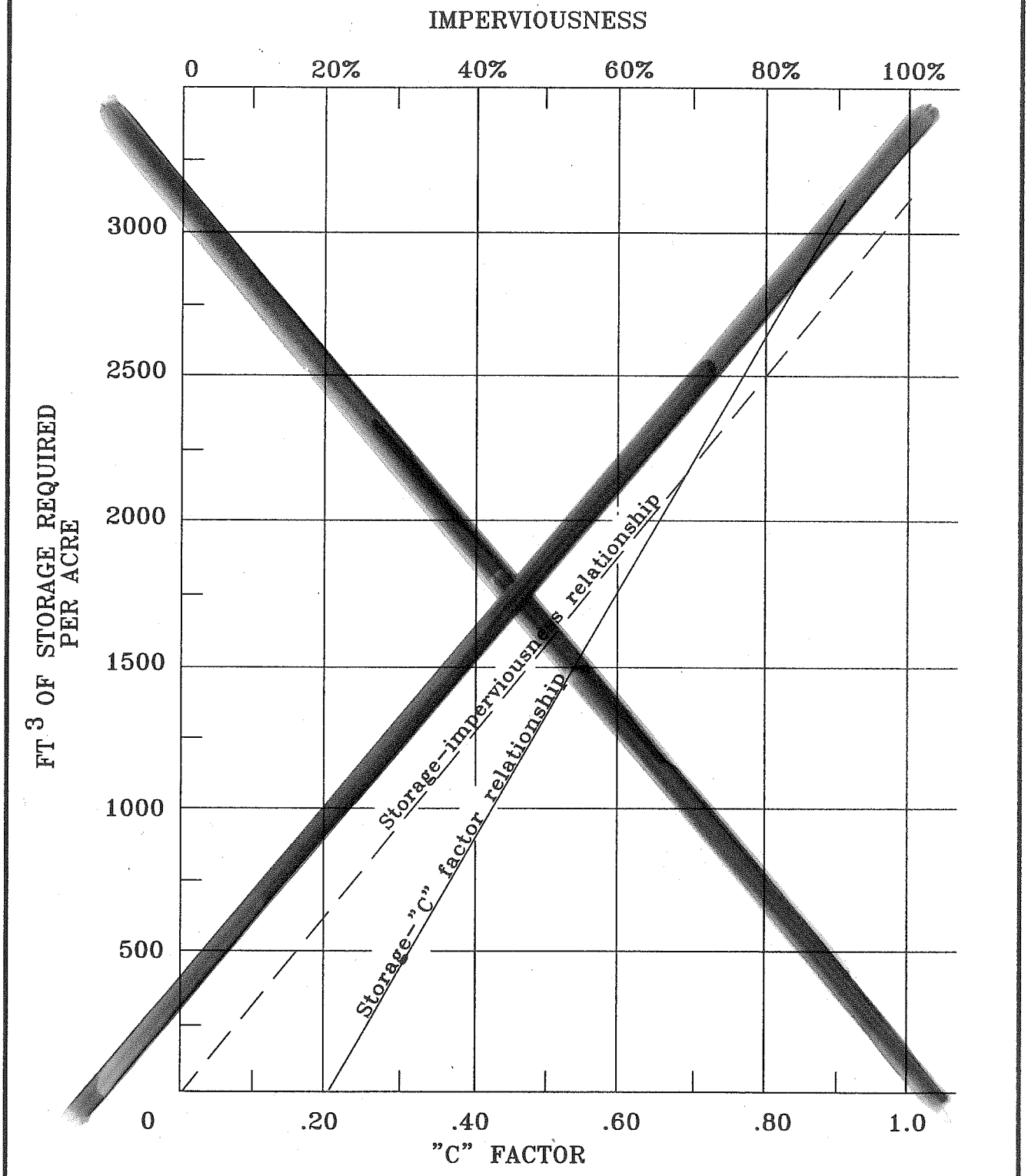
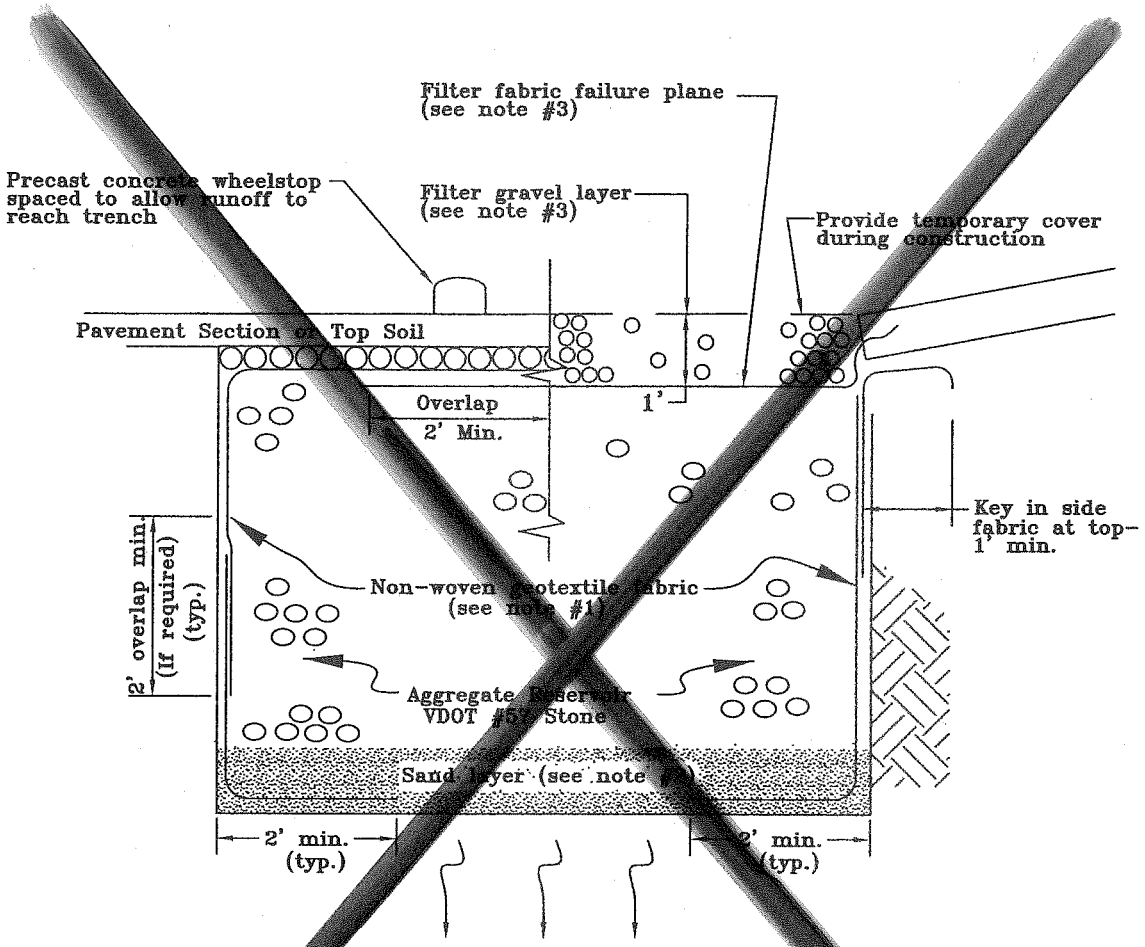


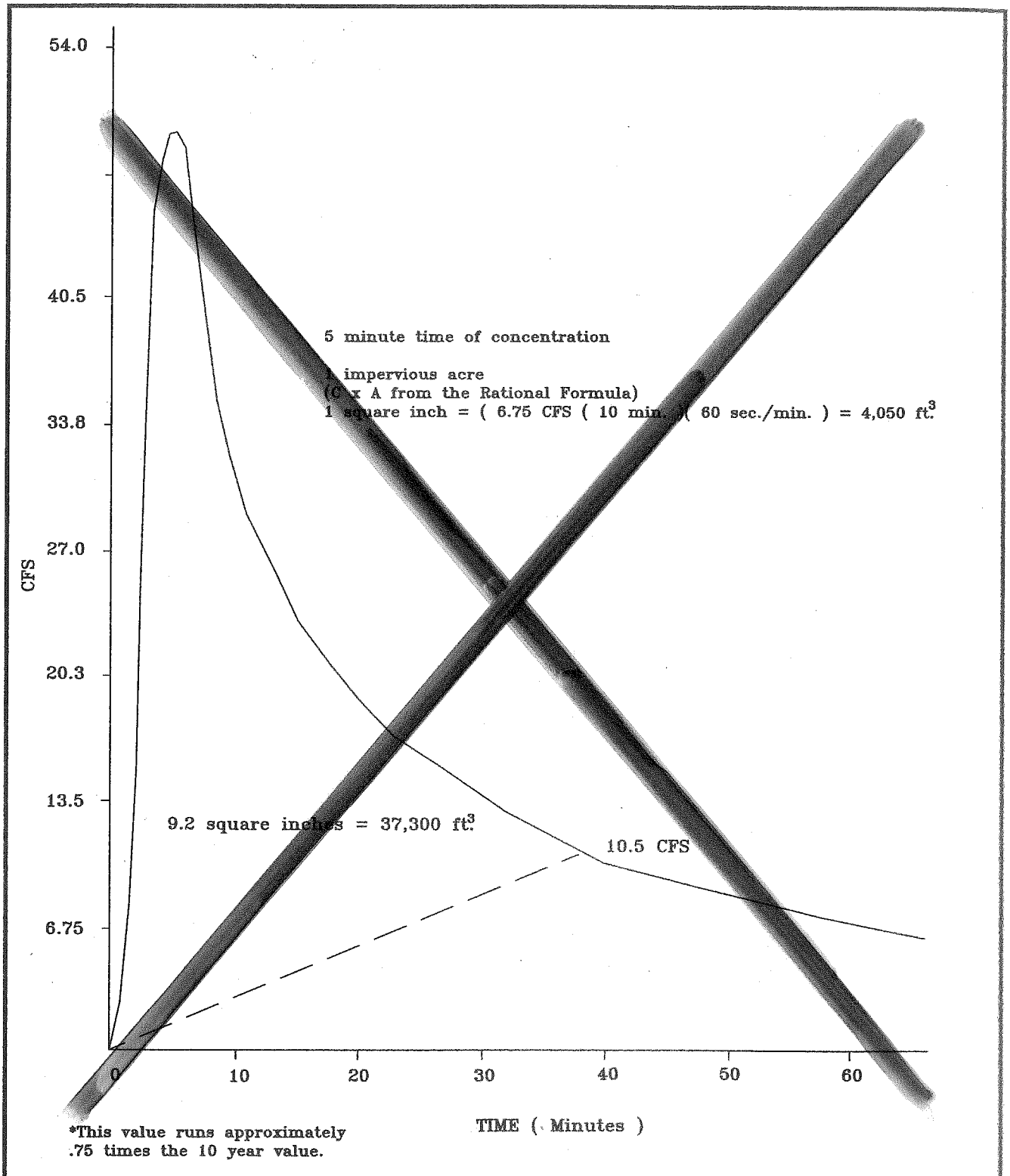
Ref. Sec. 6-0402 Rev. 1-00, 2011 Reprint	WATER QUALITY STORAGE REQUIREMENTS RELATED TO PERCENT IMPERVIOUSNESS AND RATIONAL FORMULA "C" FACTOR	PLATE NO.	STD. NO.
		2-6	



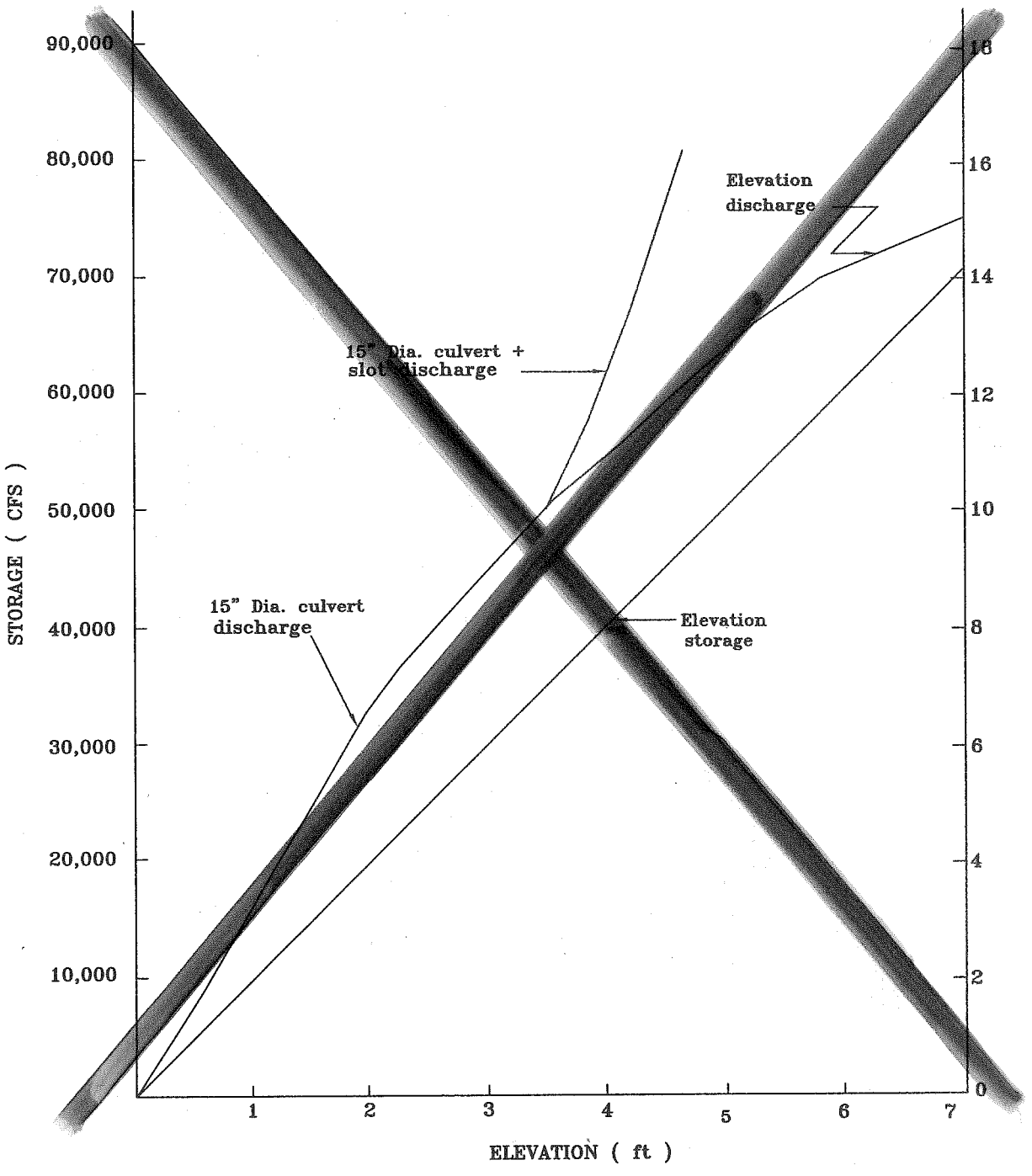
NOTES:

1. Use non-woven geotextile fabric with AOS of 70-100 US Sieve or 0.2 mm - 0.15 mm as determined by ASTM D4751 and a trapezoidal tear strength of 45 LB. or 0.2 kN as determined by ASTM D4533.
2. An 8-in. deep bottom sand layer (VDOT Fine Aggregate, Grading A or B) is required.
3. For an aggregate surface trench, filter fabric shall surround all of the aggregate fill material except the top one foot. A separate piece of fabric shall be used for the top layer to act as a failure plane. This top piece can then be removed and replaced upon clogging.
4. Geotextile fabric shall not be exposed to direct sunlight for more than 24 hours prior to installation.

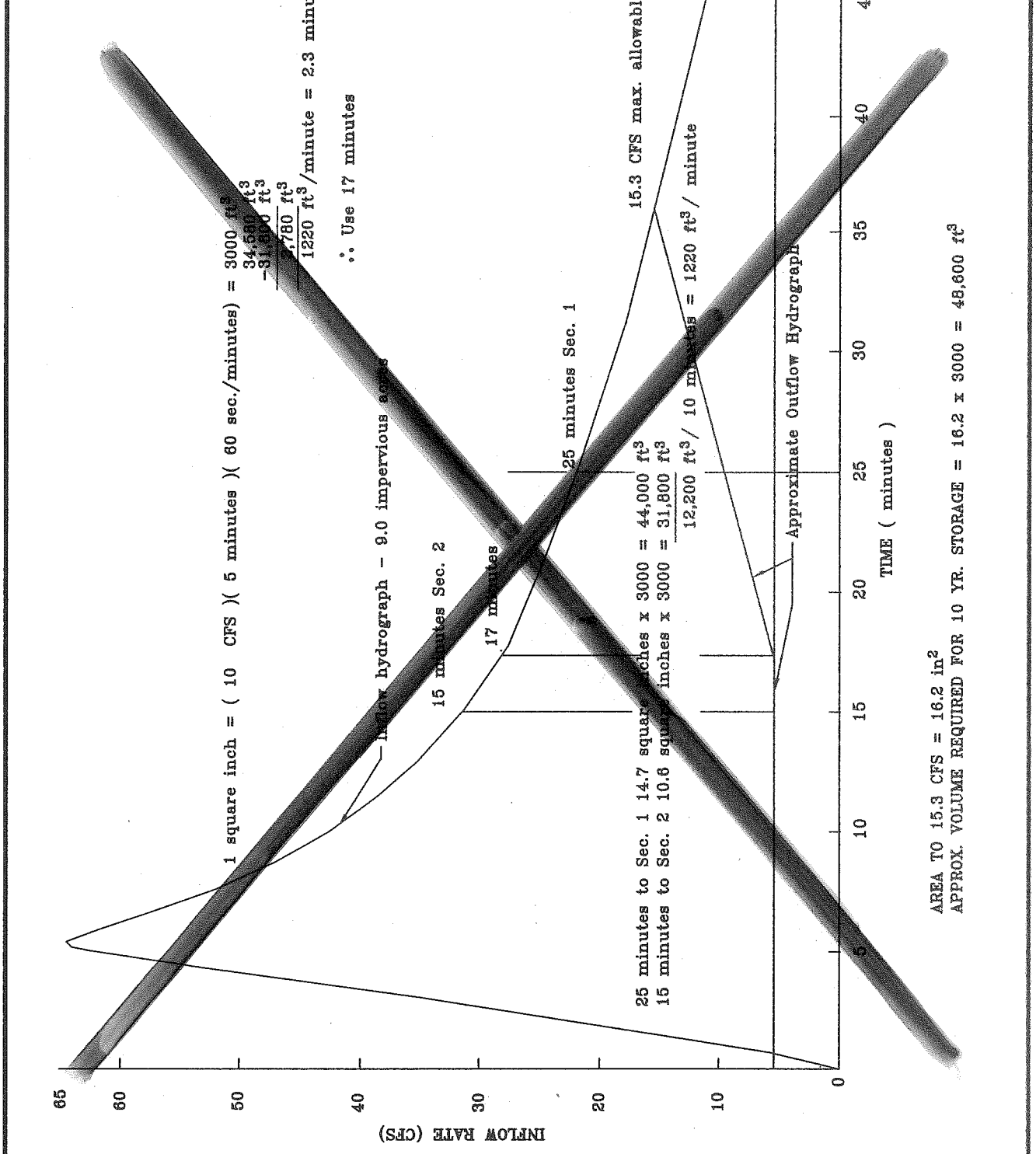
Ref. Sec. 6-1303.7B, 6-1303 Rev. 1-00, 6-04, 10-06, 2011 Reprint	PERCOLATION TRENCH	PLATE NO.	STD. NO.
		41A-6	



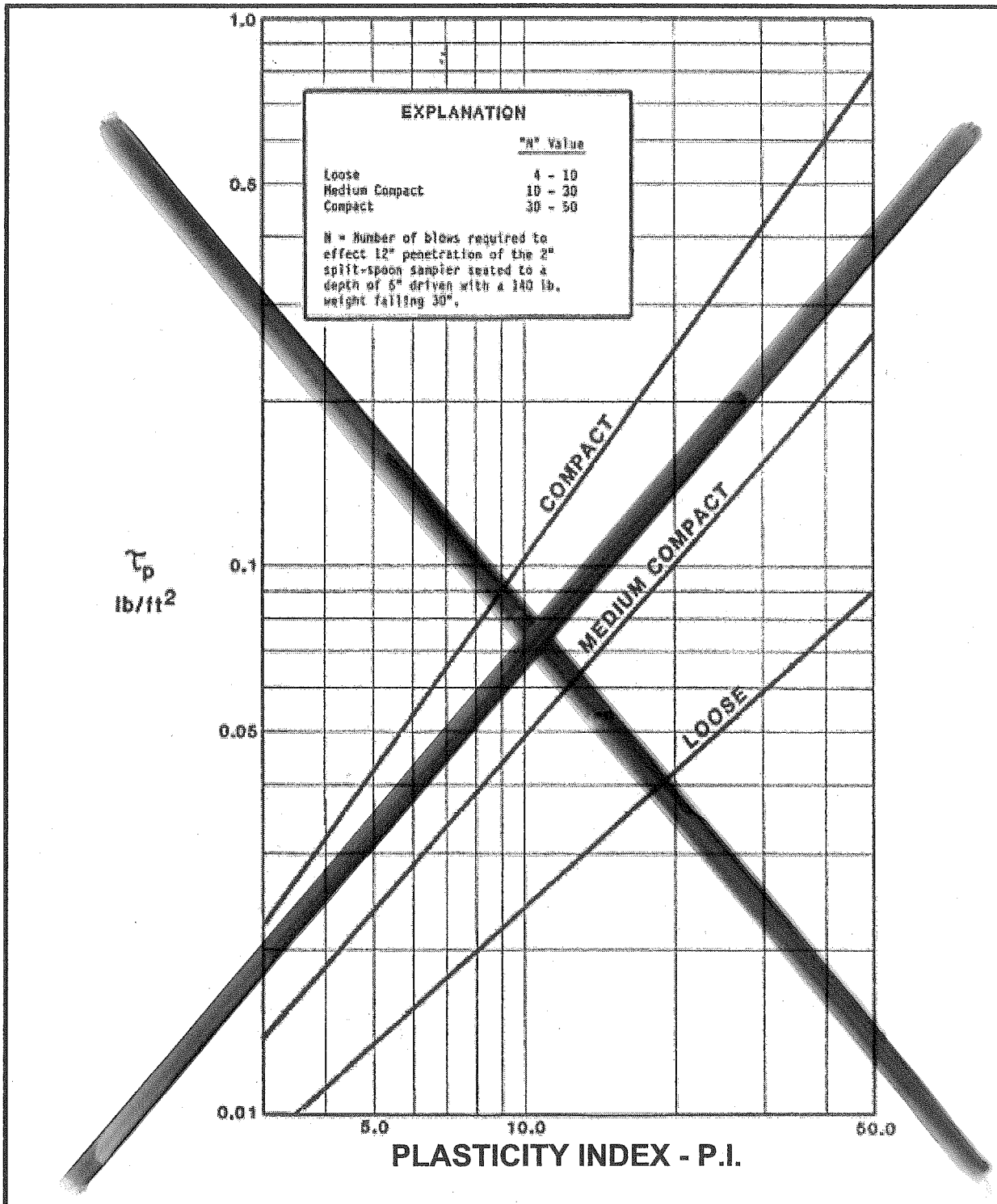
Ref Sec 6-1305.8B(1), 6-1305.9A Rev. 1-00	UNIT FLOW HYDROGRAPH 2 YEAR* - 2 HOUR STORM	PLATE NO. 42-6	STD. NO.



Ref. Sec. 6-1305.8B(5), 6-1305.8B(6), 6-1305.9C, 6-1305.10E Rev. 1-00, 2011 Reprint	DISCHARGE - 15" CULVERT	PLATE NO.	STD. NO.
		43-6	



Ref. Sec. 6-1305.10B	INFLOW HYDROGRAPH 10 YEAR- 2 HOUR STORM 5 MINUTE TIME OF CONCENTRATION	PLATE NO.	STD. NO.
Rev. 1-00		44-6	



SOURCE: Federal Highway Administration (IP-87-7) 1988
Design of Roadside Channels with Flexible Linings

Ref. Sec. 6-0203.4A(2)	PERMISSIBLE SHEAR STRESS COHESIVE SOILS	PLATE NO.	STD. NO.
Rev. 1-00, 2-06, 2011 Reprint		76-6	

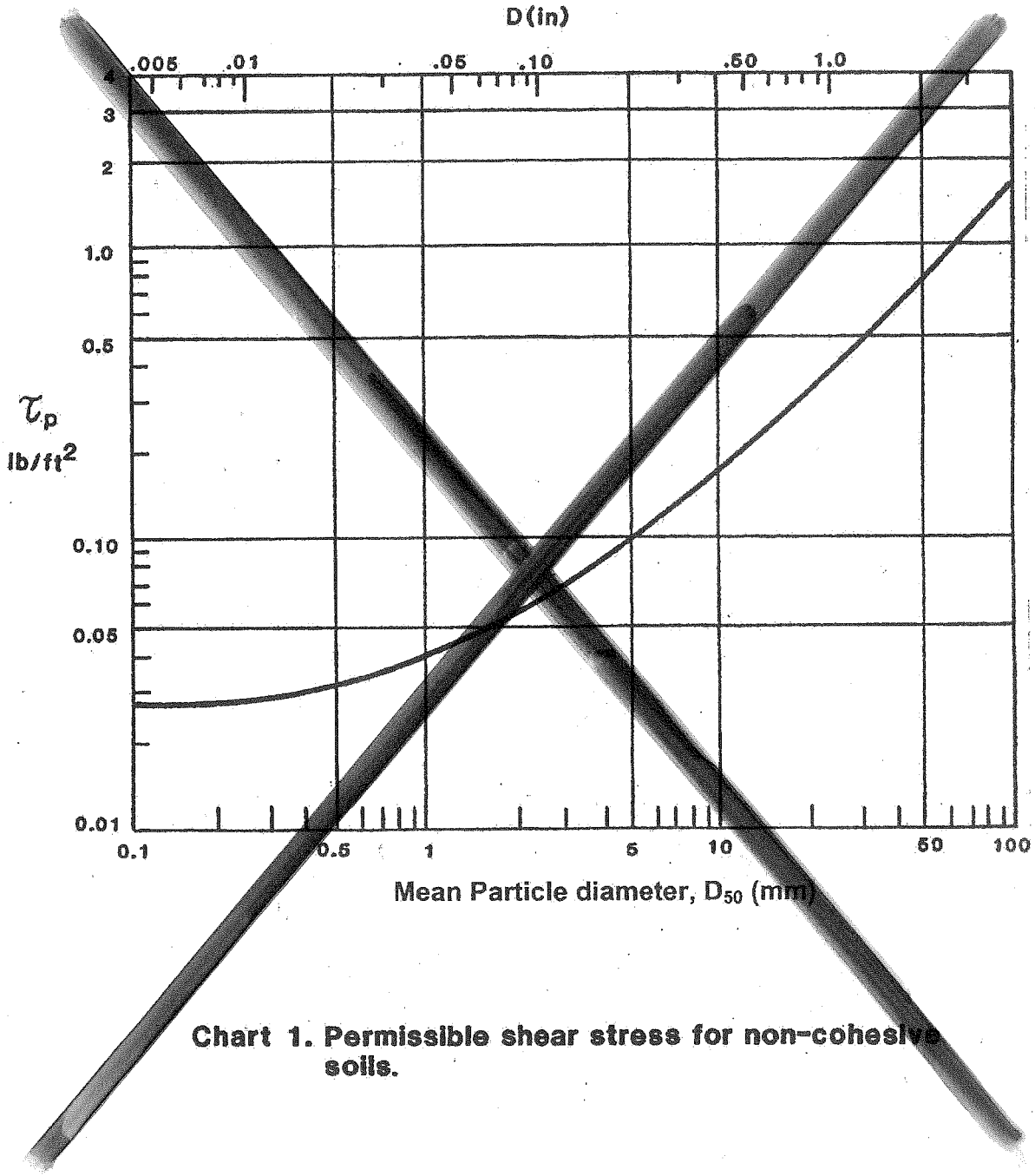
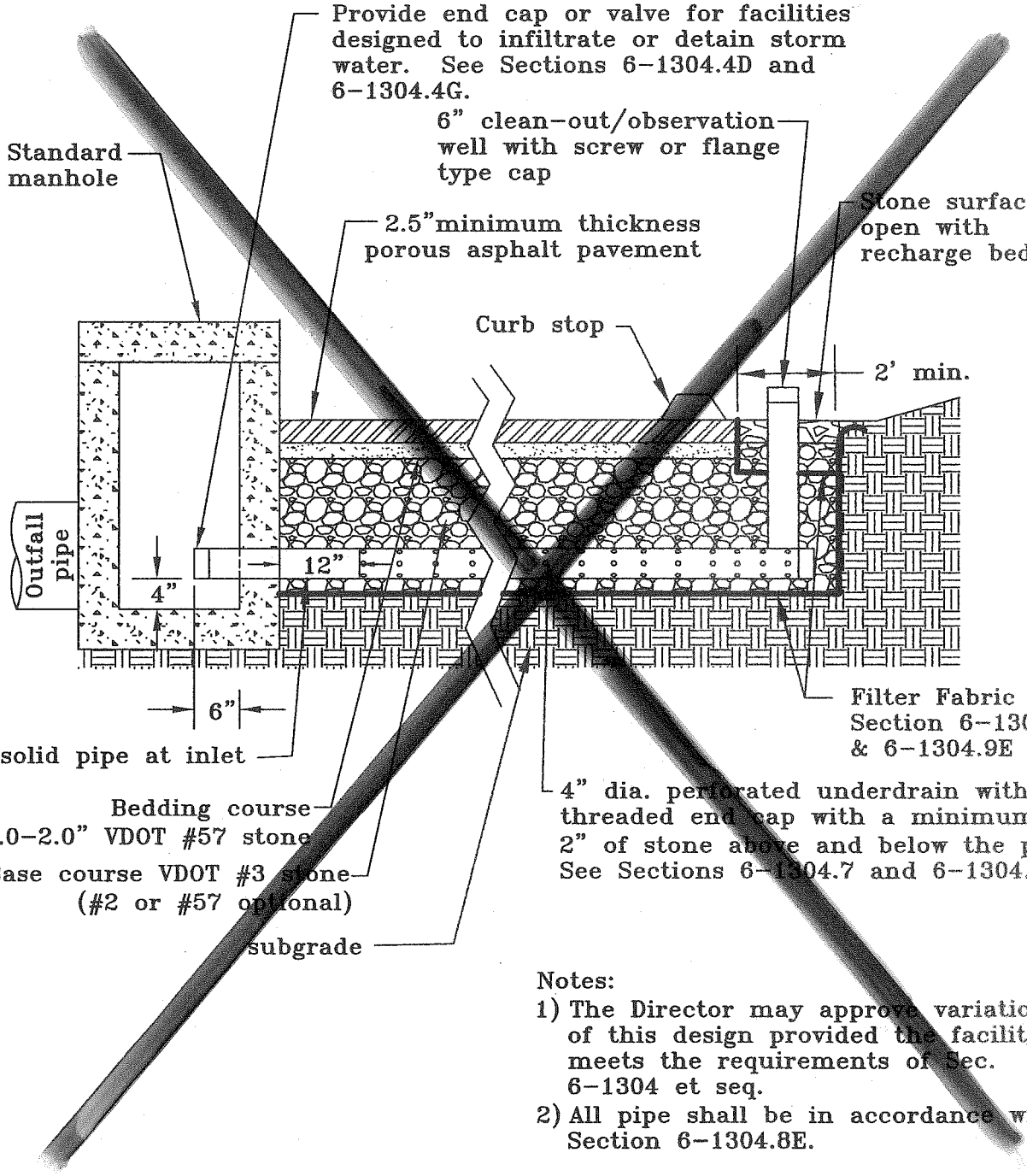


Chart 1. Permissible shear stress for non-cohesive soils.

SOURCE: Federal Highway Administration (IP-87-7) 1988 Design of Roadside Channels with Flexible Linings

Ref. Sec. 6-0203.5A(2)	PERMISSIBLE SHEAR STRESS NON-COHESIVE SOILS	PLATE NO.	STD. NO.
Rev. 2-06		77-6	



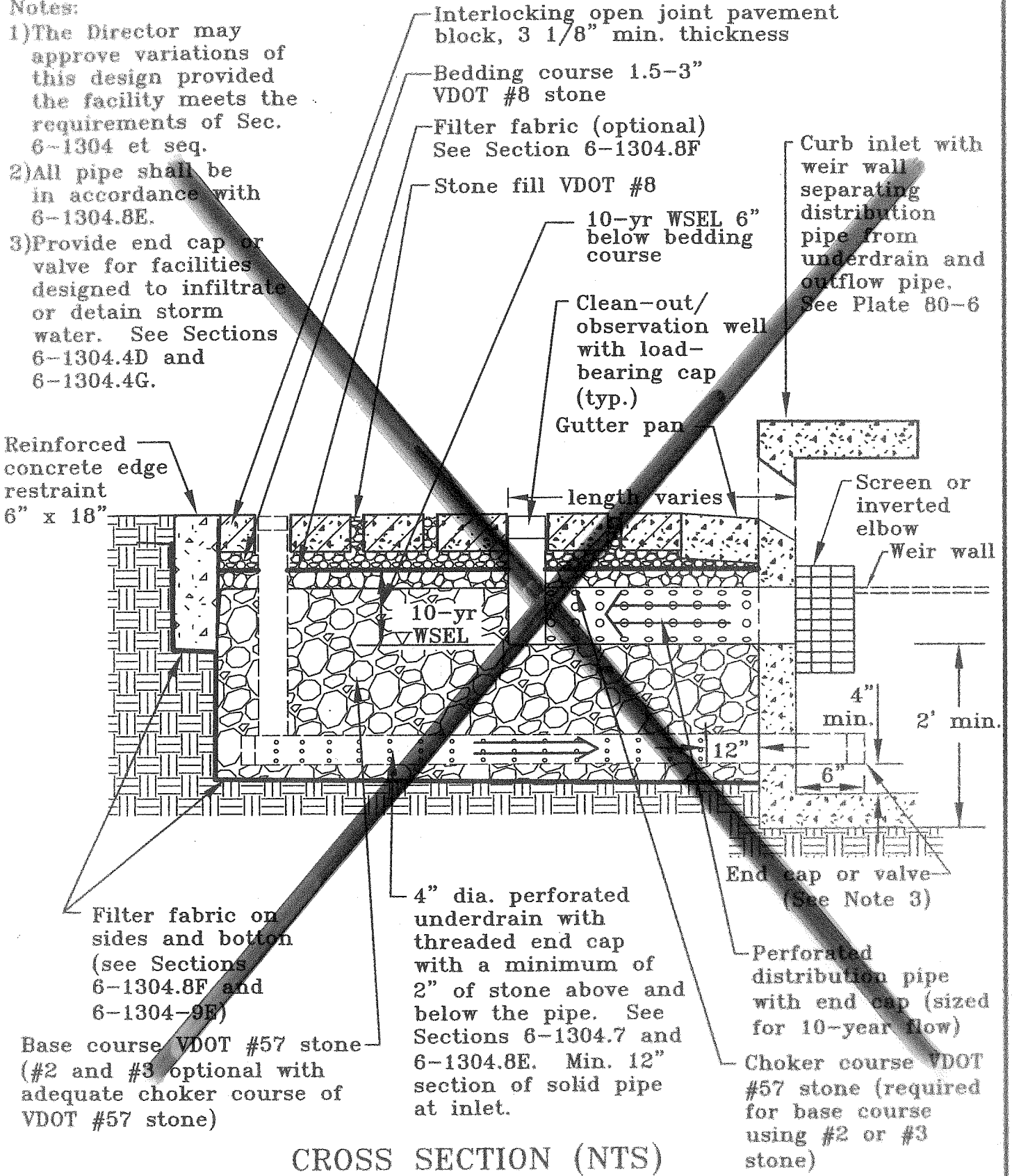
Notes:

1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1304 et seq.
2) All pipe shall be in accordance with Section 6-1304.8E.

CROSS SECTION (NTS)

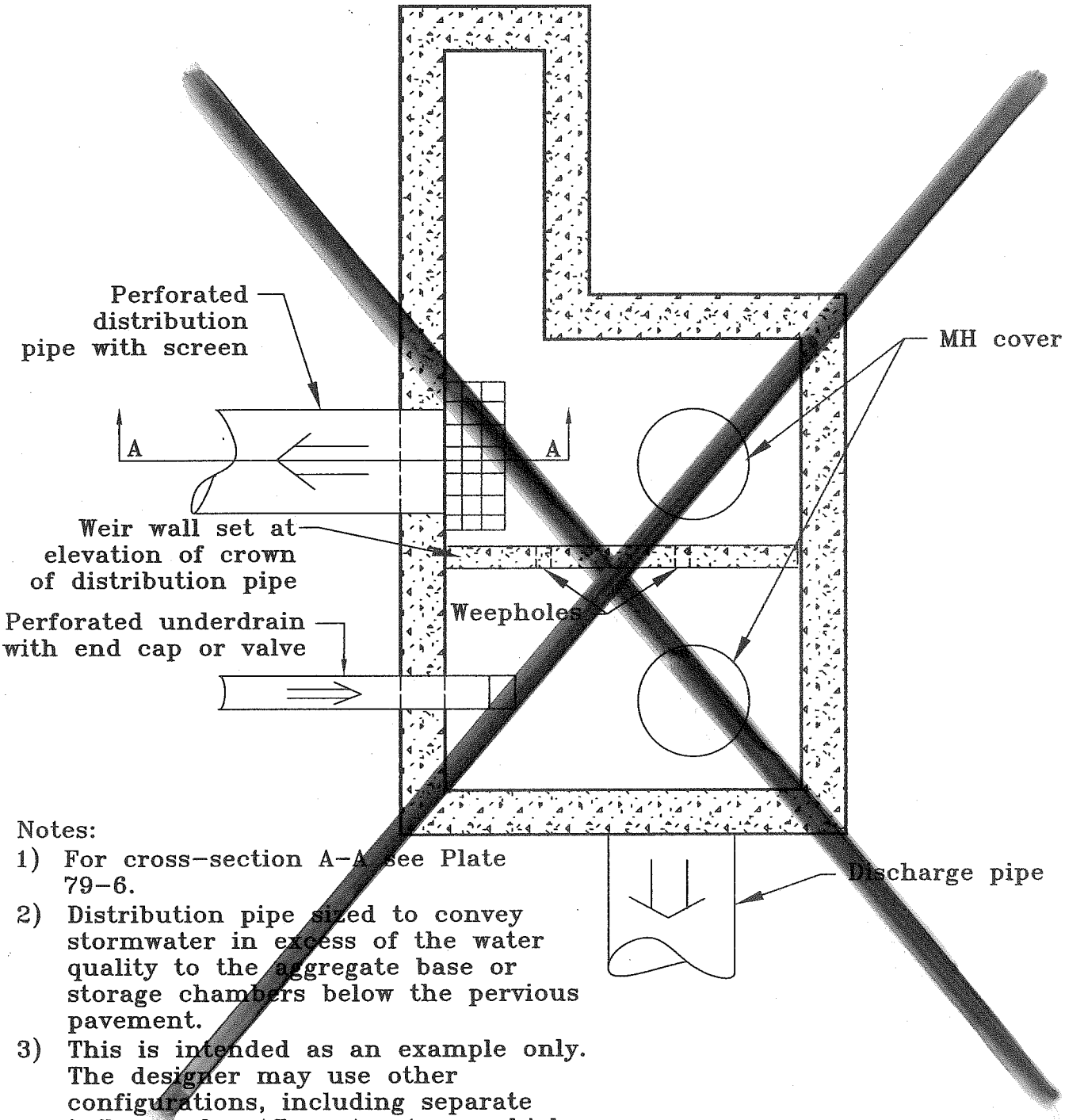
Ref. Sec. 6-1304 et seq.	POROUS ASPHALT PAVEMENT EXTENDED AGGREGATE BASE	PLATE NO.	STD. NO.
Rev. 3-07		78-6	

Notes:
1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1304 et seq.
2) All pipe shall be in accordance with 6-1304.8E.
3) Provide end cap or valve for facilities designed to infiltrate or detain storm water. See Sections 6-1304.4D and 6-1304.4G.



CROSS SECTION (NTS)

Ref. Sec. 6-1304 et seq., Plate 80-6 Rev. 3-07	PERMEABLE OPEN JOINT PAVEMENT BLOCK	PLATE NO.	STD. NO.
		79-6	

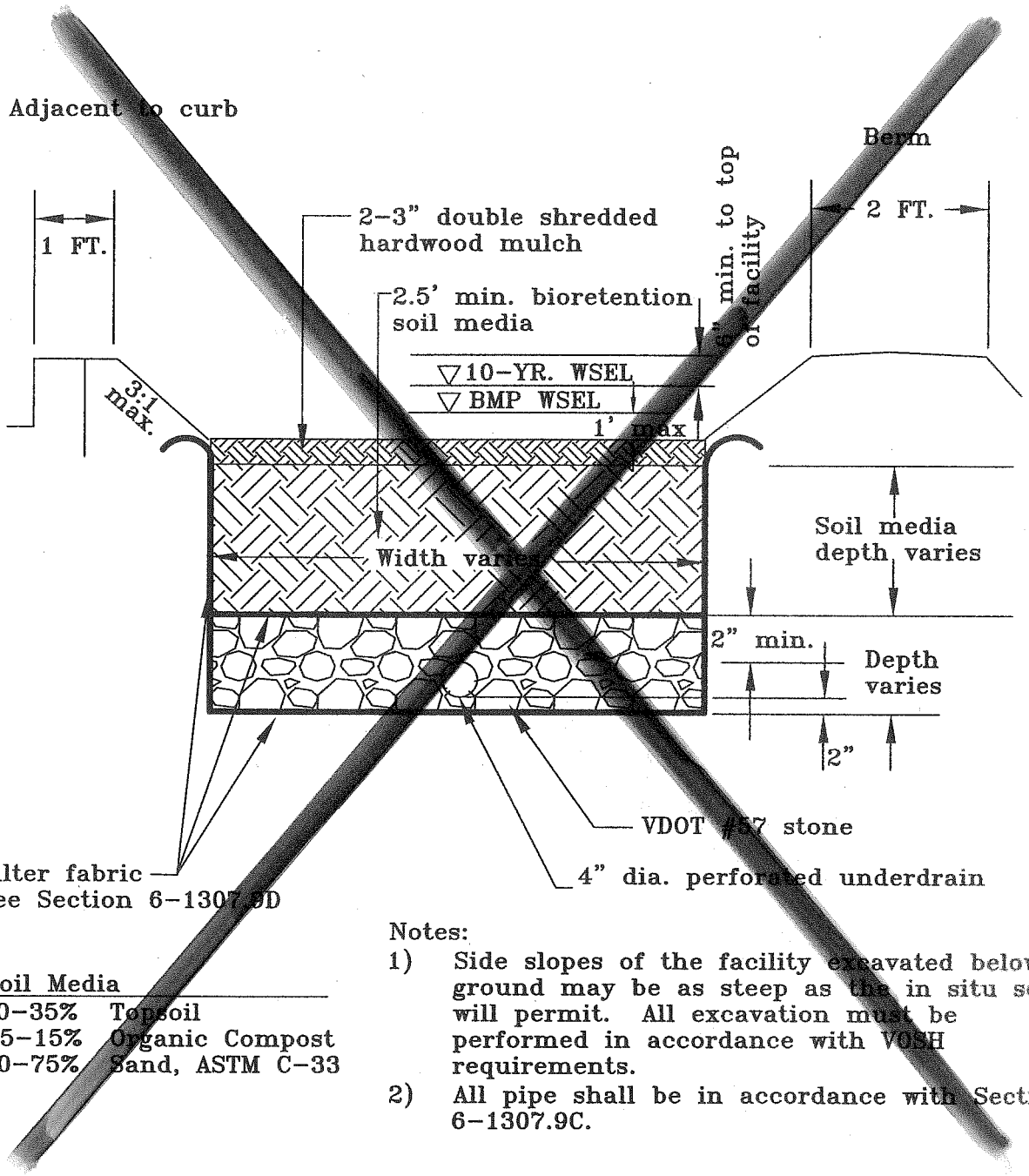


Notes:

1) For cross-section A-A see Plate 79-6.
2) Distribution pipe sized to convey stormwater in excess of the water quality to the aggregate base or storage chambers below the pervious pavement.
3) This is intended as an example only. The designer may use other configurations, including separate inflow and outflow structures which may include manufactured water quality inlets.

PLAN VIEW (NTS)

Ref. Sec. 6-1304 et. seq., Plate 79-6 Rev. 3-07, 2011 Reprint	EXAMPLE INLET SCHEMATIC FOR PERVIOUS PAVEMENT	PLATE NO.	STD. NO.
		80-6	



Soil Media

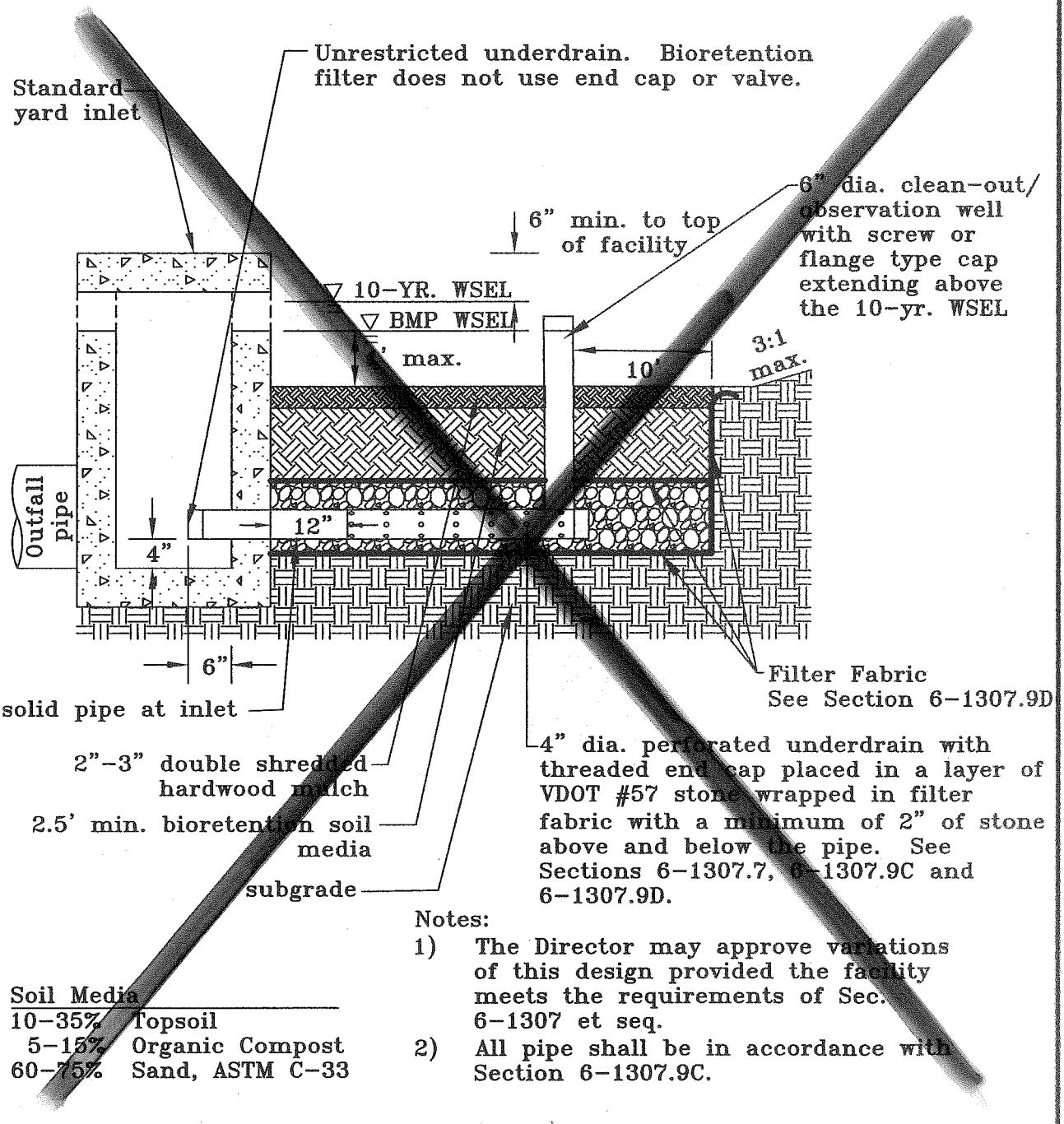
10-35%	Topsoil
5-15%	Organic Compost
60-75%	Sand, ASTM C-33

Notes:

1) Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with VOSH requirements.
2) All pipe shall be in accordance with Section 6-1307.9C.

CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1307 et. seq. Rev. 3-07	BIORETENTION FILTER OR BASIN WITH STONE STORAGE	PLATE NO.	STD. NO.
		82-6	



Soil Media

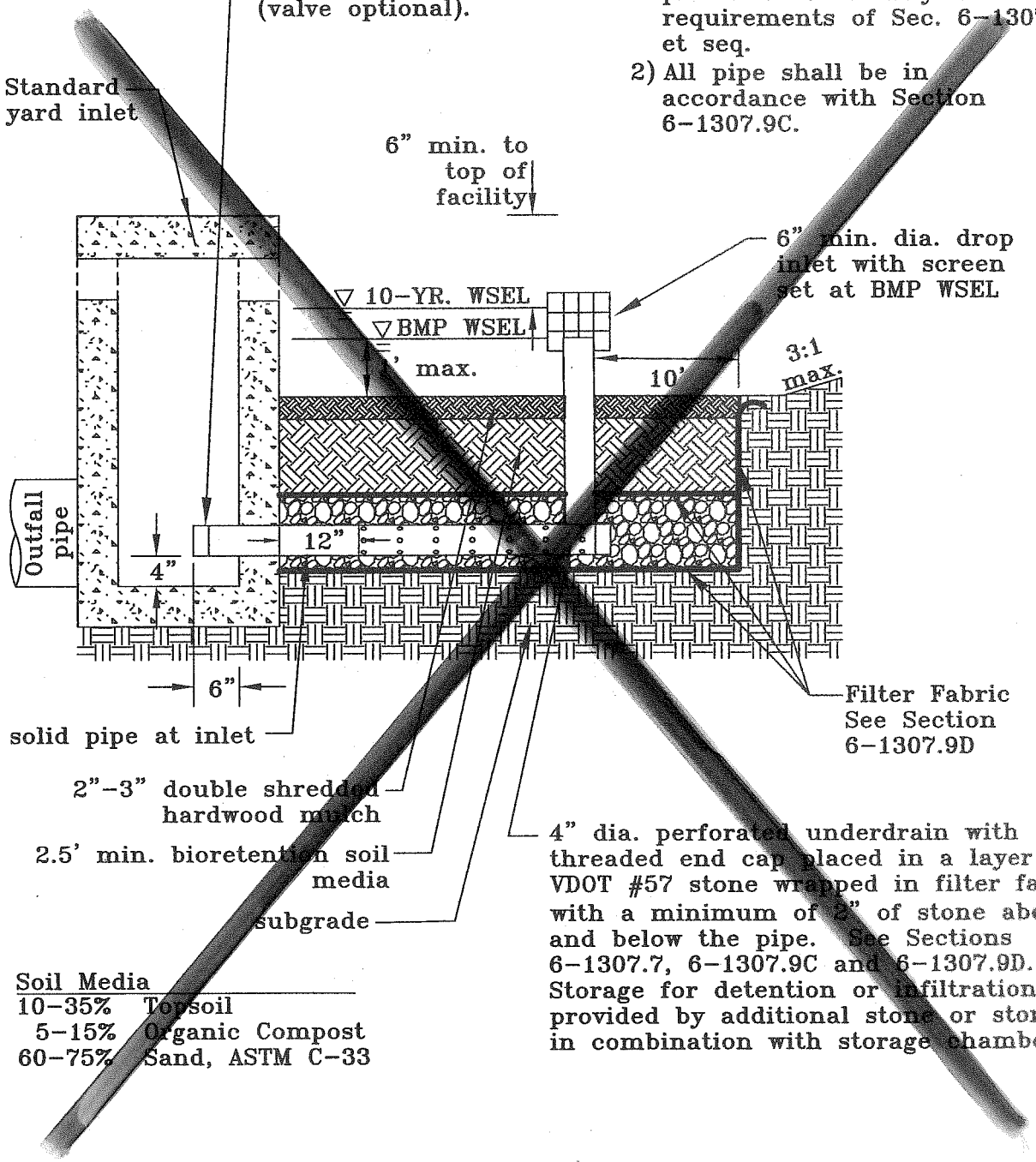
10-35%	Topsoil
5-15%	Organic Compost
60-75%	Sand, ASTM C-33

Notes:

1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1307 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.

PROFILE VIEW (NTS)

Ref. Sect. 1307 et seq.	BIORETENTION FILTER	PLATE NO.	STD. NO.
Rev. 3-07		83-6	

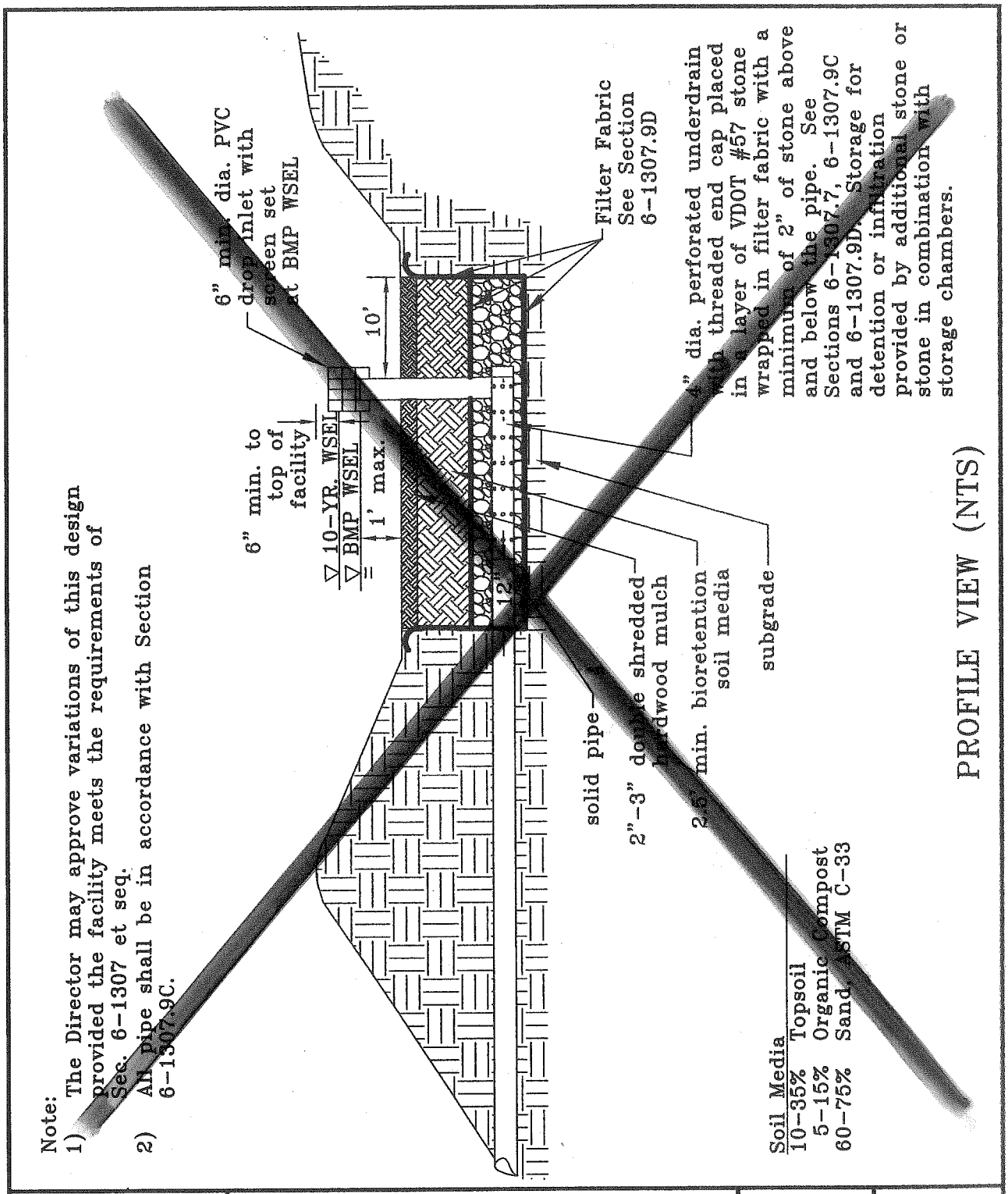


Notes:
1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1307 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.

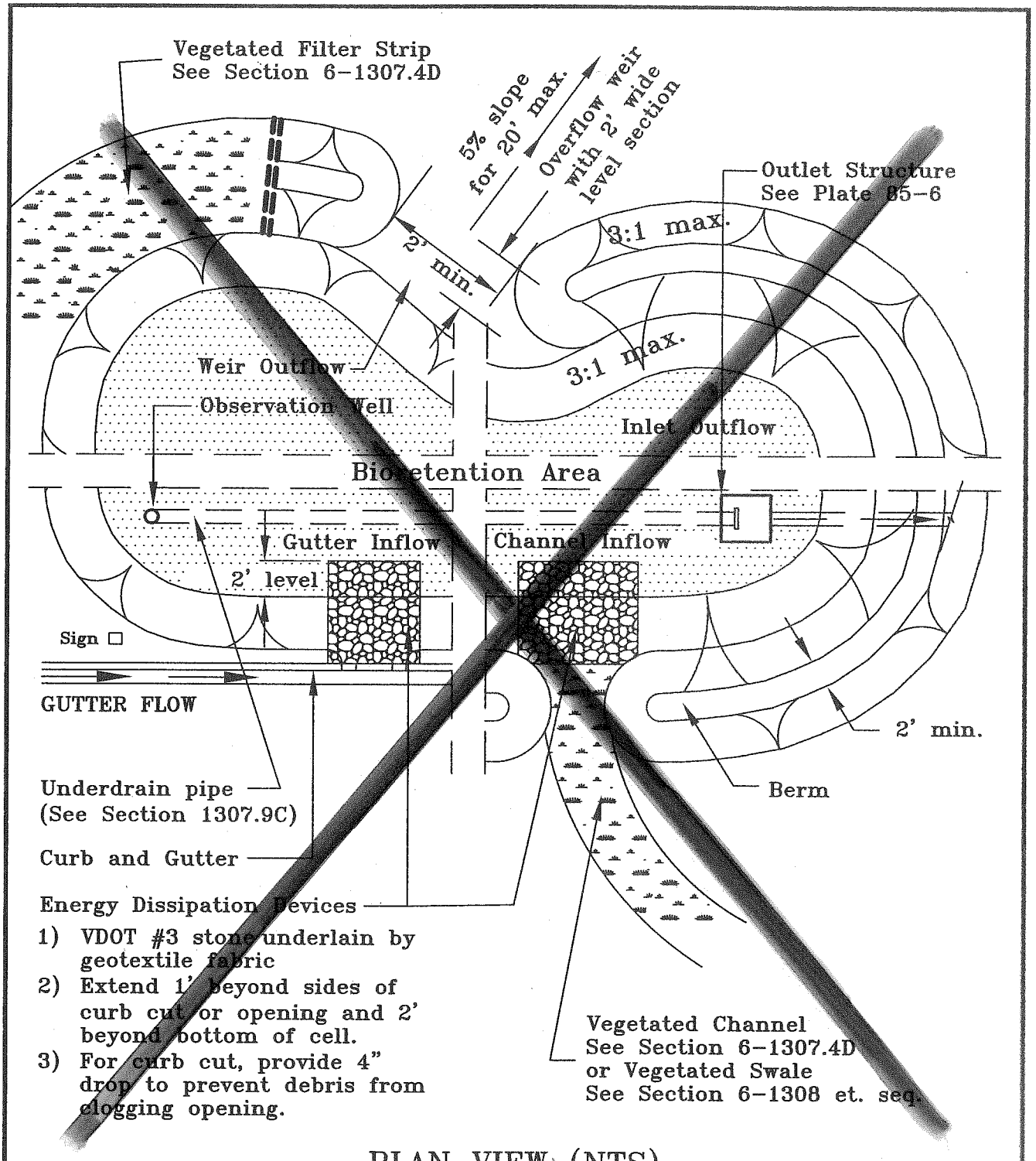
Soil Media
10-35% Topsoil
5-15% Organic Compost
60-75% Sand, ASTM C-33

PROFILE VIEW (NTS)

Ref. Sec. 6-1307 et seq.	BIORETENTION BASIN	PLATE NO.	STD. NO.
Rev. 3-07		84-6	

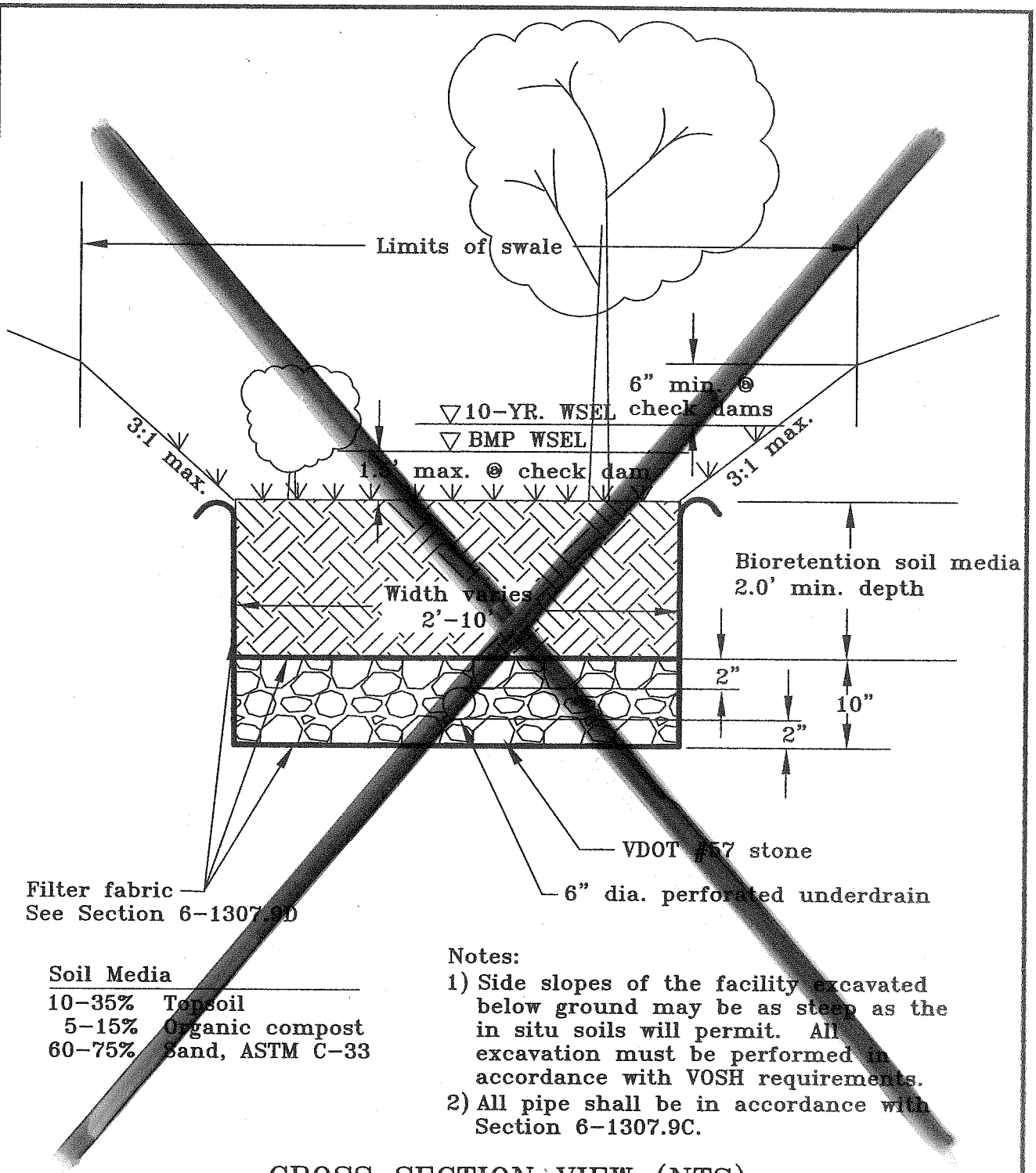


Ref. Sec. 6-1307 et seq.	BIORETENTION FILTER OR BASIN (OUTFALL DAYLIGHTED)	PLATE NO.	STD. NO.
Rev. 3-07		85-6	



PLAN VIEW (NTS)

Ref. Sec. 6-1307 et. seq., Plate 85-6 Rev. 3-07, 2011 Reprint	BIORETENTION FILTER & BASIN	PLATE NO.	STD. NO.
		86-6	



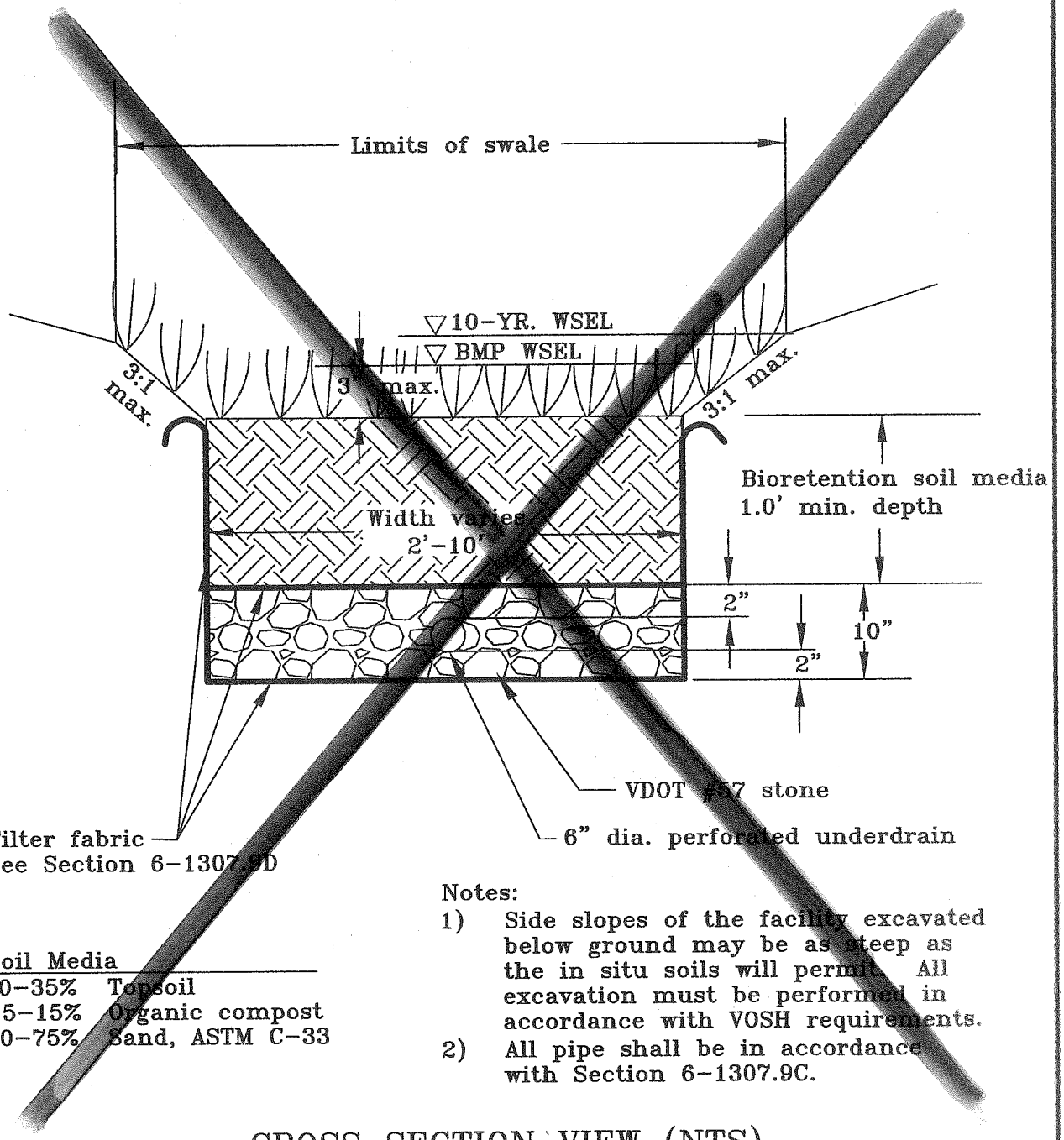
Soil Media	
10-35%	Topsoil
5-15%	Organic compost
60-75%	Sand, ASTM C-33

Notes:

1) Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with VOSH requirements.
2) All pipe shall be in accordance with Section 6-1307.9C.

CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1308 et seq.	VEGETATED SWALE WITH CHECK DAMS	PLATE NO.	STD. NO.
Rev. 3-07		87-6	



Soil Media

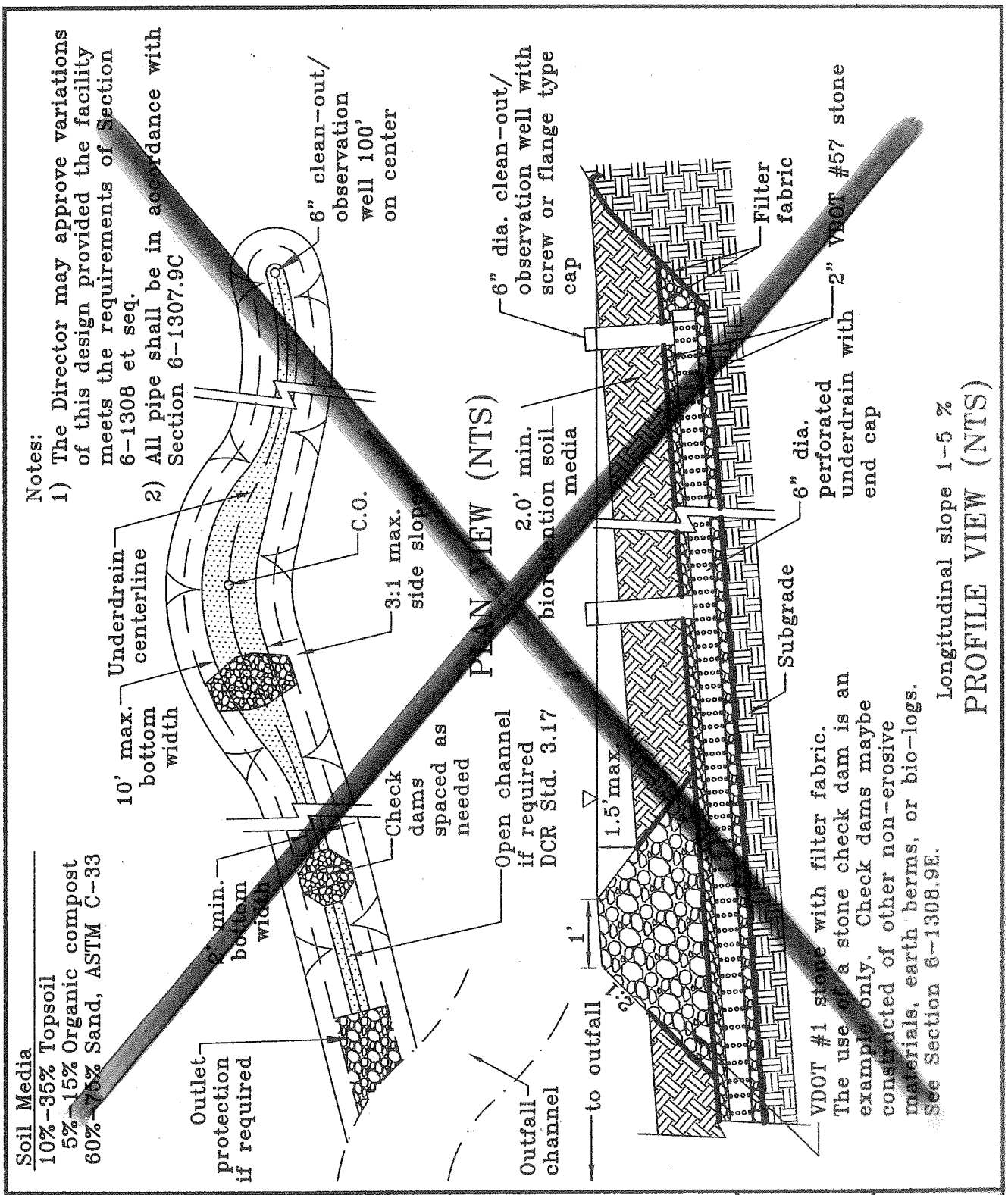
10-35%	Topsoil
5-15%	Organic compost
60-75%	Sand, ASTM C-33

Notes:

1) Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with VOSH requirements.
2) All pipe shall be in accordance with Section 6-1307.9C.

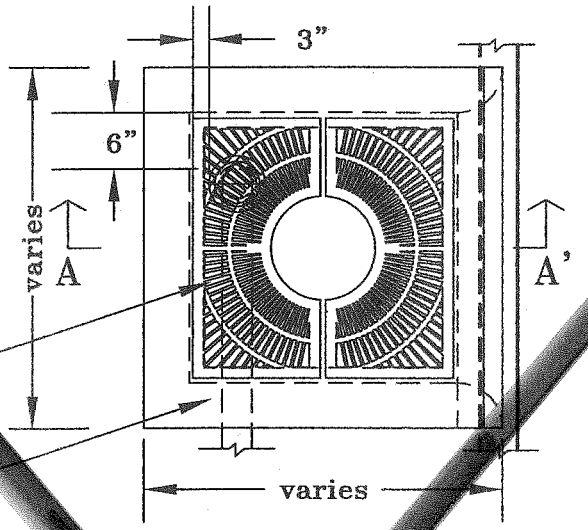
CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1308 et. seq.	VEGETATED SWALE GRASS WITHOUT CHECK DAMS	PLATE NO.	STD. NO.
Rev. 3-07		88-6	



Ref. Sec. 6-1308 et seq. Rev. 3-07	VEGETATED SWALE PLAN AND PROFILE	PLATE NO.	STD. NO.
		89-6	

Note:
1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1309 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.



4" dia. perf. underdrain pipe

Discharge to approved outfall 4" dia. solid pipe

PLAN VIEW

Vegetation See Sec. 6-1309.8

Grate and frame H-20 loading

Inlet

6"

5.5"

12"

6"

Cleanout 4" dia. pipe with screw or flange type cap

Gutter

VDOT #3 stone 6" width and depth

2-3" double shredded hardwood mulch

4" dia. perf. underdrain

VDOT #57 stone with a min. of 2" of stone above and below the pipe. See Secs. 6-1309.6 and 6-1309.7C.

6"

2.5' bioretention soil media
10-35% Topsoil
5-15% Organic Compost
60-75% Sand, ASTM C-33

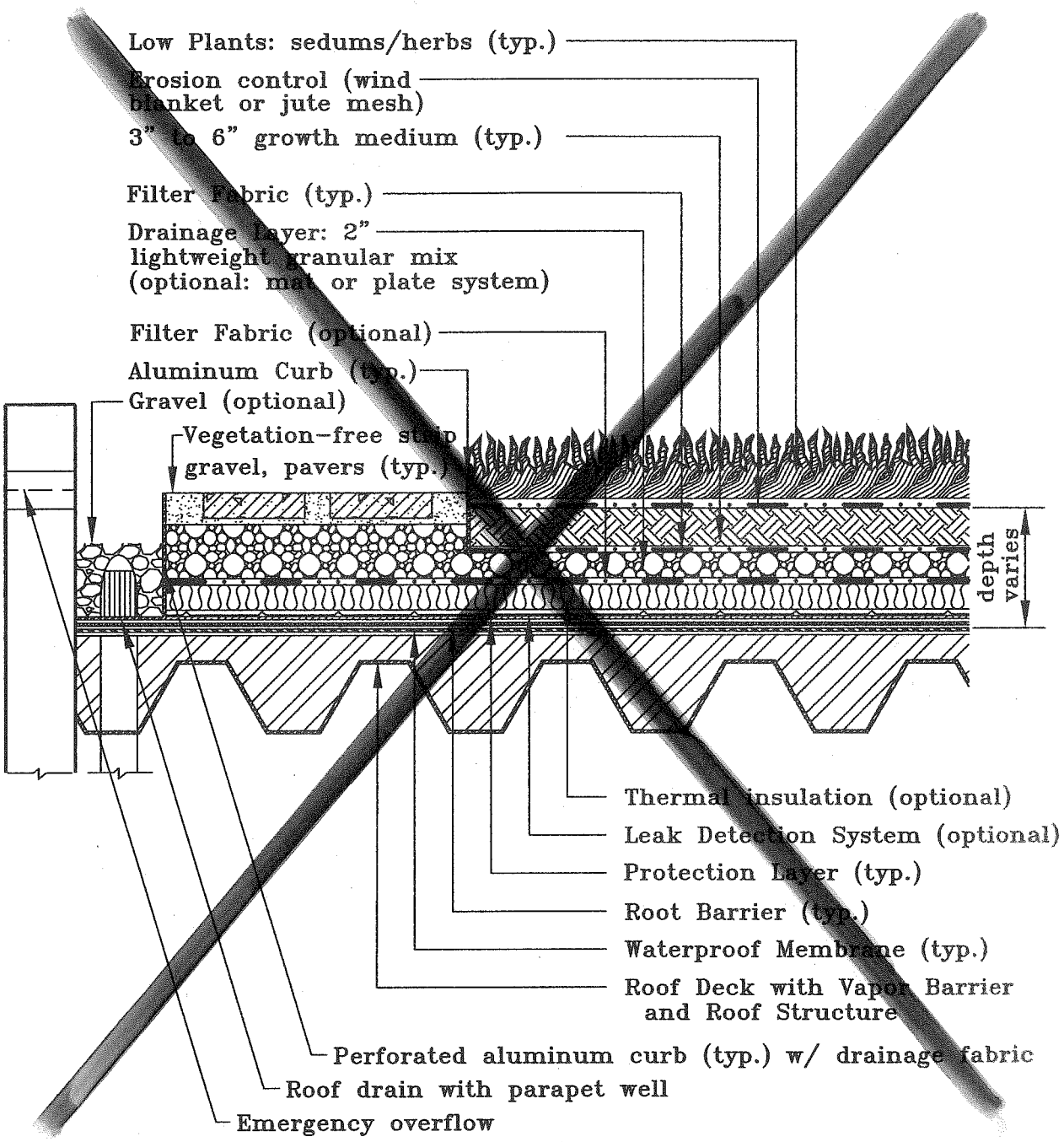
Open bottom (optional) See Section 6-1309.4G

Concrete box: pre-cast or cast-in-place See Section 6-1309.4F

CROSS SECTION A-A'

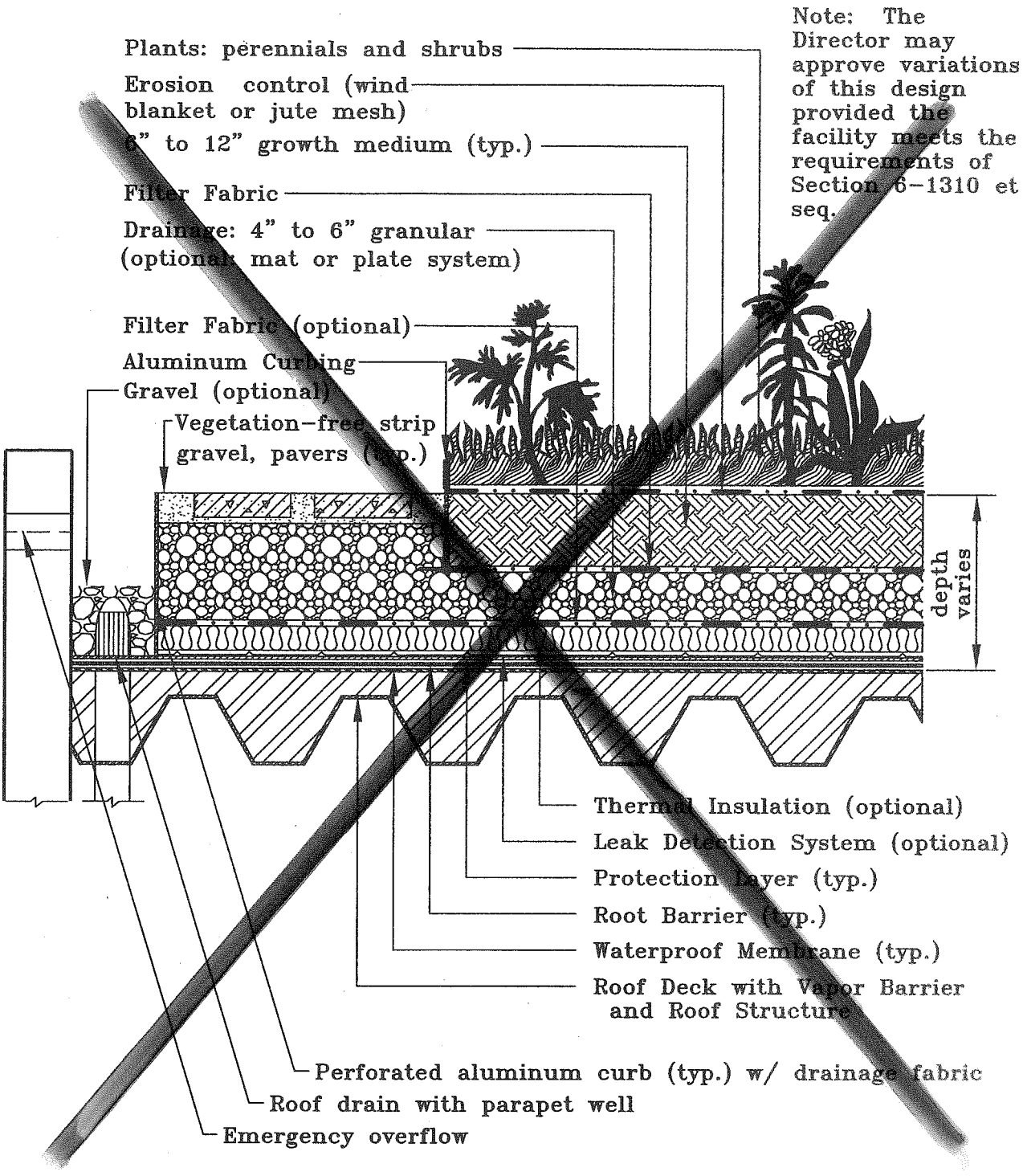
Ref. Sec. 6-1309 et seq.	TREE BOX FILTER	PLATE NO.	STD. NO.
Rev. 3-07		90-6	

Note: The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1310 et seq.



CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1310 et seq.	VEGETATED ROOF EXTENSIVE	PLATE NO.	STD. NO.
Rev. 3-07		91-6	



Note: The Director may approve variations of this design provided the facility meets the requirements of Section 6-1310 et seq.

CROSS SECTION (NTS)

Ref. Sec. 6-1310 et seq.	VEGETATED ROOF INTENSIVE	PLATE NO.	STD. NO.
Rev. 3-07		92-6	