An aerial photograph of a town, likely East Lansing, Michigan, featuring a prominent rainbow arching over the city. The foreground shows a large brick building with a dark roof, and the background is filled with various residential and commercial buildings under a cloudy sky.

County Road Commissions & SESC at Road Stream Crossings

Mitch Koetje

MDEQ – Water Resources Division

(906) 202-1464 koetjem@michigan.gov



**Do you feel
like this?**

Or
like
this?



Grimmac &
tight jaw

Stomach in
knots

Sweaty,
clenched
hands



















PEPSI
DUTCH'S OLD BAR



04/30/2013



MONROE
ILLINOIS
HIGHWAY
DEPARTMENT





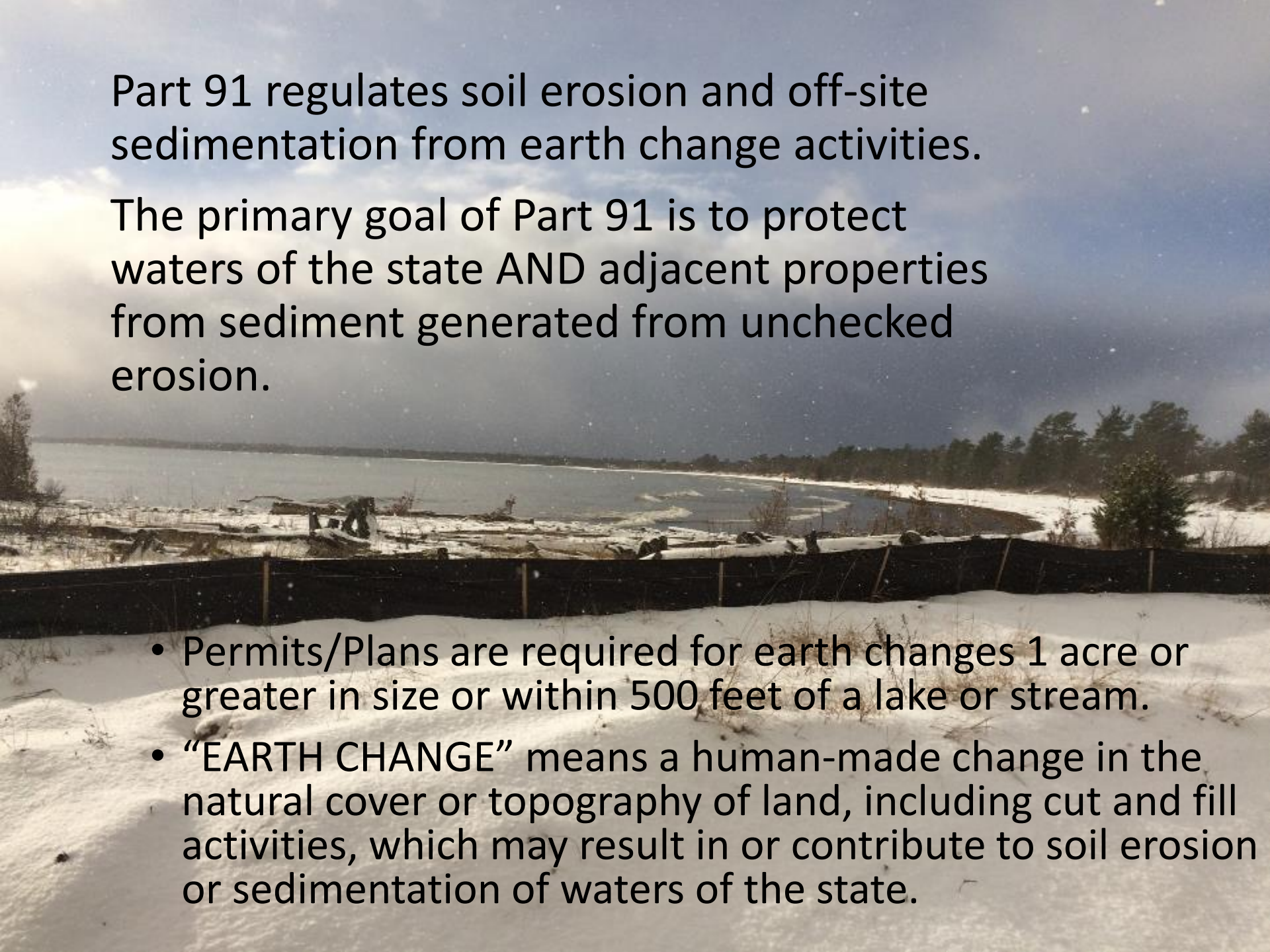




Water Resources



- **Protect and Monitor**
 - 4 Great Lakes
 - 11,000 Inland Lakes
 - 36,000 river miles
 - 5 million acres of wetlands
 - 70,000 acres of coastal dunes
- For swimming, fishing, drinking water and aquatic ecosystems.**



Part 91 regulates soil erosion and off-site sedimentation from earth change activities.

The primary goal of Part 91 is to protect waters of the state AND adjacent properties from sediment generated from unchecked erosion.

- Permits/Plans are required for earth changes 1 acre or greater in size or within 500 feet of a lake or stream.
- “EARTH CHANGE” means a human-made change in the natural cover or topography of land, including cut and fill activities, which may result in or contribute to soil erosion or sedimentation of waters of the state.

Why is SESC Important?









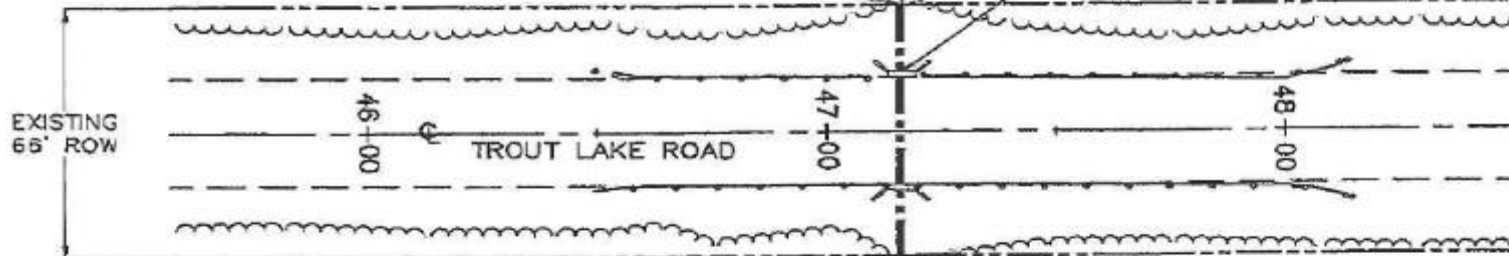
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PROPOSED 66', CULV, PRECAST CONC
 BOX, 15 FOOT BY 6 FOOT, WITH MITERED ENDS
 INLET ELEV = 92.4
 OUTLET ELEV = 92.3

EXISTING 30', CULV, CONC BOX, 15 FOOT BY 5 FOOT
 WITH HEADWALLS AND WINGWALLS.
 INLET ELEV = 92.4
 OUTLET ELEV = 92.3



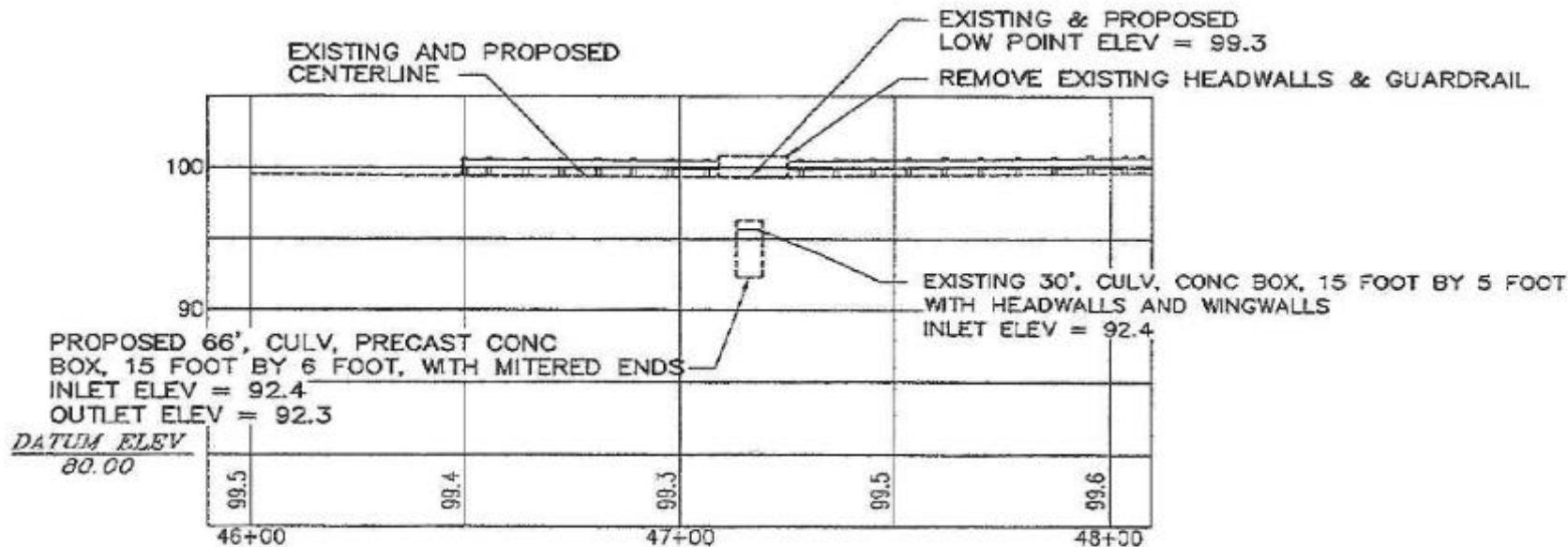
EXISTING STREAM BED
 WIDTH: 10 FOOT

Part 301 Permit & Plans

CULVERT SITUATION PLAN

NO SCALE

LOCATIONS:

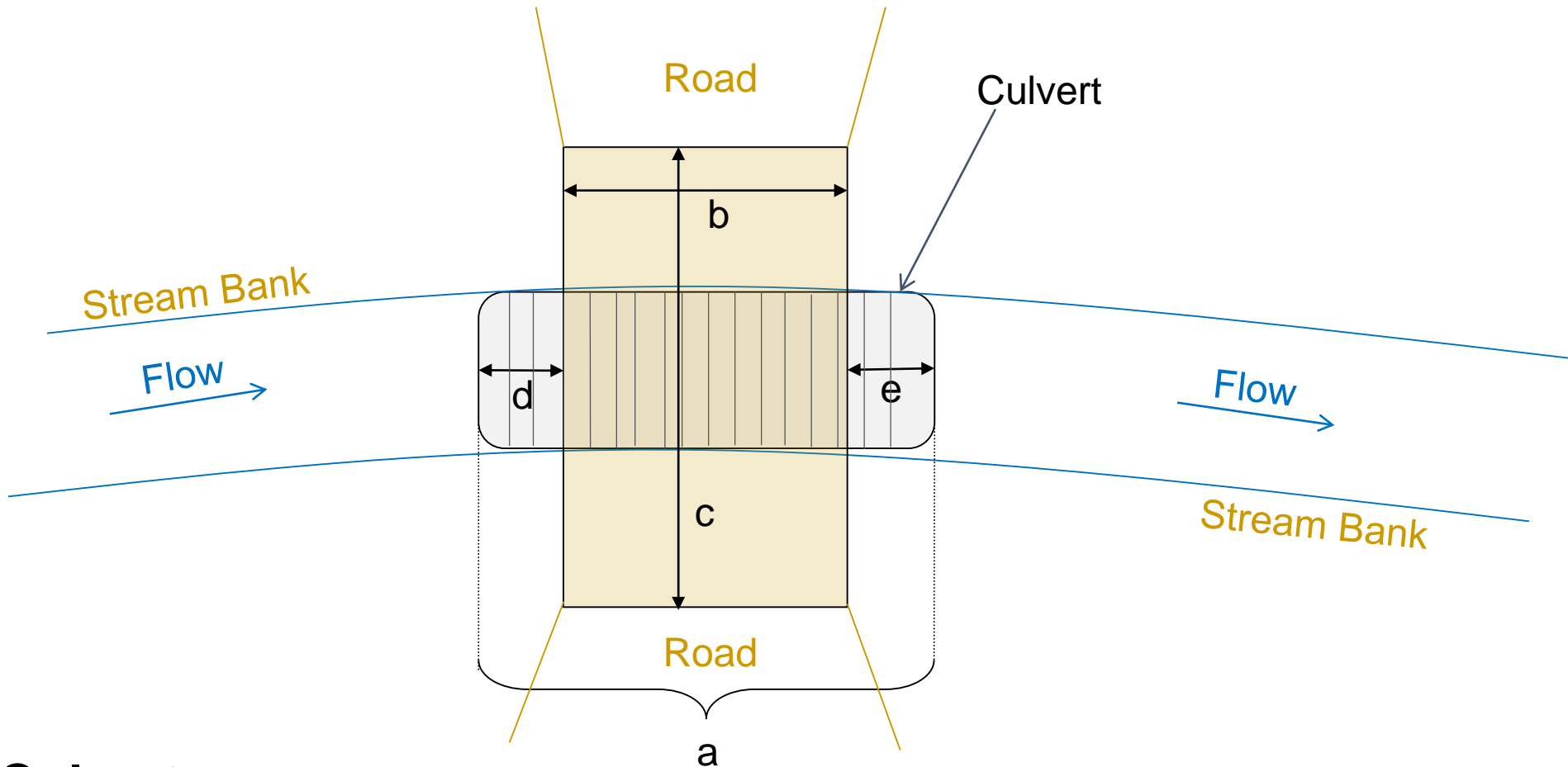


ELEVATION DATUM
 IS LOCAL

CENTERLINE PROFILE

NO SCALE

- a. _____ Length of culvert
- b. _____ Width of fill (distance parallel to stream)
- c. _____ Length of fill (distance perpendicular to stream)
- d. _____ Distance between edge of fill and end of culvert
- e. _____ Distance between edge of fill and other end of culvert



**Culvert
Plan View**

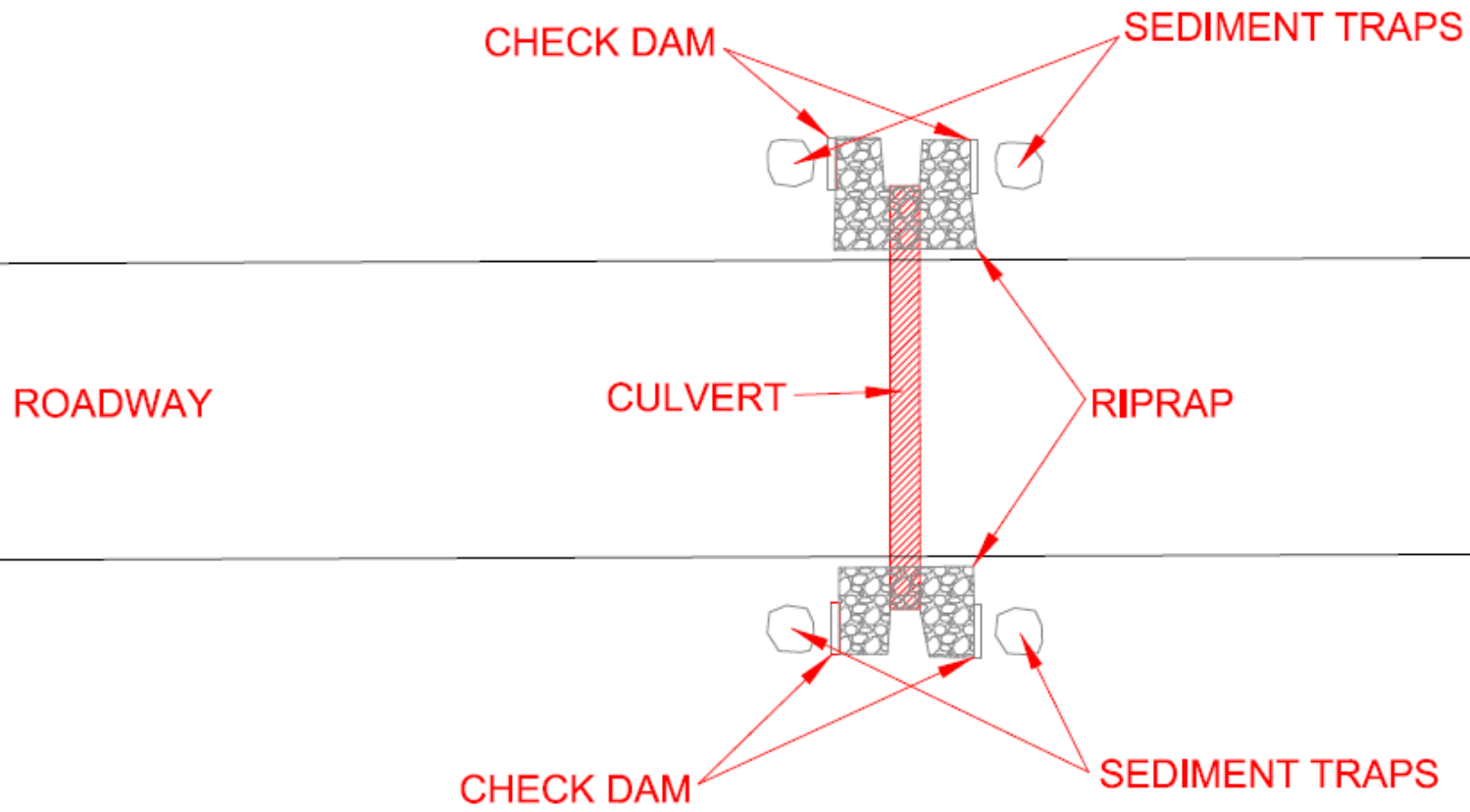
SESC Plan Requirements

Rule 1703, Part 91 of the NREPA

1. A scaled map (<200 ft = 1 in.)
2. Legal description
3. Site location sketch
4. Proximity to lakes and streams
5. Predominant land features
6. Contour intervals or slope description
7. Soils information
8. Physical limits of earth change
9. Drainage and dewatering facilities
10. Timing and sequencing
11. Temporary SESC measures (install & removal)
12. Permanent SESC measures (install)
13. Maintenance program for permanent SESC measures

**SESC PLAN FOR PRARIE ROAD PROJECT
T44N, R02/3W, SEC 19&24, RUDYARD TOWNSHIP
CHIPPEWA COUNTY, MICHIGAN**

TYPICAL PLACEMENT FOR CHECK DAMS, SEDIMENT TRAPS AND RIPRAP



Riprap in The Channel







JUN 13 2006













3 10:03 AM





































Topsoil Berm Gap



**Silt Fence Functioning
the same as Top Soil
Berm**



Good Silt Fence in Critical Area – Stream Crossing



Inlet Protection





JAN 13 2005

Non-Woven Fabrics



- Impossible to maintain
- Curb cut installation
- Blinding and flooding



www.enviroages.com



www.efsinc.net

Few of the many, many products available



www.ero-tex.net

BEAVER DAM

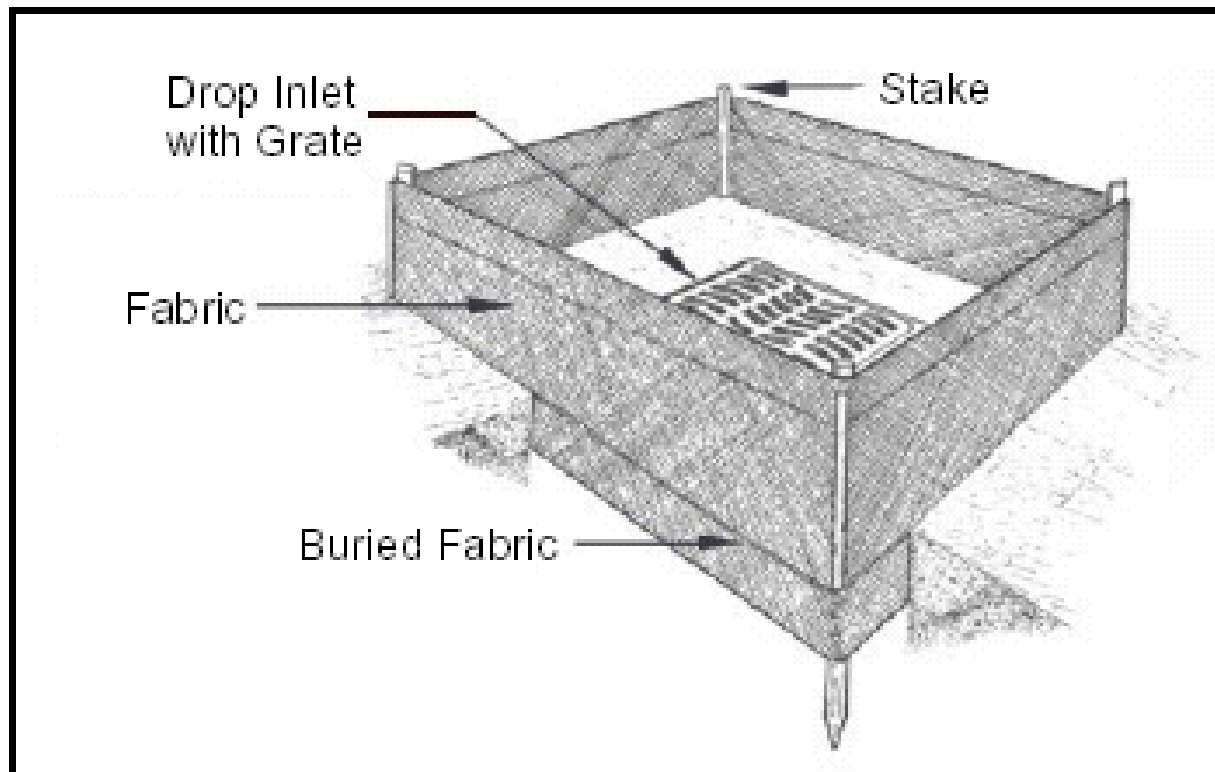


Figure 4-34: Inlet Protection

Source: Price and Company

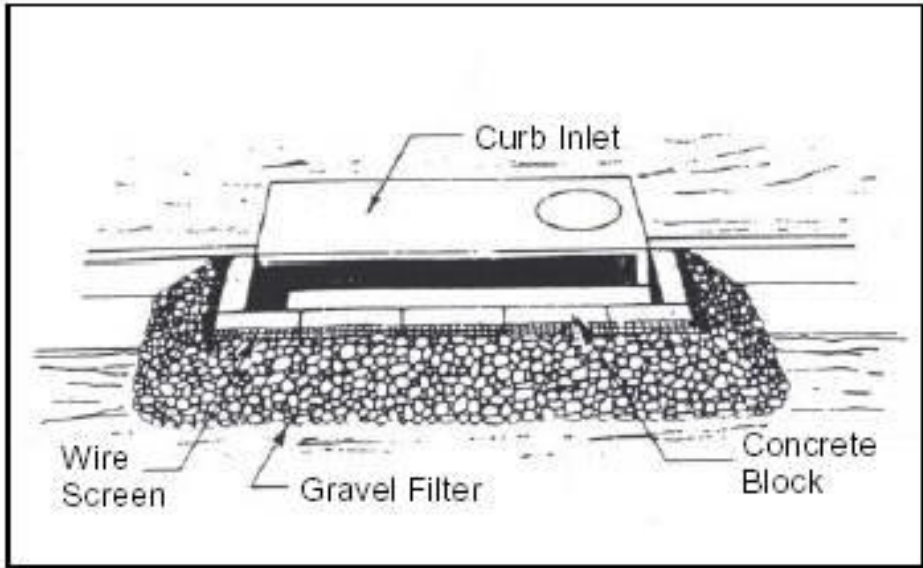
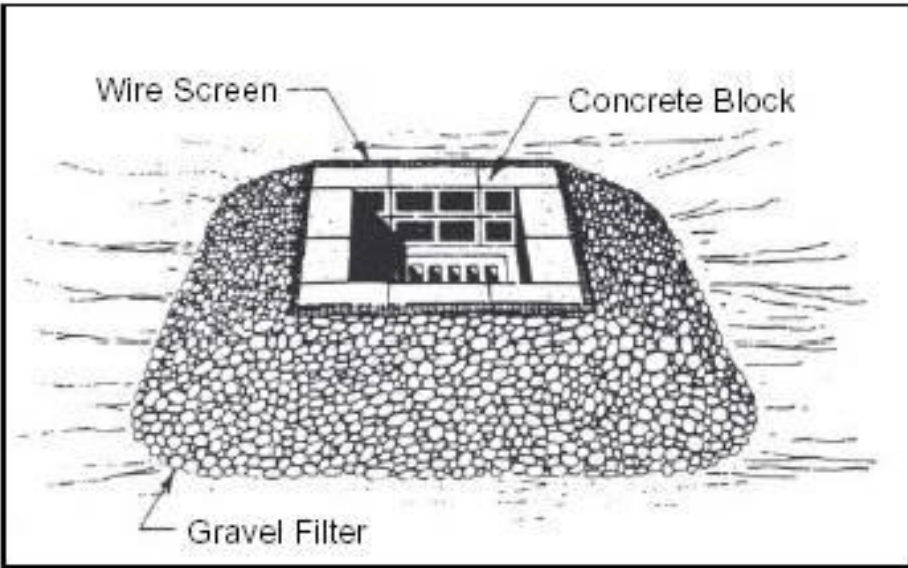
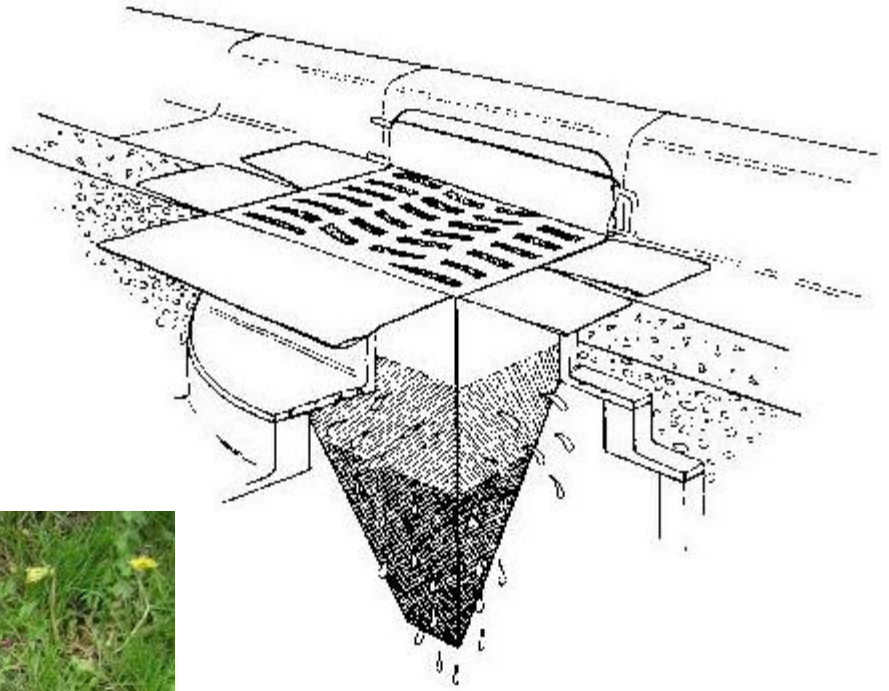


Figure 4-35: Inlet Sediment Filters

Sediment collection bags allow more volume to be processed.



DIVERSIONS

























DEWATERING

DISCHARGE SEDIMENT LADEN WATER TO:

- * Geotextile Filter Bag
- * Sediment Basin
- * Depressed Area
- * Vegetated Area (not wetlands)
- * Constructed Containment Area

DISSIPATE ENERGY TO PREVENT SCOURING

INSPECT DEWATERING OPERATION SEVERAL TIMES DAILY

**DO NOT PUMP SEDIMENT LADEN WATER DIRECTLY TO LAKES,
STREAMS, WETLANDS, OR STORM SEWERS.**



DEWATERING

**If it is Clean,
Keep it Clean**











CSI Geoturf
1-800-6...

CSI Geoturf

CSI



2 weeks later







Diversion /
Temporary
Stream Channel

Stabilize it First







**Earthen
berms to
block flow
are not
appropriate.**









Slope Stabilization







Silt Fence – at Project Completion







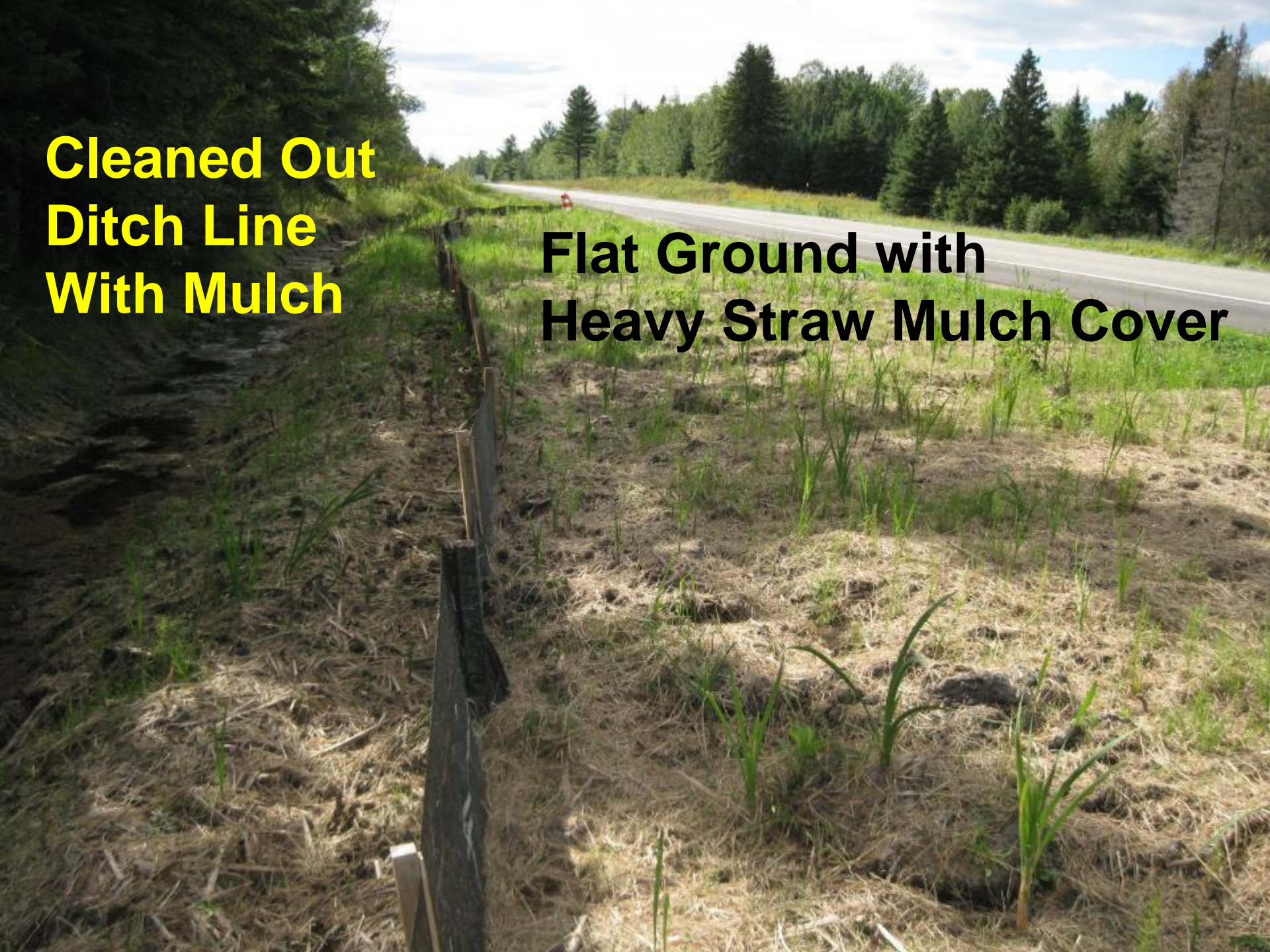






**Cleaned Out
Ditch Line
With Mulch**

**Flat Ground with
Heavy Straw Mulch Cover**





Ditch Lines



Ditch Lines









**Fresh final
grade**



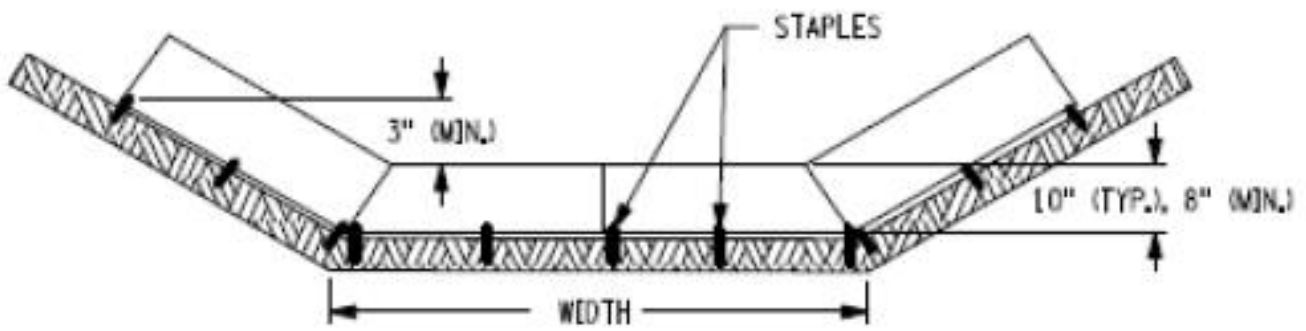
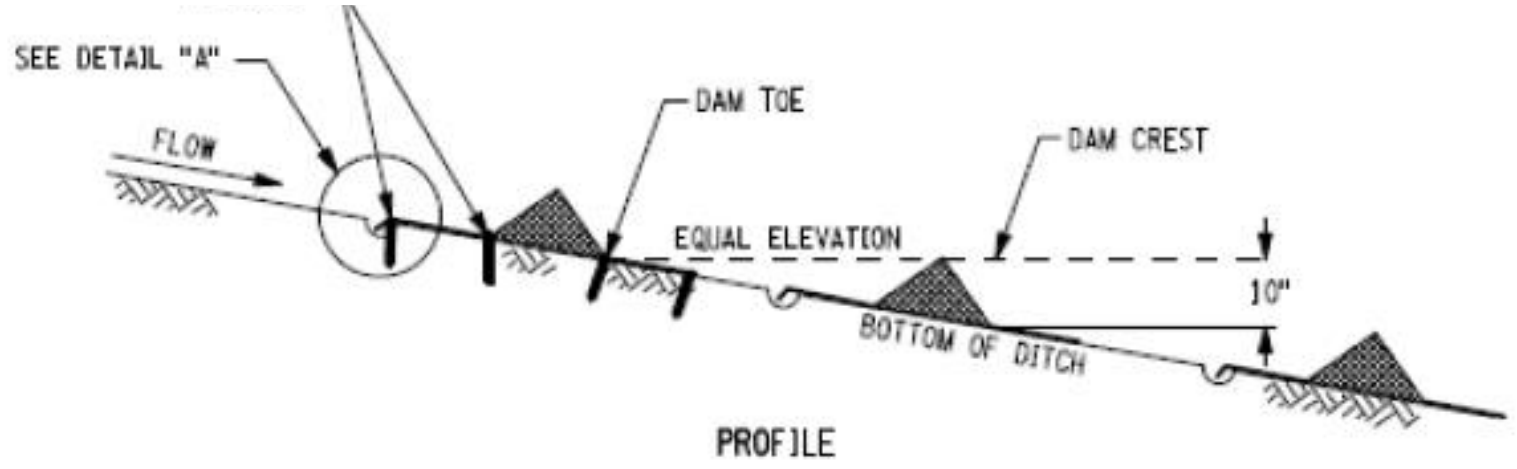
After One Rain







L = The distance such that points A and B of equal elevation















Inspect, Document, Inform, and Adjust



TELEPHONE

3000 1222





**Soil Erosion and
Sedimentation
Control, Construction
& Industrial Storm
Water, and Non Point
Source Pollution
Control Programs**

Mitch Koetje

**MI Dept. of Environmental
Quality – Water
Resources Division**

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