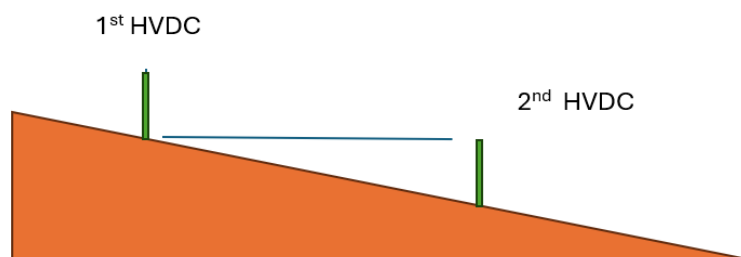


Determining Ditch Check spacing. In this case, as applies to the High Velocity Ditch Check (HVDC)

Ditch Check or HVDC placement is a design question determined by the designer. There is a theoretical minimum distance between ditch checks that can be calculated to ensure that the stormwater does not back-up in the channel.

Spacing of the Ditch Checks is determined by the designer based on

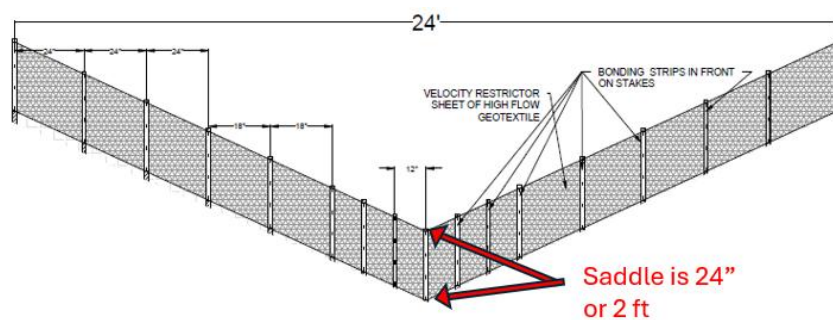
- Volumetric flow
- Velocity in the channel
- Hydrology which incorporates soil conditions, such as sandy or clay.



So, ditch checks should be spaced to a minimum distance. The bottom of 1st HVDC is at or above the elevation of the center (saddle) of the 2nd HVDC.

If a calculation is desired

HVDC 24 example



HVDC 24 center point (saddle) is 24" or 2 feet

Take the percentage of Grade. The first example uses 5% grade.

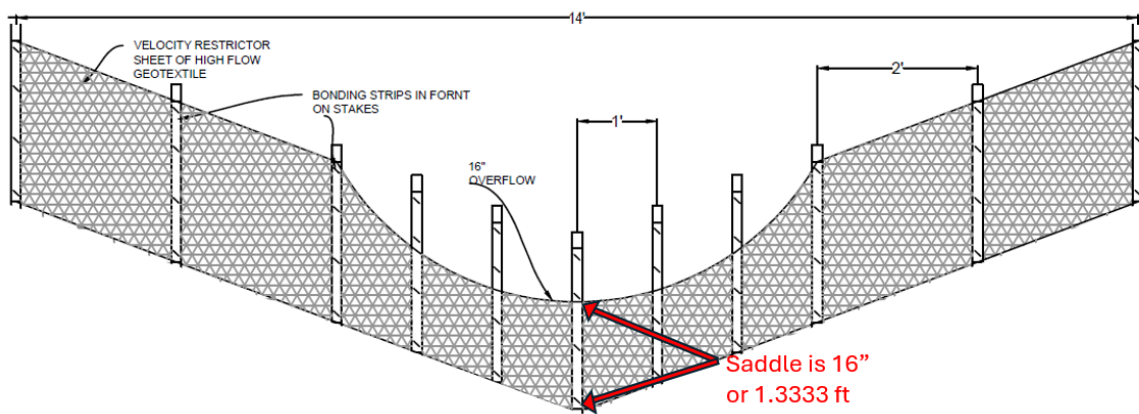
- Let's use 5% grade.
- Convert to decimal by dividing by 100.
- 5/100 This equals 0.05

- Divide center point (saddle) by 0.05
- $2 \text{ ft} / 0.05 = 40 \text{ ft}$
- So, the minimum spacing should be no closer than 40 ft apart.
- Actual spacing may be further based on the designer's plans.

Next example uses a 25% grade

- Convert the 25% grade to decimal by dividing by 100.
- $25/100$ this equals 0.25
- Divide the center point (saddle) by 0.25
- $2 \text{ ft} / 0.25 = 8 \text{ ft}$
- So, the minimum spacing should be no closer than 8 ft apart.
- Actual spacing may be further based on the designer's plans.

HVDC 14 example



HVDC 14 Center point (saddle) is 16" or 1.33333 ft.

Take the percentage of Grade. The first example uses 5% grade.

- Let's use 5% grade.
- Convert to decimal by dividing by 100.

- 5/100 This equals 0.05
- Divide center point (saddle) by 0.05
- $1.3333 \text{ ft} / 0.05 = 26.67 \text{ ft}$
- So, the minimum spacing should be no closer than 26.67 ft apart.
- Actual spacing may be further based on the designer's plans.

Next example uses a 25% grade

- Convert the 25% grade to decimal by dividing by 100.
- 25/100 this equals 0.25
- Divide the center point (Saddle) by 0.25
- $1.3333 \text{ ft} / 0.25 = 5.333 \text{ ft apart}$
- So, the minimum spacing should be no closer than 5.333 ft apart.
- Actual spacing may be further based on the designer's plans.