INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING

Driving Indiana's Economic Growth

March 13, 2008

MEMORANDUM

TO: Standards Committee

FROM: Mike Milligan, Secretary

RE: Agenda for the March 20, 2008 Standards Committee Meeting

A Standards Committee meeting is scheduled for 9:00 a.m. on March 20, 2008 in the N755 Bay Window Conference Room. Please enter the meeting through the double doors directly in front of the conference room. The following agenda items are listed for consideration.

GENERAL ITEMS OF DISCUSSION

SPECIFICATIONS AND STANDARD DRAWING ITEMS

RECURRING SPECIAL PROVISION ITEMS

DESIGN MANUAL ITEMS

cc: Committee Members (11)
FHWA (1)

GENERAL ITEMS OF DISCUSSION

APPROVAL OF FEBRUARY 21, 2008 MINUTES.

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

GENERAL ITEMS OF DISCUSSION

STANDARDS COMMITTEE SCHEDULE

Std Comm Mtg Date	Agenda Items Due (-27 days)	Draft Agenda Distributed (-21 days)	Final Agenda Distributed & Published (-7 days)	1st Draft Minutes Distributed (+7 days)	Comments Due for 1st Draft Minutes (+14 days)	Final Draft Minutes Distributed (+21 days)	Approved Minutes Published (+35 days)
02/21/08				02/26/08	03/05/08	03/13/08	03/27/08
03/20/08	03/07/08	03/13/08	03/13/08	03/27/08	04/03/08	04/10/08	04/24/08
04/17/08	03/20/08	03/27/08	04/10/08	04/24/08	05/01/08	05/08/08	05/22/08
05/15/08	04/18/08	04/24/08	05/08/08	05/22/08	05/29/08	06/05/08	06/26/08
06/19/08	05/23/08	05/29/08	06/12/08	06/26/08	07/03/08	07/10/08	07/24/08
07/17/08	06/20/08	06/26/08	07/10/08	07/24/08	07/31/08	08/07/08	08/28/08
08/21/08	07/25/08	07/31/08	08/14/08	08/28/08	09/04/08	09/11/08	09/25/08
09/18/08	08/22/08	08/28/08	09/11/08	09/25/08	10/02/08	10/09/08	10/23/08
10/16/08	09/19/08	09/25/08	10/09/08	10/23/08	10/30/08	11/06/08	11/26/08
11/20/08	10/24/08	10/30/08	11/13/08	11/26/08	12/04/08	12/11/08	12/24/08
12/18/08	11/21/08	11/27/08	12/11/08	12/24/08	01/05/09	01/12/09	01/22/09
01/15/09	12/19/08	12/24/08	01/12/09	01/22/09	01/29/09	02/05/09	02/26/09
02/19/09	01/23/09	01/29/09	02/12/09	02/26/09	03/05/09	03/12/09	03/26/09
03/19/09	02/20/09	02/26/09	03/12/09	03/26/09	04/02/09	04/09/09	04/23/09
04/16/09	03/20/09	03/26/09	04/09/09	04/23/09	04/30/09	05/07/09	05/28/09
05/21/09	04/24/09	04/30/09	05/14/09	05/28/09	06/04/09	06/11/09	06/25/09
06/18/09	05/22/09	05/28/09	06/11/09	06/25/09	07/02/09	07/09/09	07/23/09
07/16/09	06/19/09	06/25/09	07/09/09	07/23/09	07/30/09	08/06/09	08/27/09
08/20/09	07/24/09	07/30/09	08/13/09	08/27/09	09/03/09	09/10/09	09/24/09
09/17/09	08/21/09	08/27/09	09/10/09	09/24/09	10/01/09	10/08/09	10/22/09
10/15/09	09/18/09	09/24/09	10/08/09	10/22/09	10/29/09	11/05/09	11/25/09
11/19/09	10/23/09	10/29/09	11/12/09	11/25/09	12/03/09	12/10/09	12/23/09
12/17/09	11/20/09	11/25/09	12/10/09	12/23/09	12/31/09	01/07/10	01/21/10

Note 1: Agenda items must be accompanied by a Proposal sheet and must be submitted to the Division of Construction Management Data Specialist by the Agenda Items Due date for inclusion in the agenda

Note 2: May meetings are the last opportunity for approval of items to be included in September lettings

Note 3: 11/20/08 meeting is last meeting for approval of items to be included in 2010 Standard Specifications

GENERAL ITEMS OF DISCUSSION

STANDARDS COMMITTEE SCHEDULE (CONTINUED).

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Need a good definition of how "ROCK" is determined in the field. This is a returning Item to the Standards Committee. At the March 15, 2007 Standards Committee Meeting, this topic was presented as Item # 18-2. The committee did not like the suggested changes to specification 203.03 so the item was withdrawn and is hereby resubmitted for consideration.

We need a good way for INDOT Project Engineers/Supervisors and Contractors to know that the material they are getting ready to remove is actually rock by definition.

Our current specification 203.03 is too vague. I reviewed several out States' Specification and this on is from South Dakota and is very detailed as to how rock is determined in the field.

PROPOSED SOLUTION: 203.03

Need to redefined the definition of ROCK in the specifications. See attached sheet.

APPLICABLE STANDARD SPECIFICATIONS: 203.03 ROCK EXCAVATION

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: Section #3

Submitted By: Dennis A. Kuchler

Title: State Construction Engineer

Organization: INDOT

Phone Number: 232-5502

Date: 2/20/08

Item No. 18-2
Mr. Kuchler
Date: 03/20/08

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 203, BEGIN LINE 15, DELETE AND INSERT AS FOLLOWS:

203.03 Rock Excavation

Rock excavation shall consist of igneous, metamorphic, and sedimentary rock *or other sound mineral matter* which cannot be *readily* excavated ~~without blasting;~~ *by* the use of a ~~power shovel~~ *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 1 cu yd (0.76 m^3) capacity, ~~properly used, having adequate power and~~ in satisfactory running condition~~; or the use of other equivalent powered equipment~~ *and operated in accordance with the manufacturers recommended operating instructions*. Rock excavation shall also include all boulders ~~or~~ *and* other detached stones each having a volume of 1/2 cu yd (0.4 m^3) or more.

Other sections containing specific cross references:

203.07 Pg 133
203.15 Pg 141

Recurring Special Provisions potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
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___ 20__ Standard Specifications Book
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___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

PROBLEM(S) ENCOUNTERED:

Section 109.05 describes method of payment for "Extra Work and Force Account Work". Historically, contractors have felt that the section required defined markups when negotiating unit prices for extra work not performed as Force Account. INDOT auditors also held that all extra work should be documented as described under Force Account work.

In addition, section 104.03 is titled "Extra Work". This section states the Department's authority to require a contractor to perform extra work and states that the extra work will be paid for in accordance with 109.05. The intention is that Force Account work is a subset of Extra Work, but the specs don't currently make this distinction clear.

The reference to Dataquest is outdated. And fuel and lubricant costs are now included in the Blue Book rental rates but the current specifications state that these can be added to the rates.

When using rental equipment for force account work payment is made using invoices so it is still appropriate to add fuel and lube costs. However, it can be difficult to sort out when a fuel truck fills multiple pieces of equipment, some of which may be partially used or not even be used for force account.

Force account work sometimes involves transporting equipment to the site and having equipment sit idle due to non-continuous use. During this time a standby rate should be used, not the full Blue Book rental rate.

PROPOSED SOLUTION:

In order to clarify how extra work as defined in 104.03 is to be compensated, section 109.05 is being retitled "Payment for Extra Work" and the two methods of payment - Agreed Price and Force Account - are clearly defined and separated. This revision should provide clarity to contractors, INDOT auditors and field personnel.

The reference to Dataquest is being updated to EquipmentWatch. And the incorrect option to add fuel and lubricant costs is being deleted.

An alternate solution for the difficulty in sorting out fuel costs for rented equipment is to permit the PE/S to use an additional feature of the Blue Book which itemizes the components of equipment operating cost. This allows the PE/S to determine a fuel cost per hour of equipment use.

A standby rate is being defined in the specifications for use in paying for idle equipment.

APPLICABLE STANDARD SPECIFICATIONS: 104.03, 109.05

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: Section 40

APPLICABLE RECURRING SPECIAL PROVISIONS: None

Submitted By: Ron Heustis

Title: Manager of Construction Technical Support

Organization: Division of Construction Management

Phone Number: 317-234-2777

Date: Feb. 22, 2008

APPLICABLE SUB-COMMITTEE ENDORSEMENT?

This item has been reviewed and approved for submittal to the Standards Committee by the 100 Section Sub-Committee, chaired by Dennis Kuchler and Steve Thieroff.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 109, BEGIN LINE 501, DELETE AND INSERT AS FOLLOWS:

109.05 *Payment for* Extra Work ~~and Force Account Work~~

Extra work performed in accordance with 104.03 will be paid for by one of the following methods:

(a) Agreed Price

Extra work ~~performed in accordance with 104.03~~ will be paid for at the *agreed upon* unit prices or lump sum prices as ~~approved on the change order~~ *documented on approved change order. The Contractor shall, when directed, furnish a cost breakdown to substantiate a unit price or lump sum price.*

(b) Force Account

~~However, the~~ *The* Department may require the Contractor to ~~do such~~ *perform extra* work on a force account basis *when a price cannot be agreed upon in accordance with 109.05(a). The Contractor shall, when directed, submit a written proposal for the extra work prior to the start of the work. When directed, the proposal shall include the planned labor, materials, equipment, and schedule for the work. Extra work performed by force account will be documented on an approved change order and will* ~~to~~ be compensated in the following manner:

~~(a)~~ *1.* Labor Costs

For all labor and foremen in direct charge of the specific operations, the Contractor will receive the rate of wage, or scale, agreed upon in writing before beginning work for each hour that said labor and foremen are actually engaged in such work.

The Contractor will receive the actual costs paid to, or in behalf of, workmen by reasons of subsistence and travel allowances, worker's compensation insurance premiums, unemployment insurance contributions, social security taxes, health and welfare benefits, pension fund benefits, or other benefits when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work. The Contractor shall furnish satisfactory evidence of the rate or rates paid for insurance premiums and tax.

An amount equal to 20% of the sum of the above items will also be paid the Contractor.

~~(b)~~ *2.* Bond and Insurance

For bond premium and property damage and liability insurance premiums, the Contractor will receive the actual cost, to which cost 10% will be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond premium and insurance premiums.

~~(c)~~ *3.* Materials

For materials accepted and used, the Contractor will receive the actual cost of such materials delivered on the work, including transportation charges paid by the

Contractor, exclusive of machinery rentals as hereinafter set forth, to which cost 12% will be added.

~~(d)~~ *4.* Equipment

For Contractor owned machinery or special equipment other than small tools as defined herein, the rates shall be not more than those listed in the current Rental Rate Blue Book as published by ~~Dataquest, Inc.~~ *EquipmentWatch®. The rate used shall be the FHWA hourly rate which is the ownership cost rate plus the operating cost rate.* Regardless of the time used, ~~this~~ *the ownership cost* rate shall be the hourly rate obtained by dividing the monthly Blue Book rate by 176 with appropriate adjustments made for region and age. Actual ~~fuel, lubricant and~~ transportation costs may be added to the ~~rental cost~~ *FHWA rate*. Small tools will be defined as tools costing less than $500 each, or an aggregate total of $1,000 or less.

For machinery or special equipment not owned by the Contractor, the rate shall be as shown on invoices. Actual fuel, lubricant and transportation costs may be added to the rental cost. *The Engineer may designate the use of the fuel percentage of the Rental Rate Blue Book operating cost rate in lieu of actual fuel and lubricant costs. No payment will be made for repairs to rented equipment.*

For equipment that is operational, on-site, and necessary for force account work, but is idle due to conditions beyond the control of the Contractor, a standby rate will apply. The standby rate will also apply during the period of transportation and on-site assembly and disassembly of the equipment for transportation purposes. The standby rate will be the published ownership cost rate reduced by 50 percent. Standby time will not be paid for in excess of 8 hours per day minus the number of hours paid for at the FHWA rate per day; or 40 hours per week minus the number of hours paid for at the FHWA rate per week. If rented equipment necessary for force account work is idle, the Department will pay the Contractor for the actual invoice rates for the duration of the idle period.

The Contractor shall provide a list of all information needed to verify the Blue Book rental rate for each piece of equipment. The information shall include the equipment type, manufacturer name, model number, year, any attachments used, and any other information necessary to determine the proper rate.

The Contractor will receive payment for the total costs agreed upon to which sum 12% will be added.

~~(e)~~ *5.* Miscellaneous

No additional allowance will be made for general superintendence or other costs for which no specific allowance is herein provided.

~~(f)~~ *6.* Subcontracting

For administration costs in connection with approved subcontract work, the Contractor shall receive an amount equal to 10% of the first $3,000 and 7% thereafter, or the total cost of such work computed as set forth above.

~~(g)~~ *7.* Compensation

The Contractor and the Engineer shall compare records of the cost of work done as ordered on a force account basis at the end of each day. These records shall be made in duplicate and signed by both. Each shall retain one copy.

~~(h)~~ *8.* Statements

No payment will be made for work performed on a force account basis until the Contractor has furnished triplicate itemized statements of the cost of such force account work detailed as follows:

~~1.~~ *a.* name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman;

~~2.~~ *b.* designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment;

~~3.~~ *c.* quantities of materials, prices, and extensions;

~~4.~~ *d.* transportation of materials;

~~5.~~ *e.* cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions, and social security tax.

Statements shall be accompanied and supported by receipted invoices for all materials used and for transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials where taken from its stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

If the Contractor fails or refuses to prosecute extra *work* or force account work as directed, the Department may withhold payment of all current estimates until the Contractor's failure or refusal is eliminated.

~~**(i) Cost Breakdown**~~

~~In case the work is performed as extra work, the Contractor shall, when directed, furnish a cost breakdown to substantiate a lump sum price or unit price.~~

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 109, CONTINUED.

Other sections containing specific cross references:

104.03	Pg 28	105.10	Pg 44
109.04(a)	Pg 98	202.04	Pg 120
203.28	Pg 158	206.11	Pg 176
401.18	Pg 234	410.22	Pg 278
501.25	Pg 287	501.31	Pg 295
502.23	Pg 306	914.08(c)	Pg 826

Recurring Special Provisions potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Department, thru the Equal Opportunity Division (EOD), is changing its program for EEO trainee hours on federally funded projects. Where in the past a contractor could choose between participation in the Department's company wide trainee program or provide trainees for specific hours on specific contracts, contractors will now be required to participate in the trainee program.

PROPOSED SOLUTION: In order to implement the new program, the EOD has requested a that a Recurring Special Provision with the new trainee program requirements be included in all federally funded contracts as soon as possible. Compliance with the specification will be monitored by the EOD.

It is recommended that the RSP be made effective with the July 2008 lettings. It is also recommended that the spec remain as an RSP until publication of the next Standard Specifications after the 2010 book. This will allow time for review and modification of the spec before being added to the SS.

The Basis for Use for the RSP will be "ALL FEDERALLY FUNDED CONTRACTS" and will have an effective date of 07-01-08.

APPLICABLE STANDARD SPECIFICATIONS: 107.06

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE: None required.

APPLICABLE RECURRING SPECIAL PROVISIONS: None

Submitted By: Ron Heustis for Kevin Resler, EOD

Title:

Organization: Construction Management

Phone Number: 317-234-2777

Date: 2/28/08

APPLICABLE SUB-COMMITTEE ENDORSEMENT?

EEO trainee requirements are federally mandated and are implemented by the Department's EOD. The proposed RSP has been reviewed with EOD by Construction Management and Contract Administration.

Item No. 08-8-2
Mr. Walker
Date: 3/20/08

REVISED RECURRING SPECIAL PROVISION

~~09-01-07~~

~~107-C-029 EQUAL EMPLOYMENT OPPORTUNITY TRAINEES~~

~~*(Revised 09-01-05)*~~

~~A total of _____ training hours are assigned to this contract.~~

~~This requirement does not apply if the Contractor is participating in the pilot program as approved by the Department.~~

07-01-08

107-C-029 EQUAL EMPLOYMENT OPPORTUNITY TRAINEE PROGRAM

(Revised XX-XX-XX)

The Standard Specifications are revised as follows:

SECTION 107, AFTER LINE 138, INSERT AS FOLLOWS:

When the project is funded in total or in part by the United States Government and no Equal Employment Opportunity hours are shown in the Proposal book, the Contractor shall participate in the Department's Equal Employment Opportunity Trainee Program. Requirements for participation in the program are available on the Department's website or from the Department's Equal Opportunity Division. Failure by the Contractor to comply with this requirement may result in reduction or loss of prequalification to bid for future work.

REVISED RECURRING SPECIAL PROVISION

107-C-029 EQUAL EMPLOYMENT OPPORTUNITY TRAINEES (CONTINUED).

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standard Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn _____

Received FHWA Approval? _____

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: INDOT has been requested by IDEM to take actions to provide greater control over contractors who unknowingly or illegally dispose of construction waste in off-site protected areas such as wetlands. In addition, IDEM often finds that off-site borrow and disposal sites do not comply with Rule 5 regulations.

PROPOSED SOLUTION: The proposed Recurring Special Provision is intended as a short term correction and clarification of the specifications related to borrow and disposal sites. It clearly defines 3 types of sites and the requirements for each and more clearly indicates the responsibility of the contractor to comply with local, state and federal laws. The RSP also cleans up some conflicts with references in 201 and 203.

It is recommended that the proposed RSP be authorized for use beginning with July 2008 lettings. It is further recommended that the RSP be kept in place only until a full rewrite of 203.08 and all associated references and related specs. The intention is to update all environmental specs and standards to current laws and practices and collate them into one location in the specifications. The rewrite should be completed by November 2008 in time to be included in the 2010 Standard Specifications, at which time the RSP will be deleted.

A revision to Section 3 of the GIFE will also be required and will include a checklist for use by the PE/S to approve/reject proposed borrow and disposal sites. A copy of the draft checklist is included for the Committee's information.

APPLICABLE STANDARD SPECIFICATIONS: 201, 202, 203

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: Section 3

APPLICABLE RECURRING SPECIAL PROVISIONS:

108-C-192 – TEMPORARY EROSION CONTROL MEASURES
This RSP will need to be revised to coordinate with the new RSP. A draft revision of 108-C-192 is attached.

Submitted By: Ron Heustis

Title: Mgr, Ofc of Const Tech Support

Organization: INDOT

Phone Number: 317-234-2777

Date: 3/7/08

APPLICABLE SUB-COMMITTEE ENDORSEMENT? There is currently no standing sub-committee assigned to the 200 section of the SS. This proposal has been reviewed by Michelle Allen and Nathan Saxe of the OES and by Mark Miller of Const. Mgmt.

NEW RECURRING SPECIAL PROVISION

07-01-08

203-R-XXX – APPROVAL OF BORROW AND DISPOSAL SITES
(Adopted xx-xx-xx)

The Standard Specifications are revised as follows:

SECTION 201, BEGIN LINE 3, INSERT AS FOLLOWS:

201.01 Description

This work shall consist of clearing, grubbing, removing, and disposing of all vegetation and debris, except such objects as are designated to remain or are to be removed in accordance with other sections of these specifications, within the construction limits shown on the plans. If no construction limits are shown, the right-of-way and easement areas will be the construction limits. This work shall include the preservation from injury or defacement of all vegetation and objects designated to remain. *Disposal of material shall be in accordance with 203.08.*

SECTION 201, BEGIN LINE 43, DELETE AND INSERT AS FOLLOWS:

Unless burned in accordance with the requirements herein, perishable materials and debris shall be removed from the right-of-way and disposed of ~~at locations off the construction site and outside the limits of view from the traveled roadway~~ *in accordance with 203.08*. Sod may be disposed of within the right-of-way, but outside the construction limits, if permitted. ~~Written permission shall be obtained from the property owner on whose property the materials and debris are to be placed. All necessary arrangements shall be made with the owner for obtaining suitable disposal locations. The cost involved shall be included in the contract price of pay items.~~

SECTION 203, BEGIN LINE 49, DELETE AND INSERT AS FOLLOWS:

203.08 Borrow or Disposal

Borrow shall consist of approved material required for the construction of embankments or for other portions of the work and shall be obtained from approved locations and sources outside the right-of-way. Borrow material shall be free of substances that will form deleterious deposits, or produce toxic concentrations or combinations that may be harmful to human, animal, plant or aquatic life, or otherwise impair the designated uses of ~~the~~ *a* stream or area. Unless otherwise designated in the contract, arrangements shall be made for obtaining borrow. Borrow, as designated herein, shall not include material excavated beyond the right-of-way limits at intersecting public roads, private and commercial drive ~~approaches, nor~~ *approaches and* material furnished as B borrow.

Disposal of waste material, other than regulated material, from within the right-of-way shall only be at approved locations within or outside the right-of-way. Disposal of regulated material shall be in accordance with 104.06.

~~Proposed borrow sites and proposed disposal sites for excavated material shall be identified before such material is excavated or disposed of within or outside the right-of-way.~~

Except where ~~a permitted or~~ *a* licensed commercial site *or a permitted site* is utilized *for borrow or disposal*, *the Contractor shall obtain all permits required by local, state and federal laws prior to the start of any operations at the site.*

Licensed commercial sites and permitted sites are defined as follows:

(a) *A licensed commercial site is a solid waste facility with a current IDEM operating number.*

(b) *A permitted site is a location that is operated under all permits required by local, state and federal laws for the activities proposed by the Contractor.*

For proposed borrow or disposal sites other than licensed commercial or permitted sites, an inspection of areas outside the construction limits shall be conducted by a qualified wetland professional *approved by the Department* to determine if wetlands are present on the site. *An approved wetland professional shall be prequalified with the Department to perform environmental services work type 5.4 Ecological Surveys or shall be certified by the Society of Wetland Scientists as a wetland professional-in-training or professional wetland scientist. A list of approved wetland professionals is maintained on the Department's website.* ~~This~~ *The wetlands* inspection shall be in accordance with the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The inspection shall also determine if isolated wetlands as defined by ~~the~~ IDEM are present. ~~The Contractor shall submit a document, signed by the wetland professional, verifying that the site has been inspected for the presence ofwetlands in accordance with the federal manual and for isolated wetlands and, if any are present, specifying the area to be demarcated as jurisdictional waters and/or wetland.~~ *The Contractor shall demarcate in a method approved by the Engineer the boundary of all wetlands identified within the proposed borrow or disposal site.* ~~Once the area to be used for borrow or for disposal of excavated material has been shown not to contain jurisdictional or isolated wetlands, the boundary of the area cleared shall be demarcated. The methods of demarcation shall be as approved by the Engineer.~~

For proposed borrow or disposal sites other than licensed commercial or permitted sites, a qualified archaeologist shall perform a record check and field survey to determine if any significant archaeological sites exist within the proposed site. The Indiana Department of Natural Resources Division of Historic Preservation and Archeology maintains a roster of qualified archeological consultants. If any archaeological sites are identified, the archaeologist shall establish the limits of the site along with a reasonable border. The Contractor shall demarcate in a method approved by the Engineer the border of all archeological sites identified within the proposed borrow or disposal site.

Identified archeological sites shall not be disturbed unless the site is cleared by established procedures and written authorization to enter the site has been obtained by the Contractor. Under no circumstances shall an employee of the Contractor or the State of Indiana share in the ownership or profit from the sale of any archaeological artifacts that may be salvaged.

~~The Department maintains a list of professional consultants who are prequalified to perform various types of work. A qualified wetland professional shall be a professional consultant who is prequalified with the Department to perform Environmental Services work type 5.4 Ecological Surveys, or is certified by the Society of Wetland Scientists, SWS, as a wetland professional in training or professional wetland scientist. The~~

~~Department's list of prequalified professional consultants is located at . http://www.in.gov/dot/div/legal/rfp/eligiblefirms.xls.~~

~~Previously approved sites may be utilized for borrow or disposal operations if the Contractor furnishes a valid permit or document signed by a wetland professional prior to utilizing the site.~~

Borrow and disposal sites shall be approved by the Engineer prior to the start of any earth disturbing operations at the site. A request for approval of a borrow or disposal site shall be submitted to the Engineer a minimum of 14 days prior to the Contractor's planned start of operations at the site. All requests for approval of a borrow or disposal site shall include a description of the Contractor's planned operations at the site. In the case of disposal sites, the description shall include a listing of the types of material to be disposed of at the site.

A request for approval of a licensed commercial site shall include the following:

(a) *The name and address of the facility.*
(b) *The IDEM operating number.*
(c) *The expiration date of the IDEM operating permit.*

A request for approval of a permitted site shall include the following:

(a) *Name of the site owner.*
(b) *Address of the site.*
(c) *A list of the permits, permit numbers and permit expiration dates for all permits under which the site operates.*

A request for approval of a site, other than a licensed commercial or permitted site, shall include the following:

(a) *Name of the property owner.*
(b) *Address or location of the site.*
(c) *A copy of a right-of-entry obtained from the property owner. Rights-of-entry shall include rights for access by Department personnel to the site for the purposes of monitoring, measurement and sampling.*
(d) *A site plan showing the site location, site dimensions, adjacent property and right-of-way lines, all demarcated jurisdictional wetlands or isolated wetlands, all demarcated archeological sites, existing and proposed finished contours and proposed finished slope grades.*
(e) *A site operations plan detailing the operations proposed for the site, what equipment will be utilized, how the site will be accessed and any other information relevant to the operation of the site.*
(f) *A copy of the Rule 5 Notice of Intent, if required under 327 IAC 15-5.*
(g) *An erosion control plan for the site including the types of erosion control measures to be incorporated and the sequencing of the measures in respect to the operations plan for the site.*
(h) *Documentation signed by a wetlands professional verifying that the site has been inspected for the presence of both wetlands and isolated wetlands and, if any are present, specifying the area to be demarcated as jurisdictional or isolated wetlands.*
(i) *Documentation of the archeological record check and field survey signed by a qualified archeologist including the limits and border of any archeological site discovered.*

(j) *Copies of all other permits obtained by the Contractor to perform operations at the site.*

The Contractor shall provide the Engineer a minimum of 14 days notice prior to opening borrow areas for the purpose of obtaining original cross section elevations and measurements and to sample the borrow material prior to use.

The Contractor shall install temporary erosion and sediment control measures at borrow or disposal sites other than licensed commercial and permitted sites prior to the start of any earth disturbing activity. ~~If the Contractor elects to use the site, all required permits shall be obtained.~~ The Contractor shall develop and construct all mitigation measures *necessary to* ~~and~~ fulfill ~~all~~ *the* requirements ~~detailed by such~~ *of all* permits *obtained by the Contractor for operation of a borrow or disposal site*. ~~The Contractor shall also obtain written permission from the land owner for Department personnel to access the site for monitoring.~~

No excavation shall occur or no material shall be disposed of ~~beyond~~ *within* the boundaries of the demarcated *wetlands and archeological* area*s unless the operations are in compliance with all required permits and these specifications*.

No extension of completion time will be granted due to any delays by the Contractor in securing approval of borrow or disposal sites.

~~Before borrow or disposal operations are begun, the Contractor shall submit operation plans for approval. Such plans shall include the following:~~

~~(a) a detailed sketch showing the limits relative to property and right-of-way lines;~~

~~(b) the grade of all slopes;~~

~~(c) an erosion control plan in accordance with the requirements of 327 IAC 15-5;~~

~~(d) the encasement, finished grading, and seeding procedures; and~~

~~(e) archaeological clearance.~~

~~Notice shall be given in advance of opening borrow areas so that cross section elevations and measurements of the ground surface after stripping may be taken and the borrow material may be tested before being used.~~

~~Except when a commercial source is utilized, a qualified archaeologist shall perform a record check and field survey of borrow or disposal limits to determine if any significant archaeological sites are within the limits. Results of the record check and survey shall be furnished in writing prior to the excavation of any material. If any archaeological sites are identified, the archaeologist shall establish the limits of the site along with a reasonable border. The site shall not be disturbed unless the archaeological site is cleared by established procedures and written authorization to enter the site has been issued. Under no circumstances shall an employee of the Contractor or the State of Indiana share in the ownership or profit from the sale of any archaeological artifacts that~~

~~may be salvaged. No extension of completion time will be granted due to any delays in securing approval of a borrow or disposal site.~~

SECTION 203, BEGIN LINE 286, DELETE AND INSERT AS FOLLOWS:

203.10 Disposal of Excavated Material Except Waterway and Peat Excavation

Excavation material shall be used for the construction of embankments, shoulders, special fill, or other places as may be specified or directed, depending on the nature of the material. Excavated material that is suitable for embankment construction that is not required for maintenance of traffic shall be placed in the embankment before placing any borrow material, unless otherwise authorized in writing.

If more material is excavated from within required cut slopelines than is needed to construct embankments or special fills, the excess may be used to widen embankments, flatten fill slopes, or be used otherwise as directed. All excess excavated material that cannot be used constructively within the project limits shall be disposed of off the right-of-way in accordance with ~~201.03 and~~ 203.08.

Excavation obtained from the right-of-way and planned to be used in fills may be wasted and replaced with borrow with no additional payment only after written permission is obtained. All required samples of the borrow or the excavation materials involved shall be furnished with no additional payment.

203.11 Disposal of Waterway Excavation

Unless otherwise provided, material resulting from waterway excavation shall be used ~~to fill old channels and~~, if suitable, in embankment, special fill, and approach embankments, or any combination of these, as specified or directed.

A portion of waterway excavation which is unsuitable for the above uses, a portion which is suitable but is in excess of that required for such uses, or if locations for such ~~disposal~~ *uses* are not available, the disposal shall be in accordance with ~~201.03~~*203.08*.

203.12 Disposal of Peat

All material removed as peat excavation, removed or displaced by machine operation, or displaced by the advancing backfilling material shall be ~~uniformly spread between the toes of fill slopes and the swamp ditches or beyond, or otherwise~~ disposed of in accordance with 203.08.

NEW RECURRING SPECIAL PROVISION

203-R-XXX – APPROVAL OF BORROW AND DISPOSAL SITES (CONTINUED).

Other sections containing specific cross references:

201, 202, 203

Recurring Special Provisions potentially affected:

108-C-192

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

Indiana Department of Transportation
Request for Approval of Borrow or Excavation Disposal Site
Under Section 203 of the Standard Specifications

Part I – Contract, Site and Permit Information *(To be completed by the Contractor)*

Date: _____ Contract: _____

Contractor: _____ District: _____
Proposed Site is for (check one): ☐ Borrow ☐ Excavation Disposal ☐ Both

A. Complete this section for all borrow/disposal site requests. Check the appropriate box, 1, 2 or 3. If box 1 or 2 is checked, skip section **B** and complete section **C**.

1. ☐ The proposed Site is a solid waste facility listed with IDEM.

   a) Name of facility: _____

   b) Address of facility: _____

   c) IDEM Operating Number: _____ Exp. Date: _____

2. ☐ The proposed Site is not a facility listed with IDEM, but is legally permitted for the operations proposed by the Contractor.

   a) Name of Site owner: _____

   b) Address of Site: _____

   c) The proposed Site is operated under one or more of the following permits:

   ☐ IDEM 401 Water Quality Certification

   Permit No: _____ Exp. Date: _____

   ☐ Not Required (explain): _____

   ☐ US Army Corps of Engineers (USACE) Section 404 Clean Water Act

   Permit No: _____ Exp. Date: _____

   ☐ Not Required (explain): _____

   ☐ IDNR Construction in Floodway

   Permit No: _____ Exp. Date: _____

   ☐ Not Required (explain): _____

☐ IDEM Rule 5

Permit No: _____ Exp. Date: _____

☐ Not Required (explain): _____

☐ The Site has archeological clearance and written authorization to enter in accordance with 203.08. Attach copies.

☐ Not Required (explain): _____

3. ☐ The proposed Site is not currently a licensed commercial site or a permitted site as defined in 203.08. Complete sections **B** and **C** below.

B. Complete this section only if box 3 was checked in section **A**.

1. Name of the Site owner: _____
2. Location of the Site: _____
3. For a proposed disposal site, attach a list of materials to be disposed of at the Site.
4. Attach a right-of-entry signed by the property owner for the proposed work at the Site including access by the Department.
5. Attach a site plan for the proposed Site in accordance with 203.08.
6. Attach a copy of the operation plan for the proposed Site in accordance with 203.08.
7. Attach a copy of the wetlands delineation performed at the Site in accordance with 203.08.
8. Attach a copy of the archeological clearance and written authorization to enter the Site in accordance with 203.08.
9. Will there be impacts to wetlands or waters of the US at the Site?

☐ **Yes** – Attach copies of the following permits for the Site:

1. IDEM 401 Water Quality Certification – Exp. Date: _____
2. USACE 404 Permit – Exp. Date: _____

☐ Site is an isolated wetland and a USACE 404 Permit is not required.

☐ **No** – No permits are required.

5. Is the Site in a Floodway?

☐ **Yes** – Attach a copy of the IDNR Construction in a Floodway Permit for the Site.

Exp. Date: _____

☐ **No** – No permit is required.

6. Will more than one acre of land at the Site be disturbed by borrow or disposal activities?

☐ **Yes** – Attach a copy of the IDEM Rule 5 Notice of Intent (NOI) for the Site.

Exp. Date: _____

☐ **No** – No permit is required.

8. Comments (attach additional sheets as necessary)

_____

_____

_____

C. Complete the certification for all borrow/excavation disposal site requests. Submit the request to the Project Engineer/Supervisor.

Certification

The Contractor hereby certifies that the proposed borrow or disposal site, as described above, has valid permits for the Contractor's proposed operations at the site in accordance with all local, state and federal laws and that the Contractor will only perform those operations at the site that are permitted.

Signed: _____ Title: _____

Printed Name: _____ Date: _____

Indiana Department of Transportation
Request for Approval of Borrow or Disposal Site

Part II. – Review and Approval *(To be completed by the Project Engineer/Supervisor)*

The Contractor's request for approval of borrow or disposal site has been reviewed and is

☐ Approved

☐ Rejected

with the following comments (attach additional sheets as necessary.

_____

_____

_____

_____

_____

The Department's approval of this request is only for compliance with the contract provisions and in no way relieves the Contractor of any obligations under any local, state or federal regulations.

Signed: _____ Title: _____

Printed Name: _____ Date: _____

Cc: District Construction
District Environmental Scientist
Contractor
File

108-C-192 TEMPORARY EROSION CONTROL MEASURES

(Revised 03-20-08)

The Standard Specifications are revised as follows:

SECTION 108, BEGIN LINE 107, DELETE AND INSERT AS FOLLOWS:

An amended Erosion Control Plan shall be submitted in accordance with 327 IAC 15-5 for those areas not included in the Department submittal ~~or~~ as necessary for changes initiated by the Contractor. Items to include consist of sequencing of operations, *soil stockpile sites, equipment storage sites, batch plant sites* ~~borrow and disposal areas,~~ and haul roads as well as any revision to the Department's submittal. ~~*If borrow and stockpile sites are used, the Contractor shall indicate the erosion and sediment control measures to be implemented and the sequencing of the erosion and sediment control measures to be used on the sites. The Contractor shall also state where the spoil from the project, if any, will be placed. The Contractor shall provide this information following the guidelines for Rule 5 (327IAC 15-5).*~~

Borrow and disposal sites shall be in accordance with 203.08.

The Contractor shall ~~*also*~~ *submit* ~~*a*~~ *the planned sequencing of* ~~*the*~~ *erosion and sediment control measures to be used on the project to:*

IDEM	*Indiana Dept. of Transportation*
Rule 5 Coordinator	*Rick Phillabaum*
100 N. Senate Avenue	*Room N642*
Mail Code 65-42 Rm 1255	*100 N. Senate Avenue*
Indianapolis, IN 46204	*Indianapolis, IN 46204*

When required by 327 IAC 15-5, ~~*The borrow,*~~ *stockpile*~~*,*~~ *and* ~~*spoil*~~ *storage sites* ~~*must*~~ *shall be permitted by* ~~*the*~~ *an IDEM Notice of Intent*~~*,*~~ *(NOI). The Contractor shall submit either a new IDEM NOI or revise the original NOI for the project. A copy of the* ~~*revised NOI or*~~ *the new or revised NOI shall be* ~~*given*~~ *submitted to the Engineer prior to any operations at a stockpile or storage site.*

All required information shall be submitted and approved prior to land disturbing activities. All appropriate erosion control items shall be in place prior to disturbing the project site. A copy of the amended plan shall be provided to the Engineer.

The Contractor shall designate one or more of its employees *as an Erosion Control Supervisor. The Erosion Control Supervisor shall* ~~to~~ be responsible for the preparation, submittal, and ensuring receipt of the approval of the amended erosion control plan. Such individual(s) shall also be responsible for obtaining all other necessary permits including the wetland inspection and archaeological record check and field survey in accordance with 203.08, and for all environmental inspections. Such individual(s) shall oversee the installation of all erosion control measures and shall conduct ~~regular~~ *weekly and post-event* inspections *and perform all other tasks related to the installation, maintenance, and removal of erosion control measures. The Erosion*

Control Supervisor shall accompany personnel from IDEM or other governmental agencies, as required, during site visits by those agencies. ~~And~~ *The Erosion Control Supervisor shall be responsible for* completion of all reports in accordance with 205.

A minimum of ~~*10*~~ *14 days prior to commencing work, the Contractor shall prepare and submit to the Engineer, for approval, an erosion control plan that includes, at a minimum, the following items:*

(a) Locations of all proposed soil stockpiles~~*, borrow areas, or disposal areas*~~*.*

(b) Locations of all proposed ~~*vehicle and*~~ *equipment* ~~*parking*~~ *storage areas,* ~~*vehicle and equipment*~~ *fueling locations,* ~~*placement of the site*~~ *construction trailers,* ~~*location of all*~~ ~~*on site*~~ *batch plants*~~*,*~~ *and designated concrete truck washout areas.*

(c) Proposed construction sequence and phasing of erosion control measures.

(d) Location of all construction entrances where vehicles and equipment will enter and exit the site.

(e) Material handling and spill prevention plan, which shall include a list of expected materials that may be present on the site during construction operations, as well as a written description of how these materials will be handled to minimize the potential that the materials may enter the storm water runoff from the site.

(f) Statements that the erosion control measures for the project shall, at a minimum, be inspected on a weekly basis and within 24 h of every 1/2 in. (13 mm) rain event.

(g) Monitoring and maintenance plan for erosion control measures.

The erosion control plan shall be signed by the Erosion Control Supervisor. The Engineer will submit the erosion control plan~~*, for approval, to IDEM through*~~ *to the Department's Office of Environmental Services Permit Coordinator.*

The name~~(s)~~ of the ~~designated individual(s)~~ *Erosion Control Supervisor* shall be furnished the Engineer at, or prior to, the preconstruction meeting. Should the designated individual(s) need to be replaced during the contract, replacements shall be designated within seven calendar days and notification shall be furnished the Engineer.

Permanent erosion control measures shall be incorporated into the work at the earliest practicable time as the construction progresses to stabilize the site.

In order to minimize pollution to bodies of water, the practices and controls set out below shall be followed.

(a) When work areas are located in or adjacent to bodies of water, such areas shall be separated by a dike or other barrier to keep contained. Sediment disturbance of these bodies of waters shall be minimized during the construction and removal of such barriers.

(b) All waterways shall be cleared as soon as practicable of false-work, temporary piling, debris, or other obstructions placed during construction operations.

(c) Water from aggregate washing or other operations containing sediment shall be treated by filtration, a settling basin, or other means sufficient to reduce the sediment content.

(d) Pollutants such a fuels, lubricants, asphalt, sewage, wash water, or waste from concrete mixing operations, and other harmful materials shall not be discharged into existing bodies of water.

(e) All applicable regulations and statutes relating to the prevention and abatement of pollution shall be complied with in the performance of the contract.

SECTION 108, AFTER LINE 177, INSERT AS FOLLOWS:

The cost of preparation of the erosion control plan shall be included in the cost of the various erosion and sediment control items.

SECTION 205, AFTER LINE 33, INSERT AS FOLLOWS:

Temporary erosion control measures shall be placed as soon as possible. Silt fence and sediment traps shall be installed prior to beginning earth disturbing activities.

Temporary seeding shall be placed on disturbed areas that are expected to be undisturbed for over 7 days or as directed by the Engineer.

Check dams shall be installed as soon as possible in areas of construction. Once ditches are to grade, permanent erosion control measures shall be placed as soon as possible and no later than 5 workdays after ditch grading is completed. During construction, if ditch flow patterns change, erosion control measures may need to be moved or adjusted so that no areas are left unprotected.

Pipe end sections and anchors shall be placed when the structure is installed. If the pipe end sections or anchors cannot be placed at the same time, temporary riprap splashpads shall be placed at the outlets of the pipes until the pipe end sections or anchors can be placed.

SECTION 205, AFTER LINE 108, INSERT AS FOLLOWS:

(o) Stable Construction Entrance

The Contractor shall provide a stable construction entrance at the points where construction traffic will enter onto an existing road. This entrance shall be a minimum of 12 ft wide, 50 ft long, and constructed of 12 in. of No. 2 stone. The radii shall be large enough to accommodate the vehicles utilizing the entrance. Additional stone may be required, as directed, to maintain the usefulness of the stable construction entrance. Where there in insufficient room for a stable construction entrance, other measures shall be taken to prevent the tracking of sediment onto the pavement.

SECTION 205, AFTER LINE 118, DELETE AND INSERT AS FOLLOWS:

205.04 Maintenance

Temporary erosion and sediment control measures shall be inspected by the Contractor*'s Erosion Control Supervisor* once every seven days and after *each* rain ~~activities~~ *activity*. Inspections shall be documented and records shall be maintained by the Contractor, to be made available for review upon request. Records shall include, at a minimum, the date, the inspector's name, the maintenance and corrections needed based on this inspection, and the status of previously identified deficiencies. The temporary protection measures shall be returned to good working conditions within 48 hours after inspection or as directed. Sediment shall be removed as approved and disposed of in accordance with 201.03 and 203.08. *Inspection records shall be kept until the entire contract is complete and has been permanently stabilized.*

SECTION 205, AFTER LINE 148, INSERT AS FOLLOWS:

No. 2 stone for stable construction entrances will be measured by the ton (megagram) in accordance with 109.01(b).

SECTION 205, LINE 166, INSERT AS FOLLOWS:

for at the contract unit price per each unit installed. *No. 2 stone for stable construction entrances will be paid for at the contract unit price per ton.*

SECTION 205, AFTER LINE 176, INSERT AS FOLLOWS:

No. 2 Stone .....TON (Mg)

SECTION 205, AFTER LINE 213, INSERT AS FOLLOWS:

The cost of constructing, maintaining, and removal of the stable construction entrance shall be included in the cost of No. 2 stone.

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The following issues require revisions to sections 401, 402, 410, 902 & 904:

1. AASHTO T 331 (Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing) -- This test procedure replaces the current test method (ASTM D 6752) for the bulk specific gravity of OG 19.0 and OG 25.0 mixtures. The AASHTO procedure has a check on a possible leak in the bag by requiring the weight of the specimen after weighing-in-water to be within -0.08% and +0.04% of the weight of the initial mass of specimen. This is a more accurate procedure than the current specification requirement of a 5 minute time period for duration of test and requirement that the test is considered invalid if the specimen exceeds 5 g from the initial mass of the specimen.
2. AASHTO T 209 (Theoretical Maximum Specific Gravity and Density of Hot-Mix Asphalt Paving Mixtures) -- The reference to Section 9.5.1 was added to be consistent with the current specification for the appeal maximum specific gravity requirement of 401.20(a) and to emphasize that the maximum specific gravity test is required to be conducted by the weighing-in-water method.
3. Binder Grade Change -- The INDOT laboratory binder study indicated that there is an insignificant change in the volumetric properties when there is a change in the grade of asphalt for the same aggregate structure. Requiring a new mix design for a binder grade change is not needed. Since the volumetric properties are verified from samples taken from the pavement, there is a final check on the HMA.

   Since a higher upper temperature classification of the PG grade will normally result in higher Tensile Strength Ratio (TSR) values, AASHTO T 283 for moisture susceptibility will be required if the original mix design upper temperature classification of the PG grade is higher than the requested PG grade (i.e., original PG 70 mix design and requesting a mix design with PG 64 will require a TSR value to be determined for the PG 64 grade mixture).

   A new DMF is required to be submitted and reference the original mix design for a binder grade change with the same aggregate structure.

   Binder Source Change -- The INDOT laboratory binder study also indicated that there is an insignificant change in volumetric properties when the asphalt grade source is changed. Currently a new mixture design is not required for a change in the source for PG 58-28 or PG 64-22 binders. This revision will not require a new mix design for a change in any grade of binder.

   A copy of the load ticket identifying the binder source is required to be submitted with the sublot binder samples to allow improved tracking of the source of the binders
4. Mixture Adjustment Factor (MAF) -- The MAF value is used to define the planned quantity, lay rate, and pay quantity for HMA. Currently if the MAF value is outside of the 0.980 and 1.020 range, the actual calculated value is used. This procedure has resulted in several instances where Contractors have been forced to ship aggregates long distances rather than use localized material. By making the adjustment more gradual, more localized

aggregates will be used and a reduced cost of the HMA should be obtained.

5. Moisture Content -- We have not required moisture tests for HMA and SMA mixtures in 2006 or 2007 through a Special Provision because our experience with moisture tests is that they rarely fail, and when failures do occur no detrimental effects to the pavement have been observed. The Certified HMA Program requires that moisture tests be monitored as part of the plant QCP. Also, Sections 401.10 and 410.10 require removal of HMA or SMA when flushing or bleeding is evident, which is a common occurrence with excessive moisture. This addition to the Special Provision is to reemphasize that no moisture test is required.
6. Certificate of Compliance -- The requirement for a Certificate of Compliance for paving equipment implies that there is a form or format for this document and there is none. The revision to just "written documentation" will require that the Contractor submit any document as long as the document includes the manufacturer's make, model, serial number, manufactured year, and the manufacturer's literature with pictures of the paving equipment.
7. AASHTO T 166 (Bulk Specific Gravity of Compacted Hot-Mix Asphalt Using Saturated Surface-Dry Specimens) -- Method A was added to AASHTO T 166 to require the bulk specific gravity to be conducted by weighing the sample in a water bath rather than in a volumeter as required by Method B.
8. The bulk specific gravity and maximum specific gravity samples are dried in accordance with ITM 572. The current specification states that the maximum specific gravity is prepared in accordance with ITM 572 which indicates that the sample is reduced in size by ITM 572.
9. Fine Aggregate Angularity (FAA) -- A statement was added to not require the FAA test for open graded mixtures. A small amount of fine aggregate is normally added to open graded mixtures to have enough aggregate to absorb the heat in the plant dryer to prevent the dryer flame from possibly causing a fire in the plant baghouse. The intent of open graded mixtures is not compromised by adding a small amount of fine aggregate; however, the FAA test is not appropriate for the fine aggregate. The purpose of the open graded mixture is to provide a layer that will drain moisture and the air voids required to provide the drainage are measured during production of the mixture. The fine aggregate would not affect the air voids significantly.

PROPOSED SOLUTION: It is recommended that the following revisions be authorized and made effective by Recurring Special Provision 400-R-547. This RSP has currently been in effect since 01-01-08:

1. Replace ASTM D 6752 with AASHTO T 331.
2. Add "Section 9.5.1" to AASHTO T 209 references.
3. Do not require a new mix design for a binder grade or source change
4. Revise MAF adjustments to make adjustments more gradual
5. Remove moisture content requirements
6. Change "Certificate of Compliance" to "written documentation"
7. Add "Method A" to the AASHTO T 166 references
8. Revise specifications to state that the bulk specific gravity and maximum specific gravity samples are dried in accordance with ITM 572.
9. Remove the FAA requirement for open graded mixtures

RSP 400-R-547 is included with this proposal. Note that each section of the RSP includes a reference to a specific proposal item from this document to aid in review of the provision.

APPLICABLE STANDARD SPECIFICATIONS: 401,402,410, 902, 904

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: Section 13

APPLICABLE RECURRING SPECIAL PROVISIONS: 400-R-547 HMA REVISIONS FOR 2008

Submitted By: Ron Walker

Title: Manager of Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x204

Date: 02-26-08

APPLICABLE SUB-COMMITTEE ENDORSEMENT? This material is recommended by the INDOT/APAI Technical Committee.

REVISION TO RECURRING SPECIAL PROVISION

01-01-08

400-R-547 HMA REVISIONS FOR 2008

(Adopted 12-13-07)

The Standard Specifications are revised as follows:

SECTION 401, LINE 77, DELETE AND INSERT AS FOLLOWS: *(Proposal Item 1)*

~~Bulk Specific Gravity of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing .....ASTM D 6752~~

Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing ..... AASHTO T 331

SECTION 401, LINE 90, INSERT AS FOLLOWS: *(Proposal Item 2)*

The optimum binder content for dense graded mixtures shall produce 4.0% air voids at N_{des} and for open graded mixtures shall produce 15.0% – 20.0% air voids at N_{des}. The design for dense graded mixtures shall have at least four points, including a minimum of two points above and one point below the optimum. A one point design may be used for open graded mixtures. The maximum specific gravity of the uncompressed mixture shall be determined in accordance with AASHTO T 209, *Section 9.5.1*.

SECTION 401, LINE 108, DELETE AND INSERT AS FOLLOWS:
(Proposal Items 3 & 4)

A PG binder grade or source change will not require a new mix design. If the upper temperature classification of the PG binder is lower than the original PG grade, a new TSR value is required. A new DMF shall be submitted for a binder grade change and shall reference the originating DMF/JMF number.

The MAF equals the Gmm from the mixture design divided by the following: 2.465 for 9.5 mm mixtures and 2.500 for 12.5 mm, 19.0 mm, and 25.0 mm mixtures. If the MAF calculation results in a value where $0.980 \leq MAF \leq 1.020$, then the MAF shall be considered to be 1.000. ~~If the calculated MAF is outside of the above range, then the actual calculated value shall be used.~~ *If the MAF is greater than 1.020, the calculated MAF value shall have 0.020 subtracted from the value. If the MAF is less than 0.980, the calculated MAF value shall have 0.020 added to the value.* The MAF does not apply to OG mixtures.

SECTION 401, LINE 119, DELETE AS FOLLOWS: *(Proposal Item 3)*

~~Changes in the source of specified binders, except for PG 58-28 or PG 64-22, shall require a new DMF. Changes in the grade of a specified binder shall require a new DMF.~~

SECTION 401, LINE 178, DELETE AS FOLLOWS: *(Proposal Item 5)*

Acceptance of mixtures for binder content, VMA at N_{des}, and air voids at N_{des} for each lot will be based on tests performed by the Engineer. ~~Acceptance testing for surface mixtures will include tests for moisture content.~~ The Engineer will randomly select the location(s) within each sublot for sampling in accordance with ITM 802. An acceptance sample will consist of two plate samples with the first being at the random location and

the second 2 ft (0.6 m) ahead station. A backup sample consisting of two plate samples shall be located 2 ft (0.6 m) towards the center of the mat from the acceptance sample. ~~For surface mixtures, an additional sample shall be located 2 ft (0.6 m) back station from the random sample location.~~

SECTION 401, LINE 201, DELETE AND INSERT AS FOLLOWS:
(Proposal Item 1 & 7)

The bulk specific gravity of gyratory specimens for dense graded mixtures will be determined in accordance with AASHTO T 166, *Method A* except samples are not required to be dried overnight. The bulk specific gravity of gyratory specimens for open graded mixtures, OG19.0, OG25.0, will be determined in accordance with ~~ASTM D 6752, except as follows. The duration of the test from initiating the vacuum extraction to weighing the specimen after the water bath will not exceed five minutes. The mass of water absorbed by the specimen while in the water bath will be subtracted from the mass of the specimen obtained in the water bath. Any test in which the mass of water absorbed by the specimen exceeds 5 g is invalid~~ *AASHTO T 331*.

SECTION 401, LINE 211, DELETE AND INSERT AS FOLLOWS: *(Proposal Item 1)*

The mixture properties for each sublot shall meet the requirements for the tolerances from the JMF as shown in the table as follows:

ACCEPTANCE TOLERANCES	
MIXTURE PROPERTIES	TOLERANCES FROM THE JMF
DENSE GRADED	
Air Voids	JMF ± 1.0%
Binder Content	JMF ± 0.5%
VMA	JMF ±1.0%
OPEN GRADED	
Air Voids*	JMF ± 3.0%
Binder Content	JMF ± 0.5%
* Gmb will be determined in accordance with ~~ASTM D 6752~~ *AASHTO T 331*	

SECTION 401, LINE 215, DELETE AS FOLLOWS: *(Proposal Item 5)*

~~The maximum percent of moisture in the mixture shall not exceed 0.10 from plate samples.~~

SECTION 401, LINE 225, DELETE AND ADD AS FOLLOWS: *(Proposal Item 5)*

Air voids, binder content and VMA values will be reported to the nearest 0.1%. ~~Moisture and d~~*D*raindown test results will be rounded to the nearest 0.01%. Rounding will be in accordance with 109.01(a).

SECTION 401, LINE 245, DELETE AND INSERT AS FOLLOWS: *(Proposal Item 6)*

Equipment for HMA operations shall be in accordance with 409. The Contractor shall submit to the Engineer ~~a~~ written ~~Certificate of Compliance~~ *documentation* that includes the manufacturer's make, model, serial number, manufactured year, and the manufacturer's literature with pictures. The ~~Certificate of Compliance~~ *documentation* shall be submitted prior to use and shall certify that the paving equipment proposed for the project is new and includes the modifications or have been modified in accordance with the following.

SECTION 401, LINE 403, DELETE AND INSERT AS FOLLOWS:
(Proposal Items 2, 7 & 8)

The density for the mixture will be expressed as the percentage of maximum specific gravity (%MSG) obtained by dividing the average bulk specific gravity by the maximum specific gravity for the sublot, times 100. *Samples for the bulk specific gravity and maximum specific gravity will be dried in accordance with ITM 572.* The Engineer will determine the ~~BSG~~ *bulk specific gravity* of the cores in accordance with AASHTO T 166, *Method A*. The maximum specific gravity will be determined in accordance with AASHTO T 209*, Section 9.5.1* ~~from samples prepared in accordance with ITM 572~~. The target value for density of dense graded mixtures of each sublot shall be 92.0%.

SECTION 401, LINE 614, INSERT AS FOLLOWS: *(Proposal Item 7)*

Additional cores shall be taken within seven calendar days unless otherwise directed. Additional core locations will be determined by adding 1.0 ft (0.3 m) longitudinally of the cores tested using the same transverse offset. The appeal density cores will be tested in accordance with AASHTO T 166*, Method A*.

SECTION 402, LINE 52, DELETE AND INSERT AS FOLLOWS: *(Proposal Item 4)*

The MAF equals the Gmm from the mixture design divided by the following: 2.465 for 9.5 mm mixtures and 2.500 for 12.5 mm, 19.0 mm, and 25.0 mm mixtures. If the MAF calculation results in a value where $0.980 \leq MAF \leq 1.020$, then the MAF shall be considered to be 1.000. ~~If the calculated MAF is outside of the above range, then the actual calculated value shall be used.~~ *If the MAF is greater than 1.020, the calculated MAF value shall have 0.020 subtracted from the value. If the MAF is less than 0.980, the calculated MAF value shall have 0.020 added to the value.* The MAF does not apply to OG mixtures.

SECTION 402, LINE 346, INSERT AS FOLLOWS: *(Proposal Item 2 & 7)*

The Engineer will determine the bulk specific gravity of the cores in accordance with AASHTO T 166*, Method A.*. The maximum specific gravity will be determined in accordance with AASHTO T 209*, Section 9.5.1*. Density shall not be less than 92.0%.

SECTION 410, LINE 84, INSERT AS FOLLOWS: *(Proposal Item 2)*

The optimum binder and aggregate gradation content shall produce 4.0% air voids. The maximum specific gravity of the uncompacted mixture shall be determined in accordance with AASHTO T 209*, Section 9.5.1.*. The percent draindown for SMA surface mixture shall not exceed 0.30% in accordance with AASHTO T 305.

SECTION 410, LINE 89, DELETE AND INSERT AS FOLLOWS: *(Proposal Item 4)*

The MAF equals the Gmm from the mixture design divided by the following: 2.465 for 9.5 mm mixtures and 2.500 for 12.5 mm, 19.0 mm, and 25.0 mm mixtures. If the MAF calculation results in a value where $0.980 \leq MAF \leq 1.020$, then the MAF shall be considered to be 1.000. ~~If the calculated MAF is outside of the above range, then the actual calculated value shall be used.~~ *If the MAF is greater than 1.020, the calculated MAF value shall have 0.020 subtracted from the value. If the MAF is less than 0.980, the calculated MAF value shall have 0.020 added to the value.* The MAF does not apply to OG mixtures.

SECTION 410, LINE 137, DELETE AS FOLLOWS: *(Proposal Item 5)*

Acceptance of mixtures for binder content, ~~moisture,~~ and gradation for each lot will be based on tests performed by the Engineer. The Engineer will randomly select the location(s) within each sublot for sampling in accordance with ITM 802.

Samples from each location shall be obtained from each sublot from the pavement in accordance with ITM 580. ~~The second sample shall be located from the random sample by offsetting 1 ft (0.3 m) transversely towards the center of the mat and will be used for the moisture sample.~~ The test results of the sublots will be averaged and shall meet the requirements for tolerances from the JMF for each sieve and binder content.

~~The maximum percent of moisture in the mixture shall not exceed 0.10 from plate samples.~~

SECTION 410, LINE 170, DELETE AS FOLLOWS: *(Proposal Item 5)*

Single test values and averages will be reported to the nearest 0.1% ~~except moisture will be reported to the nearest 0.01%~~. Rounding will be in accordance with 109.01(a).

SECTION 410, LINE 313, INSERT AS FOLLOWS:
(Proposal Item 2, 7 & 8)

The density of the mixture will be expressed as the percentage of maximum specific gravity (%MSG) obtained by dividing the average bulk specific gravity by the maximum specific gravity for the sublot, times 100. *Samples for the bulk specific gravity and maximum specific gravity will be dried in accordance with ITM 572.* The Engineer will determine the BSG of the cores in accordance with AASHTO T 166, *Method A*. The maximum specific gravity will be determined in accordance with AASHTO T 209, *Section 9.5.1*. ~~from plant produced materials prepared in accordance with ITM 572.~~ The target value for density of SMA mixtures of each sublot shall be 93.0%.

The Engineer will determine the bulk specific gravity of the cores in accordance with AASHTO T 166, *Method A.* The maximum specific gravity will be determined in accordance with AASHTO T 209, *Section 9.5.1.* Density shall not be less than 92.0%.

SECTION 902, LINE 22, DELETE AND INSERT AS FOLLOWS: *(Proposal Item 3)*

~~Each Sample~~ *An acceptance sample and backup sample* shall be taken from the asphalt delivery system at the HMA plant. ~~Each sample~~ *The two samples* will represent a sublot. *A copy of a load ticket identifying the binder source shall be submitted with the sublot samples.* The Department will randomly select one sublot from each lot in accordance with ITM 802 for either complete or partial testing. If the sublot selected is in compliance, the lot will be accepted. If the sublot is not in compliance, the material will be adjudicated as a failed material in accordance with 105.03.

SECTION 904, LINE 127, INSERT AS FOLLOWS: *(Proposal Item 9)*

The fine aggregate angularity value shall not apply to OG mixtures.

REVISION TO RECURRING SPECIAL PROVISION

400-R-547 HMA REVISIONS FOR 2008 (CONTINUED).

Other sections containing specific cross references:

401,402,410, 902, 904

Recurring Special Provisions potentially affected:

See Above

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Current special provision needs to be updated. Existing special provision limits material to one manufacture type, does not strictly prohibit fabrication on-site using roll stock or non-standard material, references outdated standards, needs clarification of use and payment for PVC coated product. Existing special provision lacks straightforward material certification guidance and lacks complete construction guidance.

PROPOSED SOLUTION: Allow use of both twisted wire and welded wire products. Prohibit on-site fabrication from roll stock or non-standard material. Provide clear construction guidance. Provide clear materials certification requirements. Ensure that all AASHTO, ASTM or other specification references are current and accurate. Include separate pay item for PVC coated gabions and metallic coated gabions.

APPLICABLE STANDARD SPECIFICATIONS: 203, 206, 616, 625, 904

APPLICABLE STANDARD DRAWINGS: NONE

APPLICABLE DESIGN MANUAL SECTION: Chapters 30, 38

APPLICABLE SECTION OF GIFE:NONE CURRENTLY

APPLICABLE RECURRING SPECIAL PROVISIONS:625-R-194

Submitted By: Ron Heustis

Title: Manager, Construction Technical Supportr

Organization: Division of Construction Management, Construction Technical Support

Phone Number: 317 232 2777

Date: February 29, 2008

APPLICABLE SUB-COMMITTEE ENDORSEMENT? Wall Committee, Ad Hoc Committee for Review of Draft Gabion Specification, ICA

REVISED RECURRING SPECIAL PROVISION

625-R-194 GABIONS AND REVET MATTRESSES

(Revised XX-XX-XX)

The Standard Specifications are revised as follows:

SECTION 625, BEGIN LINE 1, INSERT AS FOLLOWS:

SECTION 625 – GABIONS AND REVET MATTRESSES

625.01 Description

This work shall consist of riprap filled wire mesh baskets, constructed in accordance with 105.03.

625.02 Submittals

The Contractor shall submit the following information to the Engineer at least 15 days prior to commencing gabion or revet mattress construction.

(a) Type and source of basket material.
(b) Type and source of fastening and miscellaneous materials.
(c) Source of riprap.
(d) Construction method and sequence.
(e) A copy of the basket manufacturer's material and installation recommendations and instructions.

MATERIALS

625.03 Materials

Materials shall be in accordance with the following:

Geotextile 918.02
*Riprap.....904.04**
Twisted Wire Mesh Gabions and Revet Mattresses .....ASTM A 975
Welded Wire Mesh Gabions and Revet Mattresses.....ASTM A 974

** Riprap shall be uniform riprap A in accordance with 904.04(f).*

(a) Baskets, Fasteners, Spiral Binders, Lacing Wire and Stiffeners

Metallic coated gabion or revet mattress baskets may be fabricated from either twisted or welded wire mesh in accordance with ASTM A 974 Style 1, 2, 3 or 4 or in accordance with ASTM A 975 Style 1, 2 or 4.

PVC coated gabion or revet mattress baskets may be fabricated from either twisted or welded wire mesh in accordance with ASTM A 974 Style 5 or in accordance with ASTM A 975 Style 3.

The Contractor may select baskets from any of the mesh types and styles listed above, however, the same mesh type and style shall be used throughout a gabion or revet mattress structure. Baskets shall be prefabricated by the manufacturer and assembled in the field. Fabrication of baskets on site from stock materials will not be permitted.

Fasteners, spiral binders, lacing wire and stiffeners shall be of the same style and shall satisfy the same requirements as those for the selected baskets.

A Type A certification in accordance with 916 shall be provided for all components used in assembly of the baskets, including fasteners, spiral binders, lacing wire and stiffeners prior to use of the materials. The certification for material selected in accordance with ASTM A 974 shall include the following tests and results:

1. *Diameter in inches (millimeters) of metallic coated wire for all components.*
2. *Diameter in inches (millimeters) of PVC coated wire, if applicable, both prior to and after coating for all components.*
3. *Mechanical properties in accordance with ASTM A 974 section 7.*
4. *Physical properties in accordance with ASTM A 974 section 8.*
5. *Dimensional tolerances in accordance with ASTM A 974 section 9.*

The certification for material selected in accordance with ASTM A 975 shall include the following results:

1. *Mesh characteristics in accordance with ASTM A 975 section 6.*
2. *Mechanical properties in accordance with ASTM A 975 section 7.*
3. *Physical properties in accordance with ASTM A 975 section 8.*
4. *Dimensional tolerances in accordance with ASTM A 974 section 9.*

(b) Soil Anchor Stakes

Soil anchor stakes for revet mattresses shall be in accordance with the revet mattress manufacturer's recommendations.

A Type C certification in accordance with 916 shall be provided for soil anchor stakes prior to installation. The certification shall state that the soil anchor stakes supplied satisfy the testing requirements set out in the revet mattress manufacturer's recommendations.

CONSTRUCTION REQUIREMENTS

625.04 Construction

Excavation for gabion or revet mattress basket foundations shall be as shown on plans and in accordance with 203.08 and 206.01 through 206.09. Excavation for toe walls or cut-off walls shall be made to the neat lines as shown on the plans.

Where required, geotextile fabric shall be placed in accordance with 616.11 on the foundation prior to basket placement. Baskets shall be founded on the geotextile lined bed and laid to the lines and dimensions specified.

Gabion and revet mattress baskets shall be placed as shown on the plans. Baskets shall be assembled, connected and filled in accordance with the manufacturer's recommendations and these specifications.

Riprap shall be placed in close contact in the baskets so that maximum fill is obtained. Vertically exposed faces of the baskets shall be hand filled with larger aggregate. Aggregate shall be placed in 12 in. (300 mm) lifts so as to minimize basket

distortion and damage to basket coating. Fill height differential between adjacent baskets shall not exceed 12 in. (300 mm) during construction. Twisted wire baskets shall be overfilled by 1 in. (25 mm) to 2 in. (50 mm) to allow for settlement. Welded wire baskets do not require overfilling. The baskets may be machine filled by handwork as required to accomplish the requirements herein.

625.05 Method of Measurement

Gabion and revet mattress baskets will be measured by the cubic yard (cubic meter) of riprap required to fill the baskets in place. Geotextiles will be measured in accordance with 616.12.

625.06 Basis of Payment

Gabion and revet mattress baskets will be paid for at the contract unit price per cubic yard (cubic meter). Geotextiles will be paid in accordance with 616.13. Excavation of rock that is not identified in the contract and is encountered within the limits of the foundation will be paid for in accordance with 104.03.

Payment will be made under:

Pay Item	***Pay Unit Symbol***
Gabions, Metallic Coated	*CYS (m3)*
Gabions, PVC Coated	*CYS (m3)*
Geotextiles	*SYS (m2)*
Revet Mattress, Metallic Coated	*CYS (m3)*
Revet Mattress, PVC Coated	*CYS (m3)*

The cost of furnishing the wire mesh baskets, spiral binders, lacing wire, stiffeners, tie and connecting wire, selvedges, riprap material for filling the wire mesh baskets, soil anchor stakes for the wire mesh baskets, and all labor, materials and equipment required to furnish and install gabions or revet mattresses shall be included in the cost of the pay item.

The cost of excavation for foundations shall be included in the cost of the gabion or revet mattress pay items.

REVISED RECURRING SPECIAL PROVISION

625-R-194 GABIONS AND REVET MATTRESSES (CONTINUED).

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

See Above

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

(OLD RECURRING SPECIAL PROVISION)

12-12-07

625-R-194 GABIONS

(Revised 12-07-07)

The Standard Specifications are revised as follows:

SECTION 625, BEGIN LINE 1, INSERT AS FOLLOWS:

SECTION 625 – GABIONS

625.01 Description

This work shall consist of riprap filled wire mesh cages, constructed in accordance with 105.03.

MATERIALS

625.02 Materials

Materials shall be in accordance with the following:

All wire used in the manufacture and assembly of the mesh shall be in accordance with or shall exceed the requirements of ASTM A 641 including Finish 5, Class 3 weight of zinc coating.

All wire used in the manufacture and assembly of PVC coated gabions and mattresses shall, after zinc coating, having extruded onto it a coating of polyvinyl chloride. The coating shall be gray in color, of nominal thickness of 0.02165 in. (0.5499 mm). The coating thickness shall not be less than 0.015 in. (0.381 mm). The coated wire shall be capable of resisting deleterious effects of salt spray, UV rays, and abrasion. It shall not show significant material difference in its initial characteristics after 3000 hours of accelerated exposure in accordance with ASTM B 117, ASTM D 1499, and ASTM G ~~23152, and after 200 cycles in accordance with ASTM D 1242, Method B~~.

Galvanized wire mesh for gabions of cage thickness of 12 in. (300 mm) or greater shall be nominal 11 gage soft temper steel made of hexagonal double twist mesh. The wire mesh shall be nominal 12 gage with PVC coating.

Wire for mattress mesh of cage thickness up to 12 in. (300 mm) shall be nominal 13.5 gage soft tempered steel woven into a hexagonal triple twist mesh. The finish diameter of PVC coated wire shall be nominal 0.1299 in. (3.3 mm).

Samples for testing shall include at least one sample of each component of the mesh.

Tie and connecting wire shall be supplied for the secure fastening of all edges of the wire mesh cages and diaphragms. Tie and connecting wire shall be nominal 13.5 gage minimum. Gabions used for vertical structures shall be filled to a depth of 12 in. (300 mm). For end units, two connecting wires in each direction shall be tightly tied to opposite faces of the end gabion cell. Internal compartments shall have two connecting

wires, front face to back face of the gabion, on the exposed face. Gabions shall be filled to a further depth of 12 in. (300 mm). Two connection wires shall similarly be tied at this level. Gabions shall then be filled to the top. The gabion shall not be underfilled.

All wire used, including tie and connecting wire, shall be certified by mill test reports showing compliance with specification requirements.

Alternate methods and fasteners for assembling baskets and interconnecting adjacent baskets in lieu of lacing wire shall be acceptable to the gabion manufacturer, and shall be in accordance with the requirements herein. The wire fasteners shall be fabricated from either minimum 11 gage galvanized, hard drawn steel wire in accordance with ASTM A 764, ~~Type~~ Coating Class 3; or minimum 11 gage type 302, stainless steel wire in accordance with ASTM A 313, Class 1. Stainless steel fasteners shall be used with PVC coated gabions.

625.03 Mesh Openings

The maximum linear dimension of the opening shall not exceed 5 in. (125 mm). The area of the mesh opening shall not exceed 10 sq in. (625 mm^2).

625.04 Wire Mesh

Wire mesh shall be woven so as to be non-raveling and to have elasticity. ~~Tests for compliance with these and the following properties shall be in accordance with Colorado Procedure I 6130. A certified test report, showing the required results and information shall be supplied.~~

~~The mesh for gabions shall show no raveling beyond the mesh opening in which a break occurs once the loading is continued after the first break. The test shall be conducted with the pull parallel to the axis of the wire twist.~~

~~For wire mesh cages, when pulled parallel to the axis of the wire twist and deformation is controlled by spreader bars, no wire shall break until the mesh has been stretched at least 4.5%. The pull test shall be performed both parallel and perpendicular to the axis of the wire twist. In either case, the first wire break shall not occur until the loading on the table shown in 625.05 has been reached.~~

Wire mesh shall meet the strength requirements of ASTM A 975.

The edge wire connection strength for both gabions and mattresses shall be similar to that of the mesh.

The selvedge on each sheet of mesh for both gabions and mattresses shall be galvanized steel wire as described above. Selvedge wire for gabions without PVC coating shall be nominal 9 gage minimum. Selvedge wire for gabions with PVC coating shall be nominal 10 gage minimum. Selvedge wire for mattresses with or without PVC coating shall be nominal 12 gage minimum.

The field connection between adjacent wire baskets shall be made while the gabions are empty. Each unit shall be adjoined along the vertical reinforced edges and the top using alternating single and double loops at nominal spacing of 4 in. (100 mm). All joint materials shall develop a connection with a minimum strength of 1,400 lbs/lft

(20 431 N/m) for galvanized gabions and 1200 lbs/lft (17 512 N/m) for PVC coated gabions, when subjected to a pull-apart resistance test.

A type A certification in accordance with 916 for the wire mesh shall be furnished prior to use of the materials.

625.05 Pull-Apart Resistance Test

A set of two identical rectangular gabion panels, each with a width of about 10 mesh openings along a selvedge wire, shall be jointed by means of properly installed wire fasteners along the two selvedge wires so that each fastener confines two selvedge wires and two mesh wires. If the fasteners are also to be used to joint two individual empty gabion baskets, two additional selvedge wires, which are each mechanically wrapped with mesh wires shall be included so that each fastener confines four selvedge wires and four mesh wires. A properly installed fastener shall be in accordance with the requirements as follows:

(a) Each interlocking fastener shall be in a locked and closed position.

(b) Each ring fastener shall be closed. The free ends of the fastener shall overlap a minimum of 1 in. (25 mm).

The jointed panels shall be mounted on a loading machine with grips or clamps such that the panels are uniformly secured along the full width. The grips or clamps shall be designed to transmit only tension forces. The load will then be applied at a uniform rate of 50 lbs (225 N) per second until failure occurs. Failure will be defined as either of the following occurrences.

(a) The maximum load is reached and a drop in strength is observed with subsequent loading.

(b) An opening of greater than 2 in. (50 mm) appears along the panel width between two selvedge wires in a fastener confining either two or four selvedge wires.

The strength of the jointed panels at failure shall be a minimum of 1,400 lbs/lft (20 431 N/m).

TABLE FOR MINIMUM STRENGTH TESTS FOR GABION AND MATTRESS BASKETS

PART	*MINIMUM STRENGTH Lb/lft (N/m)*		
	GABIONS		*MATTRESSES*
	WITHOUT PVC	*WITH PVC*	*WITH OR WITHOUT PVC*
Mesh pulled parallel to wire twist	*2000 (29 188)*	*2000 (29 188)*	*2000 (29 188)*
Mesh pulled perpendicular to wire	*1000 (14 594)*	*1000 (14 594)*	*1000 (14 594)*
Connection of selvedge wire to mesh	*1400 (20 431)*	*~~1400~~ 1200 (17 512)*	*900 (13 135)*

Gabions or mattresses shall be as shown on the plans and uniform in size.

All gabion and mattress dimensions will be subject to a tolerance limit of ± 5% of the manufacturer's stated sizes. However, a tolerance of ± 10% will be permitted for the height of mattresses.

A type A certification in accordance with 916 for the gabions or mattress shall be furnished prior to use of the materials.

625.06 Riprap

Riprap for filling wire mesh cages shall be in accordance with the applicable requirements of 904 except as follows:

(a) Riprap shall consist of hard, dense, sound, rough fractured stone or local sandstone, as nearly cubical as practicable. Thin slab type stones and flaking rock shall not be used.

~~*(b) Stones shall have a specific gravity of at least 2.25 and shall be resistant to the action of air and water. Flaking or fragmental rock will not be permitted.*~~

(b) The sizes of riprap stone for gabions shall be 3 to 6 in. (75 to 150 mm) for a gabion thickness of 12 in. (300 mm) or greater, and 3 to 6 in. (75 to 150 mm) for a mattress thickness of less than 12 in. (300 mm).

625.07 Soil Anchor Stakes

Soil anchor stakes for wire mesh mattresses shall be steel and shall include the components as follows:

(a) Steel pipe of 2 in. (50 mm) in size, either black or galvanized, in accordance with ~~*ASTM A 120*~~ *ASTM A53.*

(b) Structural steel angles L 3 x 3 x 3/8 in. (L 76 x 76 x 9.5 mm) in accordance with ASTM A 36.

A type A certification in accordance with 916 for the soil anchor stakes shall be furnished prior to use of the materials.

CONSTRUCTION REQUIREMENTS

625.08 Construction

Gabions and mattresses shall be placed as shown on the plans. Riprap shall be placed in close contact in the wire mesh cage units so that maximum fill is obtained. The units may be machine filled with sufficient handwork to accomplish the requirements herein.

The vertical exposed faces of the gabions shall be hand filled with larger stones. An effort shall be made to place the stones so as to limit basket distortion as much as possible.

Where the length of the unit exceeds 1.5 times its horizontal width, the cage shall be equally divided with diaphragms of the same mesh and gage as the body into cells whose length does not exceed the horizontal width. The unit shall be furnished with the necessary diaphragms secured in proper position on the base section such that no additional fasteners or tie wire at such juncture will be necessary.

All perimeter edges of gabion cages shall be securely selvedged or bound such that the joints formed by tying the selvedges have a minimum strength of 1400 lbs/lft (20 431 N/m) for galvanized gabions, and 1200 lbs/lft (17 512 N/m) for PVC gabions.

After the foundation soils have been excavated to the width, line, and grades specified and the Engineer determines that a suitable foundation exists for installation of the geotextiles and subsequent construction of the gabions, the Contractor shall install the geotextiles in accordance with 616.11. The gabions shall then be founded on the geotextile lined bed and laid to the lines and dimensions specified or as directed.

Excavation for toewalls or cut-off walls shall be made to the neat lines shown on the plans.

All wire mesh cage units shall be tied together each to its neighbor along all contacting edges in order to form a continuous connecting structure.

625.09 Method of Measurement

This work will be measured by the cubic yard (cubic meter) of riprap required to fill the gabions or mattresses, or as directed, in place. Geotextiles will be measured in accordance with 616.12.

625.10 Basis of Payment

The accepted quantities of riprap measured as set out above will be paid for at the contract unit price per cubic yard (cubic meter) for gabions. Geotextiles will be paid for in accordance with 616.13.

Payment will be made under:

Pay Item	***Pay Unit Symbol***
Gabions	*CYD (m3)*

The cost of furnishing the wire mesh cages, tie and connecting wire, selvedges, riprap material for filling the wire mesh cages, soil anchor stakes for the wire mesh cages, and all labor, materials, equipment, and earthwork shall be included in the cost of the pay item.

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Department has been experiencing poor performance from waterbourne traffic marking paint over the last few years. The current specifications in the 808 section are prescriptive and therefore place all of the risk on the Department as long as the contractor places the markings in accordance with the current specification.

PROPOSED SOLUTION: Create a Recurring Special Provision for performance based traffic paint that sets criteria for retroreflectivity and durability of painted traffic markings. The provision allows for retroreflectivity testing to be done by either INDOT or the contractor. This will allow the contractor additional latitude in when and how to place markings and at the same time move much of the risk for their performance to the contractor. The provision also adds pay adjustment factors and failure criteria that are not present in the current specification.

It is recommended that the RSP be effective for 2 construction seasons to evaluate the specification. After evaluation the spec will be revised as necessary and brought back to the Standards Committee for consideration as a revision to the Standard Specifications.

APPLICABLE STANDARD SPECIFICATIONS: 109, 808, 909

APPLICABLE STANDARD DRAWINGS: Review for any coordination with 808-MKPM-01 thru 06

APPLICABLE DESIGN MANUAL SECTION: Section 76 – review for need for memo to provide direction on when to call for PRS paint.

APPLICABLE SECTION OF GIFE: No current GIFE section. A section should be developed for traffic markings.

APPLICABLE RECURRING SPECIAL PROVISIONS: None

Submitted By: Ron Heustis

Title:

Organization: Construction Management

Phone Number: 317-234-2777

Date: 2/27/08

APPLICABLE SUB-COMMITTEE ENDORSEMENT?

This spec has been developed and recommended by the 800 Sub-Committee with Joe Novak & Tom Harris as co-chairs. Significant input from District Traffic engineers and industry.

Item No. 08-8-6
Mr. Heustis
Date: 3/20/08

NEW RECURRING SPECIAL PROVISION

808-R-XXX PERFORMANCE BASED PAINT PAVEMENT MARKINGS

(Adopted 0X-XX-08)

The Standard Specifications are revised as follows:

SECTION 109, AFTER LINE 643, INSERT AS FOLLOWS:

(f) Pavement Traffic Markings

Quality adjustments will be calculated in accordance with 808.07.

SECTION 808, DELETE LINES 142 THROUGH 172.

SECTION 808, AFTER LINE 172, INSERT AS FOLLOWS:

(a) Traffic Paint

1. Traffic Paint Pavement Markings

These traffic paint markings shall be used for temporary pavement markings or when performance based markings are not specified.

a. Application

Fast dry traffic paint shall be applied only when the pavement temperature is 40°F (5°C) or above. Waterborne traffic paint shall be applied only when the pavement temperature is 50°F (10°C) or above. Fast dry traffic paint will only be permitted between October 1 and the following April 30. Cold temperature waterborne traffic paint shall be applied only when the pavement and ambient air temperature is a minimum of 35°F (2°C) and rising.

The wet film thickness of the traffic paint shall be a minimum of 15 mils (380 µm). Painted lines and markings shall be immediately reflectorized by applying glass beads at a uniform minimum rate of 6 lb/gal. (0.7 kg/L) of traffic paint.

Painted markings on newly constructed surfaces shall receive two applications of paint and glass beads. The second application shall be applied as soon as practical after the first application dries.

b. Equipment

Traffic paint shall be applied with a spray type machine capable of applying the traffic paint under pressure through a nozzle directly onto the pavement. The machine shall be equipped with the following:

(1) an air blast device for cleaning the pavement ahead of the application;
(2) a guide pointer to keep the machine on an accurate line;
(3) spray guns which can be operated individually or simultaneously;
(4) agitator(s);
(5) a control device to maintain uniform flow and application;
(6) capability of heating the material to application temperatures;

(7) an automatic device which will provide a line of the required pattern; and

(8) an automatic glass bead dispenser which is synchronized with the marking application.

A small hand propelled machine, designed for that purpose, may be used to apply pavement markings. A brush may be used if approved to apply some markings.

2. Performance Based Traffic Paint Pavement Markings

The performance based traffic paint pavement markings consist of furnishing and applying longitudinal markings of waterborne traffic paint and glass beads, to HMA and PCC pavements. The performance based traffic paint markings shall only be applied when conditions meet or exceed the manufacture's recommendations. These painted markings shall meet or exceed all performance requirements.

a. Materials

The waterborne traffic paint and glass beads shall be commercially available traffic marking materials which shall be chosen by the Contractor and will not be required to meet the material specifications found in 909.05 or 921.02(e). A certification which shows the paint meets all IDEM and EPA regulatory requirements for VOC levels and lead, chromium or other heavy metals from the paint manufacturer shall be provided. The daytime and nighttime color of the applied markings shall be in accordance with ASTM D 6628 when determined in accordance with ASTM E 811 and E 1349. Acceptance of the materials will also be based on the performance of the applied markings.

b. Application Requirements

The paint manufacturer's recommendations shall be followed in regard to all requirements during application and curing of the pavement markings. The pavement markings shall be protected from traffic until dry to eliminate tracking. The application equipment shall be in accordance with 808.07(a)1b.

The application rates utilized of the paint and glass beads is at the discretion of the contractor provided the minimum wet film thickness of the applied paint is 15 mils and the minimum application of glass beads is 6 pound per gallon of paint. The number of applications of paint and beads shall be as necessary to meet the performance requirements.

c. Performance Requirements

(1) Retro-reflectivity

The painted centerlines and/or edgelines shall meet or exceed minimum average retro-reflectivity measurements. The white pavement markings shall provide a minimum average retro-reflectivity of 250 mcd/m^2/lx. The yellow pavement markings shall provide a minimum average of 175 mcd/m^2/lx. Pavement markings shall be evaluated for retro-reflectivity in a period of not less than 14 to no more than 30 days after the date the materials are applied. The retro-reflectivity shall be measured in accordance with ITM 931. The Engineer will randomly determine the beginning of all sampling zones for the measurement of retro-reflectivity in accordance with ITM 802.

If a pay item, retro-reflectivity testing is included in the contract and performance based traffic paint is specified, retro-reflectivity testing equipment shall be furnished, calibrated, and operated in accordance with ITM 931. The test results produced shall become the property of the Department. The retro-reflectivity equipment shall remain the property of the contractor. When retro-reflectivity testing is not included as a pay item the Department will furnish, calibrate, and operate the testing equipment.

(2) Durability

The pavement markings shall have a minimum resistance to wear of 97% in accordance with ASTM D 913 for a minimum of 90 days after application.

d. Retro-reflectivity Quality Assurance Adjustments

Pavement markings that fail to meet the minimum average retro-reflectivity will have quality adjustments applied to the payment of the markings as follows:

White	*Yellow*	*Quality Adjustment*
>250 mcd/m^2/lx	*>175 mcd/m^2/lx*	*1.00*
225 to 249	-	*0.95*
200 to 224	*150 to 174*	*0.90*
175 to 199	-	*0.85*
150 to 174	*125 to 149*	*0.80*
125 to 149	-	*0.75*
100 to124	*100 to 124*	*0.70*

Pavement marking segments which are found to have an average retro-reflectivity reading of below 100mcd/m^2/lx shall be re-striped with no additional payment. The re-striping shall begin within 14 calendar days of the completion of the retro-reflectivity measurement. Line segments of white pavement markings which have retro-reflectivity measurements between 100 and 249mcd/m^2/lx may be re-striped with no additional payment. Line segments of yellow pavement markings which have retro-reflectivity measurements between 100 and 175mcd/m^2/lx may be re-striped with no additional payment. Following each re-striping, additional retro-reflectivity measurements will be made at no additional payment. Quality assurance adjustments will be based on the final retro-reflectivity measurements. The alignment of all re-striped pavement markings shall be placed within ±0.25 inches in width and ±2.0 inches in length of the original placed markings. No more than two re-stripings will be permitted. If the final average retro-reflectivity measurements is below 100 mcd/m²/lx or the alignment or color tolerances are not in compliance the segment of line will be adjudicated as failed material in accordance with 105.03.

SECTION 808, AFTER LINE 480, INSERT AS FOLLOWS:

Retro-reflectivity testing will not be measured.

NEW RECURRING SPECIAL PROVISION

808-R-XXX PERFORMANCE BASED PAINT PAVEMENT MARKINGS (CONTINUED).

SECTION 808, AFTER LINE 521, INSERT AS FOLLOWS:

Payment for furnishing, calibrating, and operating retro-reflectivity testing equipment will be paid for at the contract lump sum price if the Schedule of Pay Items includes a lump sum pay item for retro-reflectivity testing. Adjustments to the contract payment with respect to retro-reflectivity of performance based pavement markings will be included in a quality assurance adjustment pay item in accordance with 109.05.1. If the retro-reflectivity testing cannot be performed per ITM 931 due to weather limitations only, the testing requirement may be waived and payment made at 100% provided that all other requirements are met and no payment will be made for retro-reflectivity testing.

SECTION 808, AFTER LINE 532, INSERT AS FOLLOWS:

Line, Performance Based, _____, _____, _____, _____ in. (mm) ..... LFT (m)
material type color width

SECTION 808, AFTER LINE 537, INSERT AS FOLLOWS:

Retro-reflectivity Testing ..... LS

SECTION 909, AFTER LINE 498, INSERT AS FOLLOWS:

(d) Cold Temperature White and Yellow Waterborne Traffic Paint

The cold temperature white and yellow waterborne traffic paint shall consist of an emulsion of pigmented binder formulated to be applied and cure at air and pavement temperatures above 35°F (2°C). The cold temperature waterborne traffic paints shall be in accordance with 909.05(c) except for the application temperature and no-tracking condition requirements.

Other sections containing specific cross references:

109, 808, 909

Recurring Special Provisions potentially affected:

See Above

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

808-MKPM 01 thru 06

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Direction needed on the Design of Bicycle Facilities.

PROPOSED SOLUTION: Create a section in the Design Manual for Bicycle Facilities (Shared Use Paths)
This guide regarding the design of bicycle facilities is to provide information on the development of shared-use path facilities to enhance and encourage safe bicycle travel. The purpose of this guide is to provide engineers, planners and designers with a primary source of guidance to implement the INDOT Design Manual Section for the design of bicycle facilities in conjunction with other Chapters of the IDM, the Indiana Manual on Uniform Traffic Control Devices (IN MUTCD), the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (1999). This guide is not intended to set forth strict standards, but rather to present sound guidelines that will be valuable in attaining good design, sensitive to the needs of both bicyclists and other users.

APPLICABLE STANDARD SPECIFICATIONS: N/A

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 51-7.0 Bicycle Facilities

APPLICABLE SECTION OF GIFE:N/A

Submitted By: John Wright

Title: Roadway Services Manager

Organization: INDOT

Phone Number: 232-5147

Date: 3/4/08

Item No. 08-8-7
Mr. Wright
Date: 3/20/08

REVISION TO DESIGN MANUAL

CREATE A SECTION IN THE DESIGN MANUAL FOR BICYCLE FACILITIES (SHARED USE PATHS)

This guide regarding the design of bicycle facilities is to provide information on the development of shared-use path facilities to enhance and encourage safe bicycle travel. The purpose of this guide is to provide engineers, planners and designers with a primary source of guidance to implement the INDOT Design Manual Section for the design of bicycle facilities in conjunction with other Chapters of the IDM, the Indiana Manual on Uniform Traffic Control Devices (IN MUTCD), the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (1999). This guide is not intended to set forth strict standards, but rather to present sound guidelines that will be valuable in attaining good design, sensitive to the needs of both bicyclists and other users.

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

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

Standard Sheets potentially affected:

None

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting
RSP Sunset Date: _____
___ RPD Effective: _____ Letting
___ 20__ Standard Specifications Book
___ 20__ Standards Edition
___ 20__ Design Manual
___ Technical Advisory

Withdrawn ____

Received FHWA Approval? ____