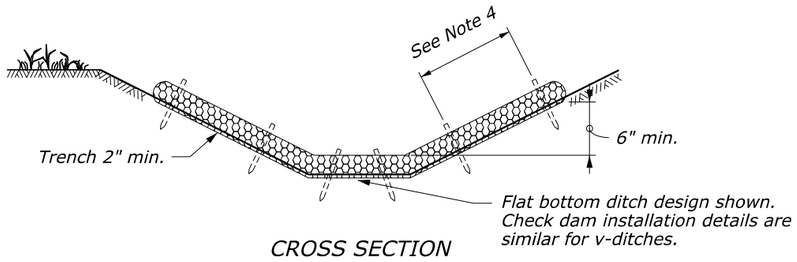
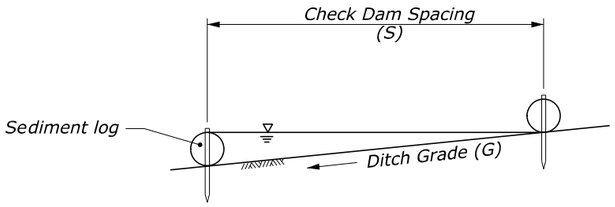
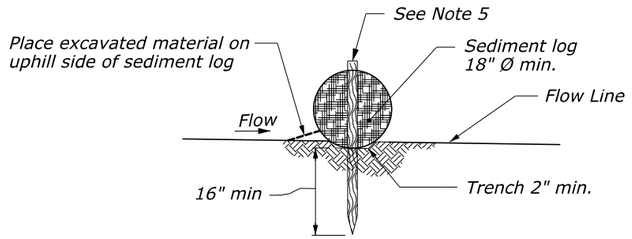
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
•	•	:	•	•



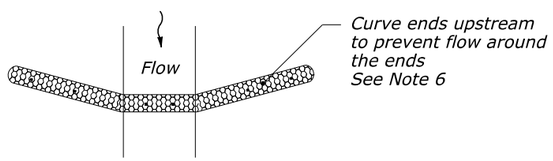
CROSS SECTION



PROFILE VIEW



SEDIMENT LOG
STAKING DETAIL

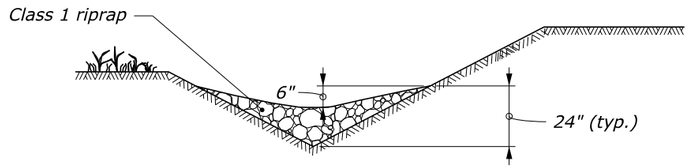


PLAN

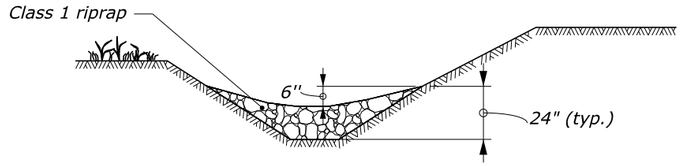
SEDIMENT LOG CHECK DAM SPACING*	
DITCH GRADE	CHECK DAM SPACING (S) max. (ft)
1%	150
2%	75
3%	50
4%	40
5%	30

* Spacing calculated based on 18" Ø min sediment log. Do not use sediment log check dams on ditch grades steeper than 5%.

SEDIMENT LOG CHECK DAM



V-DITCH
CROSS SECTION



TRAPEZOIDAL DITCH
CROSS SECTION

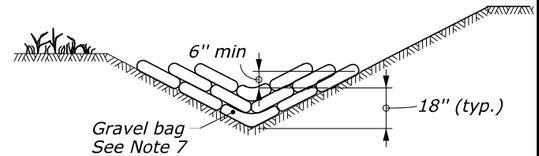
PROFILE VIEW

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

RIPRAP CHECK DAM

NOTE:

1. Check dams of sediment logs, riprap, or gravel bags may be used as approved by the CO, to meet the functional requirements of the check dam device.
2. Repair all rills or gullies prior to installation.
3. Install check dams in ditches perpendicular to the flowline.
4. Stake sediment logs in place with 1⅛" x 1⅛" wood stakes. Drive stakes at each end of the sediment log and at 2' (max) spacing.
5. Drive stakes into undisturbed soil of trench bottom 16" (min). Expose stakes 2" (min.) above top of log.
6. Provide sufficient length to prevent water from flowing around the ends of the sediment log.
7. See Subsection 713.14A of the Special Contract Requirements for gravel bag material.



CROSS SECTION

PROFILE VIEW

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

* Do not use gravel bag check dams on ditch grades steeper than 6%

GRAVEL BAG CHECK DAM

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

CHECK DAM

DETAIL APPROVED FOR USE 01/2011

REVISED:

DETAIL C157-53

Central Federal Lands Highway Division
US Department of Transportation - Federal Highway Administration

NOTES TO THE DESIGNER

Last Updated: January 2011

General Information

1. ***Appropriate Applications***. Check dams reduce scour in a channel or ditch and provide runoff treatment by reducing flow velocity and encouraging sediment deposition. Appropriate applications include:
   - Sediment logs are appropriate for lower flow conditions, gravel bags and riprap check dams in higher flow conditions
   - Steep channels where storm water runoff velocities exceed 3 ft/s
   - During the establishment of grass linings in ditches
   - Use in conjunction with RECP lining in ditches steeper than 5% or 6% (See CFL Detail C157-54)
2. ***Limitations***.
   - Not used in live streams
   - Drainage areas 10 acres or less
3. ***Layout Guidance.***
   - Install the first check dam about 15 ft from the outfall and at regular intervals based on slope gradient and soil type (steeper slopes and more erosive soils (e.g. loose sand or silt) will require shorter spacing between check dams).
   - When installing a series of check dams in a channel, install outlet stabilization measures below the final dam, such as riprap or geotextile, to minimize erosion potential.

Applicable SCRs

1. Section 157:
   http://www.cflhd.gov/design/_documents/construction/scr_03/S157-03E.doc
2. Section 713:
   http://www.cflhd.gov/design/_documents/construction/scr_03/S713-03E.doc

Typical Pay Item Used

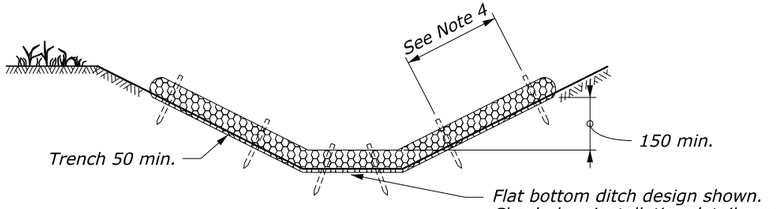
- We will leave it up to the Contractor to select the specific type of drop inlet protection to use on the project. Include both plan sheets and a generic pay item in the PS&E.
- 15706-0200 Soil erosion control, check dam [EA]
- If you would like to specify a type of check dam to use, show the type in parenthesis in the pay item description. For example Soil erosion control, check dam (riprap)

Updates

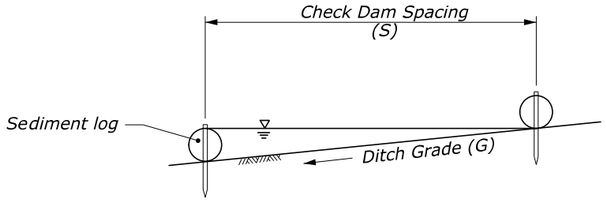
January 2011

- Updated FLH Standard drawing by: Adding sediment log and gravel bag check dams

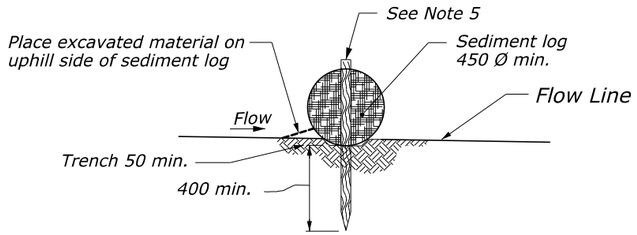
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
•	•	•	•	•



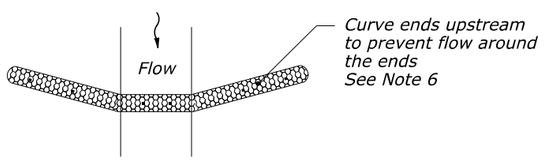
CROSS SECTION



PROFILE VIEW



SEDIMENT LOG
STAKING DETAIL

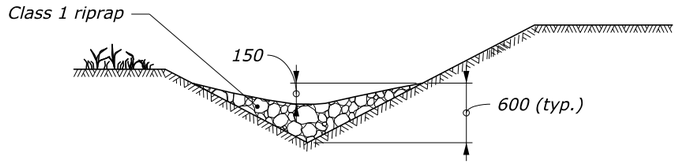


PLAN

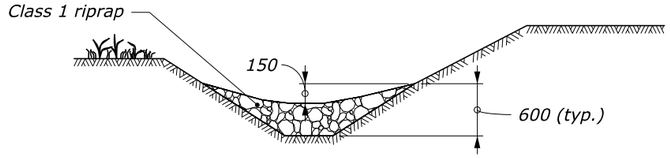
SEDIMENT LOG CHECK DAM SPACING*	
DITCH GRADE	CHECK DAM SPACING (S) max. (m)
1%	45
2%	23
3%	15
4%	12
5%	9

* Spacing calculated based on 450 Ø sediment log. Do not use sediment log check dams on ditch grades steeper than 5%.

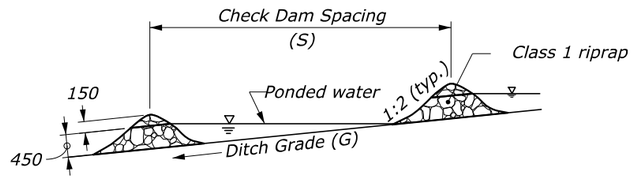
SEDIMENT LOG CHECK DAM



V-DITCH
CROSS SECTION



TRAPEZOIDAL DITCH
CROSS SECTION



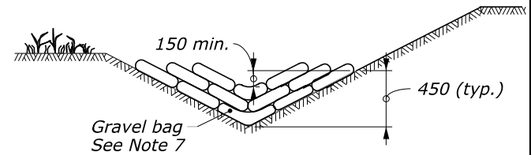
PROFILE VIEW

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

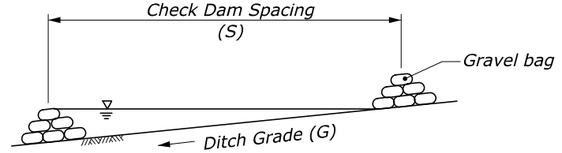
RIPRAP CHECK DAM

NOTE:

1. Check dams of sediment logs, riprap, or gravel bags may be used, as approved by the CO, to meet the functional requirements of the check dam device.
2. Repair all rills or gullies prior to installation.
3. Install check dams in ditches perpendicular to the flowline.
4. Stake sediment logs in place with 28 mm x 28 mm wood stakes. Drive stakes at each end of the sediment log and at 600 mm (max) spacing.
5. Drive stakes into undisturbed soil of trench bottom 400 mm (min). Expose stakes 50 mm (min) above top of log.
6. Provide sufficient length to prevent water from flowing around the ends of the sediment log.
7. See Subsection 713.14A of the Special Contract Requirements for gravel bag material.
8. Dimensions without units are millimeters.



CROSS SECTION



PROFILE VIEW

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

* Do not use gravel bag check dams on ditch grades steeper than 6%

GRAVEL BAG CHECK DAM

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

CHECK DAM

DETAIL APPROVED FOR USE 01/2011

REVISED:

DETAIL
CM157-53

Central Federal Lands Highway Division
US Department of Transportation - Federal Highway Administration

NOTES TO THE DESIGNER

Last Updated: January 2011

General Information

1. ***Appropriate Applications***. Check dams reduce scour in a channel or ditch and provide runoff treatment by reducing flow velocity and encouraging sediment deposition. Appropriate applications include:
    - Sediment logs and triangular sediment barriers appropriate for lower flow conditions, gravel bags and riprap check dams in higher flow conditions
    - Steep channels where storm water runoff velocities exceed 1 m/s
    - During the establishment of grass linings in ditches
    - Use in conjunction with RECP lining in ditches steeper than 5% or 6% (See CFL Detail C157-54)
2. ***Limitations***.
    - Not used in live streams
    - Drainage areas 4 hectares or less
3. ***Layout Guidance.***
    - Install the first check dam about 5 m from the outfall and at regular intervals based on slope gradient and soil type (steeper slopes and more erosive soils (e.g. loose sand or silt) will require shorter spacing between check dams).
    - When installing a series of check dams in a channel, install outlet stabilization measures below the final dam, such as riprap or geotextile, to minimize erosion potential.

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Updates

January 2011

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