

SECTION 8: CONSTRUCTION

8.1. Construction Sequence

The following is the typical construction sequence to properly install a structural Sand Filter. This sequence can be modified to reflect different filter designs, site conditions, and the size, complexity and configuration of the proposed filtering application.

Step 1: Use of Filtering Practices as an E&S Control. The future location of a filtering practice may be used as the site of a temporary sediment basin or trap during site construction, as long as design elevations are set with final cleanout and conversion in mind. The bottom elevation of the filtering practice should be lower than the bottom elevation of the temporary sediment basin. Appropriate procedures should be implemented to prevent discharge of turbid water when the temporary basin is converted to a filtering practice.

Step 2: Stabilize Driveway Area. Filtering practices should only be constructed after the contributing drainage area to the facility is completely stabilized, so sediment from the CDA does not flow into and clog the filter. If the proposed filtering area is used as a sediment trap or basin during the construction phase, the construction notes should clearly specify that, after site construction is complete, the sediment control facility will be downsized, dredged and regraded to design dimensions for the post-construction filter.

Step 3: Install E&S Controls for the Filtering Practice. Stormwater should be diverted around filtering practices as they are being constructed. This is usually not difficult to accomplish for off-line filtering practices. It is extremely important to keep runoff and eroded sediments away from the Sand Filter throughout the construction process. Silt fence or other sediment controls should be installed around the perimeter of the Sand Filter, and erosion control fabric may be needed during construction on exposed side-slopes with gradients exceeding 4H:1V. Exposed soils in the vicinity of the filtering practice should be rapidly stabilized by hydro-seed, sod, mulch or other locally approved method of soil stabilization.

Step 4: Assemble Construction Materials on-site, make sure they meet design specifications, and prepare any staging areas.

8.2. Construction Inspection

Multiple construction inspections are critical to ensure that stormwater filters are properly constructed. Inspections are recommended during the following stages of construction:

- Pre-construction meeting.
- Initial site preparation (including installation of project E&S controls).
- Excavation/grading to design dimensions and elevations.
- Installation of the filter structure, including the watertightness test.
- Installation of the underdrain and sand filter bed.
- Check off that turf cover is vigorous enough to switch the facility on-line.
- Final inspection (after a rainfall event to ensure that it drains properly and all pipe connections are watertight. Develop a punch list for facility acceptance. Log the filtering practice's GPS coordinates and submit them for entry into the local BMP maintenance tracking database.

VA DEQ STORMWATER DESIGN SPECIFICATION NO. 12

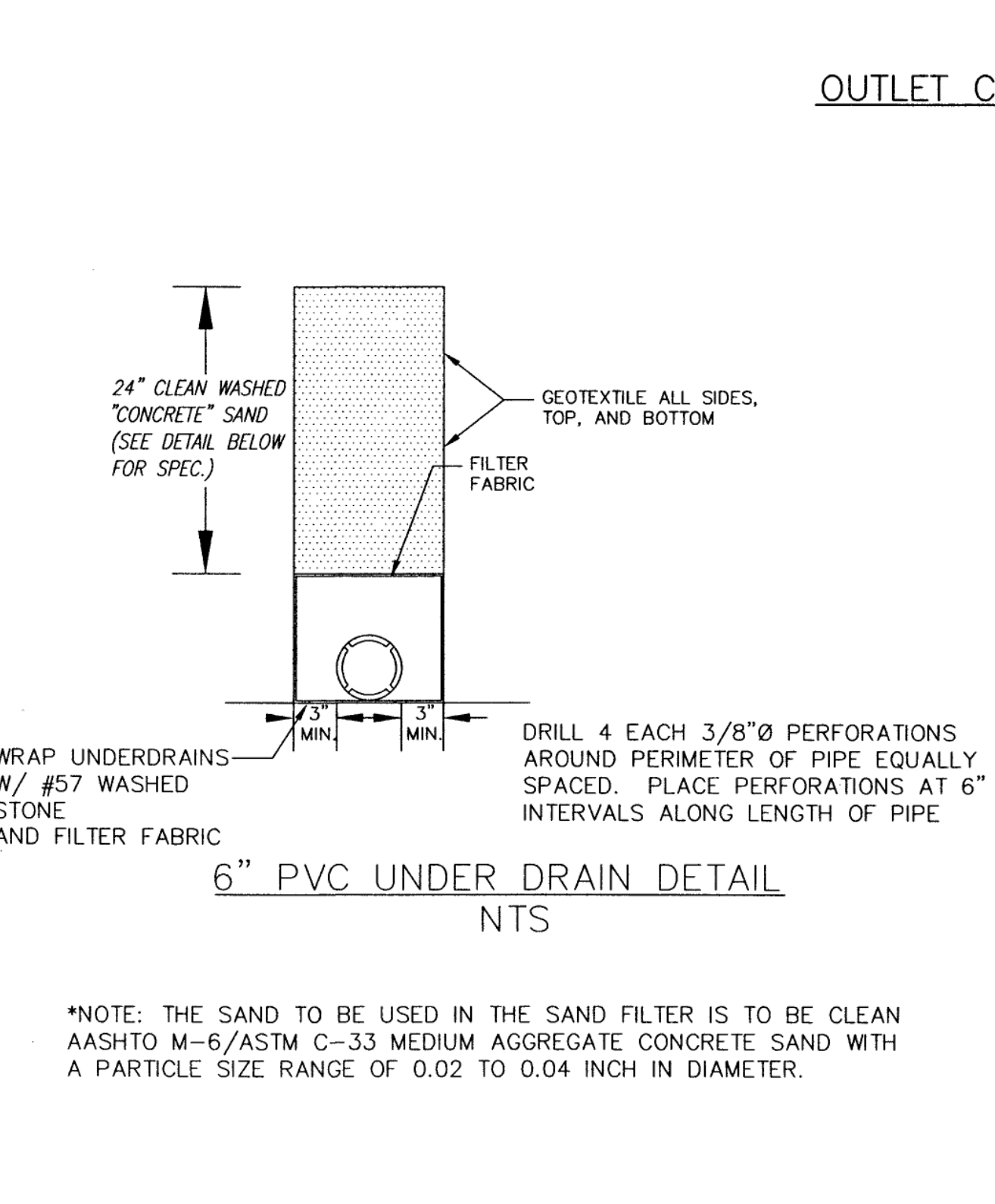
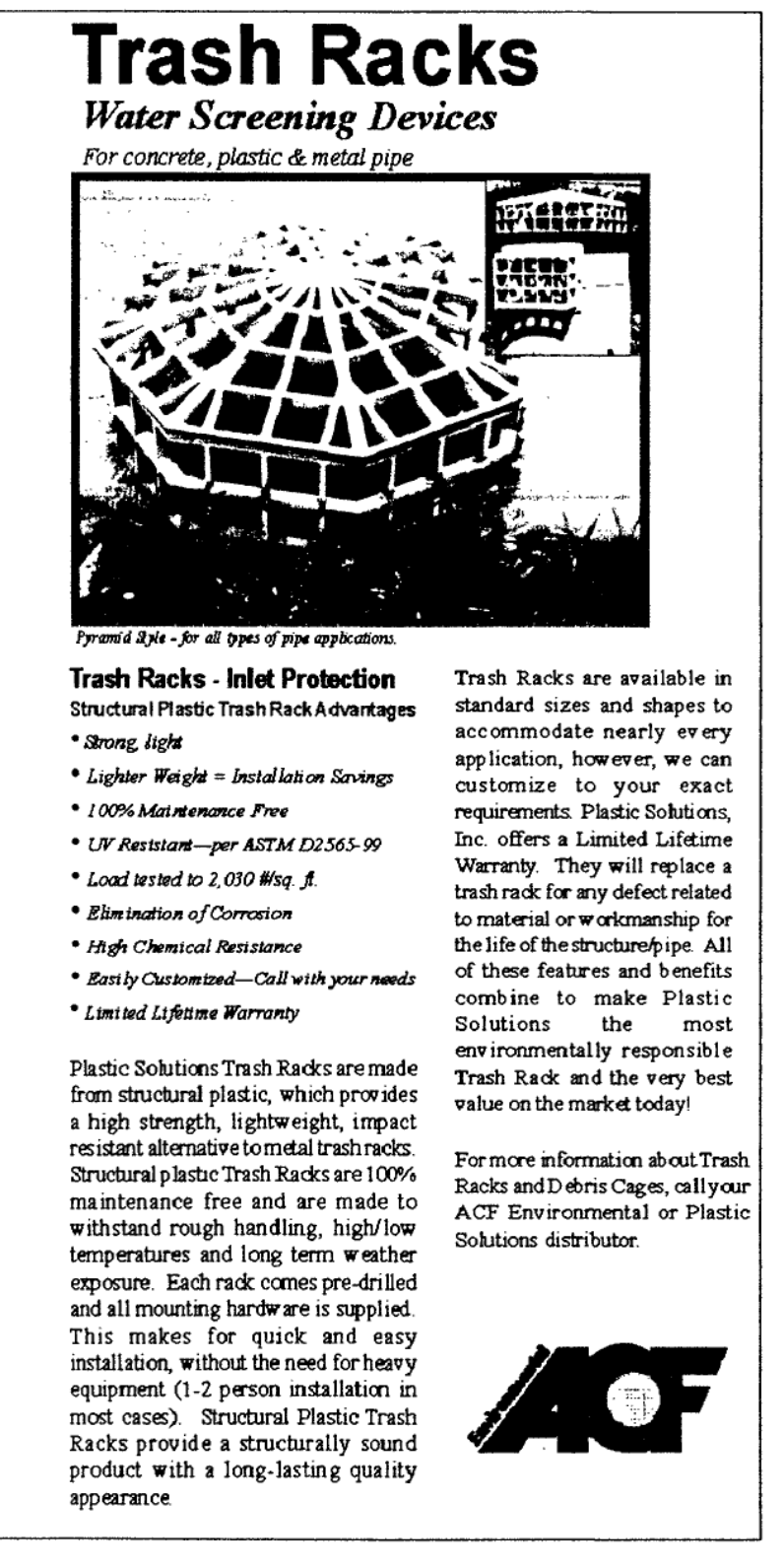
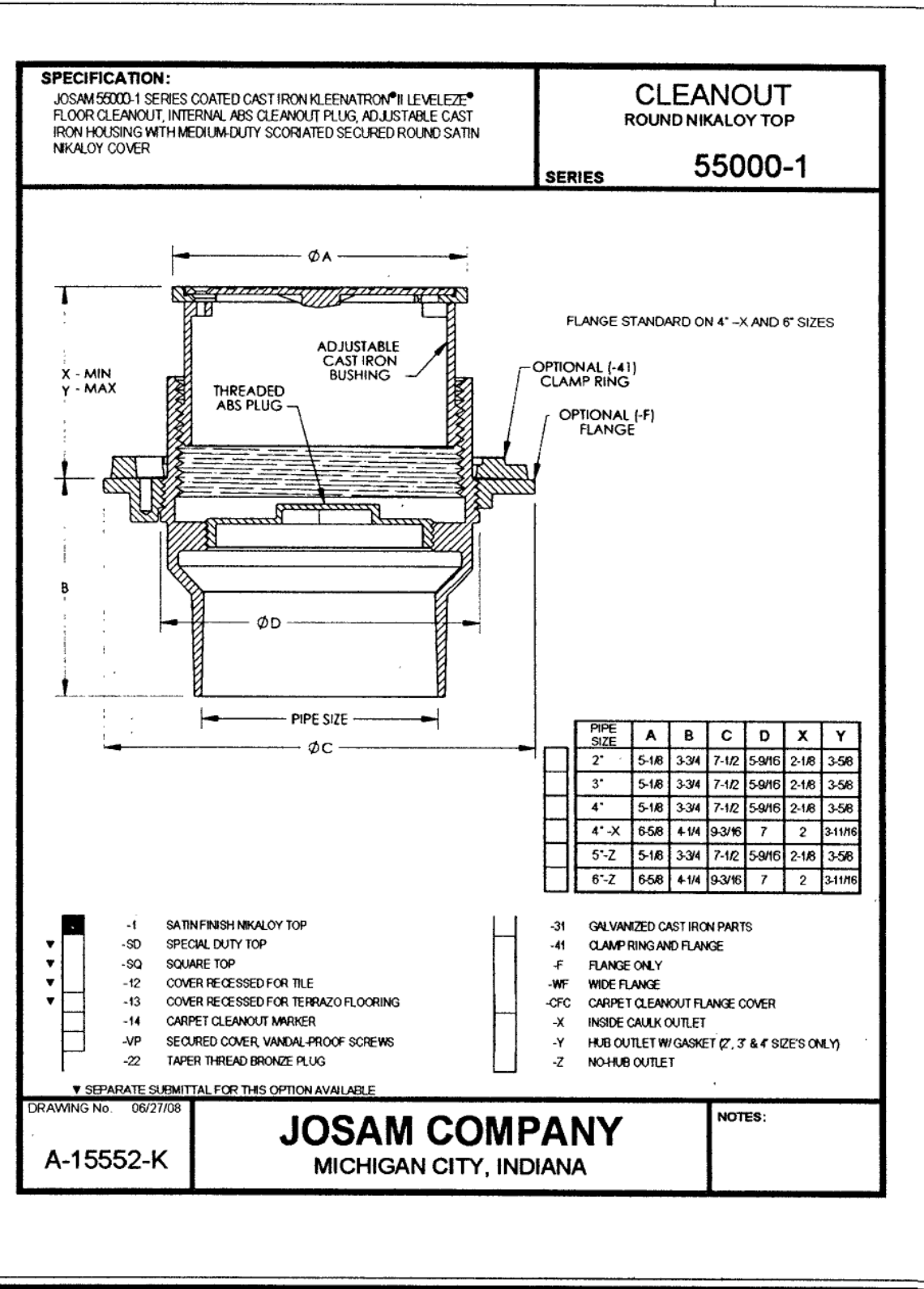
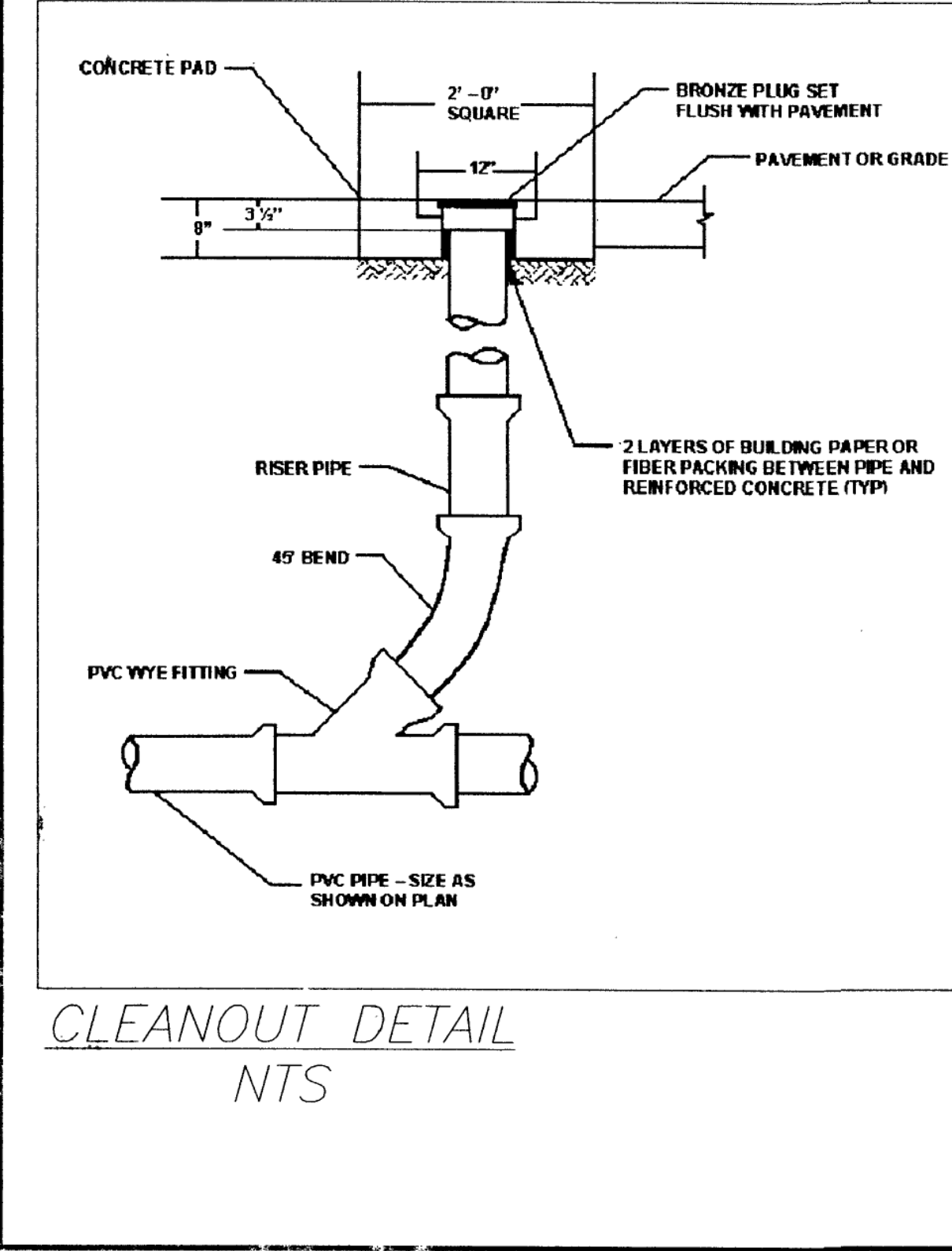
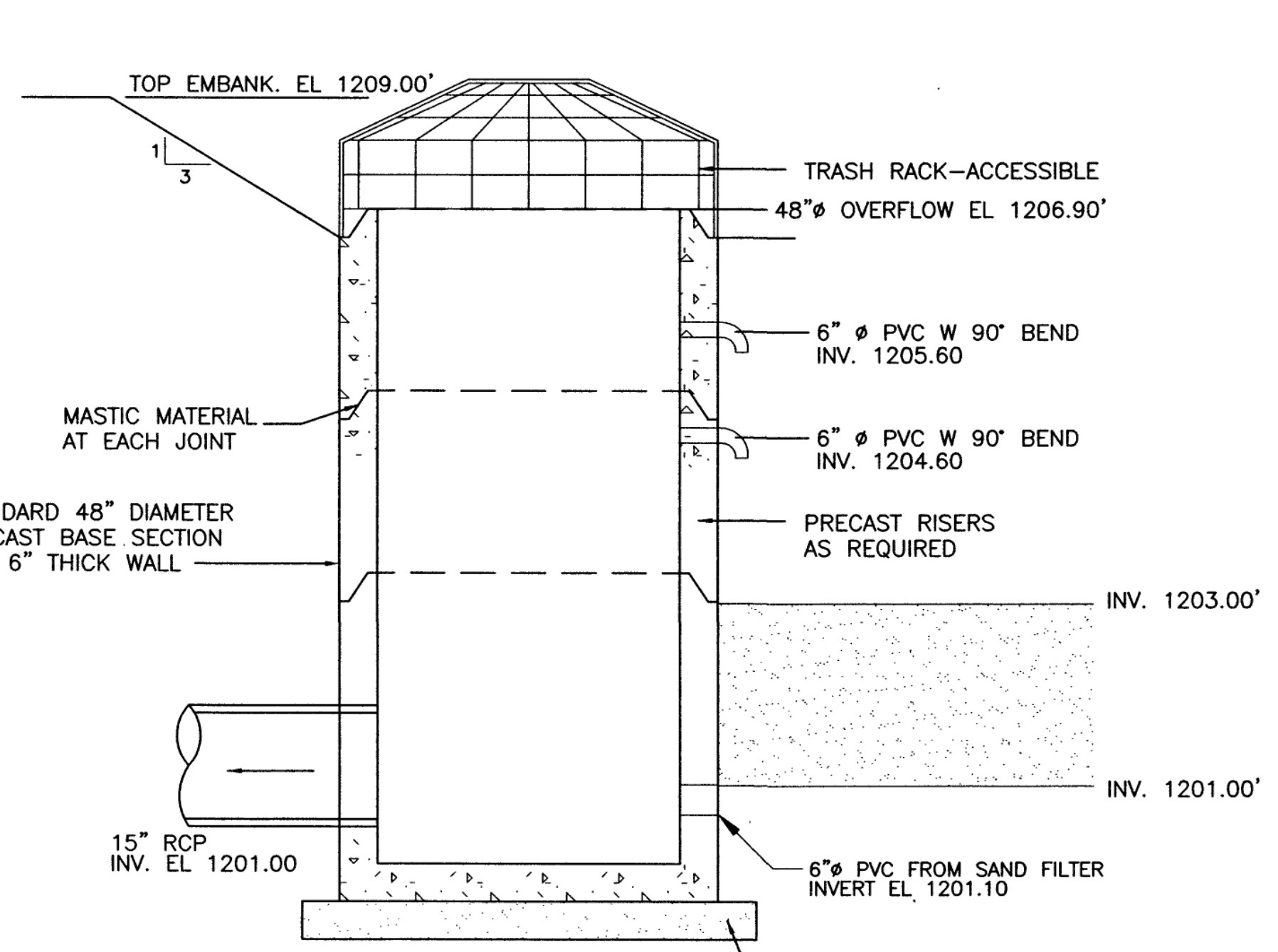
FILTERING PRACTICES

A construction inspection form for Filtering Practices can be accessed at the CWP website at: http://www.cwp.org/Resources/Library/Controlling_Burial_and_Discharge/ins_fm.html (scroll to Tool: Plan Review, BMP Construction, and Maintenance Checklists)

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SAND FILTER

Sand filters should be inspected at least once per year after a storm event, to ascertain whether the filter's infiltration capacity is decreasing due to clogging of the top layer. This layer may be removed in such cases to restore the infiltration rate.

Maintenance

Sand filters must be maintained as needed to remove visible surface sediment accumulation, trash, debris, and leaf litter to prevent the filter from clogging prematurely. The top layer may need to be removed and replaced if the annual monitoring shows a decrease in the infiltration capacity. In areas where heavy hydrocarbon loadings may be expected, the top 2 to 3 inches of sand or overlying layers of geotextile and top soil must be replaced every 3 to 5 years. The removed material must be tested for proper disposal.

The maintenance guidelines are as follows:

- The sediment chamber outlet devices should be cleaned or repaired when downtime times within the chamber exceed 24 hours. Trash and debris should be removed as necessary. Sediment should be cleaned out of the sedimentation chamber when it accumulates to a depth of more than 6 inches.
- When the filtering capacity of the filter diminishes substantially (e.g., when water ponds on the surface of the filter bed for more than 24 hours), the topsoil and underlying 3 inches of filter material should be removed and replaced with fresh material. The removed sediments should be tested and disposed of in an acceptable manner (e.g., landfill). Silt/sediment should be removed from the filter bed when the accumulation exceeds 1 inch.
- Vegetation within the sedimentation chamber of open sand or organic filters should be mowed to limit the height to 12 inches. Vegetation within the sedimentation chamber of a closed sand filter should be removed.
- Direct maintenance access should be provided to the pretreatment area and the filter bed.

CONSTRUCTION SEQUENCE

- REMOVE ALL SEDIMENT FROM TEMPORARY SEDIMENT BASIN AND CONVERT RISER STRUCTURE TO ACCOMMODATE SAND FILTER PIPING.
- GRADE/SHAPE SAND FILTER AND FOREBAY PER ELEVATIONS SHOWN ON DETAIL.
- INSTALL FABRIC AND SAND FILTER PIPING AS SHOWN WITH CLEANOUTS.
- INSTALL SAND FILTER MATERIAL TO DEPTHS AND AREA SHOWN ON DETAIL.
- STABILIZE ALL EXPOSED SLOPES WITH SOD MATERIAL.
- ADJUST CLEAN OUT CAPS FLUSH W/ FINAL GRADE.

RIVER RUN EXECUTIVE OFFICES
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PROPOSED SHEETZ STORE

SHEETZ INC.

FRANKLIN COUNTY- WIRTZ, VIRGINIA

STANDARD DETAILS

9/13/16

REV	DATE	BY	DESCRIPTION
1	9-13-16	FW	FRANKLIN COUNTY COMMENTS
2	7-28-16	FW	FRANKLIN COUNTY COMMENTS
3	9-13-16	FW	ISSUED FOR CONSTRUCTION

Sheet No. **23** of **25**

Date: MARCH 22, 2016

Scale: NTS

Project No.

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