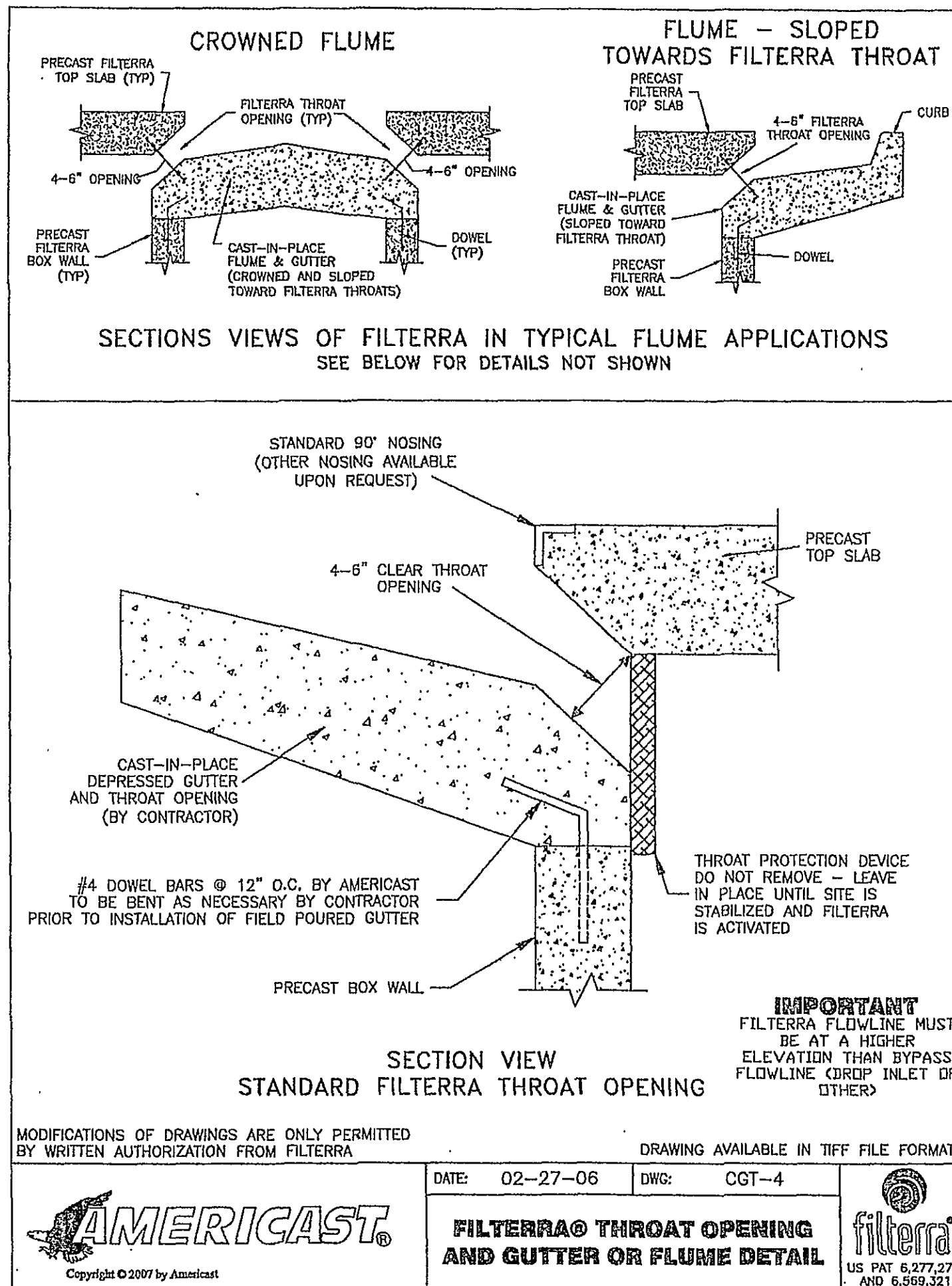


Filterra Standard Plan Notes



Construction & Installation

- Each unit shall be constructed at the locations and elevations according to the sizes shown on the approved drawings. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.
- If the Filterra® is stored before installation, the top slab must be placed on the box using the 2x4 wood provided, to prevent any contamination from the site. All internal fittings supplied (if any), must be left in place as per the delivery.
- The unit shall be placed on a compacted sub-grade with a minimum 6-inch gravel base matching the final grade of the curb line in the area of the unit. The unit to be placed such that the unit and top slab match the grade of the curb in the area of the unit. Compact undisturbed sub-grade materials to 95% of maximum density at +1- 2% of optimum moisture. Unsuitable material below sub-grade shall be replaced to the site engineer's approval.
- Outlet connections shall be aligned and sealed to meet the approved drawings with modifications necessary to meet site conditions and local regulations.
- Once the unit is set, the internal wooden forms and protective mesh cover must be left intact. Remove only the temporary wooden shipping blocks between the box and top slab. The top lid should be sealed onto the box section before backfilling, using a non-shrink grout, butyl rubber or similar waterproof seal. The boards on top of the lid and boards sealed in the unit's throat must NOT be removed. The Supplier (Americast or its authorized dealer) will remove these sections at the time of activation. Backfilling should be performed in a careful manner, bringing the appropriate fill material up in 6" lifts on all sides. Precast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of Filterra® unit shall conform to ASTM specification C891 "Standard Practice for Installation of Underground Precast Utility Structures", unless directed otherwise in contract documents.
- Curb and gutter construction (where present) shall ensure that the flow-line of the Filterra® units is at a greater elevation than the flow-line of the bypass structure or relief (drop inlet, curb out or similar). Failure to comply with this guideline may cause failure and/or damage to the Filterra® environmental device.
- Each Filterra® unit must receive adequate irrigation to ensure survival of the living system during periods of drier weather. This may be achieved through gutter flow or through the tree grate.



09/28/03

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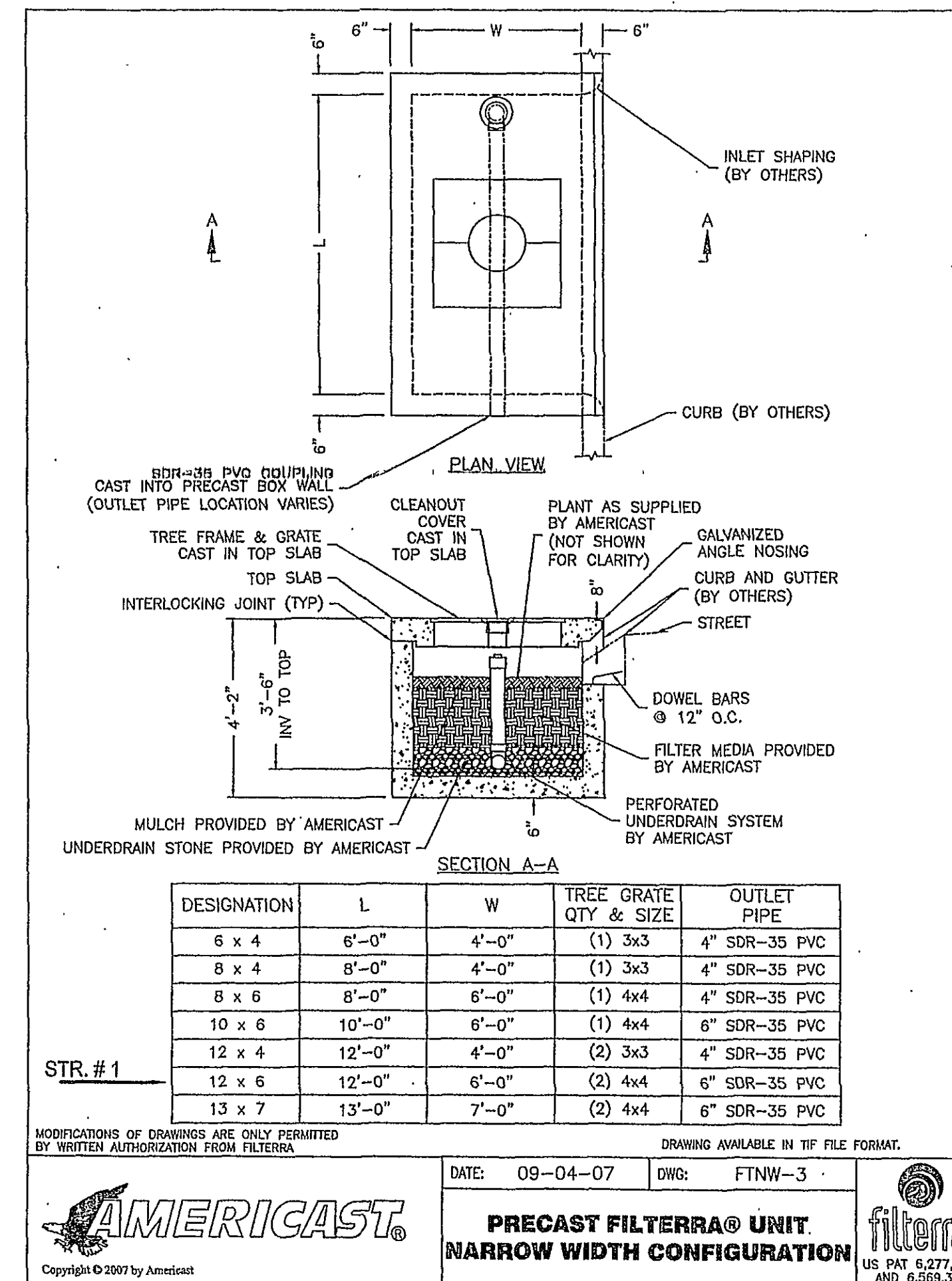


Activation

- Activation of the Filterra® unit is performed ONLY by the Supplier. Purchaser is responsible for Filterra® inlet protection and subsequent clean out cost. This process cannot commence until the project site is fully stabilized and cleaned (full landscaping, grass cover, final paving and street sweeping completed), negating the chance of construction materials contaminating the Filterra® system. Care shall be taken during construction not to damage the protective throat and top plates.
- Activation includes installation of plant(s) and mulch layers as necessary.

Maintenance

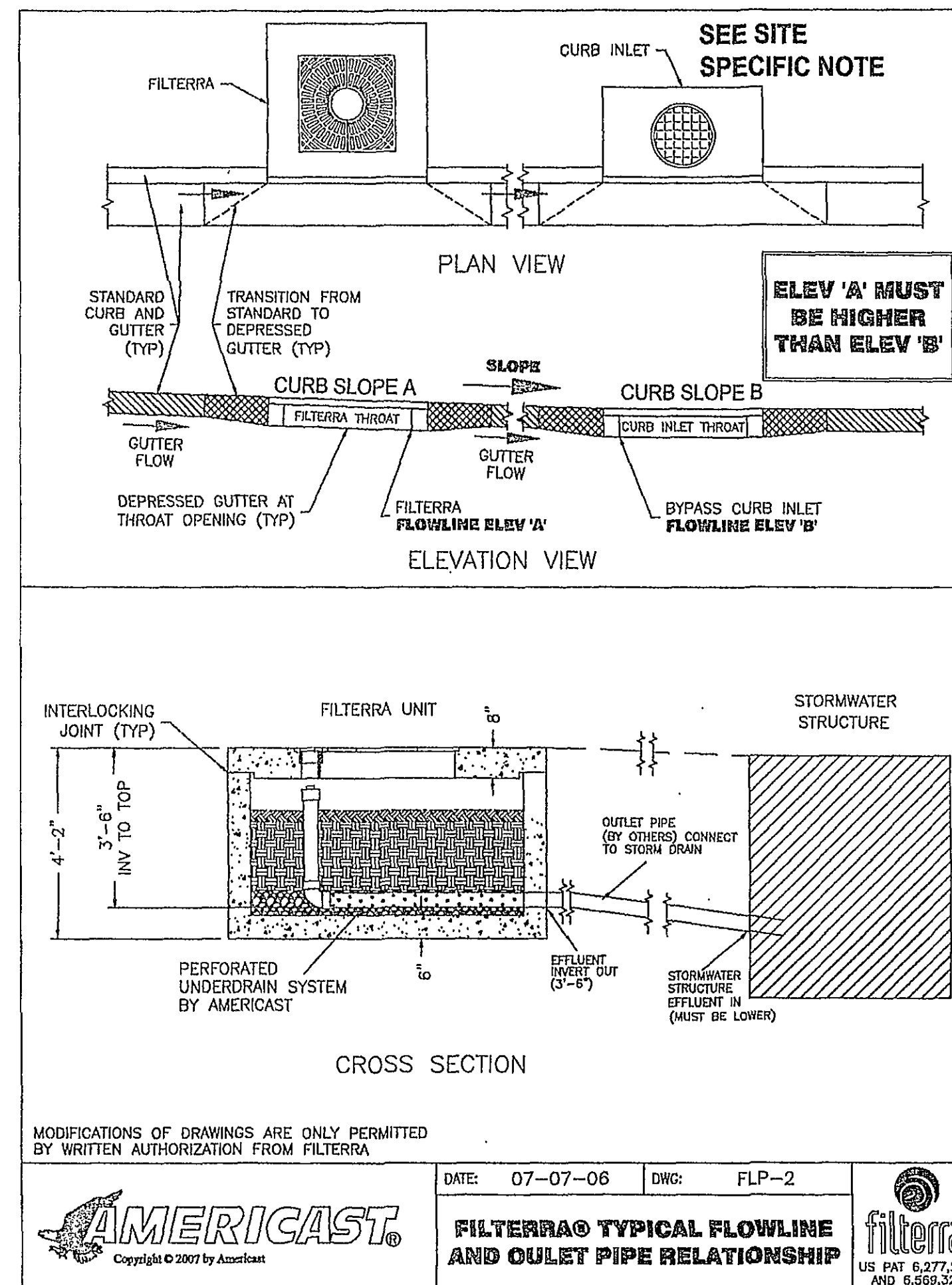
- Each correctly installed Filterra® unit is to be maintained by the Supplier, or a Supplier approved contractor for a minimum period of 1 year. The cost of this service is to be included in the price of each Filterra® unit. Extended maintenance contracts are available at extra cost upon request.
- Annual maintenance consists of a maximum of (2) scheduled visits. The visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands. The fall visit helps the system by removing excessive leaf litter.
- Each maintenance visit consists of the following tasks.
 - Filterra® unit inspection
 - Foreign debris, silt, mulch & trash removal
 - Filter media evaluation and recharge as necessary
 - Plant health evaluation and pruning or replacement as necessary
 - Replacement of mulch
 - Disposal of all maintenance refuse items
 - Maintenance records updated and stored (reports available upon request)
- The beginning and ending date of Supplier's obligation to maintain the installed system shall be determined by the Supplier at the time the system is activated. Owners must promptly notify the Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology.



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MODIFICATIONS OF DRAWINGS ARE ONLY PERMITTED BY WRITTEN AUTHORIZATION FROM FILTERRA

DATE: 07-07-06 DWG: FLP-2

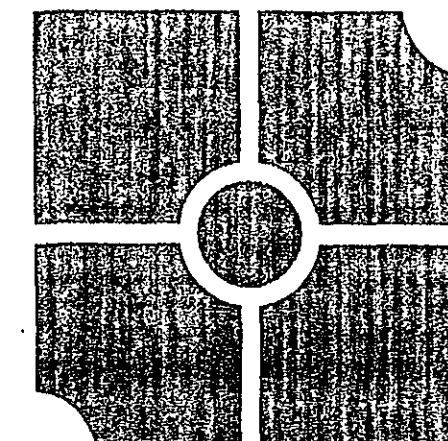
AMERICAST

FILTERRA® TYPICAL FLOWLINE AND OUTLET PIPE RELATIONSHIP

US PAT. 6,277,274 AND 6,569,321

FILTERRA PROJECT INFORMATION FORM	
Structure ID #	1
Structure Size LxW	12x8'
Filterra Drainage Area (Ac.)	0.58
Runoff Coefficient (C factor)	0.81
Top Curb Elev A	975.60
Flowline Elev A	975.10 (match pavement)
Curb Slope A	1.1%
Filterra Invert Out	972.10
Top Curb Elev B	---
Flowline Elev B	Paved (974.8)
Curb Slope B	---
ByPass Structure Invert In	Surface (972.0)
Modified Structure (Y/N)	NO
Grate or Top Options	NONE

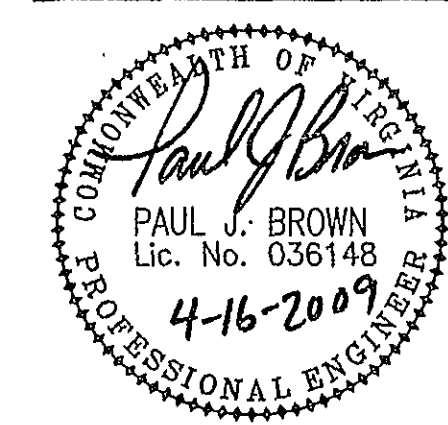
SITE SPECIFIC NOTE:
THIS PROJECT IS A RETROFIT OF AN EXISTING SYSTEM. THERE IS NO PROPOSED BYPASS STRUCTURE (CURB INLET) PROPOSED FOR THIS DEVELOPMENT. THE BYPASS RUNOFF CONTINUES TO FLOW AS IT DOES UNDER EXISTING CONDITIONS. FLOWLINE ELEVATIONS SHOWN ARE EXISTING PAVEMENT ELEVATIONS. THE PRESENCE OF THE FILTERRA STRUCTURE WILL REDUCE THE AMOUNT OF RUNOFF THAT FREELY DISCHARGED TO THE ADJACENT CHANNEL.



parker
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Comprehensive Site Plan for Tank Containment Expansion for PM Properties, Inc.
3643 Aerial Way Drive, S.W.; Tax # 220602
City of Roanoke, VA

REVISIONS:
Address City Comments - Review Structure 02-11-2009

DESIGNED BY: PJB

DRAWN BY: MFW

CHECKED BY: PJB

SCALE: As Shown

DATE: December 17, 2008

SHEET TITLE:

Stormwater Quality Structure Details

C07
07 OF 08
PROJECT NUMBER:
08-0323-01

APPROVED
APR 27 2009