



## TRANSPORTATION CABINET

Frankfort, Kentucky 40622  
www.transportation.ky.gov/


**Steven L. Beshear**  
Governor

**Joseph W. Prather**  
Secretary

### STATE HIGHWAY ENGINEER POLICY #2008-09

#### MEMORANDUM

TO: Chuck Knowles  
Ray Polly  
Bill Gulick  
Chief District Engineers  
Division Directors  
Active Consultants  
Prequalified Contractors

FROM: O. Gilbert Newman, P.E.   
State Highway Engineer

DATE: July 25, 2008

SUBJECT: KYTC Policy on Pipe Materials

The Standard Drawings have been modified to allow the use of PVC and HDPE on both storm sewer applications and the National Highway System. Coinciding with the new allowances, the Kentucky Transportation Cabinet (KYTC) will begin mandatory camera testing of 50 percent of all installed pipe regardless of material type. This will require the inclusion of a new Bid Item "Pipeline Video Inspection" on all projects. The quantity for this bid item should be set at 50% of the total linear feet of storm sewer and culvert pipe on each project. This policy change is also reflected in the newly revised Kentucky Method KM 114-08 and Supplemental Specifications for sections 701.03.08 and 701.04.07.

These changes will be effective with the August 29, 2008 bid letting. Projects let prior to August 29, 2008, may adopt the new standard; however, there may be a bid price reduction applied according to subsection 105.04 of the Standard Specifications and camera testing will be performed at no additional expense to the KYTC.

The Maintenance and Permits Guidance Manuals will be revised to reflect the policy change as well. Until they are reissued, this policy memo takes precedence. This memo supersedes the attached Official Order Number 86172, released on August 3, 1981. Additionally, any previous policy pertaining to pipe material usage on KYTC projects that conflicts with this memo will be void. The KYTC's pipe material policy will be governed solely by the Standard Drawings, Standard Specifications for Road and Bridge Construction, and the Maintenance and Permits Guidance Manuals.

OGN:DM



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Frankfort, Kentucky

OFFICE OF THE SECRETARY

OFFICIAL ORDER NO.

86172

**SUBJECT: Culvert Pipe, Entrance Pipe, Storm Sewers  
and Pipe Underdrains**

WHEREAS, the design of culverts, entrance drainage, underdrains, and storm sewers and the selection of types of pipe or materials for drainage structures are exacting disciplines; and

WHEREAS, the principles of engineering pertain, it will be the ongoing policy of the Department to provide culverts, storm sewers and other buried drainage pipe which will be capable of enduring throughout the useful life of a roadway or highway constructed and maintained wholly or in part with funds administered by the Department.

THEREFORE, this Official Order supersedes and cancels Official Order No. 84778, dated August 31, 1979 and existing, conflicting procedural memoranda and operating manuals and asserts and affirms the policy stated herein.

HEREBY, it is ordered that situation surveys (engineering evaluations) normally required for hydraulic (Hydrological) and structural (foundation exploration) designs be extended and expanded to include tests for acidity and potential corrosivity of surface and ground waters and seepage from soils, shale seams and mineral veins or spoils, and to include evaluation of abrasion conditions. Sites shall be adjudged and designated according to severity of (or) concentration of corrosive agents as defined by pH values, and severity of abrasion conditions. (Note: Measurements of specific resistivity and chemical analyses may supplement pH tests).

#### I. CULVERT PIPE (CROSS DRAINS) AND STORM SEWERS

A. For locations where the pH value of the water is 4.0 and above, pipe shall be selected from the following alternatives: Reinforced Concrete; Corrugated, Iron or Steel Pipe, and Pipe Arches (Bituminous-Coated-with Paved Invert); or Corrugated, Aluminum Alloy Pipe and Pipe Arches (Bituminous-Coated-with Paved Invert) as specified in the current Standard Specifications for Road and Bridge Construction.

B. Sites adjudged to have existing or anticipated pH values of less than 4.0 shall be identified as containing strong, mineral acidity. Sites so identified shall require extra protection of the pipe. The types of pipe presently qualifying for this severe service are: Asbestos-Bonded, Bituminous Coated and Paved, Corrugated Metal; or Reinforced Concrete with Extra Protection.

C. For locations where abrasion levels are determined to be either low (level A), moderate (level B), or severe (level C), pipe shall be selected from the following alternates:

(1) Level A: Corrugated Iron or Steel; Corrugated Aluminum Alloy; or Reinforced Concrete.

(2) Level B: Corrugated Iron or Steel (Bituminous-Coated-With-Paved Invert); Corrugated Aluminum Alloy; or Reinforced Concrete.

(3) Level C: Asbestos-Bonded, Bituminous Coated and Paved, Corrugated Metal; Corrugated Aluminum Alloy (Bituminous-Coated-With-Paved Invert); or Reinforced Concrete with Extra Protection.

D. The alternates for abrasion conditions shall be compared to the alternates for acidity and the more restrictive alternates shall be specified.

## II. ENTRANCE PIPE

A. For locations at which the water has a pH of 6.0 or greater, pipe shall be selected from three alternatives: Reinforced Concrete; Corrugated, Iron or Steel; or Plain Corrugated Aluminum Alloy.

B. For locations where pH values are 4.0 to 6.0 the pipe shall be selected from three alternatives: Reinforced Concrete; Corrugated, Iron or Steel (Bituminous-Coated-with-Paved Invert); Corrugated Aluminum Alloy (Bituminous-Coated-With Paved Invert).

C. Entrance Pipe for locations with pH values adjudged less than 4.0 shall be selected from the two types qualifying for severe service as noted in I.B above for Culvert Pipe (cross drains).

## III. PIPE UNDERDRAINS

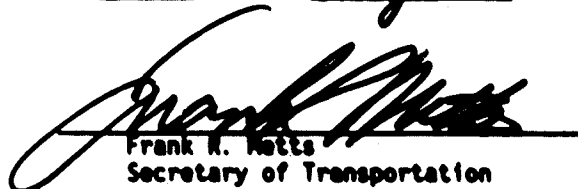
Underdrain pipe shall be selected from the following alternatives: Standard Strength, Clay Pipe; Extra Strength, Clay Pipe; Nonreinforced (Plain) Concrete Pipe; Porous, Plain, Concrete Pipe; Bituminous-Coated, Corrugated Iron or Steel Pipe; Bituminized-Fiber Pipe; Asbestos Cement Pipe; Bituminous-Coated, Corrugated, Aluminum Alloy Pipe; or Corrugated, Polyethylene Pipe. Pipe for underdrains as described in the current Standard Specifications for Road and Bridge Construction, and applicable Special Provisions.

FURTHER, all Pipe referred to above shall meet the strength requirements for fill heights further defined in the current Standard Drawings of the Department.

Exceptions and additions to the listings of qualifying types of pipe may be allowed in special cases when warranted by design and engineering factors upon approval by the State Highway Engineer.

This Official Order will be effective on all State Projects and Department Requisitions for which bids are received after September 20, 1981, and shall be effective on Federal-aid Projects at the earliest practicable date after approval by the Federal Highway Administration.

SIGNED AND APPROVED BY ME THIS 3rd DAY OF August, 1981

  
Frank N. Watts  
Secretary of Transportation