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INDOT Specification Changes

For the 2010 Construction Season

Summary:

This report, prepared by ICA staff, summarizes INDOT specification and standard changes effective for the 2010 construction season. This includes all significant changes included in the 2010 version of the INDOT Standard Specifications and standard drawing changes that became effective in September 2009, even though some of these changes may have been included in earlier contracts. Also included are specification and standard changes adopted subsequent to release of the 2010 INDOT Standard Specifications that have been or will be included in contracts as special provisions.

Unless otherwise noted, the changes listed became effective in September 2009 as part of the 2010 INDOT Standard Specifications or the standard drawings issued for September 2009. However, each contract should be examined to determine which changes are applicable to that contract.

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Section 100

A conflict between 105.01 and 104.02(b) regarding a contractor's ability to request additional compensation for work suspended by the Engineer was resolved by adding a reference to 104.02(b) in 105.01 and deleting from 105.01 a clause that stated no additional payment would be made due to a suspension.

Significant changes were approved to Sections 104.02, 105.16 and 108.08, and a new Section 109.05.2 was created to formalize a process for addressing contractor claims. These changes clearly define notification requirements, the types of delays, what costs are compensable and create a claims resolution process. In 104.02, the revised specification provides that a contract adjustment to address changed conditions may revise one or more of the following: the work to be performed, the time required for the work, or the amount of compensation due the contractor. Upon the contractor submitting a notice of changed condition, INDOT is to respond within two business days (or other time as mutually agreed) whether the request is justified and provide a possible remedy. The specification addresses possible contract adjustments that can be made to remedy a changed condition. It also provides a procedure for situations where the impact of a changed condition isn't immediately known. The specification spells out how to address acceleration and inefficiencies as well as those costs that are unrecoverable or methods of cost calculation that are unacceptable. Section 105.16 was expanded to define the required notification of changed conditions and claims. This section also details the claims resolution process beginning with a project level review, then a district office review and the final step of a central office review. The process for addressing contract time is detailed in 108.08. This details how four types of delays – (1) excusable, non-compensable; (2) excusable, compensable; (3) non-excusable; and (4) concurrent – are to be addressed. The determination of delay costs is then detailed in 109.05.2.

Sections 105.17 and 106.04 were deleted and a new Section 628 was created for specifications covering the field office, field laboratory, computer systems and office machines. These changes became effective in July 2008.

Section 107.06 was revised to require contractors to participate in INDOT's Equal Employment Opportunity Trainee Program. This was implemented in July 2008.

Sections 107.08 and 107.12 were updated, effective with lettings in February 2009, to require all workers exposed to traffic or construction equipment to wear high-visibility safety apparel complying with new federal standards. Section 107.12 was also modified to no longer allow hand-signaling flags to be used in a single flagger situation. The use of hand-signaling flags is now permitted only for emergency situations.

Changes to 108.08 regarding delays are detailed above (see 104.02) as part of the claims process.

Requirements for temporary erosion control were clarified in Sections 108.04 and 205. Many of the changes were similar to a special provision that had been used in contracts since 2006. A detailed explanation of these changes is available from ICA. These changes were implemented in July 2008 and continue to be included in contracts as Recurring Special Provision (RSP) 108-C-192.

The Cost Reduction Incentive requirements in Section 109.04 were revised to provide a two-step process that allows the contractor's concept to be reviewed before the contractor proceeds with a formal proposal.

A price adjustment index for PG asphalt binder was approved as a special provision. Adjustments are to be made when the index increases or decreases by more than 10% compared to the index price for the month in which the contract was let, provided the original or revised quantity of at least one HMA item exceeds 2000 tons. This is applicable to HMA pay items in Sections 304, 401, 402, 410, 610 and 718. At bid time, contractors must choose whether to participate in the adjustment or opt out. This became effective as special provision 109-C-219 with lettings in February 2009. The special provision references Section 109.05.3.

The extra work provisions in 109.05 were changed to clarify payment for extra work. Under the revised specification, extra work can be paid by using either an agreed price or a force account. The agreed-upon price approach can utilize unit or lump sum prices, which must be documented on an approved change order. When directed, the contractor must provide a cost breakdown to substantiate those prices. When a force account is to be used, the contractor can be directed to submit a written proposal showing planned labor, materials, equipment and the schedule for the work. The equipment portion of the force account method was revised to:

- (1) update the reference to the Rental Rate Blue Book,
- (2) require use of the FHWA hourly rate (ownership + operating costs),
- (3) allow INDOT to require use of the fuel percentage of the Book's operating cost rate in lieu of actual fuel and lubricant costs,
- (4) prohibit payment for repairs to rented equipment,
- (5) specify applicability of a standby rate for idle equipment, and
- (6) require contractor submittal of certain equipment information to verify the applicable rate.

These changes were implemented in contracts beginning in July 2008.

A new Section 109.05.2 details the handling of delay costs as part of the claims process. This is explained above (see 104.02) as part of the claims process.

Changes to Section 110.02 clarify payment for mobilization and provide that the initial estimate on a contract will include payment for the lesser of either 5% of the original contract bid price or the contract lump sum price for the pay item mobilization/demobilization.

Section 200

The definition of rock excavation was clarified in Section 203.03. In addition to igneous, metamorphic and sedimentary rock, the material to which rock excavation applies was expanded to include “other sound mineral matter.” The criteria for determining when removal of the material qualifies as rock excavation was modified to apply when the material “cannot be readily excavated by the use of a crawler mounted hydraulic excavator of not less than 40,000 pounds gross operating weight equipped with a general purpose excavator bucket of not less than one cubic yard provided the equipment is operated per the manufacturer’s instructions.” Rock excavation also continues to apply to removal of boulders and detached stones with a volume of ½ cubic yard or more.

A variety of changed requirements were made for borrow and disposal sites. While these primarily affect Section 203.08, other affected sections include 201.01, 202.02, 203.10, 203.11 and 203.12. Under the changes, more sites will require wetland delineations and archeological reviews. A detailed explanation of these changes is available from ICA. These changes were implemented in July 2008 and continue to be implemented in contracts as RSP 203-R-550.

A new Section 203.24.1 was created to show the requirements for using dynamic cone penetrometer testing (DCPT) to determine the strength of soils and to use this as an acceptance test for embankment construction. A related change was made in Section 203.23 to allow the DCPT method as an option to density control. These changes were to have been implemented in September 2009 as RSP 203-R-562.

The multiplier used to determine payment for rock excavation – when rock is encountered but there is no pay item for rock excavation – was modified to delete the reference to 10 times the price for common excavation. The revised Section 203.28 sets the rock excavation price at \$125 per cubic yard for quantities less than or equal to 100 cubic yards. For greater quantities, the price will be negotiated in accordance with INDOT’s extra work provision in Section 104.03.

Five types of structure backfill are now listed in Section 211.03.1. While only one type of material is allowed for some types, contractors have the option of using any of the listed materials for other types.

The RSP for B Borrow and Structure Backfill (211-R-543) was revised, effective with contracts let in April 2009, to no longer require Air Cooled Blast Furnace (ACBF) slag used for Type 3 structure backfill to be Class A or higher, or size No. 8.

The Section 213 requirements for flowable backfill were revised to provide for both removable and non-removable material. To allow for both removable and non-removable flowable backfill, the requirements for the lightweight dynamic cone penetration blow count were changed from a range of 20 - 30 to a range of 12 - 30. Admixtures that increase flowability may also be used as approved by INDOT. Other changes include allowing flowable backfill mix designs which have been approved for use on a previous contract, changing strength and testing requirements, and establishing new procedures for checking yield. The changes became effective with lettings in December 2008.

Section 300

No changes.

Section 400

Several changes were made throughout the 400 section, including the adoption of a percent within limits (PWL) approach to sample mean and the standard deviation to estimate the percentage of a lot that is within the specification limits. Companion changes were made in Sections 902 and 904. Among the other changes were:

- Replace ASTM D 6752 with AASHTO T 331 for checking bulk specific gravity.
- No longer require a new mix design for a binder grade or binder source change.
- Make the mixture adjustment factor adjustments more gradual.
- Remove moisture content requirements.
- Change Certificate of Compliance for paving equipment to written documentation.
- Require bulk specific gravity and maximum specific gravity samples to be dried in accordance with ITM 572.
- Remove the fine aggregate angularity requirements for open graded mixtures.
- Revise smoothness requirements.
- Add 12.5 mm and 19.0 mm mixtures as allowable mixtures if required by the pavement design for 402 HMA mixtures.

These changes were effective for lettings beginning in September 2008.

Further changes to the 400 section were approved effective with lettings in February 2009.

These changes included:

- Reducing the upper temperature classification for binder for open graded mixtures containing fibers and referencing AASHTO M 325 for fibers.
- Reducing the grade of PG binder if fibers are used in open graded mixes.
- Allowing 15% RAP in all Category 3, 4 and 5 surfaces mixtures with restrictions on the size of RAP.
- Allowing RAP in open graded mixtures.

- Requiring matching adjacent HMA lanes at the completion of each work day for mixtures greater than 220 lb/syd.
- Allowing SS-1h to be used as an alternative to AE-T and AE-PMT for tack coat applications.
- Revisions to Section 410 to make it consistent with Section 401 and require a backup plate sample for mixture appeals.
- Requiring only the backup asphalt sample in the subplot tested to be used for an appeal.

Related changes were made in Section 900.

Other changes to Section 400 are contained in RSP 400-R-553, effective with lettings in June 2009. These include:

- Adding provisions for Warm Mix Asphalt (WMA), which is utilized with a water-injection foaming device. WMA can be used for ESAL category 1, 2 and 3 mixtures.
- Modifying pay factors in Section 401 to require referral to the Office of Materials Management for any subplot PWL air void contents greater than 7.0%.
- Referencing a new AASHTO standard for design of SMA mixtures.
- Changing a related table in 902.01 for viscosity requirements for asphalt emulsions to reference AASHTO T 59 rather than AASHTO T 72 for the Saybolt Fural Viscosity test.

Additional changes to Section 400 are scheduled to go into effect with lettings in April 2010. These will be inserted in RSP 400-R-553 and include:

- Addition of a table to indicate the maximum binder replacement allowed for dense-graded and open-graded base and intermediate mixtures and for dense-graded surface mixtures. This will include Reclaimed Asphalt Pavement (RAP) and Recycled Asphalt Shingles (RAS). The changes are applicable to Sections 401.06, 402.08 and 410.06. RAS materials shall not contribute more than 25% by weight of the total binder content for any HMA mixture.
- In Section 402.04, a 4.75 mm mixture is included as an option for Type A, B, C and D surface mixtures.
- Changes in 402.07 and 402.20 also allow designers to specify the type of mixture for temporary HMA mixtures.

A price adjustment index for PG asphalt binder was approved as a special provision. Adjustments are to be made when the index increases or decreases by more than 10% compared to the index price for the month in which the contract was let provided the original or revised quantity of at least one HMA item exceeds 2000 tons. This is applicable to HMA pay items in Sections 304, 401, 402, 410, 610 and 718. At bid time, contractors must choose whether to participate in the adjustment or opt out. This became effective as special provision 109-C-219 with lettings in February 2009. The special provision references Section 109.05.3.

The seal coat requirements in Section 404 were revised to require submittal of a quality control plan by the contractor; modify seal coat types; prohibit application of seal coat to travel or auxiliary lanes before May 1 or after October 1 (although it may be applied to shoulders if the temperature is within a specified range); and require covering of castings, detector housings and snowplowable raised pavement markers during coating operations. Requirements were also added for rolling operations, sweeping operations and protection of the surface. The pay items were also revised. This was implemented beginning with lettings in January 2009.

Provisions in 408 and 507 were revised to allow asphalt binder for crack sealing, PG 64-22, to be used for filling cracks and joints. The equipment requirements were also revised to allow the use of routing equipment more common to the operation while the maximum width of the rout was increased from 0.5 to 0.75 inches. The changes were to have been implemented as a special provision beginning in July 2009.

Special provision 411-R-432 for warranted micro-surfacing was revised to add a pay item for multiple courses, better define and update the warranty thresholds, update material requirements and revise the required warranty monitoring. The changes were implemented with lettings in January 2009.

A new Section 412 was approved to allow use of fog seal. The use of this asphalt emulsion is paid on a square yard basis. The 412-R-549 special provision was to be included in applicable contracts beginning in January 2010.

Section 500

Changes made to Sections 501, 502 and 506 – effective for contracts let in February 2009 – include:

- Allowing an alternate gradation to be used in lieu of No. 8 aggregate if identified in the contractor's Quality Control Plan.
- Requiring documentation of material and source changes to a concrete mix design, rather than a trial batch.
- Designating requirements for (1) trial batch acceptance and (2) mixtures that don't require a trial batch.
- Clarifying the subplot and lot designations when multiple mix designs are used for one pay item.
- Revising the frequency of water/cementitious determinations.
- Removing the exception to AASHTO T 121 that allows the strike-off bar when determining the unit weight.

A provision was added in Section 503.02 to require protection of epoxy coating on dowel bars and bend and straight tie bars. The protection details are spelled out in Section 703.04.

Standard drawing 506-CCPP-01 for Concrete Pavement Patch Details was revised to require retrofitted tie bars for PCCP patches more than six feet in length. Specification sections 506.12 and 506.13 were also revised to show that D-1 contraction joints and retrofitted tie bars used in such patching operations will be paid for under Section 503.08.

Section 600

The RSP for detectable warning elements used in concrete curb ramps – which modifies Section 604 – was revised to require (1) that the mortar bed material consist of high-strength mortar and (2) allow other types of detectable warning elements that comply with other requirements. The revised RSP was to be included in contracts let in February 2009. Additional detail about the warning element requirements was also added to Section 604.03(g).

Several changes were made to the Section 619 requirements for painting bridge steel. A key purpose of these changes was to provide pre-established remedies for changed conditions due to finding unexpected existing hazardous coatings. Under the revised specification, a SSPC-QP 2 certified contractor will be required for cleaning and painting existing bridge steel on bridges constructed before 1995. Contractors with either a QP 1 or QP 2 certification can work on bridges constructed after 1994. Contractors are required to stop cleaning and painting operations and notify INDOT if hazardous materials are found on a bridge advertised as non-hazardous. The specification now provides pre-established remedies to address the following situations:

- Discovery of hazardous materials but no mill scale on a site advertised as non-hazardous.
- Discovery of mill scale but no hazardous materials on a site advertised as non-hazardous.
- Discovery of hazardous materials and mill scale on a site advertised as non-hazardous.

Several other changes were made throughout the section. These changes were initially included in contracts let in September 2008.

RSP 620-R-483 with requirements for sound barrier systems was expanded to allow masonry systems. The number of acceptable colors was also reduced from eight to three. The selected color will be required on both sides of the system. The revised provision was to be implemented beginning with lettings in February 2009. Further revisions to the special provision were approved to allow increased competition and to reduce the cost of these systems. The requirement for a public information meeting was deleted as part of these changes. INDOT will use other methods to solicit public input on the wall design.

A new special provision (625-R-194) for gabions and revet mattresses was approved to allow use of additional materials (both twisted wire and welded wire products), prohibit on-site fabrication using roll stock or non-standard material, update standard references, clarify certification requirements and clarify use and payment of PVC- and metallic-coated gabions. The special provision was included in contracts requiring installation of gabions since July 2008.

A new section 628 was created for field office, field office laboratory, computer systems and office machines. This replaced specifications previously included in 105.17 and 106.04. While the changes were extensive, the primary changes included:

- Giving the contractor the option of providing either a desktop or laptop computer system. Requirements for both systems were modified.
- Requiring the Windows XP Professional operating system.

- Requiring broadband internet service with a minimum upload speed of 350Kbps.
- Reducing the number of required telephone lines to 2, regardless of field office size.
- Requiring a paper shredder.
- Allowing the contractor to provide an all-in-one unit to meet requirements for any combination of a copier, printer, document scanner and fax machine.
- Creating new pay items for additional field office computers (with the first unit included in the cost of the field office), mobile laptop computer system if INDOT requires a laptop, and mobile internet service when specified.

The new field office specification was implemented with lettings in July 2008.

Section 700

The Section 701 driven piling specifications were completely rewritten to incorporate LRFD design requirements, reflect technology advances, and make other changes. In conjunction with these changes, INDOT planned to eliminate including the Pile and Driving Equipment Data form in the contract and post the form on its website. Standard drawings 701-BPIL-02 and 04 were revised to be consistent with new specification terminology. A key change to the Basis of Payment provides that INDOT will pay 50% of the cost to re-stock unused piling if the contractor provides a paid invoice showing the re-stocking fee. The basis of payment also provides that costs of mobilization and demobilization for pile driving operations are to be included in the cost of mobilization/demobilization under Section 110.04 and the cost to control sediment in water from jetting operations is to be included in the cost of the piling. RSP 701-B-154 (Oversized Predrilled Pile Holes and Bentonite Grout for Reduction of Pile Downdrag) will also be revised for consistency. Related changes were also made to Sections 911.01, 911.02, and 915.

A provision was added to Section 702.22 to require that polychloroprene sheeting used for a semi-integral end bent be secured to the concrete with an adhesive. The sheeting is to be centered vertically on the joint with no gaps. This was one of several changes pertaining to semi-integral end bents. The cost of the sheeting and high density plastic bearing strips are to be included in the cost of concrete, A, substructure. Material requirements for the sheeting and strips are included in Sections 906.02 and 906.08. These requirements became effective in December 2008.

A provision was added in Section 703.02 to require the size and length of reinforcing bars to be plainly marked to facilitate inspection and checking of the bars.

New requirements for protecting reinforcing bars were added to Section 703.04. Both plain and epoxy coated bars must be protected from damage during storage, handling, installation and concrete placement. The bars are not to be stored in contact with the ground. Epoxy coated bars are also to be protected from exposure to ultraviolet light and moisture during storage. Once placed, the bars are to be covered with concrete within 21 days. The construction requirements for reinforcing bars now allow bars used in precast and precast prestressed concrete structural members to be welded in lieu of tied. Requirements for welding are included in Section 703.06. Related changes were made in Sections 503, 506 and 507. The changes were intended to make sure the integrity of the coating is intact. The changes were implemented as a special provision beginning with lettings in January 2009.

Several changes were made to the 706-BRRW series of standard drawings pertaining to bridge railings placed on a MSE wall, including approval of four new drawings showing the moment slab with truck-height railings. Changes were made to address over-reinforcement of the slab and to make this component more cost-effective. Many of the changes affect the size of reinforcing bars. The changes also address LRFD criteria. The changes will be effective in September 2009.

Sheets 01, 02 and 04 of the 706-BCBR series for concrete bridge railings were revised – effective September 2009 – to identify the common- and truck-height railings by a type designation.

Standard drawing 707-BPBF-03 was revised to transfer some information from the standard drawing to Sections 707.07, 707.09 and 910.01 of the Standard Specifications. These changes were implemented for lettings in February 2009. The drawing was further revised, effective in September 2009, to modify the note pertaining to camber variation during fabrication of precast beams. Permitted camber variation from design camber is:

I beams and girders, bulb-tee girders - $\pm\frac{1}{8}$ inch per 10 foot length with $\pm\frac{1}{2}$ inch maximum for member length of 80 feet or less or ± 1 inch maximum for member length of greater than 80 feet.

Box beams - $\pm\frac{1}{8}$ inch per 10 foot length with $\pm\frac{1}{2}$ inch maximum.

The Section 707 requirements for Precast and Precast Prestressed Concrete Structural Members were changed to, among other things:

- reference Indiana Test Method 814 for requirements for plants used to manufacture such members,
- give fabrication facilities the option to either tie or weld the reinforcing cages, but also require A 706 (weldable reinforcing steel) when welding is used,
- require use of either a high range water reducing or a high range water reducing retarding admixture system, and
- include the cost of precast prestressed concrete deck panels in the cost of class C concrete in superstructure when the contractor elects to use such panels.

The changes were implemented with the February 2009 lettings.

Section 710 was expanded to include patching concrete structures. A revised Section 710.03 includes requirements for concrete removal, replacement of reinforcement, and patching. A new pay item was added for Patching Concrete Structures with the basis of payment being by square feet.

Section 711.04 was changed to clarify the appropriate American Institute of Steel Construction (AISC) certification required for structural steel fabricators. Fabricators of main load-carrying components or fracture critical members must have the appropriate CBR or SBR certification. Certification is not required for fabrication of secondary structural steel members and miscellaneous components (such as diaphragms, bearing assemblies and miscellaneous plates) that does not involve any welding or heating of the steel.

The bolted parts requirements for bolted connections using high strength bolts for steel structures in Section 711.65 were revised to require removal of materials that reduce friction between the contact surfaces within slip-critical joints but allowing paint, lacquer or rust inhibitor. Related changes were made in Section 909.02 to set requirements for inorganic and organic zinc primers for use on faying surfaces at slip-critical structural bolted connections. The changes eliminate a conflict between Section 619.11, which requires faying surfaces to be painted, and 711.65, which had prohibited contact surfaces to be free of paint.

Under a change to Section 711.73, elastomeric bearings are now included in the cost of the other Section 711 pay items.

Box culvert requirements in Section 714 were updated to incorporate two recurring special provisions and to require box culverts be designed using LRFD methods. The expanded section includes requirements for all concrete box structures as well as wingwalls and headwalls. Related changes were made to 907.05 (Precast Reinforced Concrete Box Sections) and in 910.01 for steel welded wire reinforcement (both smooth and deformed) and dowel bars. A new related 907.06 was created to provide material requirements for Precast Reinforced Concrete Headwalls and Wingwalls for Box Structure or Three-Sided Structure. Also revised were Standard Drawings 01 and 02 in the 714-BCEX series.

The 714-CCSP series of standard drawings was revised to meet environmental requirements that culverts be sumped in order to allow uninterrupted movement of stream-bed materials through the culverts. Drawing 715-PCSP-01 was also added to show sump treatment for a pipe culvert. These revised and new drawings will be included in contracts with pipe pay items covered by Sections 714, 715, 717 and 723 beginning in May 2010. However, related changes to Section 723 scour protection specifications that will include scour protection (geotextile and riprap) in the structure pay item will not become effective until September 2010.

Standard drawing 715-PASD-01 was revised to delete the note regarding placement of riprap and to move requirements for anchor straps and hook bolts in notes to Section 715.10 of the INDOT Standard Specifications.

The trenchless pipe installation requirements in Section 716 were rewritten to include more detail. A related Indiana Test Method (ITM) will be developed to provide guidance on preparation of the required Quality Control Plan. The basis of payment was revised to note that no payment will be made for repair or replacement of pipe sections that have been damaged or show evidence of joint failure.

The underdrain specifications in Section 718 were revised primarily to change the method of measurement so that underdrain and outlet pipe will be measured by the linear foot, complete in place. Such pipes that connect to structures will be measured to the outside face of the structure. Outlet pipes are to be measured along the centerline of the pipe from the point of connection with the underdrain pipe to the downstream end of the outlet pipe, including all transitions, elbows, and increaser or decreaser connections. A comparable change was made to the basis of payment to delete elbows and increaser or decreaser connections from the list of incidentals that are to be included in the cost of pay items for the section. The pay items for underdrain pipe and the underdrain outlet remain in Section 715. A related change was made to Section 715.14 to delete the allowance for tee, stub tee, wye and elbow connections as well as the provision under which increaser and reducer sections were to be paid at the price for larger diameter pipe. Related changes were also made to the 718-UNDR standard drawing series with some requirements transferred from the drawings to Section 718 of the INDOT Standard Specifications.

Requirements were added in Section 718.03 for pipe installation to specify that each longitudinal underdrain trench shall be cut continuously across all twin outlet areas and all single outlet areas. Such pipeless portions of the trench shall be backfilled with aggregate for underdrains. The revised version also requires a minimum clearance of two inches between the pipe and the trench walls.

Section 723 for Reinforced Concrete Three-Sided Drainage Structures was added to the INDOT Standard Specifications for 2010. These structures had previously been covered by a special provision.

A new Section 726 to the INDOT Standard Specifications was approved to standardize bearings for bulb-tee beams or structural-steel beams. The new specification also makes the previously standardized elastomeric bearings for prestressed concrete I beams and box beams complement the newly standardized devices. Dimensions for the new bearing pads are included in a new four drawing 726-BEBP series of standard drawings. Related changes were also made to Sections 702, 711 and 915.04.

RSP 731-R-202 for Mechanically Stabilized Earth Retaining Walls was revised to remove restrictions on the ACBF characteristics allowable for structure backfill used for an MSE wall and to modify the permeability requirements. The change was effective for contracts let after April 1, 2009. Similar changes were made to RSP 732-R-310, which provides requirements for a Modular Concrete Block Retaining Wall. This RSP (732-R-310) was also changed to delete structure backfill criteria pertaining to chlorides, sulfates and resistivity. This change was also included in contracts beginning in April 2009.

A new RSP 734-R-566 was approved to standardize specifications for permanent earth retention systems using a cut-wall application. INDOT plans to start including the provision in applicable contracts beginning in March 2010. A second special provision will be included in these contracts to show the maximum lateral wall movement and the maximum allowable ground settlement behind the cut-wall.

Section 800

Added to section 801.03 was a requirement for contractors to record the location and time of operation of Temporary Worksite Speed Limit sign assemblies. The weekly report is to be reviewed and signed by the Certified Worksite Traffic Supervisor and then submitted to the PE/PS. The change became effective with lettings in July 2008.

Changes to standard drawing 801-TCDV-02 were approved to eliminate the type C light from drums used to delineate drop-offs of three inches or less that are adjacent to travel lanes.

Section 801.10 now requires that Type 1 temporary traffic barriers precast after January 1, 2007 must be from INDOT's list of certified precast concrete producers.

The requirements for Construction Zone Energy Absorbing Terminals – Section 801.10.1 – were revised to prohibit use of the Guard Rail Energy Absorbing Terminal (GREAT-cz) after January 1, 2011. Contractors will not be paid if the terminals used on a contract have to be replaced. This change was to have become effective with contracts let in March 2009.

Changes to 801.12 included:

- Clarification that a dashed line pattern for center lines and lane lines of four-foot line segments on 40-foot centers is to be used for temporary markings that are to be in place for 14 days or less.
- Deletion of a requirement that temporary markings placed on the final surface are to be marking tape type 1.
- Requiring, where possible, that non-removable temporary markings used on a final surface be placed at the same location where permanent markings will later be placed or parallel to and within 12 inches of the permanent marking pattern.
- Requiring paint be used for temporary pavement markings that are to be in service between December 1 and the following March 31, but allowing adjustments of these dates to accommodate continuance of work subject to the engineer's approval.
- Addition of pavement recycling as a condition that requires removal of temporary marking tape. (The specification previously required this prior to placement of the next pavement course, placing an overlay, or placement of the final pavement markings.

Section 801.18 Basis of Payment provisions – along with corresponding changes in 801.17 addressing Method of Measurement – were revised to clarify that:

- Message markings are to be paid at the contract unit price per each, for the specified message.
- Removal of non-removable temporary pavement lines and message markings, when necessary, will be paid for in accordance with Section 808.13 as will removal of existing markings which conflict with the temporary markings. The cost of removal of removable temporary pavement markings is to be included in the cost of pay item for the placement of the markings.

- The cost of placement, maintenance and replacement of temporary pavement markings is to be included in the cost of the markings. (This section was also revised to delete temporary pavement markings from the list of items included in the cost of maintaining traffic.)

The 802-SNOH series of drawings for overhead sign trusses and foundations were deleted beginning with lettings in November 2008 because they weren't applicable to the span lengths used and didn't comply with LRFD design criteria.

Requirements for box trusses to conform to 2008 AASHTO fatigue design changes were included in a new 802-SBTS series of 19 drawings that were to become effective in April 2009, but are still under development. Drawing series 802-SNBF has been deleted. Related changes to Section 802.07 of the Standard Specifications require:

- Vertical truss members and vertical diagonals are to be machined to provide a snug tube-to-tube fit.
- Horizontal truss members and horizontal diagonals are to be slotted for the dimensions shown and welded to the gusset plates and are to be sealed against water penetration.
- Chord plates are to be machined from solid rounds. Mating surfaces are to be flat within 1/64 inch. Flanges are to be given an additional finish if necessary to ensure contact between plates.
- The cap bolts used to attach the top caps of end-support columns must be located to miss the J hook.
- The allowable camber tolerance is 25% of the specified camber value. The camber shown on the plans is for fabrication only and shall be measured with the truss fully supported.

Changes to related truss material requirements were made in Section 910.19. All box trusses will be aluminum while all end support columns are to be made from steel. The specification changes are included in the 2010 INDOT Standard Specifications.

Changes were made to Section 805 to standardize requirements for solar-powered flashing beacons used in rural areas. Included as part of these changes are two drawings, one detailing requirements for beacons used with a school speed limit; the other showing the requirements for beacons used in conjunction with a warning sign. The changes to RSP 805-T-169 and the two detail drawings were to have been included in contracts beginning in January 2010.

Both standard drawing 807-LTFD-09 and section 920.01 were affected by a change that moved junction box material requirements from the drawing to the specification.

Conditions under which grinding can be used to remove pavement markings were expanded under Section 808.10 to include removal of non-durable markings when another course of material is to be placed on the existing course. Grinding is also permitted when removing durable pavement markings.

A special provision was adopted to modify Section 808 to establish performance standards for traffic paint. The provision establishes requirements for retro-reflectivity and durability. White pavement markings must meet an average retro-reflectivity standard of 250 mcd/m²/lx while the yellow paint must achieve an average of 175. Payment will be reduced if the paint markings do not achieve the standard. The durability standard is a minimum resistance to wear of 97% for at least 90 days after application. The basis of payment was revised to add pay items for a performance based line and retro-reflectivity testing. The special provision was included in contracts beginning in July 2008.

Section 900

Section 904.01 was revised to clarify the permitted uses of steel furnace slag. This material may be used in HMA base and HMA intermediate mixtures only if the deleterious content is less than 4.0%. This specification also refers to Sections 401.06, 402.08 and 410.06 regarding use a RAP with steel slag.

The table in Section 904.02 was revised to clarify the acid-insoluble content. Fine aggregate used in HMA surface 4.75 mm mixtures shall have a minimum acid-insoluble content of 40%, except when using ACBF or GBF slag sands for which the minimum is 25%. These requirements are not applicable to crushed gravel, limestone or dolomite sands.

Section 904.03 was modified to clarify that the Water Freeze and Thaw test (AASHTO T 103, Procedure A) is the primary aggregate soundness test and that the Sodium Sulfate and Brine Freeze and Thaw tests may be done at the discretion of the Engineer. This change was to have become effective for contracts let in February 2009.

Requirements for detectable warning elements were added to Section 905.05.

Requirements for reinforcing bars and dowel bars in Section 910.01 were revised to allow bars to be in accordance with ASTM A 706 grade 60 in addition to the previously recognized ASTM A 615. Also allows the epoxy-coated bar used in threaded tie bar assemblies to be obtained from a company that is not on the list of Certified Reinforcing Bar Epoxy Coaters. The specification now requires a Type A certification for uncoated 7 wire strand used for prestressed concrete. Increases the average coating thickness of epoxy coated reinforcing bars from a range of 8 to 13 mils to 9 to 14 mils.

Minor changes were made to the untreated lumber requirements in 911.01 for consistency with the AASHTO LRFD Bridge Construction Specification, 4th Edition. These include references to "sawn" timbers and lumber. Untreated piles are now to be strapped with at least three straps.

A change to 914.07 replaces the requirement for a certification of nursery inspection for sod with a type C certification. The change was implemented in contracts as a special provision in December 2008.

The tables for Type I and II geogrid in Section 918.05 were revised with certain testing to now be conducted according to ASTM D6637.

Section 919.01 was revised to require Type IV or higher sheeting on highway signs. The sheeting type for the sign copy and border shall be the same type or higher than the sheeting type used for the background. Corresponding changes were made in Section 802.12 to delete type from the pay items for sheet signs and double-faced sheet signs. With the higher reflective sheeting, INDOT will no longer install lighting on new overhead sign installations. INDOT planned to include special provision 802-T-171 in contracts beginning in January 2010.

Shop drawing requirements were eliminated in 920.01 for service points, circuit breaker enclosures and multiple relay switches. This was implemented beginning with lettings in July 2008. A provision was also added to require junction boxes to be polymer concrete, concrete-gray color, and have a cover rating of 20,000 pounds.