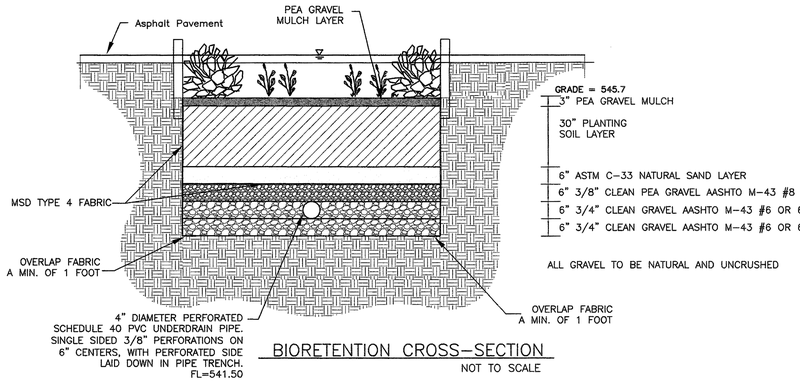


BIORETENTION CROSS-SECTION

NOT TO SCALE

BIORETENTION AREA 1 PLANTING LEGEND

ITEM	LATIN NAME	COMMON NAME	TOTAL NUMBER	SPACING
A	Carex grayi	Bur sedge	4	60"
B	Carex vulpinoidea	Fox sedge	4	60"
C	Chasmanthium latifolium	River oats	4	60"
D	Carex praegracilis	Tollway sedge	4	60"
E	Ratibida pinnata	Yellow/Grey coneflower	4	60"
F	Echinacea pallida	Pale purple coneflower	4	60"
G	Echinacea purpurea	Purple coneflower	4	60"

SAND SPECIFICATIONS:

Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications. In addition to the ASTM C-33 specification, sand must meet ALL of the Following conditions:

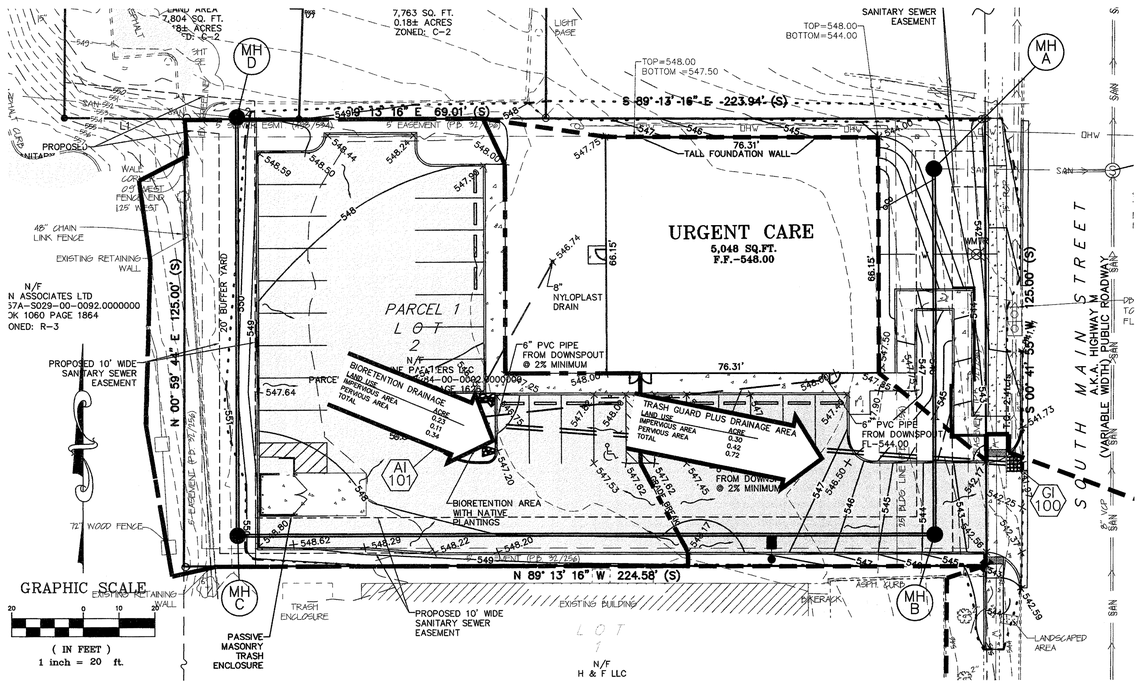
1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. AASHTO M-6 gradation is also applicable.

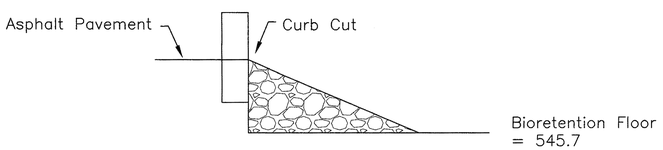
2. Sand must be silicabased...no limestone based products may be used. If the material is white or gray in color it is probably not acceptable.

3. Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has been contaminated by improper storage or installation practices will be rejected.

4. Manufactured sand or stone dust is not acceptable under any circumstances.

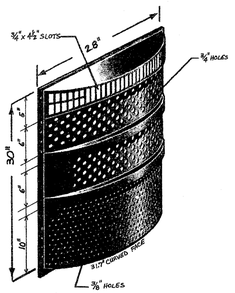
Planting Soil Specifications:
BIORETENTION SOIL MIX (SSM) = 80% SAND, 10% FINE GROUND MULCH, 10% "TOPSOIL", OR MIX PER MSD LANDSCAPE GUIDE FOR BMPS. THE SOILS SHALL BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18 INCHES AND BE PLACED LOOSELY WITH NO COMPACTION.





ROCK LETDOWN STRUCTURE CROSS-SECTION

NOT TO SCALE



TRASHGUARD DIMENSIONS

Trash Guard® Installation Instructions

Trash Guard® can be installed in a variety of catch basin configurations (or field conditions). In general the Trash Guard® is mounted on the catch basin wall, centered over the outlet pipe.

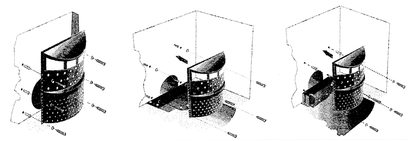
Before installing Trash Guard®, A hydraulic calculation should be performed to determine maximum flow rate based on depth of the catch basin and size of Trash Guard® used. This calculated model will determine maximum flow rate with no obstructions or varying amounts of trash build up, and determine drainage area required to support the calculated flow rate. Allowable trash build up and drainage area required for trash build up will determine maintenance frequency.

If catch basin conditions allow and increased flow rate and additional vertical capacity are desired, a model can be calculated to determine flow rate when extending Trash Guard® from one inch to seven inches from the catch basin wall. As above, this calculated model will determine maximum flow rate with no obstructions or varying amounts of trash build up. Contact Trash Guard® for assistance in determining flow rate and drainage areas under varying field conditions.

The following instructions are organized in sections described as follows:

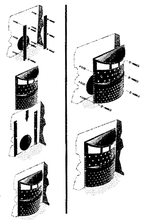
- ❑ Section 1 – Trash Guard® installed on a flat perpendicular wall with a flat bottom
- ❑ Section 2 – Bottom Plate installed on an inverted bottom
- ❑ Section 3 – Trash Guard® installed on a flat perpendicular wall with an inverted bottom
- ❑ Section 4 – Trash Guard® installed on tiered brick wall escalating width from top to bottom with an inverted or flat bottom.
- ❑ Section 5 – Trash Guard® installed on concaved wall reasonable flat at top and bottom with an inverted or flat bottom.
- ❑ Section 6 – Trash Guard® installed extended from wall to increase flow capacity with an inverted or flat bottom.

EXAMPLES OF FLAT AND INVERTED BOTTOMS



WARNING: Improper installation of the Trash Guard® or failure to keep the area around the Trash Guard® free from sediment, debris and litter after installation may result in clogging of the storm water drainage system and increase the risk of flooding during times of heavy rainfall. It is important to clear sediment, debris and litter from around the Trash Guard® at least four (4) times a year and more frequently in areas with large amounts of vegetation or litter. Please contact your local Trash Guard® distributor with any questions regarding the installation or regular maintenance requirements of the Trash Guard®.

Section 1 (Diagram I)



❑ Items Included:
- Trash Guard® (Chosen Size)
- Seven Plastic Anchors
- Seven Flat Washers
- Seven 1.75"x.25" Stainless Steel Phillips Screws

❑ Tools Needed:
- Cordless Hammer Drill
- 5/16" Masonry Drill Bit
- Phillips Screwdriver

Installation Instructions

Can be attached with or without retaining rails.
1. Place Trash Guard over outlet pipe.
2. Drill 5/16" hole top and bottom each side.
3. Insert plastic anchor and attach washer and phillips screws as shown in diagram.

Section 2 (Diagram A & B)

❑ Items included for **A**:
- Bottom Plate with plastic netting attached
- Seven Plastic Anchors
- Seven Flat Washers
- Seven 1.75"x .25" Stainless Steel Phillips Screws

❑ Tools Needed:
- Cordless Hammer Drill
- 5/16" Masonry Drill Bit
- Phillips Screwdriver

❑ Items Included for **B**:
- Bottom Plate with plastic netting attached
- Seven Plastic Anchors
- Seven Flat Washers
- Seven 1.75"x .25" Stainless Steel Phillips Screws
- Stainless Steel All Thread Rod Cut to Size
- Fourteen Hex Nuts & Flat Washers
- Four Expansion Anchors
- Plastic Netting (if excess amount on plate is not enough)
- Two Tie Wraps

❑ Tools Needed:
- Cordless Hammer Drill
- 5/16" Masonry Drill Bit for Plastic Anchors
- 1/2" Masonry Drill Bit for Expansion Anchors
- Phillips Screwdriver

Installation Instructions For A

1. Place bottom plate over inverted bottom with level sides. (Front and Back)
2. Drill 5/16" holes as shown in diagram.
3. Insert plastic wall anchors as shown in diagram A.
4. Attach with washer and screw as shown.

Installation Instructions For B

1. Follow instructions A if one side is level.
2. Drill 1/2" holes to accommodate expansion anchors.
3. Cut stainless steel rod to desired length. (Allow 1" inside expansion anchor and 1" through bottom plate)
4. Attach washers and hex nuts as shown in diagram.
5. Attach netting as shown in diagram.

PROJECT TITLE:
TAUC PROPERTIES
O'FALLON MAIN
507 S. MAIN ST.

Bax Project # 05-6396A | Issue Date: 8-14-16

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
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I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project except sheet number(s)

STATE OF MISSOURI
CLIFFORD L. HEITMANN
NUMBER E-29817
REGISTERED PROFESSIONAL ENGINEER
7-7-16
8-17

Clifford L. Heitmann
Civil Engineer
#E29817

REVISIONS

8-31-16	COMMENTS FROM CITY
10-7-16	COMMENTS FROM CITY

Developer / Owner:
DR. MATT BRUCKEL
TAUC PROPERTIS LLC
9556 MANCHESTER ROAD
ST. LOUIS, MO 63119

STORM WATER BMP DETAILS

P+Z No.
19-16 (approved 7-7-16)

City No.
16-000028

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