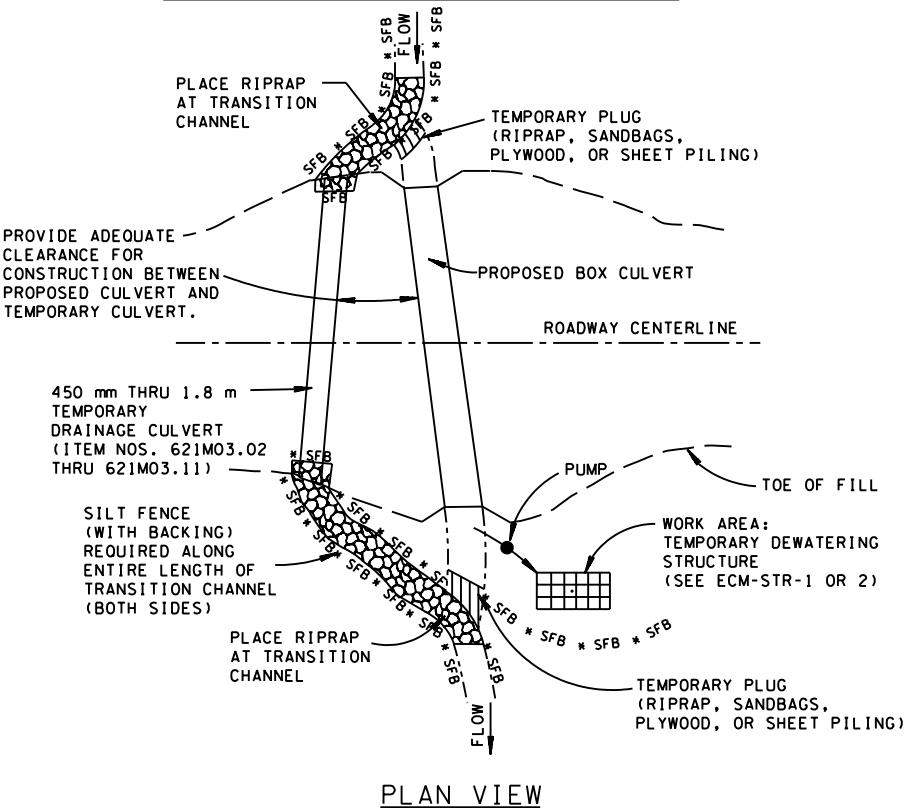
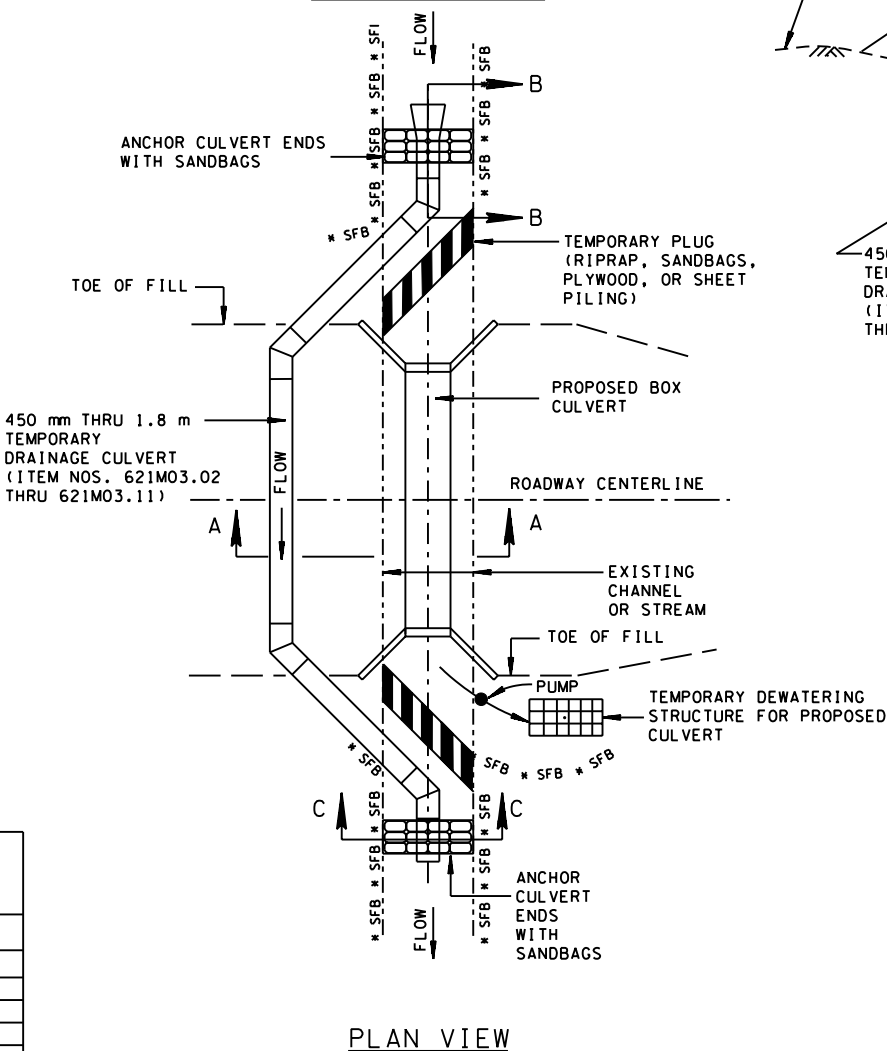


TEMPORARY DIVERSION CULVERT WITH CHANNEL TRANSITIONS

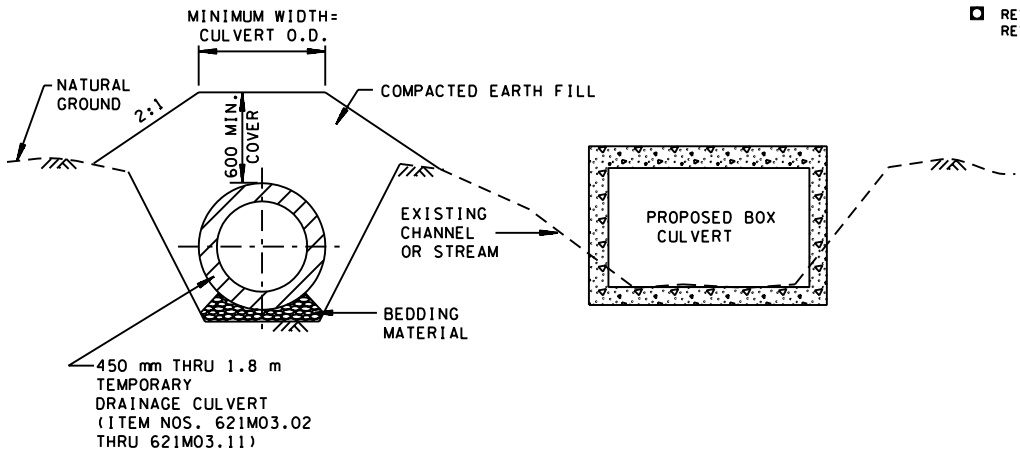


PLAN VIEW

TEMPORARY DIVERSION CULVERT WITH ELBOWS



PLAN VIEW



SECTION A-A

TEMPORARY DIVERSION CULVERTS GENERAL NOTES

- (A) TEMPORARY DIVERSION CULVERTS SHALL BE USED TO DIVERT NORMAL STREAM FLOW FROM AN ERODIBLE AREA IN ORDER TO PREVENT POLLUTION OF THE STREAM DUE TO EROSION. TEMPORARY CULVERTS MAY BE USED WHERE IT IS NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION.
- (B) THE DESIGNER SHALL PROVIDE CULVERT SECTIONS FOR TEMPORARY CULVERT CROSSINGS. MINIMUM COVER FOR CONSTRUCTION LOADS IS 600 mm.
- (C) EXAMPLE SHOWN IS FOR CULVERT REPLACEMENT OR NEW CONSTRUCTION. OTHER PROJECTS WOULD BE CONSTRUCTED IN A SIMILAR MANNER.
- (D) TEMPORARY DIVERSION CULVERTS SHALL BE DESIGNED USING A 2-YEAR FREQUENCY STORM FLOW RATE. AT SITES WHICH INVOLVE HIGH-QUALITY OR SEDIMENT-IMPAIRED STREAM, THE PIPE SHALL BE ADEQUATE TO CONVEY THE 5-YEAR, PEAK FLOW. THE TABLE "TEMPORARY DIVERSION CULVERT SELECTION" MAY BE USED AS A GUIDELINE FOR DETERMINING THE PIPE SIZE. FOR ANY SITE WHERE QSO EXCEEDS 14.2 CMS, THE DESIGN OF THIS MEASURE SHOULD BE COMPLETED BY THE HYDRAULICS SECTION OF THE STRUCTURES DIVISION.
- (E) THE RIPRAP TRANSITION AT THE ENTRANCE OF THE DIVERSION CULVERT SHALL BE DESIGNED IN ACCORDANCE WITH APPROVED TDOT METHODS. THE RIPRAP TRANSITION AT THE TEMPORARY CULVERT OUTFALL SHALL BE DESIGNED IN ACCORDANCE WITH APPROVED TDOT METHODS.
- (F) GEOTEXTILE FABRIC FOR CHANNEL TRANSITIONS SHALL MEET REQUIREMENTS OF THE STANDARD SPECIFICATION FOR GEOTEXTILES AASHTO DESIGNATION M-288, EROSION CONTROL.
- (G) WHERE EXCAVATION FOR A DIVERSION TRANSITION EXPOSES BEDROCK, GEOTEXTILE FABRIC AND RIPRAP SHALL BE USED ONLY ON THE SIDES OF THE CHANNEL.
- (H) IN ORDER TO PROVIDE THE BEST POSSIBLE SEAL, THE POLYETHYLENE SHEETING USED IN AN UPSTREAM PIPE ANCHOR SHOULD BE FITTED AROUND THE PIPE. SANDBAGS ON THE DOWNSTREAM SIDE OF THE SHEETING SHOULD BE PLACED FIRST, AND THE SHEETING PLACED ON THESE BAGS. THE REMAINING SANDBAGS WOULD THEN BE PLACED ON THE SHEETING. WHERE MULTIPLE SHEETS ARE USED, THEY SHOULD OVERLAP A MINIMUM OF 450 mm.
- (I) DURING CONSTRUCTION OF THE TEMPORARY CULVERT, DAMAGE TO THE EXISTING STREAM AND CANOPY SHALL BE MINIMIZED. ALL EXISTING VEGETATION OUTSIDE THE CUT AND FILL LINES BUT INSIDE THE RIGHT-OF-WAY SHALL NOT BE DISTURBED UNLESS IT INTERFERES WITH SAFETY STANDARDS. THE TEMPORARY CULVERT SHOULD BE LOCATED SO AS TO MINIMIZE THE LENGTH OF ANY TRANSITIONS REQUIRED.
- (J) DIVERSION CULVERT CONSTRUCTION SHALL BE COMPLETED IN THE DRY BEFORE DIVERTING WATER FROM THE EXISTING CHANNEL. WHERE THIS IS NOT FEASIBLE, TEMPORARY FLOW DIVERSION STRUCTURES CAN BE USED UNTIL WORK IS COMPLETE. THESE STRUCTURES CAN BE ANY NON-ERODIBLE MATERIAL.
- (K) CONSTRUCTION SHALL PROCEED AS FOLLOWS:
1. CONSTRUCT THE TEMPORARY CULVERT ADJACENT TO THE PROPOSED PROJECT. ISOLATE THE TEMPORARY CHANNEL FROM THE EXISTING CHANNEL WITH TEMPORARY PLUGS. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 209 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 2. DIVERT FLOW BY MOVING THE TEMPORARY PLUGS FROM THE TEMPORARY CHANNEL TO THE EXISTING CHANNEL. A COFFER DAM MAY BE USED UPSTREAM TO PREVENT STREAM FLOW DURING THIS OPERATION.
 3. CONSTRUCT THE PROJECT IN THE EXISTING STREAM AND PLACE PERMANENT EROSION CONTROL ON THE EXISTING STREAM BANKS.
 4. WHERE A TEMPORARY PLUG IS REQUIRED AT THE DOWNSTREAM END OF THE DIVERSION, IT SHOULD BE REMOVED FIRST. THEN REMOVE THE UPPER PLUG IN ORDER TO RELEASE FLOW INTO THE RECONSTRUCTED CHANNEL.
 5. REMOVE LINING MATERIALS FROM THE DIVERSION TRANSITIONS, RESTORE THE AREA TO GRADE AND STABILIZE EXPOSED SOILS.
- (L) DIVERSION CULVERT, SANDBAG ANCHORS AND TRANSITIONS SHALL BE INSPECTED WEEKLY OR AFTER EVERY RAIN EVENT. ANY NEEDED REPAIRS SHALL BE DONE IMMEDIATELY.
- (M) DIVERSION CULVERTS, LININGS, TEMPORARY DEWATERING STRUCTURES, SILT FENCES, AND TEMPORARY PLUG SHALL BE PAID FOR UNDER THEIR RESPECTIVE PAY ITEMS.

TEMPORARY DIVERSION CULVERT SELECTION						
FLOW CAPACITY IN cms OF A GIVEN PIPE AT A GIVEN CHANNEL SLOPE						
PIPE DIAMETER (mm)	AVERAGE CHANNEL SLOPE (m/m)					
	0.5%	1%	1.5%	2.0%	2.5%	3.0%
457	0.2	0.3	0.3	0.3	0.3	0.3
610	0.5	0.5	0.6	0.6	0.6	0.6
762	0.9	0.9	1.0	1.0	0.9	0.9
914	1.3	1.4	1.4	1.4	1.3	1.3
1067	1.9	2.0	1.9	1.8	1.7	1.7
1219	2.6	2.5	2.2	2.2	2.1	2.1
1372	3.6	3.0	2.6	2.7	2.6	2.5
1524	4.1	3.4	3.4	3.1	3.0	2.9
1829	5.5	4.0	4.3	4.0	3.8	3.6
RIPRAP	B	B	B	B	B/C	B/C

NOTES: FLOW RATES BASED ON 760 mm INCREASE IN WATER SURFACE ELEVATION ABOVE NORMAL LEVEL FOR THE 2-YEAR, 24 HOUR STORM EVENT

ASSUMES CORRUGATED PIPE (n = 0.024)

EXAMPLE:

DRAINAGE AREA = 80.9 HECTARES

HYDROLOGIC AREA 2

Q2 = 87.6 CMS

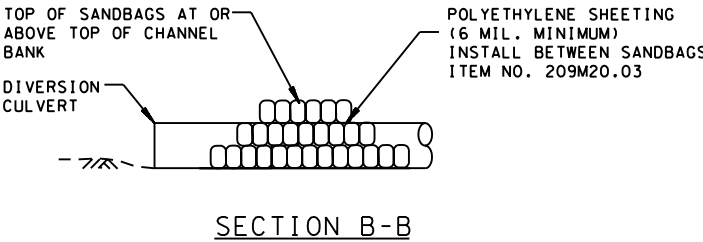
(SEE CH. 4 DRAINAGE MANUAL)

CHANNEL SLOPE 1%

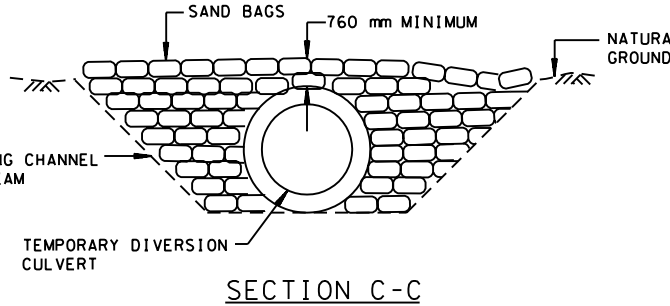
SELECT EITHER:

SINGLE 1200 mm PIPE OR

TWIN 450 mm PIPES



SECTION B-B



SECTION C-C

EROSION CONTROL PLAN LEGEND: [Symbol] TEMPORARY DIVERSION CULVERT (DESCRIBE - NUMBER & SIZE)



ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

TEMPORARY DIVERSION CULVERTS