South Carolina
Department of Transportation

INSTRUCTIONAL BULLETIN NO. 2008-5

SUBJECT: Pipe Alternate Interim Procedure
(Storm Drain Pipe from 12" diameter to 120" diameter)
EFFECTIVE DATE: September 2008 letting
SUPERSEDES: None
RE: SC-M-714 – Permanent Pipe Culverts
Engineering Directive Memorandum No. 24 – Selection of Drainage Pipe for use in South Carolina
Special Provision – Smooth Wall Pipe

In order to begin allowing pipe alternates to compete on SCDOT projects, plan preparers shall follow these guidelines on existing and future plans until the alternate pipe procedure is complete and ready to implement:

When plans are complete and have a letting date in October, November, and December 2008:

1. Plans will not need to be updated
2. Pipe pay items will need to be updated in PES before submitting plans to the Letting Preparation Office – Replace pay items with smooth wall pipe*
3. Contract documents will include Special Provision – Smooth Wall Pipe (see attachment)

When plans are in development or complete, hydraulic design is complete, and letting dates are in January 2009 or later:

1. Plan, Profile & Drainage Sheets will not change – they will still indicate RCP, etc.
2. Replace summary of estimated quantities to indicate smooth wall pipe*.
3. Enter pipe quantities in PES using Smooth Wall Pipe pay items as default*.
4. Contract documents will include Special Provision – Smooth Wall Pipe (see attachment)

When plans are in development and hydraulic design will begin after October 2008:

1. Run geopak drainage using smooth wall pipe pay items*, Run geopak drainage using corrugated wall pay items and keep this run available for future reference.
2. Plan, Profile & Drainage Sheets will indicate smooth wall pipe*.
3. Summary of estimated quantities will indicate smooth wall pipe*.
4. Enter pipe quantities in PES – Use Smooth Wall Pipe as default*.
5. Contract documents will include Special Provision – Smooth Wall Pipe (see attachment)

* When substituting smooth wall pipe pay item, always use the same pipe diameter as shown in the hydraulic design for RCP, HDPE, or SRAP. If specific pipe type is required by the designer, use required pipe pay item instead of smooth wall pipe pay item.

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Available Smooth Wall Pipe Pay Items:

7143612	12" SMOOTH WALL PIPE
7143615	15" SMOOTH WALL PIPE
7143618	18" SMOOTH WALL PIPE
7143624	24" SMOOTH WALL PIPE
7143630	30" SMOOTH WALL PIPE
7143636	36" SMOOTH WALL PIPE
7143642	42" SMOOTH WALL PIPE
7143648	48" SMOOTH WALL PIPE
7143654	54" SMOOTH WALL PIPE
7143660	60" SMOOTH WALL PIPE
7143666	66" SMOOTH WALL PIPE
7143672	72" SMOOTH WALL PIPE
7143678	78" SMOOTH WALL PIPE
7143684	84" SMOOTH WALL PIPE
7143690	90" SMOOTH WALL PIPE
7143696	96" SMOOTH WALL PIPE
7143702	102" SMOOTH WALL PIPE
7143708	108" SMOOTH WALL PIPE
7143714	114" SMOOTH WALL PIPE
7143720	120" SMOOTH WALL PIPE

Smooth Wall Pipe = Reinforced Concrete Pipe (RCP)
Spiral Ribbed Aluminum Pipe (SRAP)
High Density Polyethylene Pipe (HDPE)

Do not substitute smooth wall pipe in cases where perforated pipe, pipe underdrain, or corrugated aluminum alloy pipe (CAAP) are indicated in plans.

Approved: _____
E. S. Eargle
Preconstruction Support Engineer

ESE:hjc
Attachement
cc:
Danny Shealy, Director of Construction
Jim Feda, Director of Maintenance
Milt Fletcher, Material and Research Engineer
Steve Ikerd, FHWA
File:PC/ESE

Matt Lifsey, RP Engineer - Lowcountry
Mitchell Metts, RP Engineer – Pee Dee
Randall Young, RP Engineer - Midlands
Mark Lester, RP Engineer - Upstate

SECTION 714: SMOOTH WALL PIPE:
REFERENCE:
SCDOT Supplemental Technical Specification SC-M-714

DESCRIPTION:
When bid items for smooth wall pipe are listed in the EBS file and/or proposal, the SCDOT will allow the use of reinforced concrete pipe, spiral ribbed aluminum pipe or high density polyethylene pipe in accordance with the specifications found in SC-M-714 (latest edition), the Standard Drawings, and this Special Provision. The plans may indicate reinforced concrete pipe only and are hereby superseded by this Special Provision.

MATERIALS:
Smooth wall pipe is either Reinforced Concrete Pipe (RCP: 714-205-00), Spiral Ribbed Aluminum Pipe (SRAP: 714-610-00), or High Density Polyethylene pipe (HDPE: 714-705-00) as described in SCDOT Supplemental Technical Specification SC-M-714 and in the SCDOT Standard Drawings. Use smooth wall pipe culvert from manufacturers listed on Qualified Product Lists 30, 68, or 69. No value engineering application is required in order to use alternate pipe.

No other pipe type will be accepted as an alternate.

CONSTRUCTION REQUIREMENTS:
Use only pipe that conforms to the minimum and maximum fill height limitations indicated on the appropriate standard drawing. Unless indicated otherwise in the plans, determine pipe fill height based on the following formula:

Fill Height = Elevation (top of curb or max grade above pipe) – Elevation (pipe crown)

For all locations where new pipe is being attached to an existing system, use one of the following options:

1. Any existing pipe may be extended using any acceptable alternate pipe type by using a drainage structure at the interface between the different pipe types. The drainage structure* may consist of standard junction boxes, manholes, catch basins, drop inlets, or circular drainage structures detailed on **SCDOT Standard Drawings**. For larger diameter pipe, custom drainage structures may be required. Field cut existing pipe to remove damaged joint (if applicable) and install new drainage structure at the field cut interface. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe.

2. For locations where existing pipe properties cannot be directly matched, use a custom designed interface* (concrete collar, proprietary mastic wrap, custom coupling band, etc.) appropriate to interface the existing pipe to the new pipe of the same type. Submit interface drawings and design for review by the Engineer of Record and the Design Standards Engineer. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.

3. Any existing pipe may be extended using new pipe with the same joint profile and wall properties of the existing pipe. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe. Verify* the following parameters before ordering new pipe:
    a. For RCP to RCP, confirm wall thickness, joint profile shape, and compatibility with existing manufacturer's pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.
    b. For SRAP to SRAP, replace existing pipe that has joint damage before connecting new pipe to the system.
    c. For HDPE to HDPE, confirm the manufacturer of the existing pipe and the joint compatibility with the new pipe. Provide a new gasket when connecting to existing spigot end of HDPE pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.

d. For CAAP to CAAP, confirm the type and size of end corrugations of the pipe. When existing pipe has full helical corrugations, provide new connecting pipe with one end fully helical and fully helical coupling band. When end corrugation size does not match the corrugation size shown on SCDOT Standard Drawings, provide a drainage structure (described above) at the interface. Replace existing pipe that has joint damage before connecting new pipe to the system. Do not install CAAP as smooth wall pipe; however, use these requirements when plans specify installing new CAAP.

The **RCE** will verify that connections between existing pipe and new installed pipe have been handled with one of the options listed above. Repair or replace all existing to new joint interfaces that do not meet the requirements above at no additional cost to **SCDOT**.

In all installations, provide the RCE with a complete pipe table indicating the following: Plan Pay Item, Plan Pipe Description, Plan Quantity, Installed Pipe (diameter, type, class/gage), Installed Quantity, and description of interface used to join new pipe to existing pipe for each occurrence.

In cases where 2 or more different pipe types are installed, provide a copy of the proposed installation layout on the drainage/plan sheets to the RCE indicating which pipe is installed at each location.

MEASUREMENT:
Measure smooth wall pipe in accordance with methods specified in SC-M-714 for the pipe material installed.

*No measurement will be made for drainage structure, designed interface, or field verification performed at each interface between existing pipe and new pipe unless drainage structure/interface is specified in the plans.

PAYMENT:
Payment will be made for smooth wall pipe regardless of the type of material installed. Payment for smooth wall pipe is as specified in SC-M-714 for the pipe material installed.

*Include all costs for work related to connecting new pipe to existing pipe in the unit bid price of the new pipe. This connection work includes: drainage structure at the interface, custom designed interface, field verification of existing pipe and compatibility with new pipe, new gaskets, new joint sealant, new coupling bands, removal, and disposal of damaged sections of existing pipe.

ITEM NO.	DESCRIPTION	UNIT
7143XXX	*X*" SMOOTH WALL PIPE	LF
7143XXX	*X*"x *X*" SMOOTH WALL PIPE CUL.TEE	EA
714XXXX	*X*" x *X*" SMOOTH WALL PIPE CUL.WYE	EA
7144XXX	*X*" SMOOTH WALL PIPE *X* DEG BEND	EA
7144XXX	SMOOTH WALL PIPE INCR.- *X*" TO *X*"	EA