INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING AGENDA

Driving Indiana's Economic Growth

October 18, 2007

MEMORANDUM

TO: Standards Committee

FROM: Mike Milligan, Secretary

RE: Minutes for the October 18, 2007 Standards Committee Meeting

The Standards Committee meeting was called to order by the Chairman at 9:00 a.m. on October 18, 2007 in the N755 Bay Window Conference Room. The meeting was adjourned at 10:57 a.m.

The following members were in attendance:

Mark Miller, Chairman	Dave Andrewski, Pvmt. Engineering
Dennis Kuchler, State Constr. Engr.	Bob Cales, Contract Admin.
Ron Heustis, Constr. Mgmt.	Jim Keefer, Fort Wayne Dist.
Larry Rust, Traffic Control	Ron Walker, Materials Mgmt.
Mike Hoy, Crawfordsville Dist.*	Anne Rearick, Structural Services

* Proxy for Shakeel Baig

Also in attendance were the following:

Mike Milligan, Secretary	Thomas Duncan, FHWA
Jim Reilman, INDOT	Paul Berebitsky, ICA
Tony Uremovich, INDOT	

New Business

cc: Committee Members (11)
FHWA (2)
ICA Representative (1)

Item No. 08-5-1
Mr. Heustis
Date: 10/18/07

DISCUSSION

A discussion among the Standards Committee members concerning ways to improve the standards approval process and optimize the use of Standards Committee meeting time.

Closed Session with attendance by Standards Committee members only.

Minutes of this session will be distributed to committee members.

No action was taken.

Summary and recommendations will be discussed at a future meeting.

Other sections containing specific cross references: None	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected: None	Standard Sheets potentially affected: None
Motion: M Second: M Ayes: Nays:	Action: None

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 718, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 718 – UNDERDRAINS

718.01 Description

This work shall consist of constructing underdrains using pipe, granular aggregates, outlet protectors, or geotextiles in accordance with 105.03.

MATERIALS

718.02 Materials

Materials shall be in accordance with the following:

Coarse Aggregate, Class E or Higher, Size No. 8 or 9	904
Concrete, Class A	702
Geotextile for Underdrains	918.03
Reinforcing Steel	910.01
Sod, including Nursery Sod	621
Structure Backfill	904
Underdrain Pipes	715.02(d)
Underdrain Outlet Pipes	907.22, 907.24

Rodent screens shall be woven stainless steel wire mesh or galvanized hardware cloth. Coarse aggregate No. 8 or 9 shall be used for 6 in. (150 mm) underdrain installations. Coarse aggregate No. 9 shall be used for 4 in. (100 mm) underdrain installations.

The mixture for HMA for underdrains shall be Intermediate OG19.0 mm in accordance with 401. An ESAL Category 5 in accordance with 401.04 and a PG Binder 76-22 shall be used. A MAF in accordance with 401.05 will not apply. Acceptance of the HMA for underdrains will be in accordance with 402.09.

CONSTRUCTION REQUIREMENTS

718.03 Pipe Installation

Trenches shall be excavated to the dimensions and grade shown on the plans. Pipes shall be secured to ensure that the required grade and horizontal alignment of the pipe are maintained. Perforated pipe shall be placed with the perforations down. The pipe sections shall be joined securely with the appropriate couplings, fittings, or bands. Aggregate for underdrains shall be placed in a manner which minimizes contamination. HMA for underdrains shall be placed and compacted separately from mainline mixtures. HMA for underdrains may be placed in one lift and shall be compacted with equipment in accordance with 409.03(d).

If plain end concrete pipe is being laid, ~~no~~ joint width shall not exceed 1/4 in. (6 mm).

718.04 Geotextile

Storage and handling of geotextiles shall be in accordance with the manufacturer's recommendations. Each geotextile roll shall be labeled or tagged. Damaged or defective geotextile shall be replaced as directed. The geotextile shall be placed loosely, but with no wrinkles or folds. The ends of subsequent rolls of geotextile shall be overlapped a minimum of 1.0 ft (0.3 m). The upstream geotextile shall overlap the downstream geotextile. Placement of aggregate shall proceed following placement of the geotextile. HMA for underdrains shall be placed and compacted separately from mainline mixtures. HMA for underdrains may be placed in one lift and shall be compacted with equipment in accordance with 409.03(d).

718.05 Underdrain Outlets

After the outlet pipe installation, the trench shall be backfilled as shown on the plans. Structure backfill shall not extend into the limits of the underdrain trench. The trench outside the limits of structure backfill shall be filled with materials suitable for growing vegetation. Aggregate and stabilized materials removed from an existing shoulder shall not be used as backfill and shall be disposed of in accordance with 206.07. At the time of installation, a rodent screen shall be placed on the outlet pipe or the ends of the underdrain pipe when located in inlets or catch basins.

718.06 Underdrain Outlet Protectors

Underdrain outlet protectors shall be constructed as shown on the plans.

718.07 Video Inspection

Underdrains and outlets shall be inspected using high resolution, high sensitivity, waterproof color video camera/recording equipment.

The camera/recording equipment shall be specifically designed for continuous viewing/recording of detailed images of the interior wall of pipes and transitions of the specified sizes. The equipment shall have the capability of viewing a minimum of 450 ft (140 m) into the pipes and shall be designed to include sufficient lighting to view the entire periphery of the pipe. The equipment shall have appropriate attachments to maintain a position in the center of the pipe and an electronic counter to continuously record the location of the equipment in the pipe. The recording equipment shall be a minimum four head industrial grade VHS recorder or a digital archiving and reviewing system. A color video printer shall be included in the equipment for printing observations during inspection.

The Engineer will determine the runs of the underdrain installations to be inspected. Video inspection shall be conducted after guardrail, lighting, sign installation, and final seeding or sodding operations are completed.

Damage discovered by the video inspection shall be repaired. Damage shall include but is not limited to; crushed or partially crushed pipes that impede~~s~~ the progress of the camera, blockages, vertical pipe sags filled with water to a depth of d/2 or greater, 90 degree connections, connector separations, cracks or splits in the pipes. All repaired sections shall be video reinspected prior to acceptance. A copy of the video inspection shall be submitted to the Engineer.

718.08 Patching Underdrains

Underdrains that are disturbed shall be repaired such that the underdrain is perpetuated. This repair shall include the construction of new outlets where the existing configuration prior to the damage cannot be reinstalled. The repairs shall be as approved by the Department. Once the repairs are completed, a video inspection may be required by the Department to verify that the repairs have been successfully completed.

Geocomposite edge drains that are disturbed shall be outletted as approved and not perpetuated.

718.09 Method of Measurement

Underdrain and outlet pipe will be measured in accordance with 715.13, *except that elbows will not be measured for payment*. Outlet protectors will be measured by the number and type of units installed.

Structure backfill will be measured in accordance with 211.09. HMA for underdrains will be measured by the ton (megagram).

Aggregate for underdrains will be measured by the cubic yard (cubic meter), complete in place. The pay limits will not extend beyond the neat lines shown on the plans.

Geotextiles will be measured by the square yard (square meter) based on the neat line limits shown on the plans.

Video inspections for underdrains will be measured by the linear foot (meter) as determined by the electronic equipment.

Patching of underdrains will not be measured.

Rodent screens, ~~elbows,~~ increaser or decreaser connections, and other incidentals will not be measured for payment.

Concrete, reinforcing steel, or sod for underdrain outlet protectors will not be measured for payment.

718.10 Basis of Payment

The accepted quantities of underdrains and underdrain outlet pipe will be paid for in accordance with 715.14, *except that elbows shall be included in the cost of the pay items in this section*. Aggregate for underdrains will be paid for at the contract unit price per cubic yard (cubic meter). Geotextile for underdrains will be paid for at the contract unit price per square yard (square meter). Outlet protectors will be paid for at the contract unit price per each of the type of unit installed, complete in place. The accepted quantities of HMA for underdrains will be paid for at the contract unit price per ton (megagram).

Underdrain patching for structure installation will be paid for at the contract unit price per linear foot (meter) of underdrain, patching and shall be equal to the length of the theoretical pavement replacement as shown on the plans.

Structure backfill will be paid for in accordance with 211.10.

The final accepted quantity video inspection for underdrain will be paid for at the contract unit price per linear foot (meter).

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Aggregate for Underdrains	CYS (m3)
Geotextile for Underdrains	SYS (m2)
HMA for Underdrains	TON (Mg)
Outlet Protector, ____ type	EACH
Underdrain, Patching	LFT (m)
Video Inspection for Underdrain	LFT (m)

Geotextile for underdrains which has been rejected due to contamination or other reasons shall be replaced with no additional payment.

The cost of excavation, forming, reinforcing steel, concrete, curing materials, and sod shall be included in the cost of outlet protector.

The cost of providing the video inspection equipment, technician, videotapes, or computer disks shall be included in the cost of the underdrain video inspection. The cost of repair of underdrain pipes, aggregates, backfill, outlet protectors, geotextile fabric of providing video re-inspection of the repairs, etc. shall be included in the cost of the other pay items in this section.

Where underdrain repair for structure installation is required, the cost of underdrain pipe, aggregate for underdrains, geotextile for underdrains, HMA for underdrains, outlet protectors if required, video inspection for underdrains, and all other incidentals for underdrains shall be included in the cost of underdrain, patching. The cost of repairing underdrains damaged by activities other than for structure installation, or as defined above, shall be at the Contractor's expense.

The cost of disposal of unsuitable excavated materials, installation of pipe end caps, rodent screens, ~~elbows~~, increaser or decreaser connections, and other incidentals shall be included in the cost of ~~other~~ *the* pay items *in this section*.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 718, CONTINUED.

Other sections containing specific cross references:

622.15 Pg 423
715.03 Pg 548
715.09 Pg 552
719.02 Pg 571

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

Standard Sheets potentially affected:

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn. Will be re-submitted at November meeting.