STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO 2024 STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: A previous revision to 203.18 in October 2023 clarified the use of recycled concrete pavement by requiring it to be processed into coarse aggregate-sized material. INDOT Geotechnical Engineering desired additional clarification for use of recycled concrete in embankment.

PROPOSED SOLUTION: Clarify where and what size the recycled concrete pavement must be for use in embankments.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 203-R-786

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc: Nayyar Siddiki, Sean Yoon

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: same as existing RSP 203-R-786

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: (317) 522-9692

Date: 7/3/24

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO 2024 STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No Will approval of this item affect the Approved Materials List? N/A Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? N/A

Asset preservation? N/A

Design process? N/A

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

<u>Provide any further information as to why this proposal should be placed on the Standards</u> <u>Committee meeting Agenda:</u>

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT 203.18 Embankment Construction

(Note: previously approved changes shown highlighted gray and are in RSP <u>203-R-786</u>. Basis for Use: Required for all contracts with any <u>203</u> pay items. Newly proposed changes shown highlighted <u>yellow</u>.)

The Standard Specifications are revised as follows:

SECTION 203, BEGIN LINE 761, DELETE AND INSERT AS FOLLOWS:

203.18 Embankment Construction

Embankment construction shall consist of constructing roadway embankments, including preparation of the areas upon which they are to be placed; the construction of dikes within or outside the right-of-way; the placing and compacting of approved material within roadway areas where unsuitable material has been removed; and the placing and compacting of embankment material in holes, pits, and other depressions within the roadway area. Only approved materials shall be used in the construction of embankment backfill. Recycled concrete pavement *processed into coarse aggregate* shall be from past documented Department projects. RAP shall be the product resulting from the cold milling or crushing of an existing HMA pavement. Rocks, broken concrete, RAP, or other solid materials shall not be placed in embankment areas where piling is to be placed or driven.

Recycled concrete pavement processed into coarse aggregate shall meet the gradation requirements of B borrow in accordance with 904.06. Construction requirements shall be in accordance with 203.20(a) or 211.03 measuring 12 in. or less in all directions may be incorporated into the embankment. Construction of embankment shall be in accordance with 203.20(a). Each layer shall be choked thoroughly with broken concrete aggregates and be compacted to the required stiffness or as directed. The final 2 ft of the embankment just below the subgrade shall be composed of material meeting the gradation requirements of coarse aggregate in accordance with 904.01 or B borrow in accordance with 904.06. Construction requirements shall be in accordance with 211.03.

Only RAP particles measuring 2 in. or less in all directions shall be incorporated into the top 52 ft of the embankment *just below the bottom of the subgrade*. RAP particles incorporated anywhere in the embankment shall be 5 in. or less. *RAP shall be constructed in accordance with 203.24*.

When two sizes are used for one embankment, materials shall be separated with a layer of geotextile in accordance with 918.02(c), Type 2A. Geotextile used between recycled material lifts shall be included in the cost of the embankment pay item.

Recycled concrete pavement *processed into coarse aggregate* and RAP shall not be mixed together or with other materials. When two or more approved materials are allowed for one embankment, materials shall be separated with a layer of geotextile in accordance with 918.02(c), Type 2A. Geotextile used between recycled material lifts shall be included in the cost of the embankment pay item.

ADDENDUM 1

Item No. 8 (2024 SS) (contd.)

Mr. J. Reilman Date: 7/18/24

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT 203.18 Embankment Construction

Recycled concrete pavement *processed into coarse aggregate* or RAP shall only be used below the elevation of the pavement underdrains. Compacted lift thickness for RAP shall not be greater than 6 in. within the top 52 ft of the embankment. Where the depth of the embankment exceeds 5 ft, the compacted lift thickness for RAP shall not be greater than 12 in. Recycled concrete pavement *processed into coarse aggregate* and RAP shall not be used within 2 ft of the water table.

Recycled concrete pavement processed into coarse aggregate shall be constructed in accordance with 203.20. RAP shall be constructed in accordance with 203.23 or 203.24. Proofrolling in accordance with 203.26 shall be performed to cover the entire grade for every 5 ft of fillrecycled concrete or RAP.

A geotextile in accordance with 918.02(c), Type 2B shall be placed in accordance with 214 prior to the placement of subgrade treatment Type IC, or Type II, or Type IV in accordance with 207 when recycled concrete pavement processed into coarse aggregate or RAP is used for embankment construction. Recycled concrete pavement processed into coarse aggregate or RAP shall not be used for embankment construction when subgrade Type I, Type IBC, or Type IBL is specified. Geotextile shall be placed completely covering the top of the embankment. A minimum 24 in. soil encasement shall be constructed concurrently with the recycled concrete pavement processed into coarse aggregate or RAP lift. The soil encasement shall be suitable for vegetation growth and shall be constructed in accordance with 203.09.

ADDENDUM 1 Item No. 8 (2024 SS) (contd.) Mr. J. Reilman

Date: 7/18/24

COMMENTS AND ACTION

203.18 Embankment Construction

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: Passed as Submitted Passed as Revised Withdrawn
2024 Standard Specifications Sections: 203.18 pg. 168-169	 2026 Standard Specifications Revise Pay Items List Notification to Designers if change is not
Recurring Special Provisions or Plan Details:	addressed by RSP
203-R-786 Excavation and Embankment	Create RSP (No) Effective:
Standard Drawing affected:	
NONE	Revise RSP (No) Effective:
Design Manual Chapter:	
NONE	Standard Drawing Effective:
GIFE Section:	
NONE	Create RPD (No) Effective:
	GIFE Update Frequency Manual Update SiteManager Update

REVISION TO 2024 STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: This RSP was created from an item at the November 2023 Standards Committee Meeting. Unfortunately the QPL mentioned in the new 908.01 section was not created. Recently, when creating the QPL for Metal Pipe Sources, some errors were noted in the November 2023 proposal, such as not all metal pipes are covered by the AASHTO Product Evaluation and Audit Solutions CMP program.

<u>PROPOSED SOLUTION:</u> Correct the erroneous entries requiring certain pipes to have an AASHTO evaluation when that particular pipe material is not in the AASHTO program.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 715-R-764

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc: District Testing Engineers

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: same as existing BFU for 715-R-764

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: (317) 522-9692

Date: 7/3/24

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO 2024 STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

<u>Does this item appear in any other specification sections?</u> No <u>Will approval of this item affect the Approved Materials List?</u> Yes <u>Will this proposal improve:</u>

Construction costs? N/A

Construction time? N/A

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? N/A

Asset preservation? N/A

Design process? N/A

Will this change provide the contractor more flexibility? N/A

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

<u>Provide any further information as to why this proposal should be placed on the Standards Committee</u> meeting Agenda:

ADDENDUM 1

Item No. 9 (2024 SS) (contd.)

Mr. Reilman Date: 7/18/24

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS 715.02 Materials
SECTION 907 – CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS 907.16 Thermoplastic Pipe Requirements
SECTION 908 – METAL PIPE 908.01 BlankMetal Pipe Requirements

(Note: previously approved changes shown highlighted gray and are in RSP <u>715-R-764 PIPE CULVERTS</u>, <u>AND STORM AND SANITARY SEWERS</u>.

Basis for Use: Required for all contracts with any 715 or 717 pay items. Newly proposed changes shown highlighted yellow.)

The Standard Specifications are revised as follows:

SECTION 715, BEGIN LINE 41, DELETE AND INSERT AS FOLLOWS:

(a) Type 1 Pipe

Type 1 pipe shall be used for culverts under mainline pavement and public road approaches and shall be in accordance with the following:

	007.00
Clay Pipe, Extra Strength	
Corrugated Aluminum Alloy Pipe and Pipe-Arches	. 908.04 ⁸
Corrugated Polyethylene Pipe, Type S	. <u>*</u> A
Corrugated Polypropylene Pipe	. <u>*</u> A
Corrugated Steel Pipe and Pipe-Arches	$0.908.02^{B}$
Non-Reinforced Concrete Pipe, Class 3	
Polymer Precoated Galvanized Corrugated Steel	
Pipe and Pipe-Arches	$.908.08^{B}$
Profile Wall Polyethylene Pipe, Closed	. <u>*</u> A
Profile Wall Polyethylene Pipe, Ribbed	. <u>*</u> A
Profile Wall PVC Pipe	
Reinforced Concrete Horizontal Elliptical Pipe	. 907.03
Reinforced Concrete Pipe	. 907.02
Smooth Wall Polyethylene Pipe	. <u>*</u> A
Smooth Wall PVC Pipe	. <u>*</u> A
Spiral Rib Steel Pipe	
Structural Plate Pipe and Pipe-Arches	. 908.09
*All thermoplastic pipes shall be from the QPL of Thermoplastic P	
Sources in accordance with 907.16.	•
B $\frac{All - m}{M}$ etal pipes shall be from the QPL of Metal Pipe Sources in ac	ccordance with
908.01	

(b) Type 2 Pipe

Type 2 pipe shall be used for storm sewers and shall be in accordance with the following:

Clay Pipe, Extra Strength	907.08
Corrugated Polyethylene Pipe, Type S	<u>*</u> A
Corrugated Polypropylene Pipe	<u>*</u> A
Fully Bituminous Coated and Lined Corrugated Steel	

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS 715.02 Materials
SECTION 907 – CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS 907.16 Thermoplastic Pipe Requirements
SECTION 908 – METAL PIPE 908.01 BlankMetal Pipe Requirements

Pipe and Pipe-Arches	. 908.07 ^B
Non-Reinforced Concrete Pipe, Class 3	
Polymer Precoated Galvanized Corrugated Steel	
Pipe and Pipe-Arches Type IA and Type IIA	. 908.08 ^B
Profile Wall Polyethylene Pipe, Closed	<u>*</u> A
Profile Wall Polyethylene Pipe, Ribbed	<u>*</u> A
Profile Wall PVC Pipe	<u>*</u> A
Reinforced Concrete Horizontal Elliptical Pipe	
Reinforced Concrete Pipe	. 907.02
Smooth Wall Polyethylene Pipe	<u>*</u> A
Smooth Wall PVC Pipe	
A state of the sta	

^{*}All thermoplastic pipes shall be from the QPL of Thermoplastic Pipe and Liner Pipe Sources in accordance with 907.16.

SECTION 715, BEGIN LINE 91, DELETE AND INSERT AS FOLLOWS:

(d) Type 4 Pipe

Type 4 pipe shall be used for drain tile and longitudinal underdrains and shall be in accordance with the following:

Clay Pipe**	. 907.08
Corrugated Polyethylene Drainage Tubing	. <u>∗</u> A
Corrugated Polyethylene Drainage Tubing Corrugated Polyethylene Pipe, Type S***	. <u>*</u> A
Corrugated Polyethylene Pipe, Type SP	. <u>*</u> A
Drain Tile**	. 907.10
Non-Reinforced Concrete Pipe	
Perforated Clay Pipe**	
Perforated PVC Semicircular Pipe	. <u>*</u> A
Profile Wall PVC Pipe	. <u>∗</u> A

^{*}All thermoplastic pipes shall be from the QPL of Thermoplastic Pipe and Liner Pipe Sources in accordance with 907.16.

(e) Type 5 Pipe

Type 5 pipe shall be used for broken-back pipe runs where coupled or jointed pipe is desirable and shall be in accordance with the following:

Corrugated Aluminum Alloy Pipe and Pipe-Arches	908.04 ^B
Corrugated Polyethylene Pipe, Type S	<u>*</u> A
Corrugated Polypropylene Pipe	<u>*</u> A
Corrugated Steel Pipe and Pipe-Arches	908.02^{B}

 $[\]frac{B}{AH}$ mMetal pipes shall be from the QPL of Metal Pipe Sources in accordance with 908.01.

^{**} These materials shall be used for drain tiles only.

Item No. 9 (2024 SS) (contd.)

Mr. Reilman Date: 7/18/24

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS 715.02 Materials
SECTION 907 – CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS 907.16 Thermoplastic Pipe Requirements
SECTION 908 – METAL PIPE 908.01 BlankMetal Pipe Requirements

Fully Bituminous Coated and Lined Corrugated	
Steel Pipe and Pipe-Arches	$ \frac{908.07}{B}$
Polymer Precoated Galvanized Corrugated Steel	
Pipe and Pipe-Arches	908.08 ^B
Profile Wall Polyethylene Pipe, Closed	<u>*</u> A
Profile Wall Polyethylene Pipe, Ribbed	<u>*</u> A
Profile Wall PVC Pipe	<u>*</u> A
Smooth Wall Polyethylene Pipe	<u>*</u> A
Smooth Wall PVC Pipe	
Spiral Rib Steel Pipe	
$*^A$ All thermoplastic pipes shall be from the QPL of Thermoplastic	
Sources in accordance with 907.16.	-

 B $\frac{All\ mM}{m}$ etal pipes shall be from the QPL of Metal Pipe Sources in accordance with 908.01.

SECTION 907, BEGIN LINE 216, DELETE AND INSERT AS FOLLOWS:

907.16 Thermoplastic Pipe Requirements

A QPL of ${}^{\dagger}P$ ipe and ${}^{\dagger}P$ ipe and ${}^{\dagger}P$ ipe ${}^{\dagger}P$ ip

Summary of Thermoplastic Pipe Specification Requirements				
Pipe Material	Standard Specification	AASHTO	ASTM	Manufacturer Requirement
Corrugated Polyethylene Drainage Tubing	907.17(a)	M 252		ITM 806, Procedure O
Corrugated Polyethylene Pipe	907.17(b)	M 294*		ITM 806, Procedure O
Corrugated Polypropylene Pipe	907.19	M 330		ITM 806, Procedure O
Perforated PVC Semicircular Pipe	907.18		D3034	ITM 806, Procedure A
Profile Wall HDPE Liner Pipe	907.25(b)		F894	ITM 806, Procedure A or 916, Type A Certification
Profile Wall PVC	907.25(c)	_	F949	ITM 806, Procedure A or

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS 715.02 Materials
SECTION 907 – CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS 907.16 Thermoplastic Pipe Requirements
SECTION 908 – METAL PIPE 908.01 BlankMetal Pipe Requirements

Liner Pipe				916, Type A Certification
Profile Wall PVC Pipe	907.22 907.24(c)	M 304		ITM 806, Procedure O
Profile Wall Polyethylene Pipe	907.20		F894	ITM 806, Procedure A
Schedule 40 PVC Plastic Pipe, Schedule 40	907.24(b)		D1785 or D2665	916, Type C Certification
Slotted Vane Drain Pipe	908.14	M 278	F679	ITM 806, Procedure A
Smooth Wall Polyethylene Pipe	907.21 907.24(d)		F714	ITM 806, Procedure A
Smooth Wall PVC Pipe	907.23 907.24(e)	M 278	F679	ITM 806, Procedure A
Solid Wall HDPE Liner Pipe	907.25(a)		F714	ITM 806, Procedure Q or 916, Type A Certification
Type PSM PVC Pipe and Fittings	907.24(a)		D3034	ITM 806, Procedure A
* Pipe in accordance with AASHTO M 294 shall be manufactured with virgin materials.				

SECTION 908, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

908.01 Blank Metal Pipe Requirements

A QPL of Metal Pipe Sources for the identified pipe materials specified in the table below will be maintained by the Department. The QPL will specify the manufacturer and pipe designation. All of these materials shall comply with the applicable AASHTO or ASTM requirements listed in the following table and will only be accepted from qualified manufacturers. The manufacturer is defined as the plant which produces the metal pipe, or pipe-arch, or arch. The manufacturer shall establish and maintain a history of satisfactory quality control of these materials. This history will be based on achieving and maintaining a "Compliant" status with the AASHTO PEAS program in accordance with ITM 806 Procedure O.

Summai	ry of Metal Pipe S	Specification Re	quirements	
Pipe Material	Standard Specification	AASHTO	ASTM	Manufacturer Requirement
Required to be furnished from a manufacturer on the QPL include:				
Cast Iron Soil Pipe	908.10		474	Buy America Certification
Corrugated Aluminum Alloy Pipe and Pipe-	908.04	M 196		ITM 806, Procedure O

REVISION TO 2024 STANDARD SPECIFICATIONS

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS 715.02 Materials
SECTION 907 – CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS 907.16 Thermoplastic Pipe Requirements
SECTION 908 – METAL PIPE 908.01 BlankMetal Pipe Requirements

Arches				
Corrugated Steel Pipe and Pipe-Arches	908.02	M 36		ITM 806, Procedure O
Fully Bituminous Coated Corrugated and Lined Steel Pipe and Pipe-Arches	908.07	M 36		ITM 806, Procedure O
Polymer Precoated Galvanized Corrugated Steel Culvert Pipe and Pipe-Arches	908.08	M 245		ITM 806, Procedure O
Slotted Drain Pipe	908.14	pipe: M 36	grate: A36, grade 36	ITM 806, Procedure O
Not	required to be fu	rnished from the	e QPL:	
Cast Iron Soil Pipe	908.10		<u> 474</u>	Buy America Certification
Steel Pipe	908.11		A139, grade B or A53 Type E, grade B	ITM 806, Procedure OType C Certification; Buy America Certification
Structural Plate Pipe, Pipe-Arches, and Arches; Aluminum Alloy	908.09(b)	M 219		ITM 806, Procedure OCertified Mill Report; Fabricator Certification; Buy America Certification
Structural Plate Pipe, Pipe-Arches, and Arches; Steel	908.09(a)	M 167 and LRFD Bridge Construction Specification s		ITM 806, Procedure OCertified Mill Report; Fabricator Certification; Build America Certification

ADDENDUM 1

<u>Item No. 9</u> (2024 SS) (contd.)

Mr. Reilman Date: 7/18/24

COMMENTS AND ACTION

715.02 Materials 907.16 Thermoplastic Pipe Requirements 908.01 Blank*Metal Pipe Requirements*

DISCUSSION:

Motion:	Action:
Second: Ayes: Nays: FHWA Approval:	Passed as Submitted Passed as Revised Withdrawn
2024 Standard Specifications Sections: 715 pg. 734 – 736; 907 pg. 1031 -1032; 908.01 pg.1036.	 2026 Standard Specifications Revise Pay Items List Notification to Designers if change is not addressed by RSP
Recurring Special Provisions or Plan Details: 715-R-764 PIPE CULVERTS, AND STORM AND SANITARY SEWERS.	Create RSP (No) Effective:
Standard Drawing affected: NONE	Revise RSP (No) Effective:
Design Manual Chapter: NONE	Standard Drawing Effective:
GIFE Section: NONE	Create RPD (No) Effective:
	GIFE Update Frequency Manual Update SiteManager Update