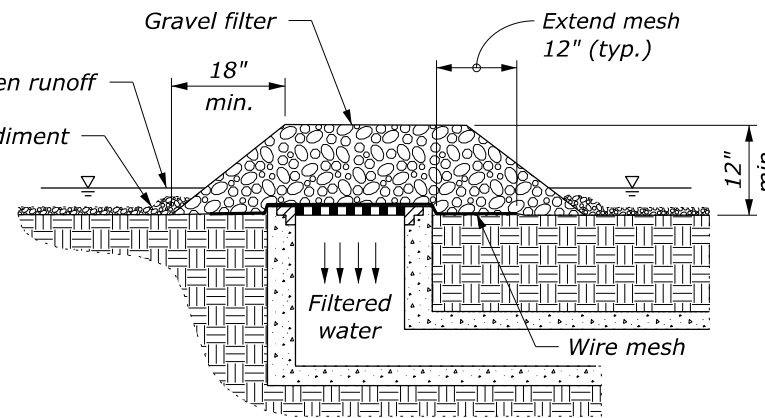


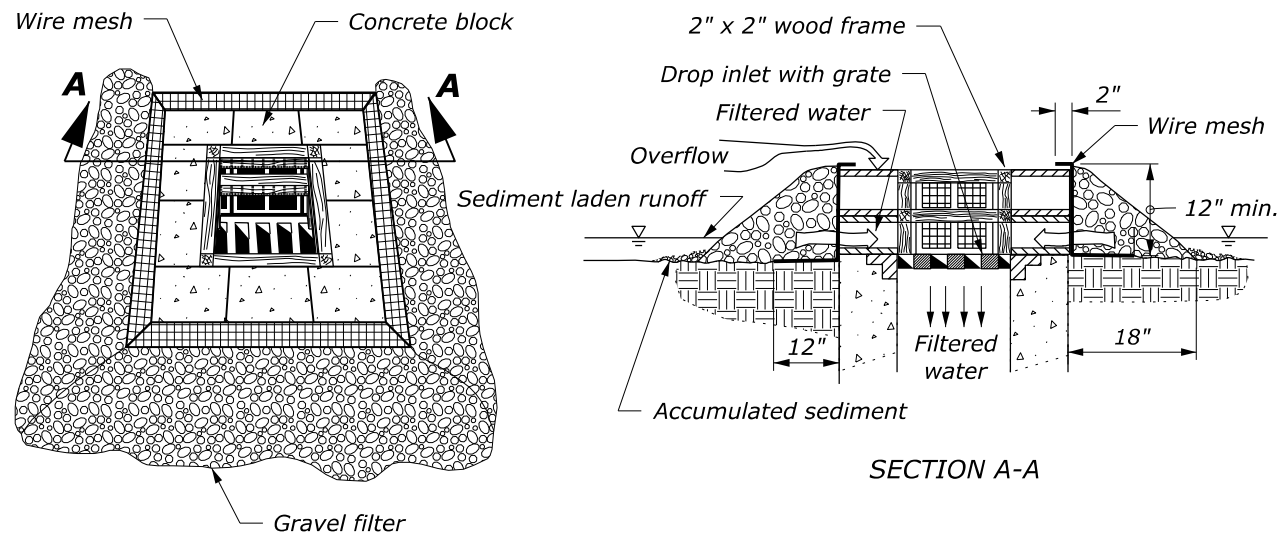
SILT FENCE DROP INLET PROTECTION (TYPE A)



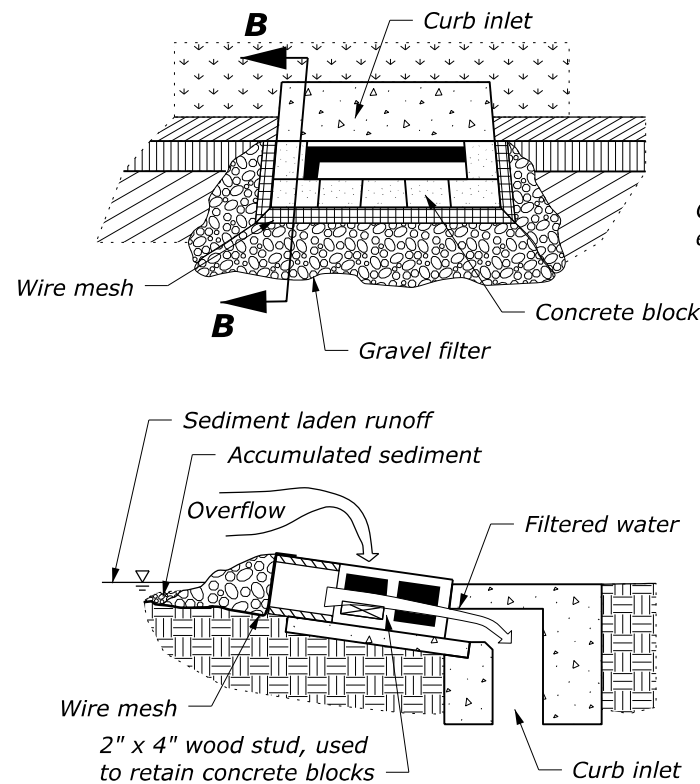
GRAVEL AND WIRE MESH DROP INLET PROTECTION (TYPE B)

NOTE:

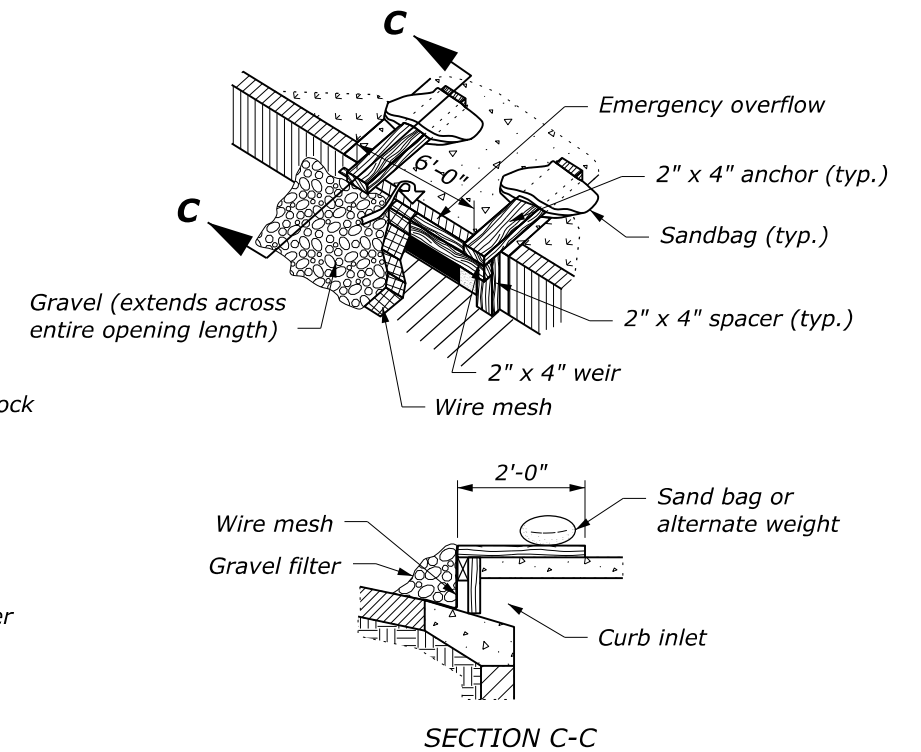
1. For gravel filters use 2" to 3" diameter coarse aggregate.
2. Use wire mesh with 1/2" x 1/2" openings.
3. Use type A inlet protection in sump locations only.
4. Use type B inlet protection only in sump locations where heavy concentrated flows are not expected. Do not use where ponding around the structure might cause inconvenience or damage.
5. Provide silt fence drop inlet protection geotextile conforming to subsection 713.16(a).



BLOCK AND GRAVEL DROP INLET PROTECTION (TYPE C)



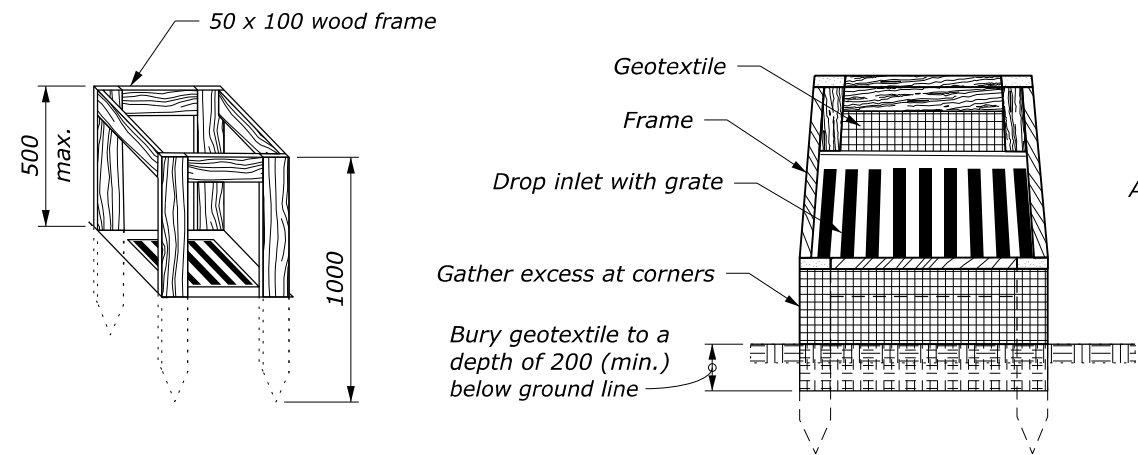
CURB INLET PROTECTION, BLOCK AND GRAVEL (TYPE D)



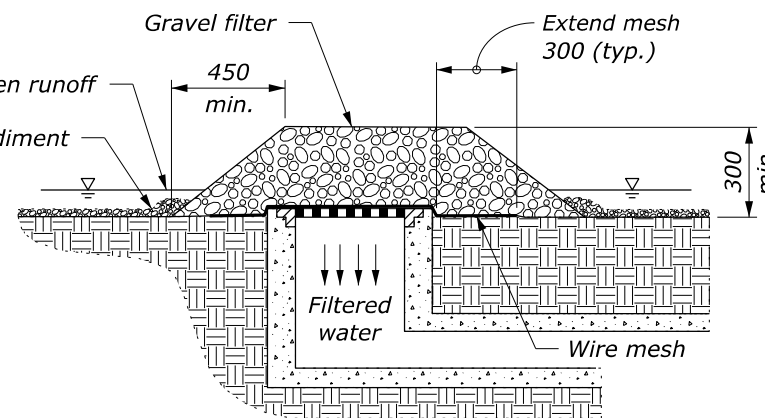
CURB INLET PROTECTION, WOODEN WEIR (TYPE E)

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 157-2
TEMPORARY INLET PROTECTION	SPECIFICATION FP-24, FP-14 APPROVED FOR USE 1/2024



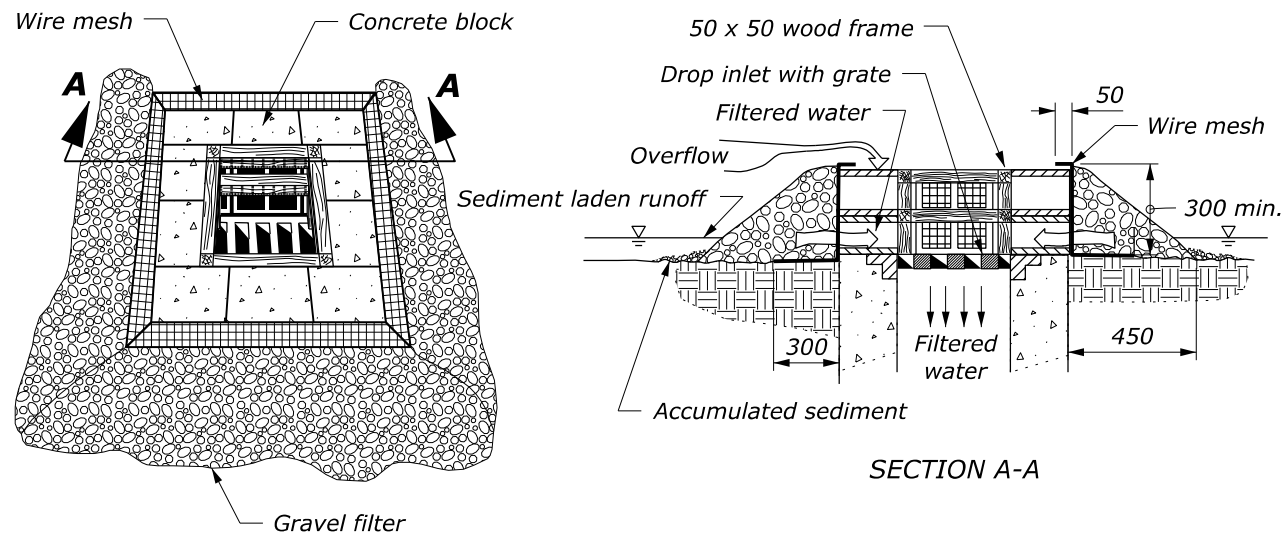
SILT FENCE DROP INLET PROTECTION (TYPE A)



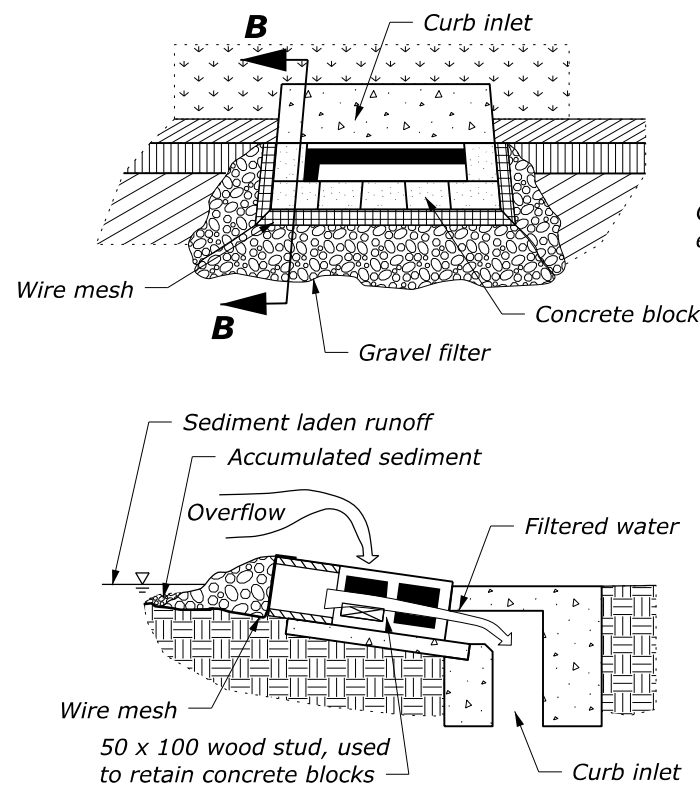
GRAVEL AND WIRE MESH DROP INLET PROTECTION (TYPE B)

NOTE:

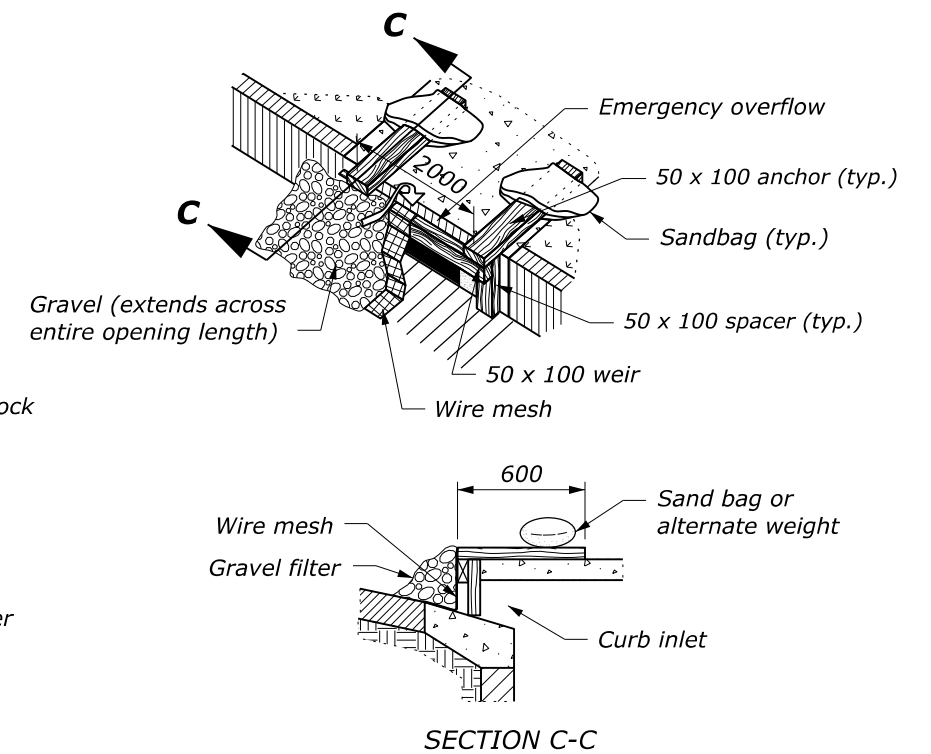
1. For gravel filters use 50 to 75 mm diameter coarse aggregate.
2. Use wire mesh with 12 x 12 mm openings.
3. Use type A inlet protection in sump locations only.
4. Use type B inlet protection only in sump locations where heavy concentrated flows are not expected. Do not use where ponding around the structure might cause inconvenience or damage.
5. Provide silt fence drop inlet protection geotextile conforming to subsection 713.16(a).



BLOCK AND GRAVEL DROP INLET PROTECTION (TYPE C)



SECTION B-B
CURB INLET PROTECTION, BLOCK AND GRAVEL (TYPE D)

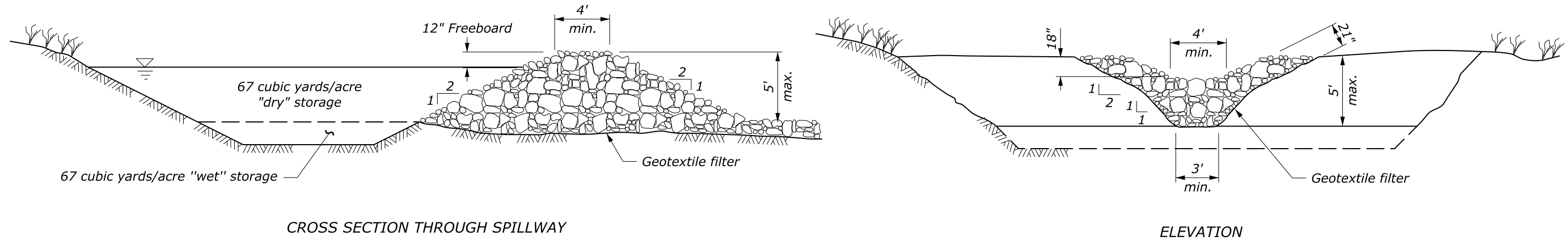


SECTION C-C
CURB INLET PROTECTION, WOODEN WEIR (TYPE E)

This drawing contains **Metric** units of measure. Dimensions without units are millimeters.

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD M157-2
TEMPORARY INLET PROTECTION	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024

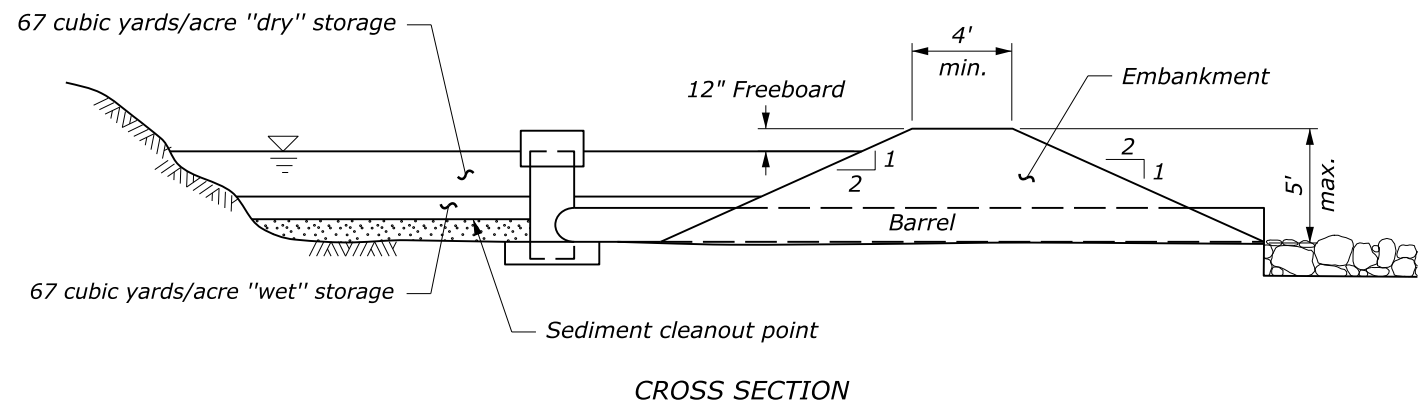
NO SCALE



CROSS SECTION THROUGH SPILLWAY

ELEVATION

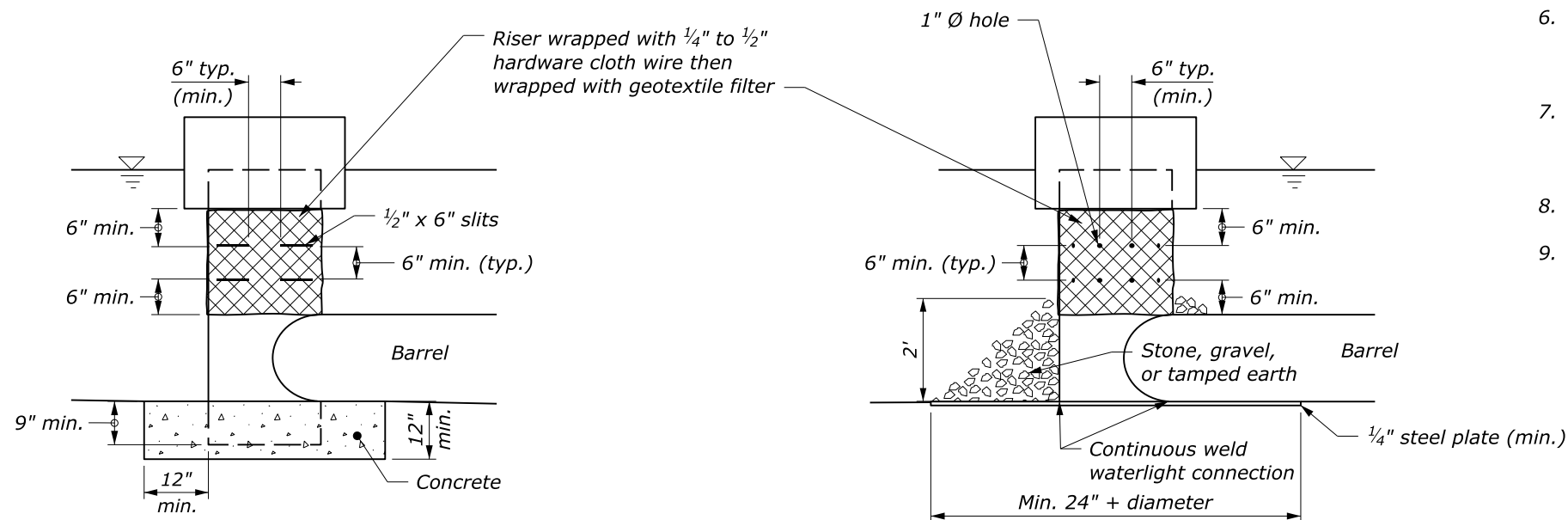
SEDIMENT TRAP (TYPE A) RIPRAP OUTLET



CROSS SECTION

NOTE:

1. Clear, grub, and remove all vegetative matter including root mat before constructing sediment trap.
2. Remove vegetative matter, other organic material, and large stones from embankment fill material.
3. Compact embankment in 8-inch layers using construction equipment for compaction of each layer.
4. Seed the soil embankment and all cut slopes with temporary or permanent vegetation within 7 days of construction.
5. Remove sediment from sediment trap when accumulated sediment reaches half the design water storage of the trap.
6. Inspect sediment trap regularly for damage and accumulated sediment and especially after each storm event. Make repairs as required.
7. Remove the sediment trap and stabilize the location by grading and seeding when the upslope drainage area has been stabilized against erosion.
8. Do not use sediment traps for drainage areas over 5 acres.
9. Provide geotextile filter conforming to Subsection 714.01(a).



CONCRETE BASE WITH SLIT PERFORATIONS IN RISER

STEEL PLATE BASE WITH HOLE PERFORATIONS IN RISER

SEDIMENT TRAP (TYPE B) PIPE OUTLET

NO SCALE

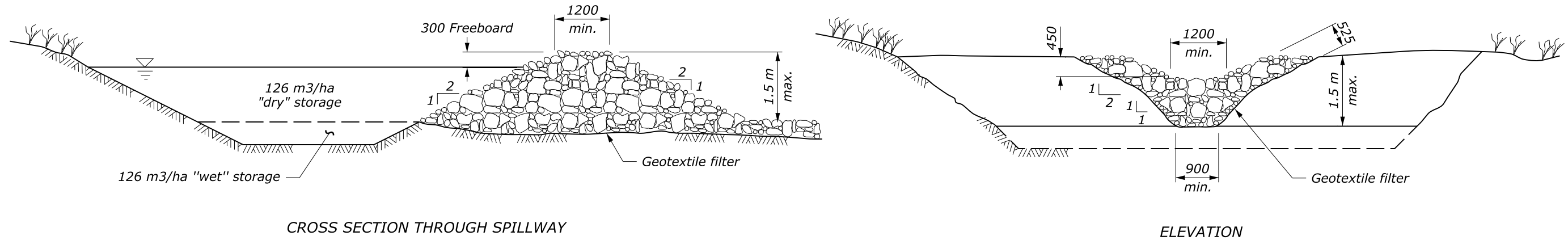
U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

FLH STANDARD
157-4

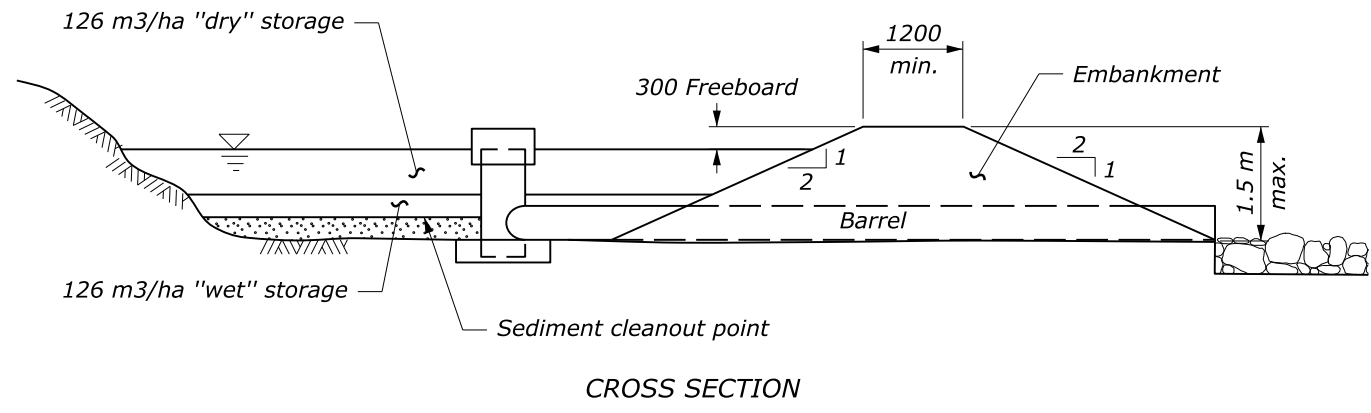
SEDIMENT TRAP

SPECIFICATION
FP-14

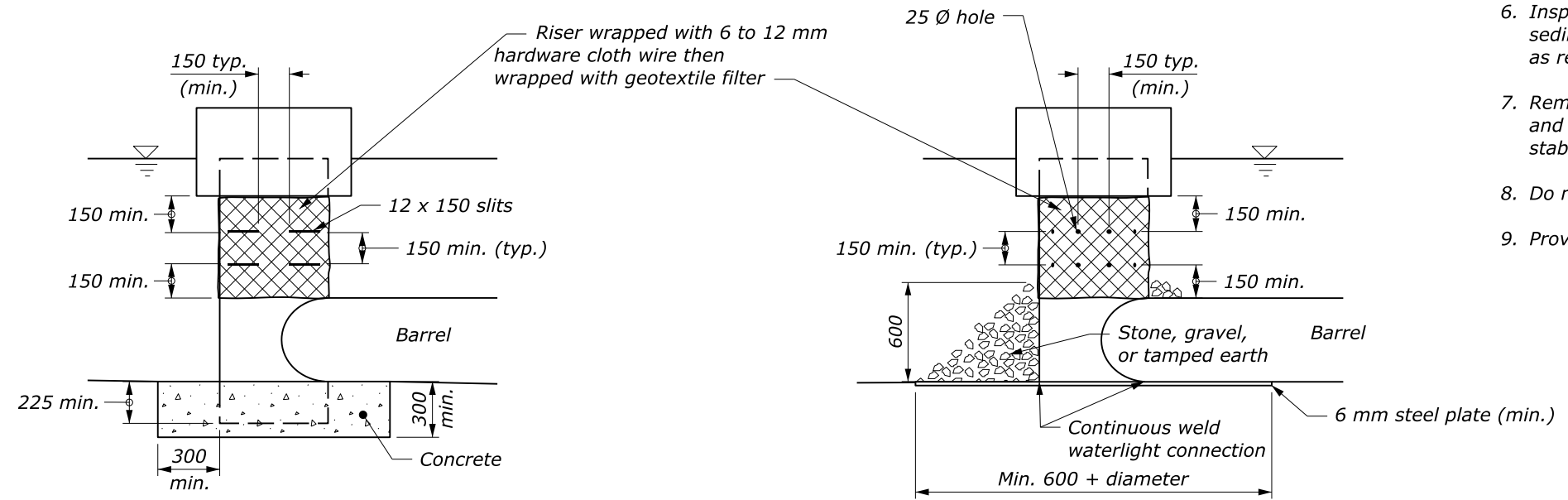
APPROVED FOR USE
1/2024



SEDIMENT TRAP (TYPE A) RIPRAP OUTLET



SEDIMENT TRAP (TYPE B) PIPE OUTLET



CONCRETE BASE WITH SLIT PERFORATIONS IN RISER

STEEL PLATE BASE WITH HOLE PERFORATIONS IN RISER

NOTE:

1. Clear, grub, and remove all vegetative matter including root mat before constructing sediment trap.
2. Remove vegetative matter, other organic material, and large stones from embankment fill material.
3. Compact embankment in 200 mm layers using construction equipment for compaction of each layer.
4. Seed the soil embankment and all cut slopes with temporary or permanent vegetation within 7 days of construction.
5. Remove sediment from sediment trap when accumulated sediment reaches half the design water storage of the trap.
6. Inspect sediment trap regularly for damage and accumulated sediment and especially after each storm event. Make repairs as required.
7. Remove the sediment trap and stabilize the location by grading and seeding when the upslope drainage area has been stabilized against erosion.
8. Do not use sediment traps for drainage areas over 2 hectares.
9. Provide geotextile filter conforming to Subsection 714.01(a).

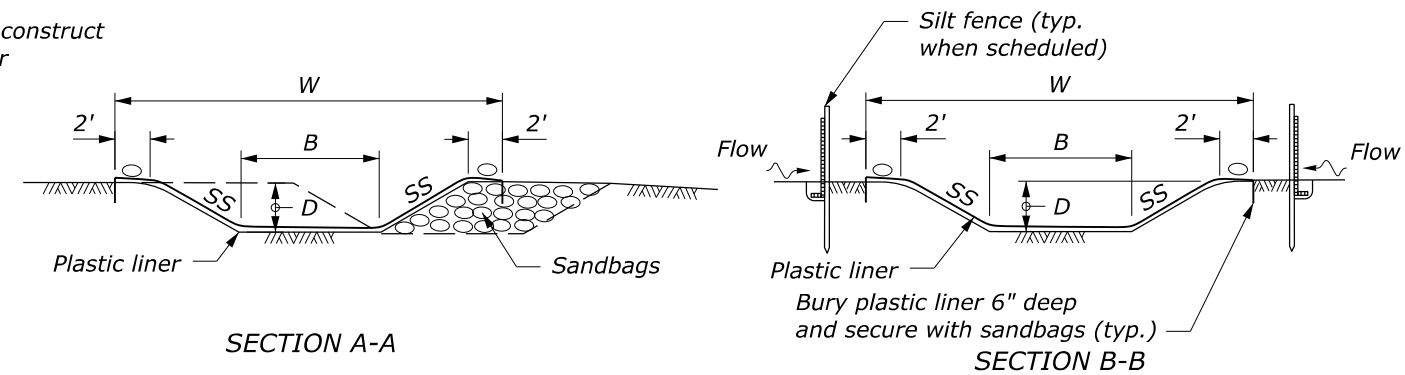
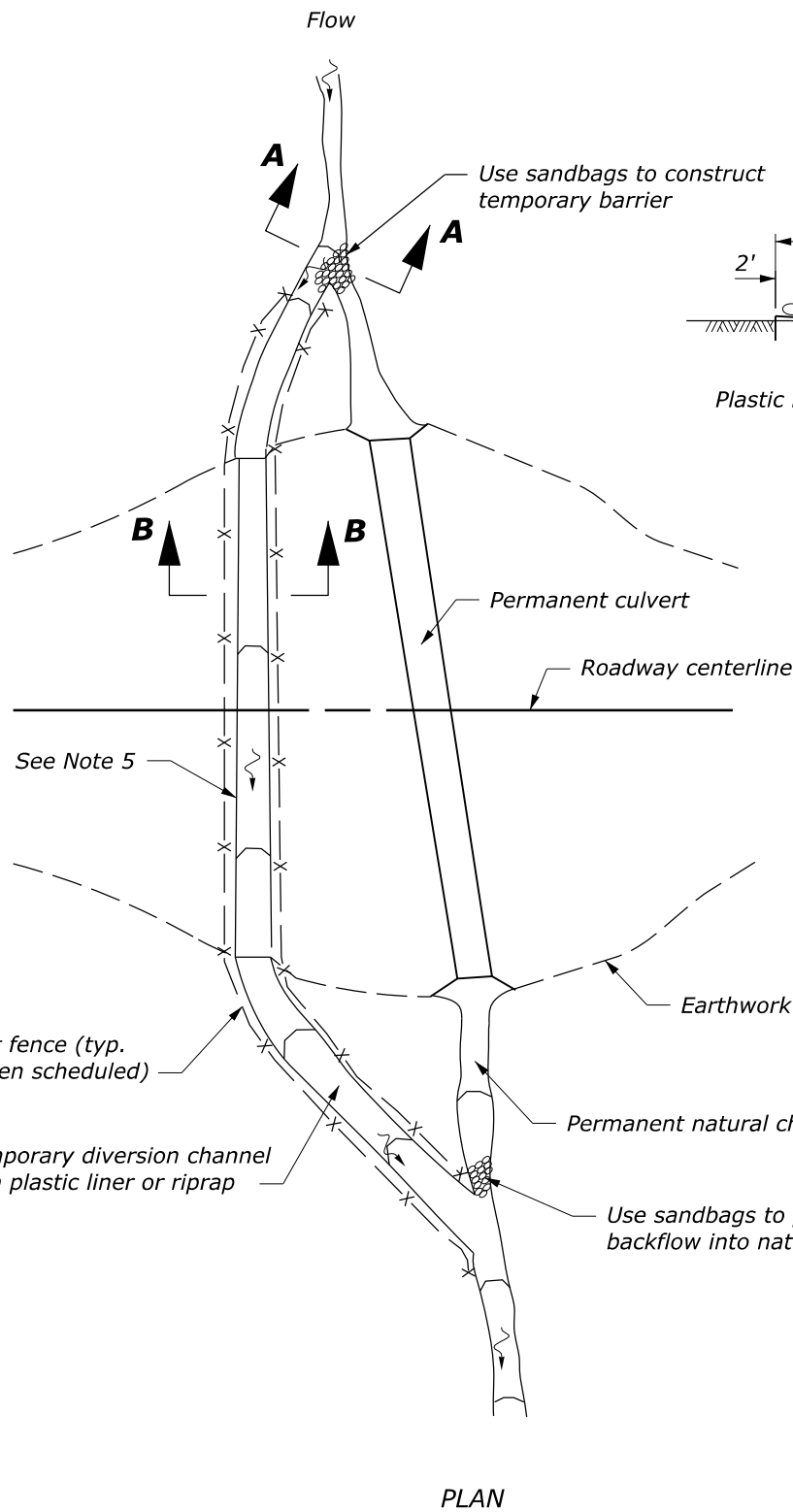
This drawing contains **Metric** units of measure. Dimensions without units are millimeters.

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD M157-4
SEDIMENT TRAP	SPECIFICATION FP-14
	APPROVED FOR USE 1/2024

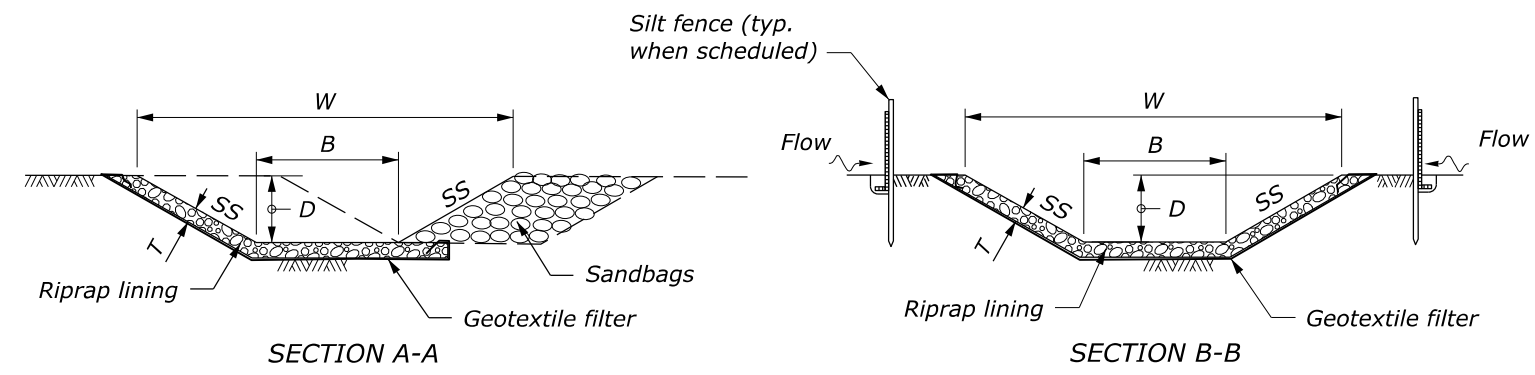
NO SCALE

NOTE:

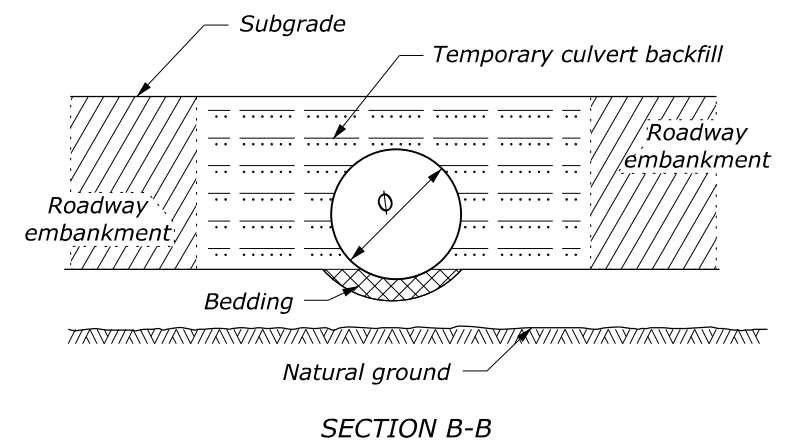
1. See Erosion Control Section for temporary culvert diameter, riprap class, channel dimensions and quantities.
2. Use plastic liner or riprap along the entire length and width of the temporary diversion channel.
3. Construct channel at a minimum grade of 0.5 percent.
4. Do not construct with longitudinal joints if using a plastic liner. Bury the upstream edge of the liner a minimum of 6" deep and secure with riprap or sandbags.
5. When specified replace the portion of the diversion channel through the roadway embankment with temporary culvert. Compact temporary culvert backfill using one of the methods listed in Subsection 204.11(a).
6. Provide geotextile filter conforming to Subsection 714.01(a).



PLASTIC LINED DIVERSION CHANNEL



RIPRAP LINED DIVERSION CHANNEL



TEMPORARY CULVERT

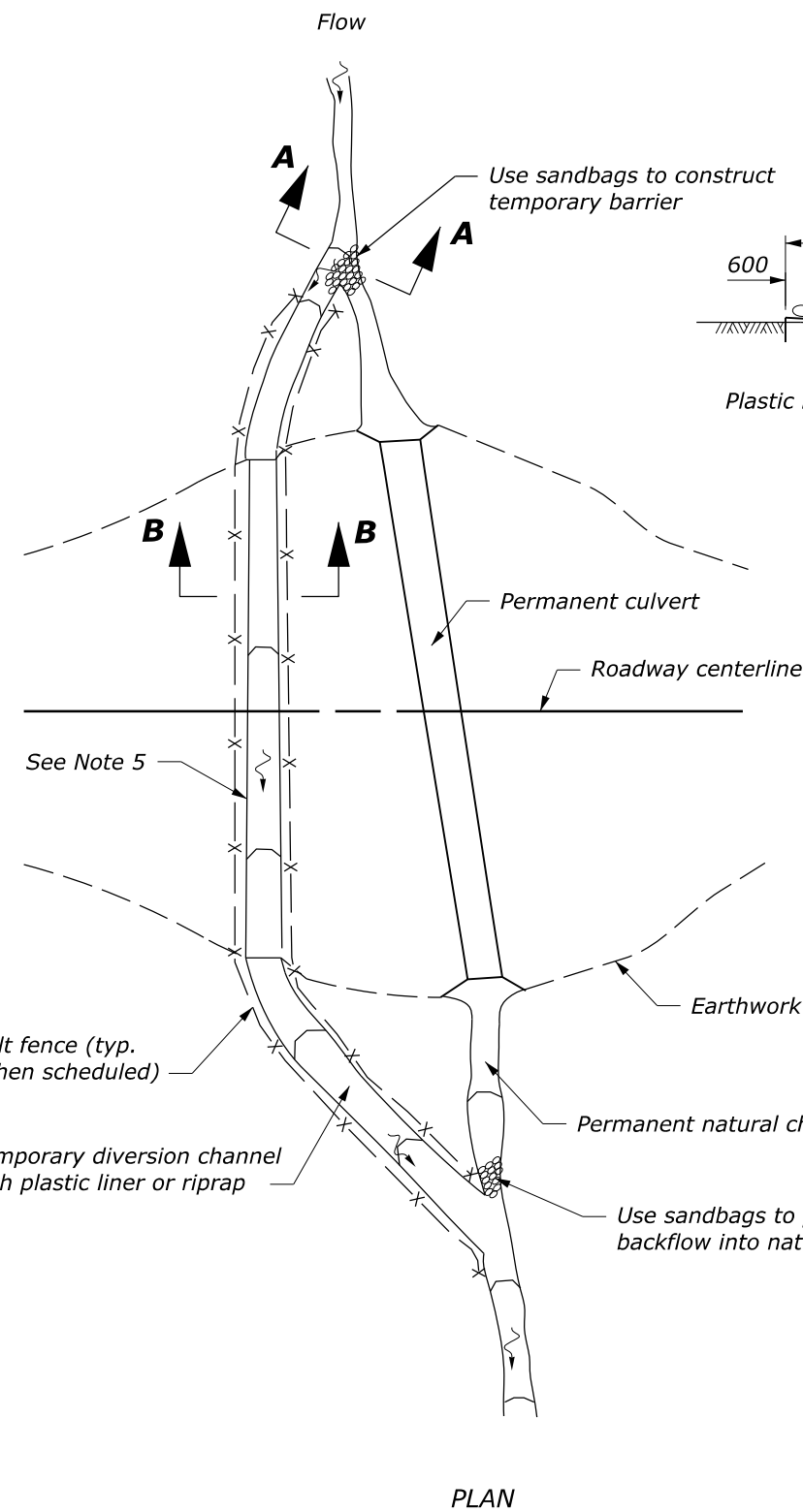
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 157-5
TEMPORARY DIVERSION CHANNELS	SPECIFICATION FP-14
	APPROVED FOR USE 1/2024

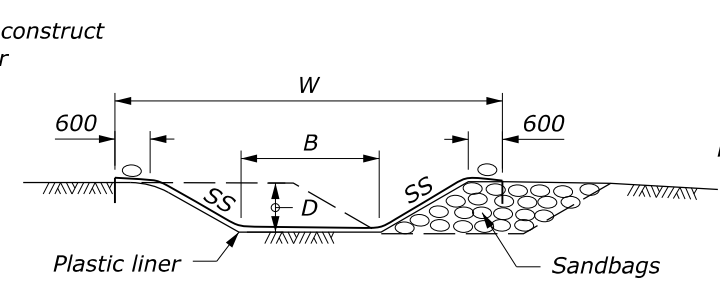
c:\pwwork\04223311\Std157-5fp14.dgn [Std 157-5] 29 May 2024 3:21 PM

NOTE:

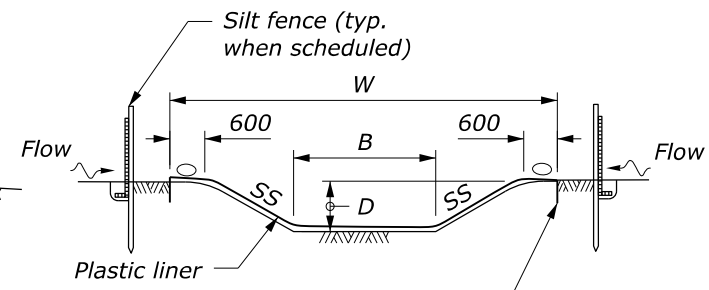
1. See Erosion Control Section for temporary culvert diameter, riprap class, channel dimensions and quantities.
2. Use plastic liner or riprap along the entire length and width of the temporary diversion channel.
3. Construct channel at a minimum grade of 0.5 percent.
4. Do not construct with longitudinal joints if using a plastic liner. Bury the upstream edge of the liner a minimum of 150 mm deep and secure with riprap or sandbags.
5. When specified replace the portion of the diversion channel through the roadway embankment with temporary culvert. Compact temporary culvert backfill using one of the methods listed in Subsection 204.11(a).
6. Provide geotextile filter conforming to Subsection 714.01(a).



DIVERSION CHANNEL

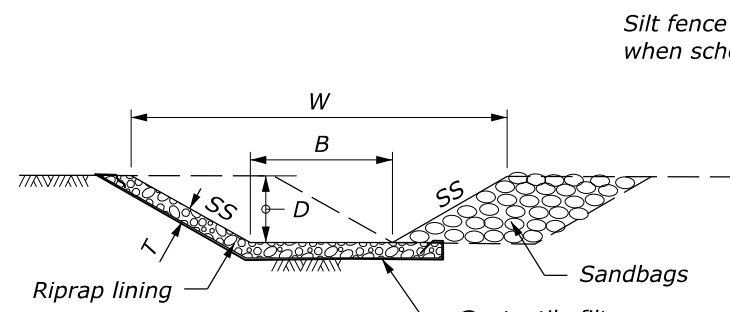


SECTION A-A

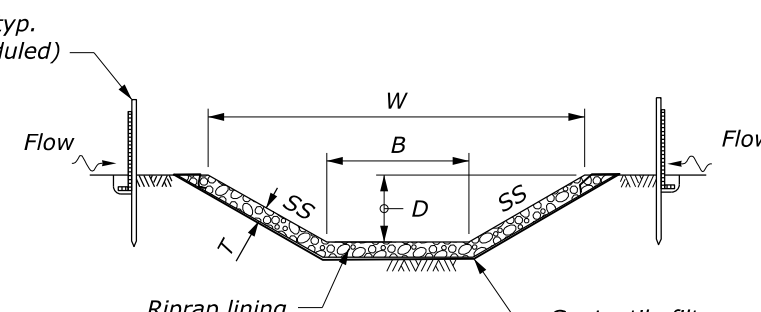


SECTION B-B

PLASTIC LINED DIVERSION CHANNEL

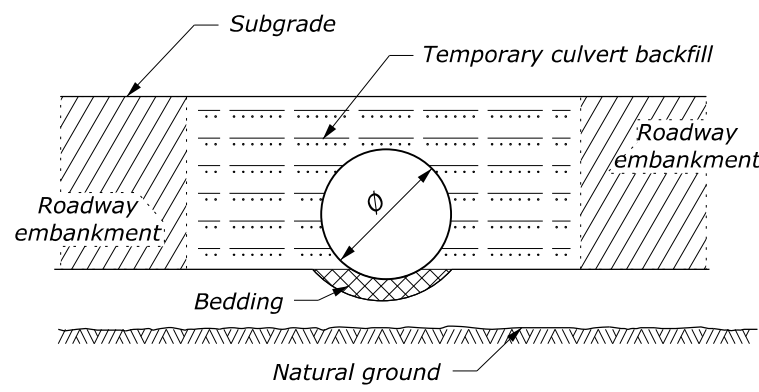


SECTION A-A



SECTION B-B

RIPRAP LINED DIVERSION CHANNEL



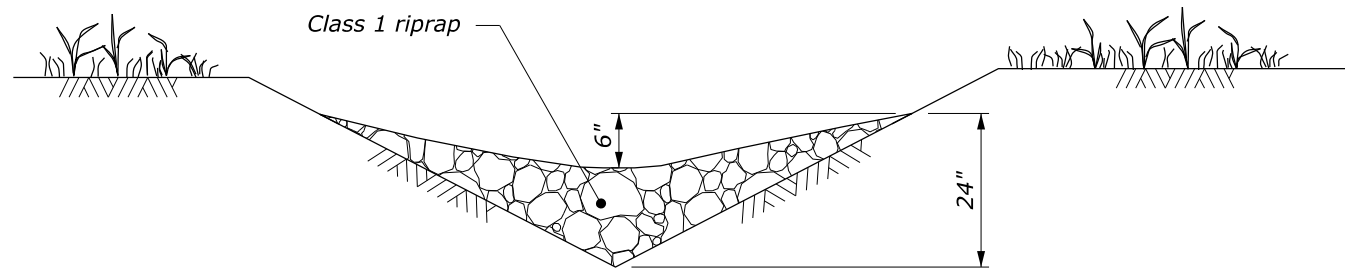
SECTION B-B

TEMPORARY CULVERT

This drawing contains **Metric** units of measure. Dimensions without units are millimeters.

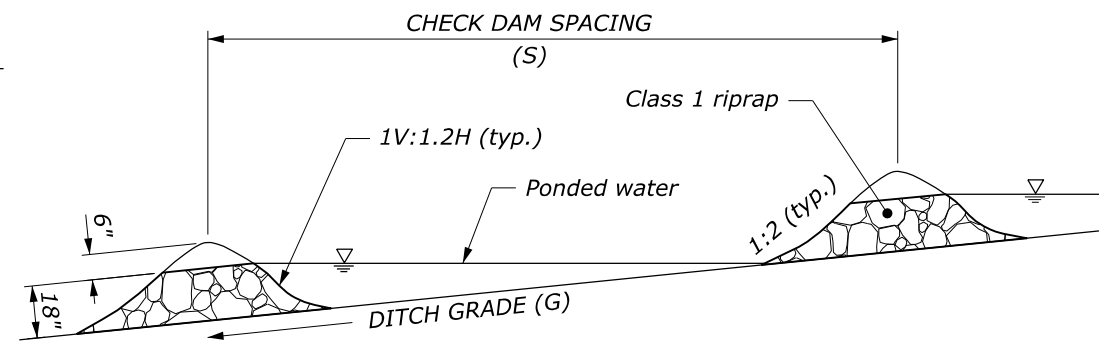
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD M157-5
TEMPORARY DIVERSION CHANNELS	SPECIFICATION FP-14
	APPROVED FOR USE 1/2024

NO SCALE



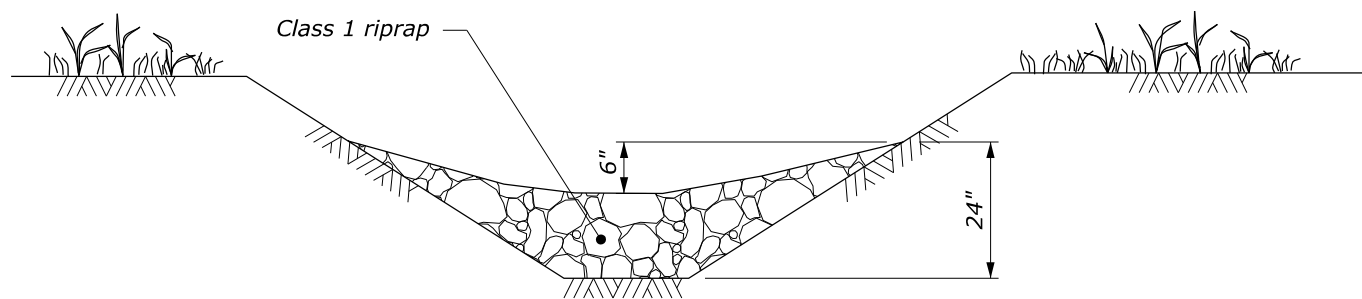
CROSS SECTION

V DITCH



PROFILE VIEW

DITCH



CROSS SECTION

TRAPEZOIDAL DITCH

DITCH GRADE (G)	CHECK DAM SPACING S (ft)
2%	75
3%	50
4%	40
5%	30
6%	25

* Do not use Check Dams below 2% or above 6% ditch grades.

NO SCALE

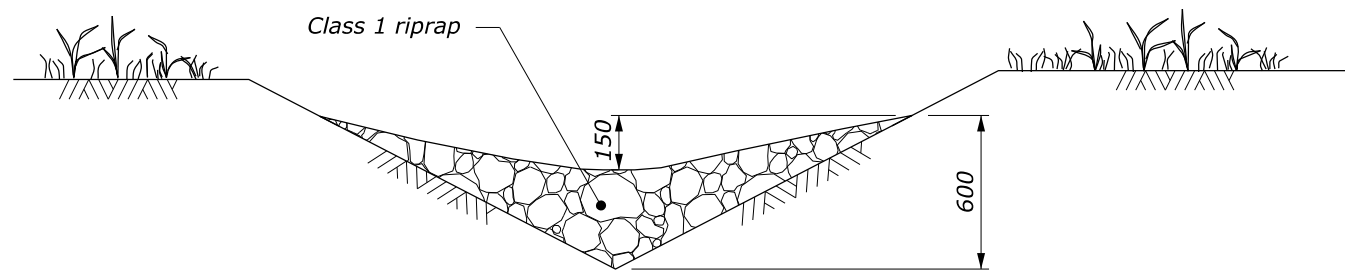
U.S. DEPARTMENT OF TRANSPORTATION, FHWA
OFFICE OF FEDERAL LANDS HIGHWAY

FLH STANDARD
157-6

CHECK DAM

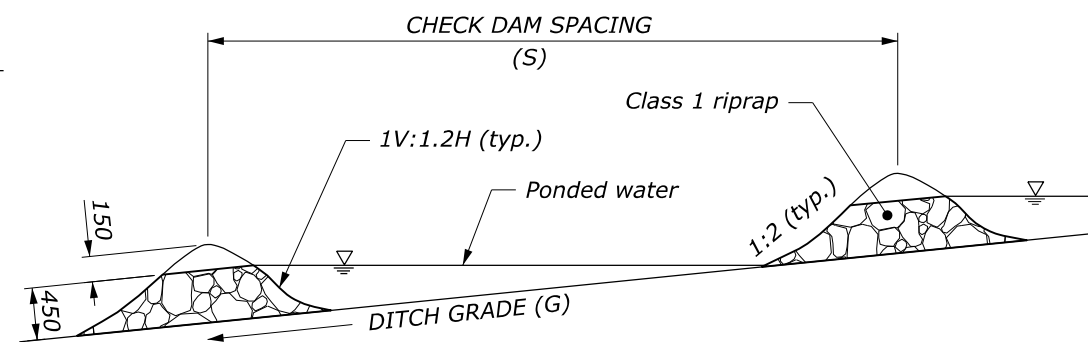
SPECIFICATION
FP-24, FP-14

APPROVED FOR USE
1/2024



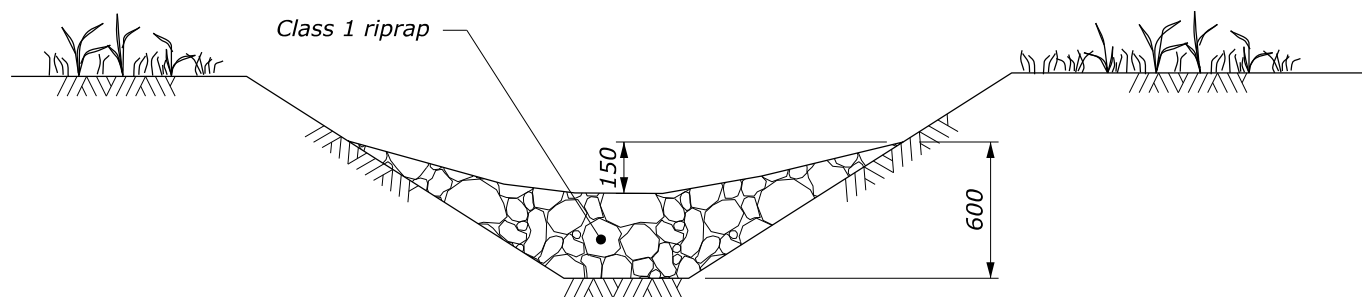
CROSS SECTION

V DITCH



PROFILE VIEW

DITCH



CROSS SECTION

TRAPEZOIDAL DITCH

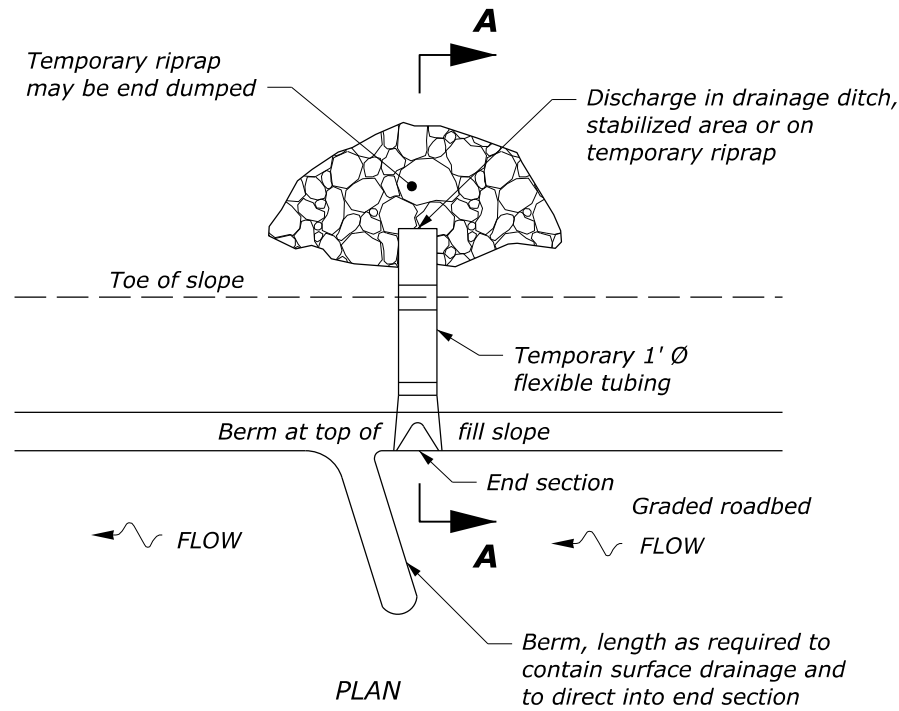
DITCH GRADE (G)	CHECK DAM SPACING S (m)
2%	23
3%	15
4%	12
5%	9
6%	7.5

* Do not use Check Dams below 2% or above 6% ditch grades.

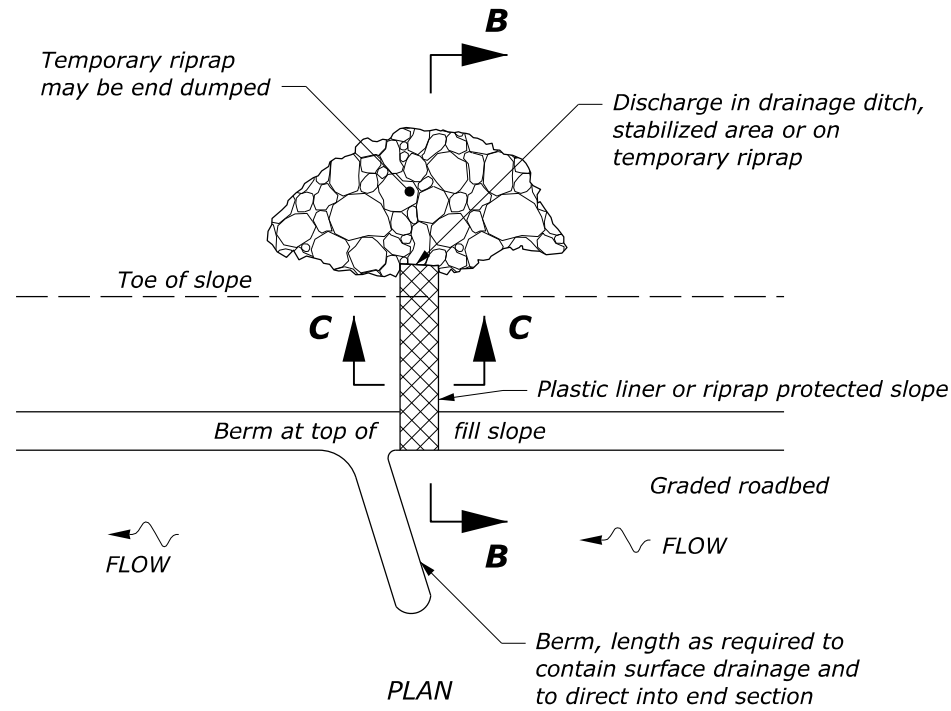
This drawing contains **Metric** units of measure. Dimensions without units are millimeters.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD M157-6
CHECK DAM	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024



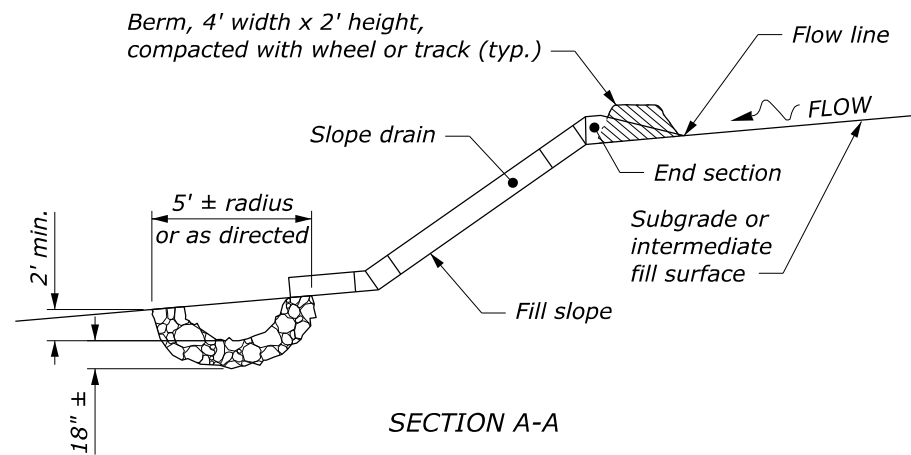
SLOPE DRAINS



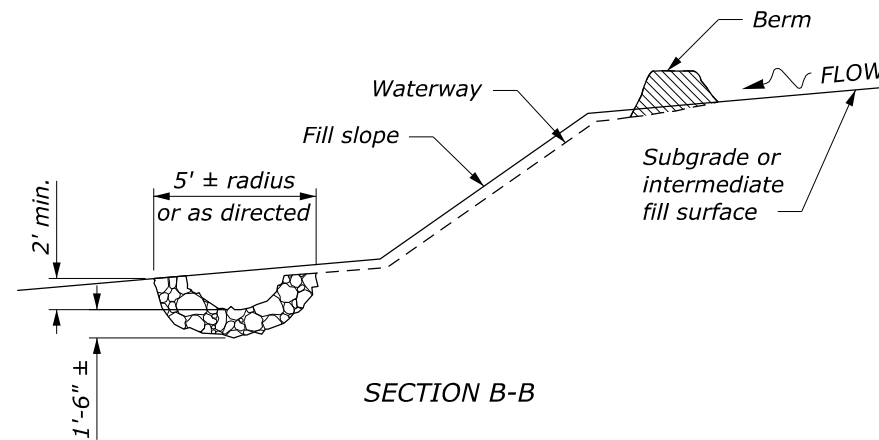
PLASTIC LINED WATERWAY

NOTE:

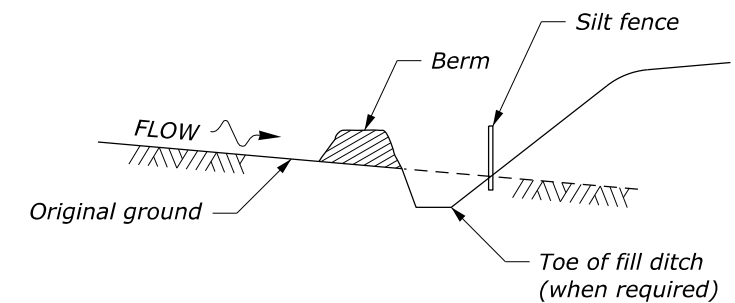
1. Use temporary slope drains (berms, drains, and riprap) as the embankment is constructed. Use spacings as shown on the Erosion Control Plans or as designated by the CO. Place all slope drains at the end of each work shift. Use slope drains until the slopes are permanently stabilized.
2. Construct temporary berms at the top of all erodible cut slopes as shown on the Erosion Control Plans or as designated by the CO. Use check dams to reduce the runoff velocity when existing grades are steep.
3. Do not use transverse or longitudinal joints in plastic liner. Plastic liner is not required for rock embankments.
4. Use toe-of-fill slope berms to divert offsite runoff away from disturbed areas.
5. Seed and mulch all cut slope berms and toe-of-fill berms immediately after berm construction.
6. Use Class 2 temporary riprap.



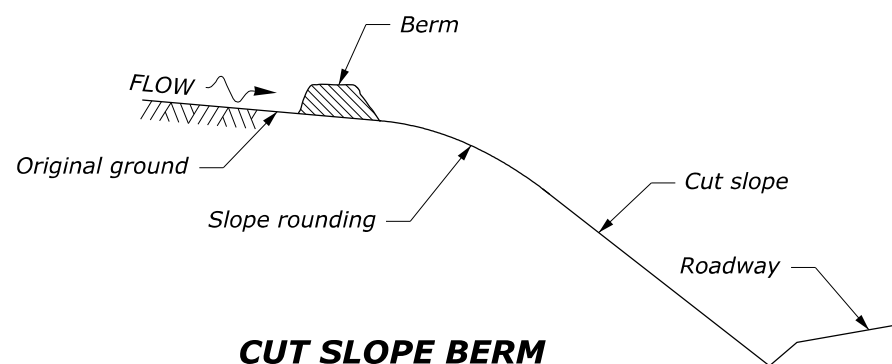
SECTION A-A



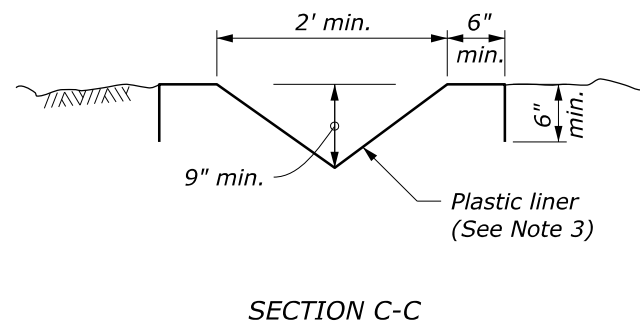
SECTION B-B



TOE-OF-FILL SLOPE BERM



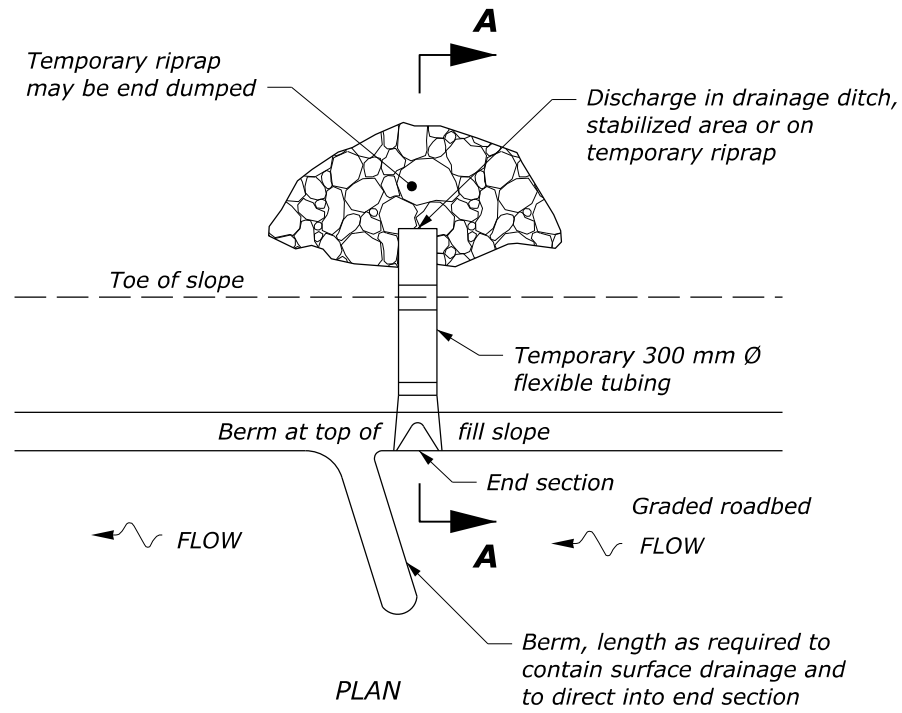
CUT SLOPE BERM



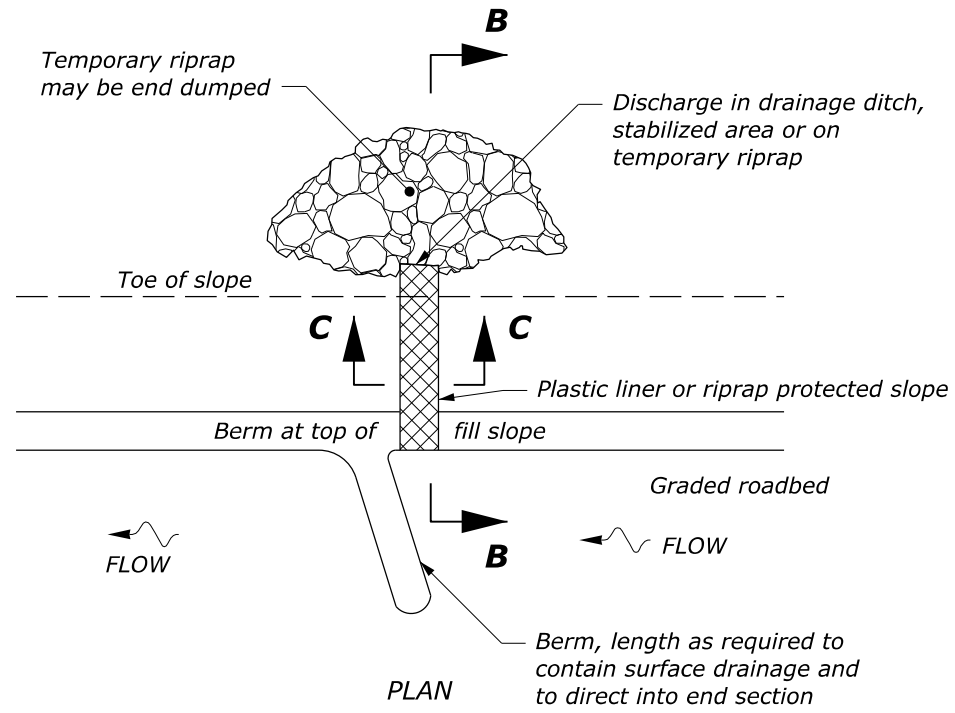
SECTION C-C

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 157-7
TEMPORARY EROSION CONTROL BERMS, SLOPE DRAINS AND LINED WATERWAYS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024



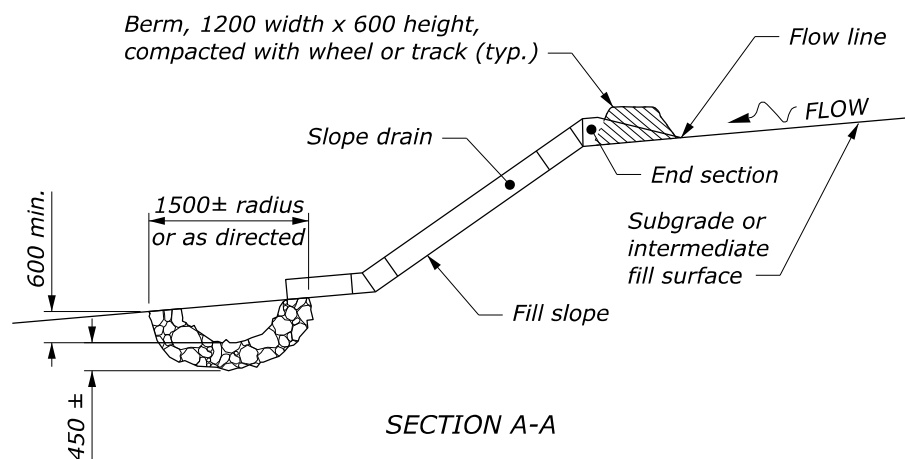
SLOPE DRAINS



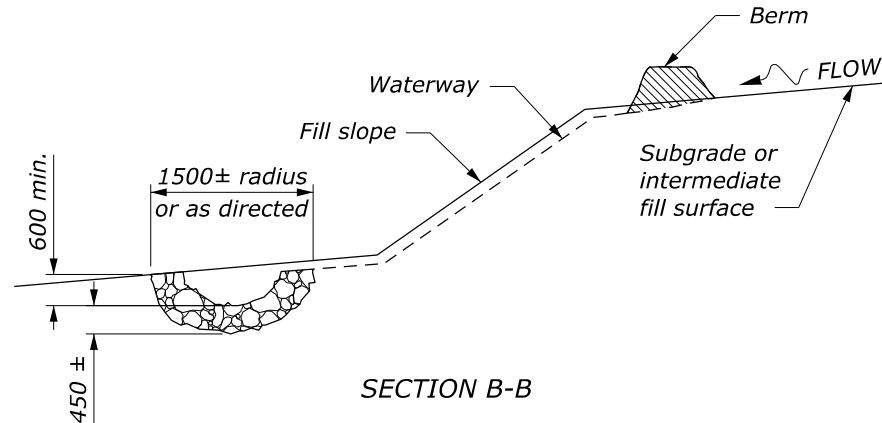
PLASTIC LINED WATERWAY

NOTE:

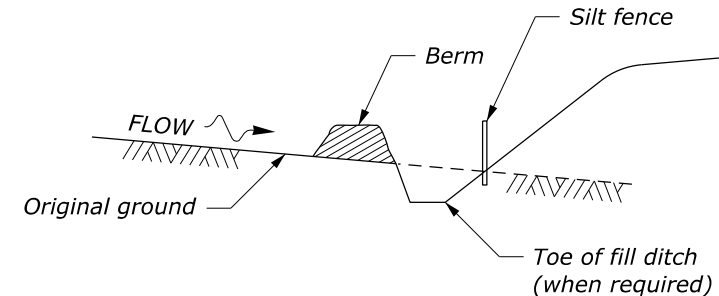
1. Use temporary slope drains (berms, drains, and riprap) as the embankment is constructed. Use spacings as shown on the Erosion Control Plans or as designated by the CO. Place all slope drains at the end of each work shift. Use slope drains until the slopes are permanently stabilized.
2. Construct temporary berms at the top of all erodible cut slopes as shown on the Erosion Control Plans or as designated by the CO. Use check dams to reduce the runoff velocity when existing grades are steep.
3. Do not use transverse or longitudinal joints in plastic liner. Plastic liner is not required for rock embankments.
4. Use toe-of-fill slope berms to divert offsite runoff away from disturbed areas.
5. Seed and mulch all cut slope berms and toe-of-fill berms immediately after berm construction.
6. Use Class 2 temporary riprap.



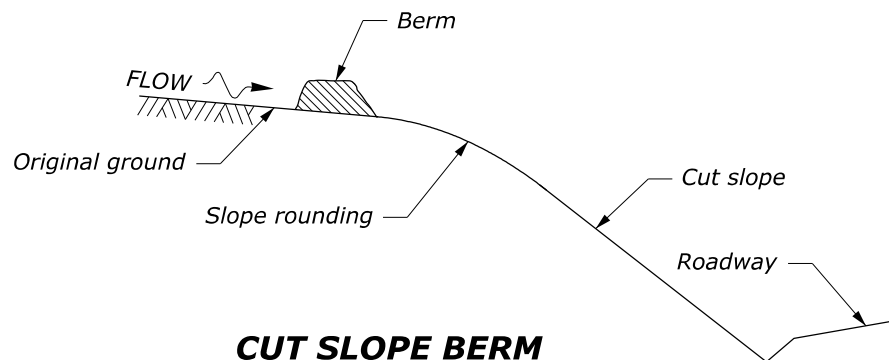
SECTION A-A



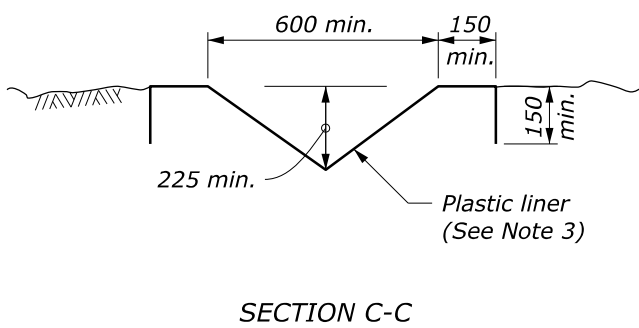
SECTION B-B



TOE-OF-FILL SLOPE BERM



CUT SLOPE BERM



SECTION C-C

This drawing contains **Metric** units of measure. Dimensions without units are millimeters.

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD M157-7
TEMPORARY EROSION CONTROL BERMS, SLOPE DRAINS AND LINED WATERWAYS	SPECIFICATION FP-24, FP-14
	APPROVED FOR USE 1/2024

NO SCALE

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