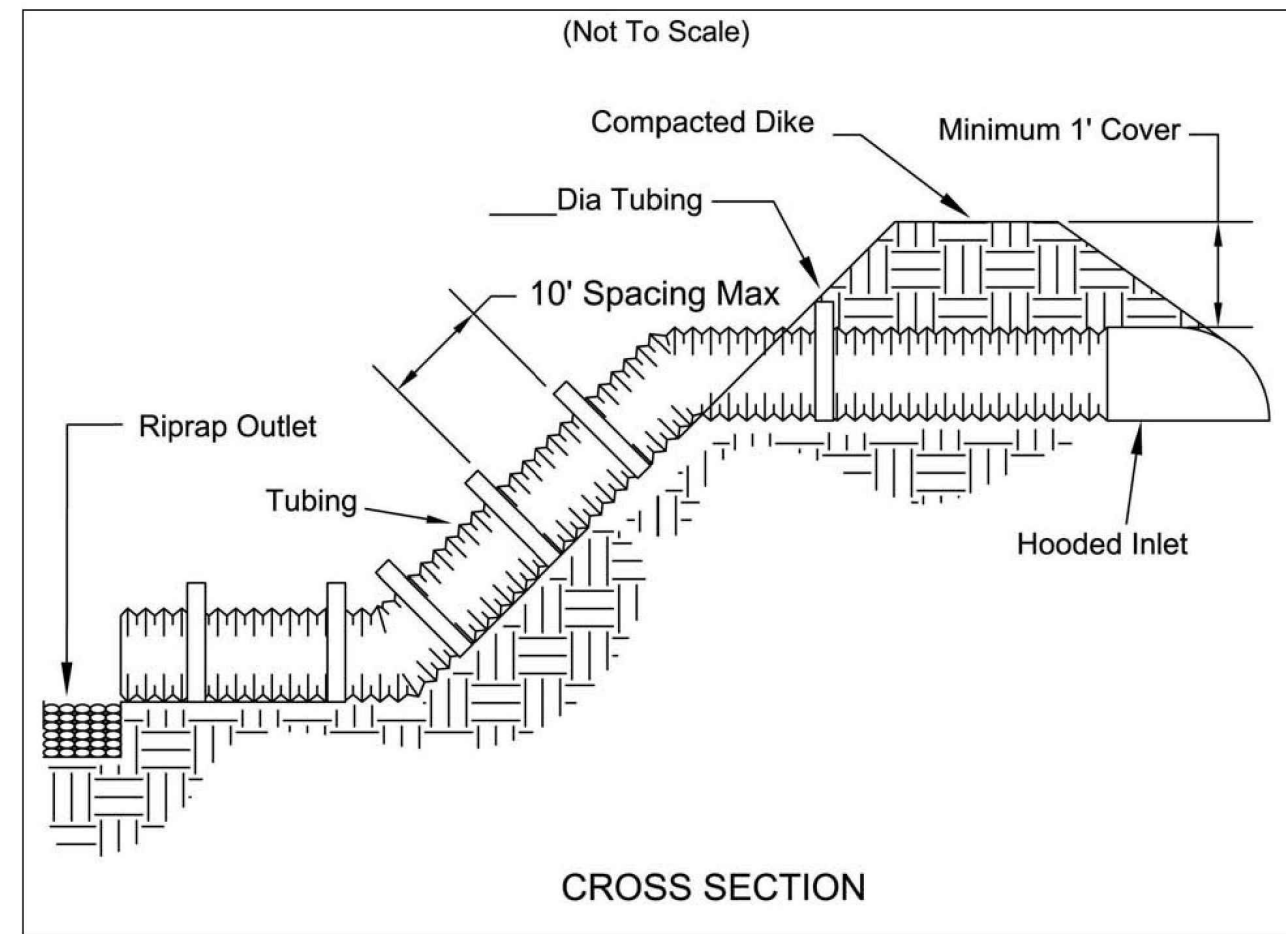


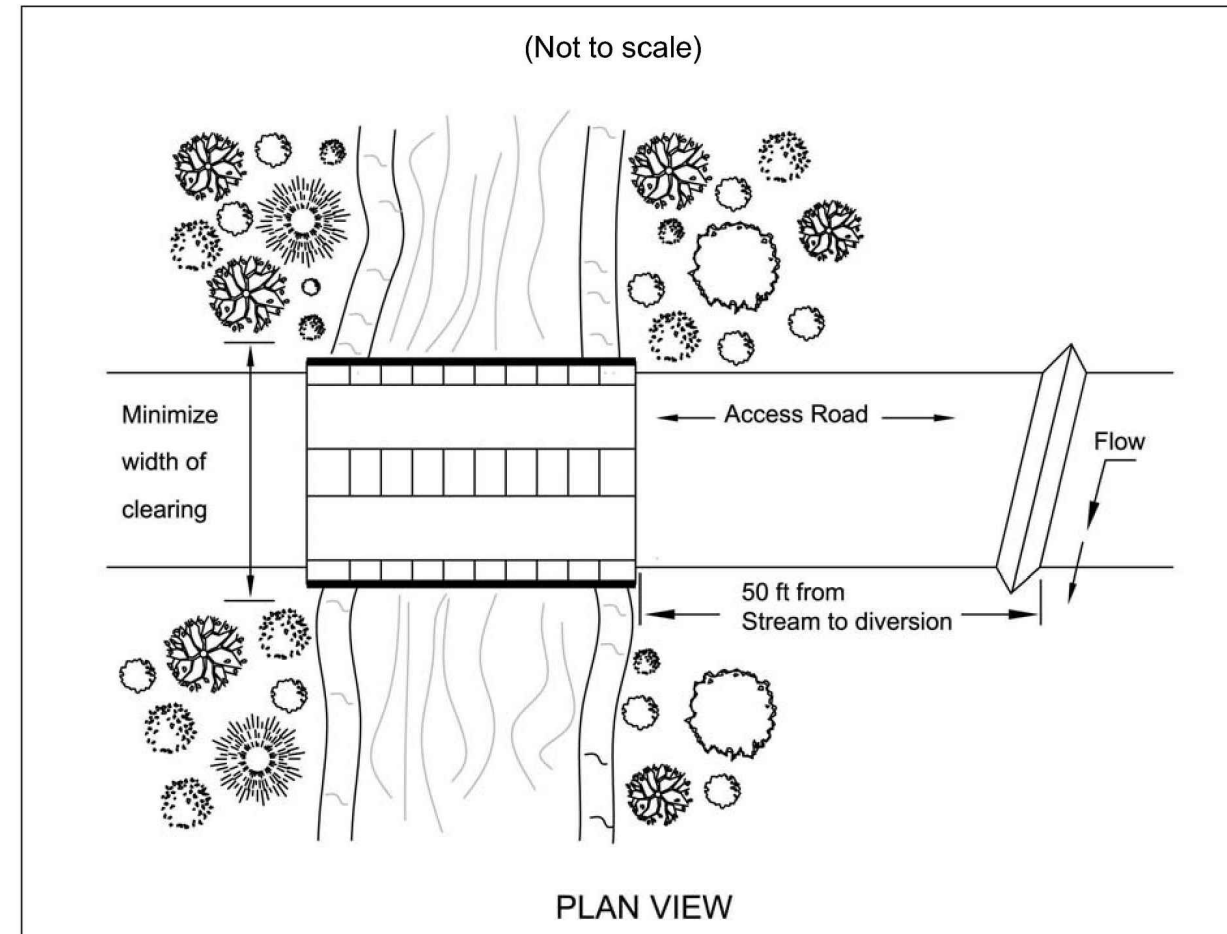
Specifications
for
Slope Drain



- The slope drain shall be constructed on a minimum slope of 3 percent.
- All points along the top of the dike/earthfill for the storage area shall be at least one (1) foot higher than the top of the inlet pipe.
- The pipe drain may be constructed of corrugated metal or PVC pipe. All pipe connections shall be watertight. Flexible tubing may be used, provided rigid pipe is used for the inlet, and pipe connections are made with metal strapping or watertight connecting collars. The flexible pipe shall be constructed with hold down apparatus spaced on 10 foot centers for anchoring the pipe.
- The entrance to the pipe shall be a hooded type.
- The soil around and/or under the pipe shall be placed in 4-inch layers and hand compacted to the top of the earth dike.
- A riprap apron shall be installed at the pipe outlet where clean water is discharged into a stabilized area or drainageway.

Specifications
for
Temporary Access Bridge

This specification does not define the strength of the temporary bridge. It shall be the designer's responsibility to select bridge construction materials with adequate strength for the anticipated construction traffic loads.

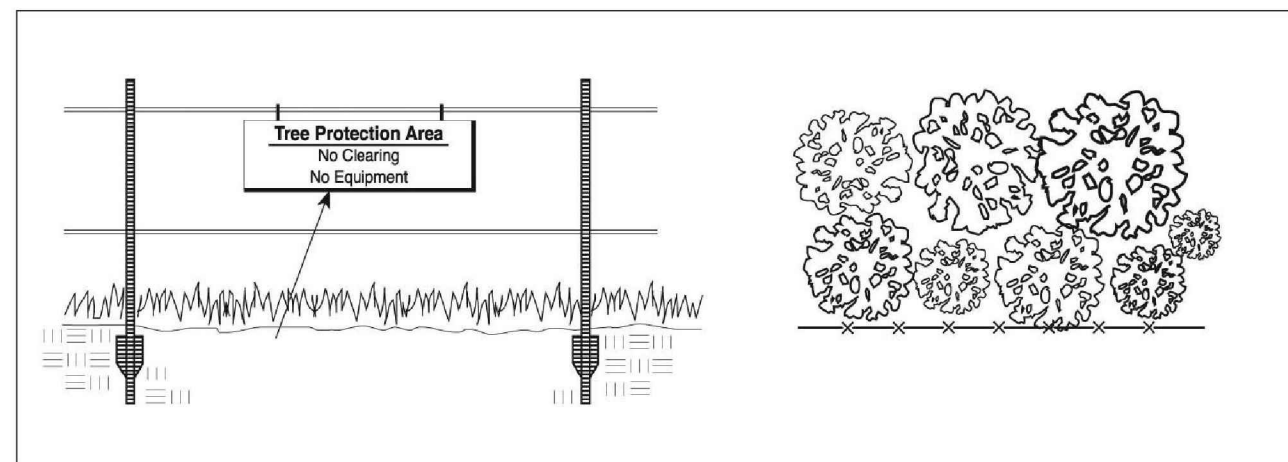


- Stream Disturbance -Disturbance to the stream shall be kept to a minimum. Streambank vegetation shall be preserved to the maximum extent practical and the stream crossing shall be as narrow as practical.
- Clearing shall be done by cutting NOT grubbing. The roots and stumps shall be left in place to help stabilize the banks and accelerate revegetation.
- Water shall be prevented from flowing along the road directly to the stream. Diversions and swales shall direct runoff away from the access road to a sediment-control practice.
- Bridges shall be constructed to span the entire channel. If the channel width exceeds 8 ft. as measured from the top-of-bank, then a footing, pier or bridge support may be constructed within the waterway. No more than one additional footing, pier or bridge support shall be permitted for each additional 8-ft. width of the channel. However, no footing, pier or bridge support will be permitted within the channel for waterways less than 8 ft. wide.
- Some steep watersheds subject to flash flood events may require that the bridge be cabled or secured to prevent downstream damage or hazard.
- No fill other than clean stone free from soil shall be placed within the stream channel.

Specifications
for
Culvert Stream Crossing

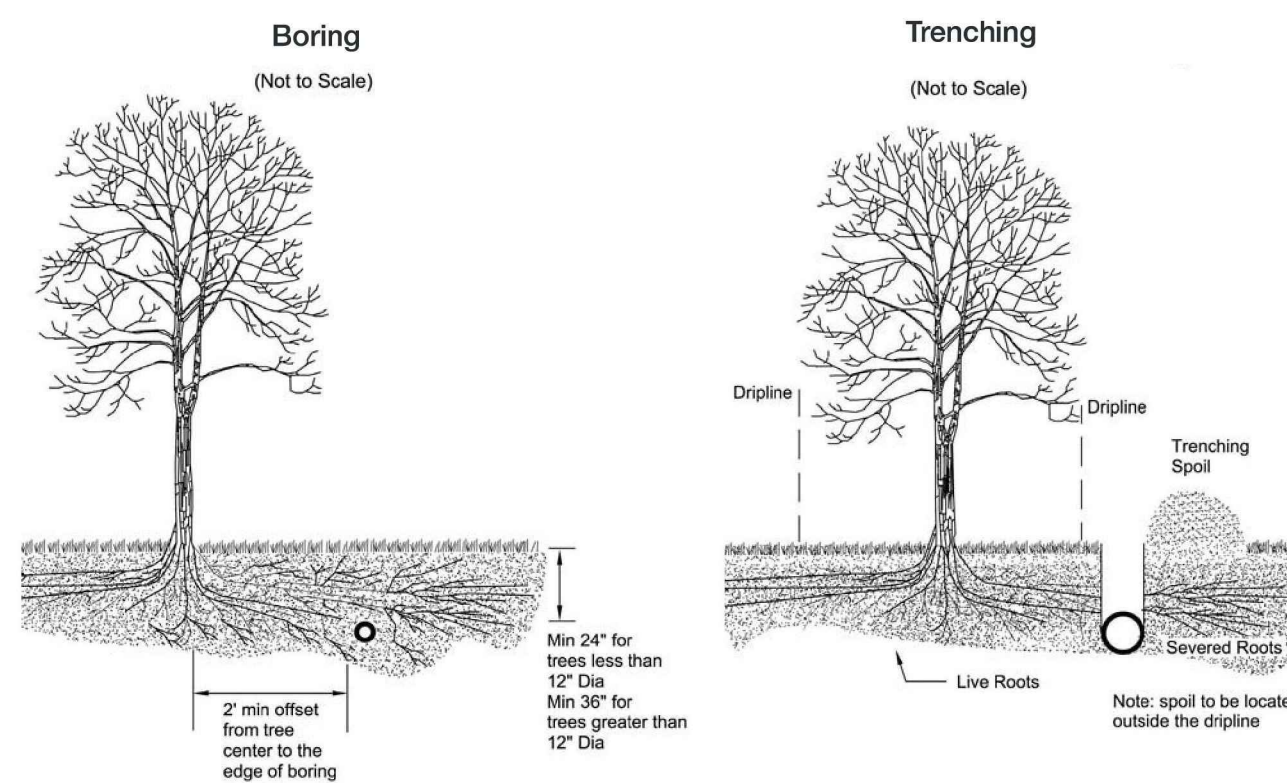
- Stream Disturbance -Disturbance to the stream shall be kept to a minimum. Streambank vegetation shall be preserved to the maximum extent practical and the stream crossing shall be as narrow as practical.
- Clearing shall be done by cutting NOT grubbing. The roots and stumps shall be left in place to help stabilize the banks and accelerate revegetation.
- To minimize interference with fish spawning and migration, crossing construction should be avoided where practical from March 15 through June 15.
- Water shall not be allowed to flow along the road directly to the stream. Diversions and swales shall direct runoff away from the access road to a sediment-control practice.
- Placement -Culverts shall be placed on the existing streambed to avoid a drop or waterfall at the downstream end of the pipe, which would be a barrier to fish migration. Crossings shall be made in shallow areas rather than deep pools where possible.
- Culvert Size -Culvert diameter shall be at least three times the depth of normal stream flow at the point of the stream crossing. If the crossing must be placed in deep, slow-moving pools, the culvert diameter may be reduced to twice the depth of normal stream flow. The minimum size culvert that may be used is 18 in.
- Number of Culverts -There shall be sufficient number of culverts to completely cross the stream channel from streambank to streambank with no more than a 12-in. space between each one.
- Fill and Surface Material -All material placed in the stream channel, around the culverts and on the surface of the crossing shall be stone, rock or aggregate. ODOT No. 1 shall be the minimum acceptable size. To prevent washouts, larger stone and rock may be used and they may be placed in gabion mattresses. NO SOIL SHALL BE USED IN THE CONSTRUCTION OF A STREAM CROSSING OR PLACED IN THE STREAM CHANNEL.
- Removal -Aggregate stone and rock used for this structure does not need to be removed. Care should be taken so that any aggregate left does not create an impoundment or impede fish passage. All pipes, culverts, gabions or structures must be removed.
- Stabilization -Streambanks shall be stabilized. Plantings shall include woody vegetation where practical.

Specifications
for
Tree and Natural Area Preservation



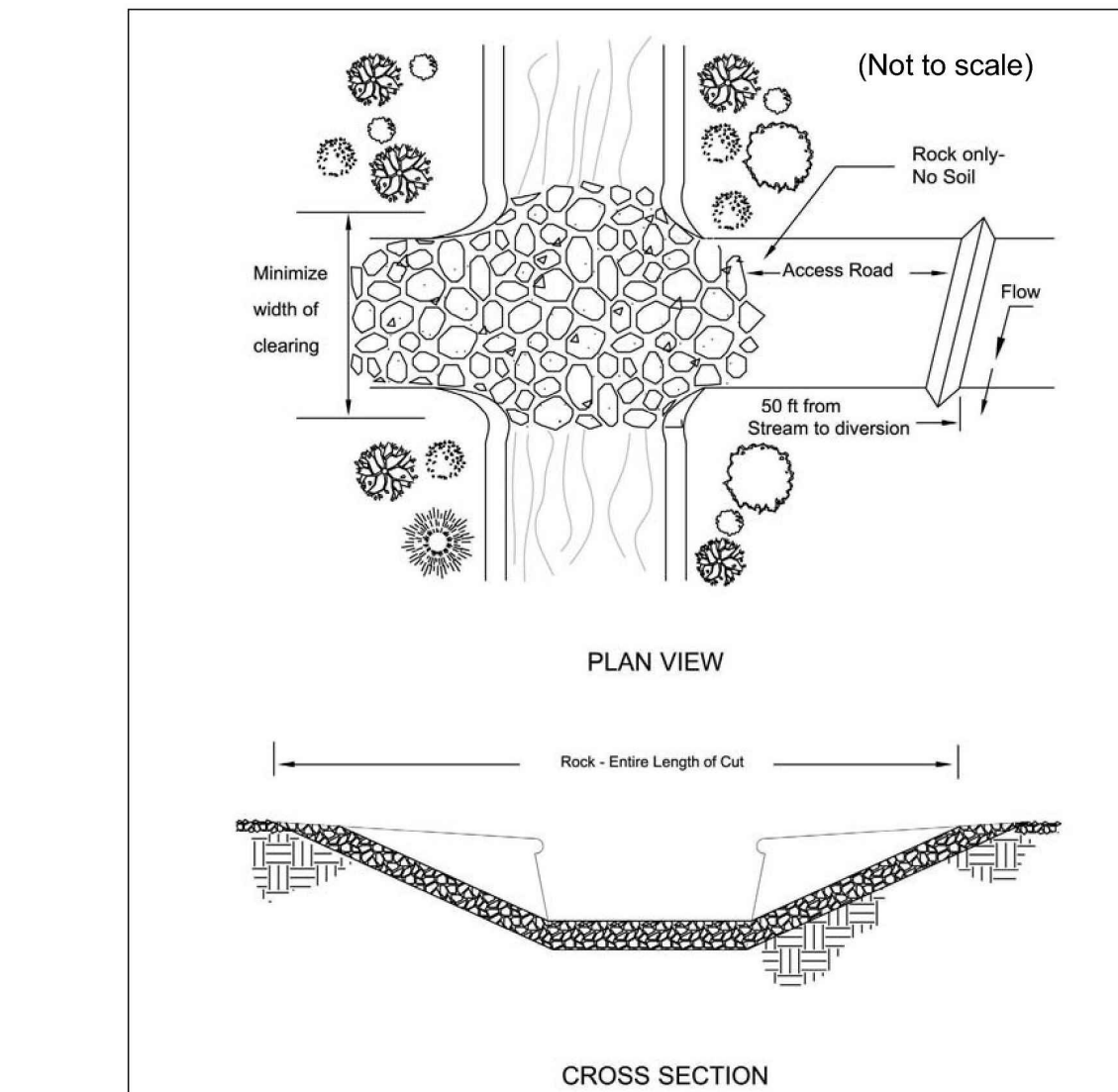
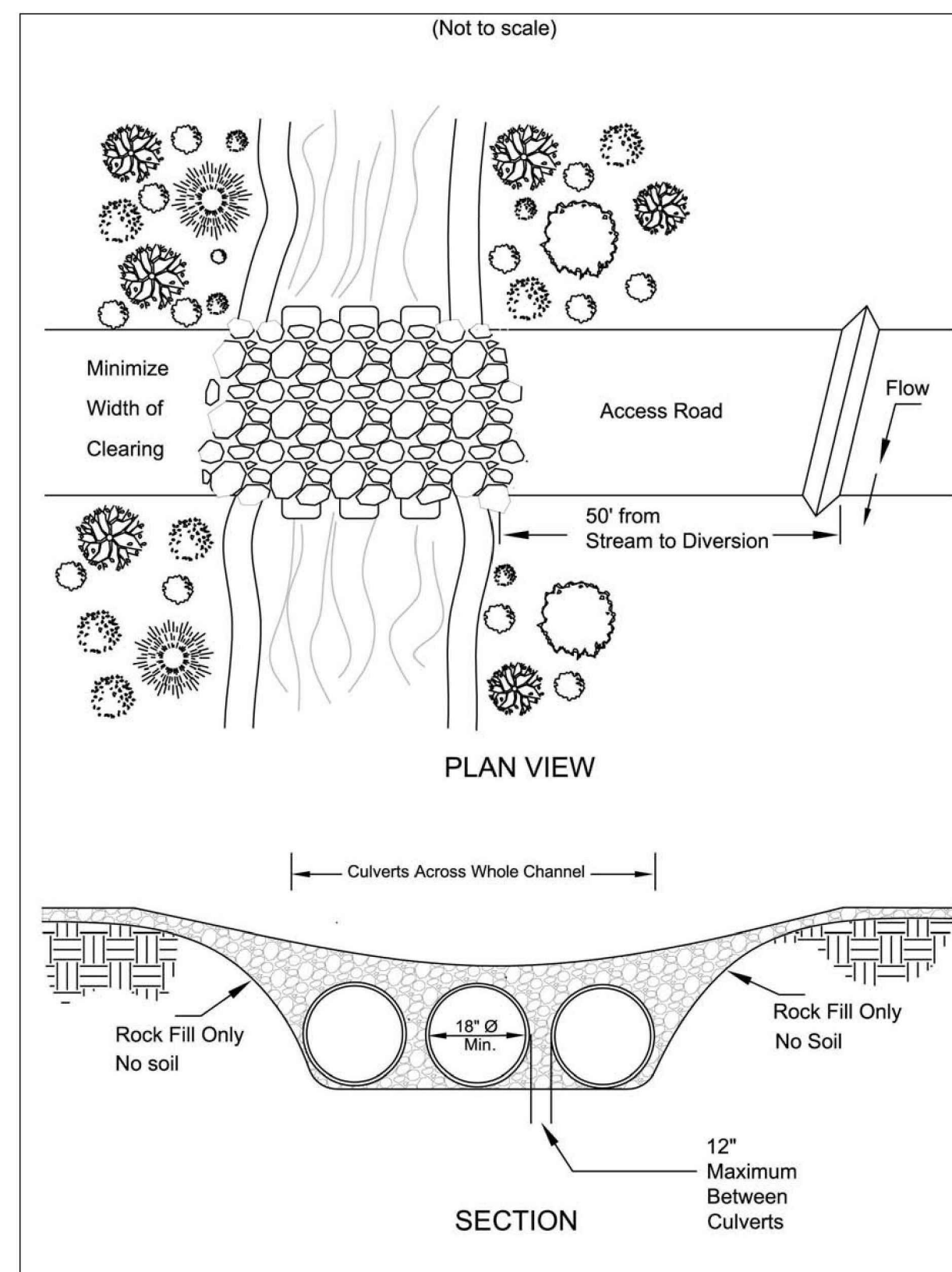
- Tree and natural area preservation shall be fenced prior to beginning clearing operations.
- Fence materials shall be metal fence posts with two strands of high tensile wire, plastic fence or snow fence.
- Signage shall clearly identify the tree and natural preservation area and state that no clearing or equipment is allowed within it.
- Fence shall be placed as shown on plans and beyond the drip line or canopy of trees to be protected.
- If any clearing is done around specimen trees it shall be done by cutting at ground level with hand held tools and shall not be grubbed or pulled out. No clearing shall be done in buffer strips or other preserved forested areas.
- No piling or stockpiling of materials shall occur within the tree protection area, including deposition of sediment.

Specifications
for
Protection During Utility Installation



- Where utilities must run through a tree's dripline area, tunneling should be used to minimize root damage. Tunneling should be performed at a minimum depth of 24 inches for trees less than 12 inches in diameter or at a minimum depth of 36 inches for larger diameter trees.
- Where tunneling will be performed within the dripline of a tree, the tunnel should be placed a minimum of 2 feet away from the tree trunk to avoid taproots.
- Minimize excavation or trenching within the dripline of the tree. Route trenches around the dripline of trees.
- Roots two inches or larger that are severed by trenching should be sawn off neatly in order to encourage new growth and discourage decay.
- Soil excavated during trenching shall be piled on the side away from the tree.
- Roots shall be kept moist while trenches are open and re-filled immediately after utilities are installed or repaired.

Specifications
for
Culvert Stream Crossing



- Timing -No construction or removal of a temporary stream ford will be permitted on perennial streams from March 15 through June 15 to minimize interference with fish spawning and migration.
- Stream Disturbance -Disturbance to the stream shall be kept to a minimum. Streambank vegetation shall be preserved to the maximum extent practical and the stream crossing shall be as narrow as practical. Clearing shall be done by cutting NOT grubbing where possible.
- Surface Runoff -Water shall not be allowed to flow along the road directly to the stream. Diversions and swales shall direct runoff away from the access road to a sediment-control practice.
- Fill and Surface Material -All material placed in the stream channel shall be stone, rock or aggregate. ODOT No. 1 shall be the minimum acceptable size. Larger stone and rock may be used. NO SOIL SHALL BE USED IN THE CONSTRUCTION OF A STREAM FORD OR PLACED IN THE STREAM CHANNEL.
- Removal -Aggregate, stone and rock used for the stream crossing shall NOT be removed but shall be formed so it does not create an impoundment, impede fish passage, or cause erosion of streambanks.
- Stabilization -Streambanks shall be stabilized. Plantings shall include woody vegetation where practical.

REV.	DATE	DESCRIPTION
1	06/02/14	REVISED PER LOCAL AGENCY COMMENTS
2	06/27/14	REVISED PER LOCAL AGENCY COMMENTS
3	07/18/14	REVISED PER LOCAL AGENCY COMMENTS
4	07/25/14	REVISED PER LOCAL AGENCY COMMENTS
5	08/01/14	MILLER PARCEL UTILITY UPDATE
6	08/05/14	COMMENTS FOR GRADING APPROVAL
7	08/20/14	REVISED PER LOCAL AGENCY COMMENTS
8	08/22/14	SANITARY REVISION MH 300-302
9	09/12/14	REVISED PER LOCAL AGENCY COMMENTS

THE PRESERVE AT MILLER'S FARM
 SE CORNER OF SR 18 AND MEDINA LINE RD
 COPLEY, OHIO 44321

SWPP NOTES

ISSUED FOR:	
PERMIT	06-02-14
BID	06-02-14
CONSTRUCTION	09-16-14
RECORD	-

PROJECT MANAGER	DESIGNER
MAL	KB

JOB NO.
2013258.00

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