

**NOTES:**

1. ENTIRE RUN FROM MANHOLE TO MANHOLE SHALL BE DUCTILE IRON PIPE.
2. RIPRAP SHALL BE SIZED BY THE ENGINEER.
3. GRAVEL, SMALL STONES AND FINES SHALL NOT BE USED.
4. WHEN 6 FEET OF COVER BEYOND THE CHANNEL CANNOT BE ACHIEVED ON BOTH SIDES OF THE STREAM, A STEEL ENCASEMENT PIPE SHALL BE USED. JOINT SHALL BE WITHIN THE CASING AND CASING SHALL EXTEND 2 FEET BEYOND THE CONCRETE COLLAR.
5. BOTTOM OF PIPE MUST BE A MINIMUM OF 24 INCHES ABOVE NORMAL WATER LEVEL BUT NO LOWER THAN THE 25-YEAR FLOOD ELEVATION.
6. VENT OPENING SHALL BE INSTALLED 12" ABOVE 100-YEAR FLOOD ELEVATION OR 36" ABOVE EXISTING GRADE, WHICHEVER IS HIGHER.

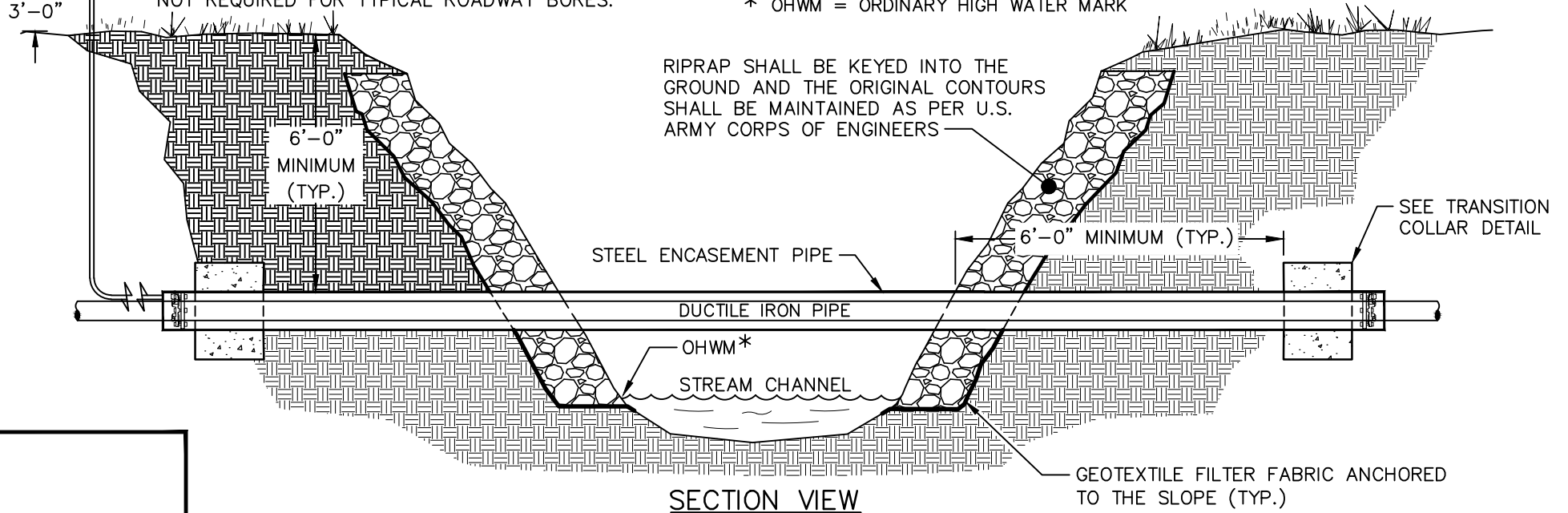
2" GALVANIZED VENT AT HIGH END OF CASING. VENT TO HAVE INSECT SCREEN WELDED TO END. VENT TO BE USED FOR ALL STREAM CROSSINGS, NOT REQUIRED FOR TYPICAL ROADWAY BORES.

3'-0"

**TRANSITION COLLAR DETAIL**

\* OHWM = ORDINARY HIGH WATER MARK

RIPRAP SHALL BE KEYED INTO THE GROUND AND THE ORIGINAL CONTOURS SHALL BE MAINTAINED AS PER U.S. ARMY CORPS OF ENGINEERS



**TYPICAL STREAM STABILIZATION FOR  
NON-PIER AERIAL CROSSINGS**