Illinois Department of Transportation

Memorandum

To:	*
From:	Rich Dotson RD
Subject:	**Special Provision Changes**
Date:	January 21, 2014

The following special provisions have been revised for the April 25,, 2014 and June 13, 2014 lettings. Please revise your special provision books as indicated.

Recurring Special Provisions

Updated Designer Note for Check Sheet #15 for the 2014 Recurring Special Provisions.

Interim Special Provisions

ISP Number	Description
Alphabetic ISP Index (Revised)	Remove existing alphabetic index and insert revised index.
Numerical ISP Index (Revised)	Remove existing numeric index and insert revised index.
109.09 (New)	**"Contract Claims (BDE)"** (*Item #21 on BDE Checksheet*) Reduced the number of claim levels from three to two.
312.06 (New)	**"Stabilized Subbase (BDE)"** Removed the trimming requirement for HMA stabilized subbase.
406.14 (Revised)	**"Hot-Mix Aspghalt-Mixture Design Composition and Volumetric Requirements (BDE)"** Revised the Designer Note to not use.
440.00 (New)	**"Longitudinal Joint and Crack Patching (BDE)"** Creates a BDE Specification to address this type of patching.
440.01 (New)	**"Paved Shoulder Removal (BDE)"** Addresses varability in thickness.
440.02 (New)	**"Portland Cement Concrete Partial/Depth Hot-Mix Asphalt Patching (BDE)"** Addresses variability of patch sizes in the field.
504.00 (Revised)	**"Concrete Box Culverts with Skews >30 Degrees and Design Fills ≤ 5 Feet (BDE)"** Reflects changes in LRFD code and removes the requirement for select granular material in order to take advantage of the 1.15 distribution factor.

Interim Special Provisions *(Continued)*

ISP Number	Description
504.04 (Revised)	**"Concrete Box Culverts with Skews ≤ 30 Degrees Regardless of Design Fill and Skews > 30 Degrees with Design Skews > 5 Feet (BDE)"** Reflects changes in LRFD code and removes the requirement for select granular material in order to take advantage of the 1.15 distribution factor.
542.01 (Revised)	**"Traversable Pipe Grate (BDE)"** Revised to include splicing requirements.
542.02 (Revised)	**"LRFD Pipe Culvert Burial Tables (BDE)"** No longer requires submittal of construction loadings.
606.02 (New)	**"Concrete Gutter, Curb, Median, and Paved Ditch (BDE)"** Adds a sealant material to the list.
1031.00 (Revised)	**"Reclaimed Asphalt Pavement and Reclaimed Asphalt Shingles (BDE)"** Revised the Designer Note.

District Special Provisions

District Number	Description
Alphabetic District Index (Revised)	Remove existing alphabetic index and insert revised index.
Numerical District Index (Revised)	Remove existing numeric index and insert revised index.
253.00b (Revised)	**"Seedling Mixture A"** Revised the Designer Note.
406.02 (New)	**"Hot-Mix Asphalt – Prime Coat (BMPR)"** New special with similar name as the deleted special.
406.02 (Delete)	**"Hot-Mix Asphalt – Prime Coat"** Replaced with a new version from the Bureau of Materials and Physical Research (BMPR).
440.02 (Revised)	**"Longitudinal Joint Repair"** Revised the Designer Note.
440.03c (Revised)	**"Center Joint Repair System"** Revised the type of prime required.
733.00 (New)	**"Re-Tightening Anchor Bolts for Cantilever Sign Structures"** New special to address loose nuts found in the field.
781.00 (Delete)	**"Temporary Raised Reflective Pavement Marker"** Deleted because it is obsolete.
1030.02 (New)	**"Hot-Mix Asphalt – Mixture Design Requirements, Volumetric Requirements, Verification and Production (D-4)"** New special to replace BDE specials and DSP 1030.04.
1030.04 (Delete)	**"Hot-Mix Asphalt – Mixture Verification and Production"** Included in another District Special Provision 1030.02.

District Special Provisions *(Continued)*

District Number	Description
1031.00 (Revised)	**"Reclaimed Asphalt Pavement and Reclaimed Asphalt Singles (D-4)"** New version of previous special. Use instead of the BDE version.

General Notes

District Number	Description
Alphabetic District Index (Revised)	Remove existing alphabetic index and insert revised index.
Numerical District Index (Revised)	Remove existing numeric index and insert revised index.
105.04 (Revised)	**"Soil Report Availability"** Minor revisions.

Attachments

cc: * N. Jack, K. Emert, T. Phillips, L. Hayworth, Team 1, Team 2, Team 3, Team 4, Team 5, Team 6, Team 7, Team 8, Team 9, Team 10, Team 11, Geometrics, Galesburg Design, Local Roads (M. Augspurger), Materials (H. Shoup), Bridge (T. Inglis)

RJD:tdp\s:\mgr2\winword\special provisions\special provisions changes memos\specprovchngsmemo_2014-01-21.doc

Index for
Supplemental Specifications
and
Recurring Special Provisions

Contract No. _____ Route(s): _____

(SLT No. SLT-94-_____ D.L. No.: _____)

Designer: _____ Section(s): _____

Lettings: Apr. 25, 2014 & Jun. 13, 2014 County(ies): _____
(circle correct letting)

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted **January 1, 2012 (Revised January 1, 2014)**, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein, and the "Recommended Standards for Water Works", (Ten State Standards), latest edition, which apply to and govern the construction of

_____

_____

_____

and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

DESCRIPTION OF PROJECT

Contract No. _____ Route(s): _____

(SLT No. SLT-94-_____ D.L. No.: _____)

Designer: _____ Section(s): _____

Lettings: Apr. 25, 2014 & Jun. 13, 2014 County(ies): _____
(circle correct letting)

LOCATION OF PROJECT *(CONTINUED)*

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2014

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

Designer Notes
Recurring Special Provisions

Designer Notes for January 1, 2014 Recurring Special Provisions

(Updated for April 25, 2014 and June 13, 2014 lettings.)

1. Designer Note: This check sheet is required in all contracts that involve Federal funds.

2. Designer Note: This check sheet is required in all Federal contracts.

3. Designer Note: This check sheet is required in all contracts.

4. Designer Note: This check sheet is required in all contracts involving State funds only.

5. Designer Note: This check sheet is required in all contracts involving State funds only.

6. Designer Note: Include in all contracts where Asbestos Bearing Pad Removal is part of the structure work.

7. Designer Note: Include in all contracts where the existing bridge deck HMA surface is to be removed and the waterproofing membrane contains asbestos and will be removed. The designer must have in the project files a completed "Asbestos Determination Certificate" for every bridge within the project limits. The District Bridge Maintenance Engineer and/or the District Hydraulics Engineer can provide copies of these certificates. If your project has any bridge deck containing asbestos, insert this special provision as well as the General Notes entitled "Asbestos Bridge Wearing Surface Removal".

8. Designer Note: This check sheet will be required for those contracts that will involve Contractor work on haul road stream crossings, other temporary stream crossings, and in stream work pads. Contracts that would generally involve this type of work would be bridges/structures, new or rebuilt, and contracts involving earth excavation, embankment or borrow excavation. Discuss these types of work operations and any other stream related work with your Project Engineer. Any in-stream crossing or other work will require an individual 404 permit from the Corps of Engineers. Be sure to let the Hydraulics Engineer (Jim Miller) know as soon as possible that a Corps permit will be needed. The permit has a lead-time and is required for the project to proceed to letting.

9. Designer Note: (See #10 below.) Depending on IDOT manpower, this check sheet will be included as a pay item when the Contractor will be required to do all contract staking, except bridges. A large span culvert measuring more than 6 meters (20 feet) along the survey line will require a structure number be assigned to the structure. This will require that the Designer, if he is calling for Contractor staking, use the check sheet entitled Construction Layout Stakes and not the check sheet entitled Construction Layout Stakes Except for Structures. Discuss with the Bureau of Project Implementation (Construction) as to what manpower sources are available.

10. Designer Note: Depending on IDOT manpower needs, this check sheet will be included as a pay item when the Contractor will be required to do all contract staking, including bridges. This check sheet should be used for a large box culvert or a multi pipe that will require a structure number. This would be a structure that will have a span length along survey line of more than 6 meters (20 feet).

    Discuss this check sheet with the Bureau of Project Implementation (Construction) as to what manpower sources are available.

Designer Notes for January 1, 2014 Recurring Special Provisions
(Updated for January 17, 2014 and February 28, 2014 lettings.)

1. Designer Note: This check sheet is required in all contracts that involve Federal funds.

2. Designer Note: This check sheet is required in all Federal contracts.

3. Designer Note: This check sheet is required in all contracts.

4. Designer Note: This check sheet is required in all contracts involving State funds only.

5. Designer Note: This check sheet is required in all contracts involving State funds only.

6. Designer Note: Include in all contracts where Asbestos Bearing Pad Removal is part of the structure work.

7. Designer Note: Include in all contracts where the existing bridge deck HMA surface is to be removed and the waterproofing membrane contains asbestos and will be removed. The designer must have in the project files a completed "Asbestos Determination Certificate" for every bridge within the project limits. The District Bridge Maintenance Engineer and/or the District Hydraulics Engineer can provide copies of these certificates. If your project has any bridge deck containing asbestos, insert this special provision as well as the General Notes entitled "Asbestos Bridge Wearing Surface Removal".

8. Designer Note: This check sheet will be required for those contracts that will involve Contractor work on haul road stream crossings, other temporary stream crossings, and in stream work pads. Contracts that would generally involve this type of work would be bridges/structures, new or rebuilt, and contracts involving earth excavation, embankment or borrow excavation. Discuss these types of work operations and any other stream related work with your Project Engineer. Any in-stream crossing or other work will require an individual 404 permit from the Corps of Engineers. Be sure to let the Hydraulics Engineer (Jim Miller) know as soon as possible that a Corps permit will be needed. The permit has a lead-time and is required for the project to proceed to letting.

9. Designer Note: (See #10 below.) Depending on IDOT manpower, this check sheet will be included as a pay item when the Contractor will be required to do all contract staking, except bridges. A large span culvert measuring more than 6 meters (20 feet) along the survey line will require a structure number be assigned to the structure. This will require that the Designer, if he is calling for Contractor staking, use the check sheet entitled Construction Layout Stakes and not the check sheet entitled Construction Layout Stakes Except for Structures. Discuss with the Bureau of Project Implementation (Construction) as to what manpower sources are available.

10. Designer Note: Depending on IDOT manpower needs, this check sheet will be included as a pay item when the Contractor will be required to do all contract staking, including bridges. This check sheet should be used for a large box culvert or a multi pipe that will require a structure number. This would be a structure that will have a span length along survey line of more than 6 meters (20 feet).

    Discuss this check sheet with the Bureau of Project Implementation (Construction) as to what manpower sources are available.

11. Designer Note: This special provision specifies the requirements for geotextile fabric for use on railroad crossings.

    Include only on projects where the railroad crossing is a contract pay item. Also may be required for temporary crossings.

    Railroad crossings are generally (99%) handled by the Railroad through an agreement and not part of our contract. If in doubt as to how to handle, discuss with Project Support.

12. Designer Note: Use this check sheet where existing pavement is being reconstructed and voids are evident under the existing pavement that can be filled by grouting. Discuss with Maintenance Field Engineer responsible for the area.

    NOTE: A detail of the slab movement detection device is included in CADD and this drawing must be included in your contract plans.

13. Designer Note: This check sheet will be required on a contract where cold milling is required but where the cold milled area will not be overlaid. Include CADD Standard 440001 in your plans. If your contract is to be cold milled and the area overlaid, you should use one of the two District special provisions on this subject, **not** this check sheet.

14. Designer Note: This check sheet requires that once a lift of bituminous resurfacing is placed on a lane of pavement, any adjoining bituminous shoulder shall be resurfaced with an equal thickness before any other lane is resurfaced for each lift of resurfacing. Insert this special on resurfacing projects which meet the following criteria: All four lane interstates and freeways, all four lane expressways, four lane highways with ADT > 25,000 or peak one-way VPH > 1700, two lane highways with ADT > 10,000 or peak one-way VPH > 800.

15. Designer Note: Do not use this check sheet. It has been superseded by the Bureau of Design & Environment (BD&E) special provision of the same name.

16. Designer Note: Intended to remove thick bituminous overlay so that the original pavement can be examined and then patched, if necessary. It also further defines specific pay items for work involved.

17. Designer Note: This check sheet was developed by Materials and Physical Research as an alternate to replacing Preformed Joint Sealer and Neoprene Expansion Joints up to 65 mm (2 ½ inches). Include with any projects that have POLYMER CONCRETE as a pay item.

18. Designer Note: This rehabilitation process can be used in a variety of gravity applications such as trenchless rehabilitation of sanitary sewers, storm sewers, and process piping. Insert this special provision if trenchless repair of the items listed above is selected. Prior to selection consult your Project Engineer. Additional information such as size of pipe to be lined, number of laterals, and manhole treatment may be necessary.

19. Designer Note: This check sheet calls for CA 16 for backfill and wrapping the trench. Discuss usage with Implementation.

20. Designer Note: This check sheet was developed by the Central Bureau of Traffic and should be incorporated into all plans containing guardrail, barrier wall or bridge rail. The designer is required to specify the color of all reflectors to be placed and to provide appropriate traffic control standards for the installation of reflectors/markers. It is the District's option to select the type of reflector marker for use on guardrail and barrier walls, and the type of terminal marker for guardrail. This option should be specified by the pay item used. The District prefers use of the top mounted reflector Type C on barrier walls. Include Highway Standards 635006 and 635011 in the plans if this Check Sheet is used.

21. Designer Note: This check sheet was developed to obtain the desired pipe coating on bike racks. Use on all projects with bike racks.

22. Designer Note: This special provision covers the installation of temporary glare screens on temporary concrete barrier. Glare screens may be needed on temporary concrete barriers separating opposing lanes of traffic, especially on horizontal and vertical curves where oncoming headlight glare could be a problem. Discuss usage with your project engineer.

23. Designer Note: This special provision is for use on bridge contracts where staging is required and the District wants the contractor to have an option to post-mounting the temporary bridge and traffic signals. Discuss use with the District Traffic Control Technician.

24. Designer Note: Intended for use on all freeway/expressway contracts with lane closures as shown on Highway Standard 701400. It may also be used at the District's discretion on high visibility projects and/or projects that will require several months to complete.

25. Designer Note: This check sheet should be included for all projects containing roadway lighting. The designer should also include CADD Standard 701301-D4 in the plans.

26. Designer Note: This check sheet was developed to address difficulties with obtaining metric sized bolts. Include in all metric projects, which contain or could contain any type of bolted connection.

27. Designer Note: This check sheet was developed to address difficulties with obtaining metric sized reinforcement bars. Include in all metric projects containing reinforcement bars.

28. Designer Note: This special provision not to be used in District Four. Not recommended for use on recently constructed pavements or bridge decks. This is not recommended when there is steel in the patches due to the corrosion the calcium chloride causes.

29. Designer Note: Insert into contracts where a PCC inlay or overlay is selected. This method is for locations where excessive rutting has become a problem. Discuss with the Project Engineer, Operations, and Implementation before using. Also, refer to BDE Manual, Chapter 53 before using.

30. Designer Note: Do not use Check Sheet #30 unless requested by Materials.

31. Designer Note: Use in all contracts involving cast-in-place concrete.

32. Designer Note: This special allows the use of digital terrain modeling for field measurements of earthwork. This is to be used at the district's discretion. Discuss it with your Project Engineer and Construction.

33. Designer Notes: Insert at the district's discretion. Discuss with Construction. This special will not allow grinders to be used. When it is possible that Temporary Pavement Markings will be required over the winter and performed plastic pavement markings will be installed the next season; this may not be feasible since removing the temporary will require grinding.

34. Designer Note: Insert this special into contracts using an A-1 bituminous surface treatment. Use of this special provision shall be according to the Bureau of Design and Environment Manual, Chapter 52.

    The designer must specify the gradation for the bituminous surface treatment on the plans. Districts are encouraged to use the CA 20 gradation as it has proven to perform well for A-1 surface treatments.

    Include Special Provision on Temporary Flexible Raised Pavement Marker with this work.

    Include the following information in the Traffic Control Plan Special Provision:
    - Contractor shall post the roadway with "LOOSE GRAVEL" and SPEED LIMIT 35" signs in accordance with applicable articles of Division 700 of the Standard Specifications.
    - These signs shall be placed at the start of the work, near intersecting roadways and then at an average spacing of 0.5 mi (0.8 km).
    - The signs may be removed as soon as the sweeping operation has been completed.

35. Designer Note: Insert into all contracts using cape seal. Use of this special provision shall be according to the Bureau of Design and Environment Manual, Chapter 52.

Districts are encouraged to use the CA 20 gradation as it has proven to perform well for A-1 surface treatments.

The designer must specify the aggregate gradation for the A-1 bituminous surface treatment. Districts are encouraged to use the CA 20 gradation as it has proven to perform well for A-1 surface treatments.

The designer must specify the proper friction aggregate for the micro-surfacing layer on the plans using the following note:

"The aggregates for the micro-surfacing shall meet the friction aggregate requirements for Mixture __ in Article 1004.03(a)."

Insert either "C" or "D" into the note to indicate which mixture is to be used according to the ADT volume on the project. ADT ≤ 5,000 shall use Mixture C and ADT > 5,000 shall use Mixture D.

Include the following information in the Traffic Control Plan Special Provision:

- Contractor shall post the roadway with "LOOSE GRAVEL" and SPEED LIMIT 35" signs in accordance with applicable articles of Division 700 of the Standard Specifications. These signs shall be placed at the start of the work, near intersecting roadways and then at an average spacing of 0.5 mi (0.8 km). The signs may be removed as soon as the sweeping operation has been completed.

Include Special Provision on Temporary Flexible Raised Pavement Marker with this work.

36. Designer Note: Insert into all contracts using micro-surfacing. Use of this special provision shall be according to the Bureau of Design and Environment Manual, Chapter 52.

The designer must specify the friction aggregate mixture and the following information on the plans using the following note:

"The aggregates for the surface lift of micro-surfacing shall meet the friction aggregate requirements for Mixture __ in Article 1004.03(a)."

Insert either "C" or "D" into the note to indicate which mixture is to be used according to the ADT volume on the project. ADT ≤ 5,000 shall use Mixture C, and ADT > 5,000 shall use Mixture D.

37. Designer Note: Insert into all contracts using slurry seal. Use of this special provision shall be according to the Bureau of Design and Environment Manual, Chapter 52.

The designer must include the following note on the plans.

"Aggregates for the slurry seal shall meet the friction aggregate requirements for Mixture C."

38. Designer Note: Insert into preventative maintenance contracts using cape seals or bituminous surface treatments.

39. Design Note: Insert into contracts using high-density expanding polyurethane foam or restoring the elevation of settled bridge approach pavements.

BDE Special Provisions Checklist

April 25, 2014 & June 13, 2014 Lettings

Note: Specials that go in every contract have already been marked with an "X" for you.

BDE SPECIAL PROVISIONS
For the April 25 and June 13, 2014 Lettings

The following special provisions indicated by an "x" are applicable to this contract and will be included by the Project Development and Implementation Section of the BD&E. An * indicates a new or revised special provision for the letting.

	File Name	#		Special Provision Title	Effective	Revised
	80240	1		Above Grade Inlet Protection	July 1, 2009	Jan. 1, 2012
	80099	2		Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
	80274	3		Aggregate Subgrade Improvement	April 1, 2012	Jan. 1, 2013
	80192	4		Automated Flagger Assistance Device	Jan. 1, 2008	
	80173	5		Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2013
	80241	6		Bridge Demolition Debris	July 1, 2009	
	5026I	7		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I	8		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I	9		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I	10		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80292	11		Coarse Aggregate in Bridge Approach Slabs/Footings	April 1, 2012	April 1, 2013
	80310	12		Coated Galvanized Steel Conduit	Jan. 1, 2013	
	80198	13		Completion Date (via calendar days)	April 1, 2008	
	80199	14		Completion Date (via calendar days) Plus Working Days	April 1, 2008	
*	80293	15		Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	April 1, 2014
*	80294	16		Concrete Box Culverts with Skews ≤ 30 Degrees Regardless of Design Fill and Skews > 30 Degrees with Design Fills > 5 Feet	April 1, 2012	April 1, 2014
	80311	17		Concrete End Sections for Pipe Culverts	Jan. 1, 2013	
*	80334	18		Concrete Gutter, Curb, Median, and Paved Ditch	April 1, 2014	
	80277	19		Concrete Mix Design – Department Provided	Jan. 1, 2012	Jan. 1, 2014
	80261	20		Construction Air Quality – Diesel Retrofit	June 1, 2010	Jan. 1, 2014
*	80335	21	X	Contract Claims	April 1, 2014	
	80029	22		Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Aug. 2, 2011
	80265	23		Friction Aggregate	Jan. 1, 2011	
	80229	24		Fuel Cost Adjustment	April 1, 2009	July 1, 2009
	80329	25		Glare Screen	Jan. 1, 2014	
	80303	26		Granular Materials	Nov. 1, 2012	
	80304	27		Grooving for Recessed Pavement Markings	Nov. 1, 2012	Jan. 1, 2013
	80246	28		Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2012
	80322	29		Hot-Mix Asphalt – Mixture Design Composition and Volumetric Requirements	Nov. 1, 2013	
	80323	30		Hot-Mix Asphalt – Mixture Design Verification and Production	Nov. 1, 2013	
	80315	31		Insertion Lining of Culverts	Jan. 1, 2013	Nov. 1, 2013
*	80336	32		Longitudinal Joint and Crack Patching	April 1, 2014	
*	80324	33		LRFD Pipe Culvert Burial Tables	Nov. 1, 2013	April 1, 2014
	80325	34		LRFD Storm Sewer Burial Tables	Nov. 1, 2013	
	80045	35		Material Transfer Device	June 15, 1999	Jan. 1, 2009
	80165	36		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
*	80337	37		Paved Shoulder Removal	April 1, 2014	
	80330	38		Pavement Marking for Bike Symbol	Jan. 1, 2014	
	80298	39		Pavement Marking Tape Type IV	April 1, 2012	
	80254	40		Pavement Patching	Jan. 1, 2010	
	80331	41	X	Payrolls and Payroll Records	Jan. 1, 2014	
	80332	42		Portland Cement Concrete – Curing of Abutments and Piers	Jan. 1, 2014	
	80326	43		Portland Cement Concrete Equipment	Nov. 1, 2013	
*	80338	44		Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	April 1, 2014	
	80300	45		Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	

	File Name	#		Special Provision Title	Effective	Revised
	80328	46	X	Progress Payments	Nov. 2, 2013	
	80281	47		Quality Control/Quality Assurance of Concrete Mixtures	Jan. 1, 2012	Jan. 1, 2014
	3426I	48		Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
	80157	49		Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
*	80306	50		Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	April 1, 2014
	80327	51		Reinforcement Bars	Nov. 1, 2013	
	80283	52		Removal and Disposal of Regulated Substances	Jan. 1, 2012	Nov. 2, 2012
	80319	53		Removal and Disposal of Surplus Materials	Nov. 2, 2012	
	80307	54		Seeding	Nov. 1, 2012	
*	80339	55		Stabilized Subbase	April 1, 2014	
	80127	56		Steel Cost Adjustment	April 2, 2004	April 1, 2009
	80317	57		Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	
	80301	58	X	Tracking the Use of Pesticides	Aug. 1, 2012	
	80333	59		Traffic Control Setup and Removal Freeway/Expressway	Jan. 1, 2014	
	20338	60		Training Special Provisions	Oct. 15, 1975	
*	80318	61		Traversable Pipe Grate	Jan. 1, 2013	April 1, 2014
	80288	62		Warm Mix Asphalt	Jan. 1, 2012	Nov. 1, 2013
	80302	63	X	Weekly DBE Trucking Reports	June 2, 2012	
	80289	64		Wet Reflective Thermoplastic Pavement Marking	Jan. 1, 2012	
	80071	65	X	Working Days (_____ days)	Jan. 1, 2002	

The following special provisions are in the 2014 Supplemental Specifications and Recurring Special Provisions:

File Name	Special Provision Title	New Location	Effective	Revised
80309	Anchor Bolts	Articles 1006.09, 1070.01, and 1070.03	Jan. 1, 2013	
80276	Bridge Relief Joint Sealer	Article 503.19 and Sections 588 and 589	Jan. 1, 2012	Aug. 1, 2012
80312	Drain Pipe, Tile, Drainage Mat, and Wall Drain	Article 101.01, 1040.03, and 1040.04	Jan. 1, 2013	
80313	Fabric Bearing Pads	Article 1082.01	Jan. 1, 2013	
80169	High Tension Cable Median Barrier	Section 644 and Article 1106.02	Jan. 1, 2007	Jan. 1, 2013
80320	Liquidated Damages	Article 108.09	April 1, 2013	
80297	Modified Urethane Pavement Marking	Section 780, Articles 1095.09 and 1105.04	April 1, 2012	
80253	Movable Traffic Barrier	Section 707 and Article 1106.02	Jan. 1, 2010	Jan. 1, 2013
80231	Pavement Marking Removal	Recurring CS #33	April 1, 2009	
80321	Pavement Removal	Article 440.07	April 1, 2013	
80022	Payments to Subcontractors	Article 109.11	June 1, 2000	Jan. 1, 2006
80316	Placing and Consolidating Concrete	Articles 503.06, 503.07, and 516.12	Jan. 1, 2013	
80278	Planting Woody Plants	Section 253 and Article 1081.01	Jan. 1, 2012	Aug. 1, 2012
80305	Polyurea Pavement Markings	Article 780.14	Nov. 1, 2012	Jan. 1, 2013
80279	Portland Cement Concrete	Sections 312, 503, 1003, 1004, 1019, and 1020	Jan. 1, 2012	Nov. 1, 2013
80218	Preventive Maintenance – Bituminous Surface Treatment	Recurring CS #34	Jan. 1, 2009	April 1, 2012
80219	Preventive Maintenance – Cape Seal	Recurring CS #35	Jan. 1, 2009	April 1, 2012
80220	Preventive Maintenance – Micro-Surfacing	Recurring CS #36	Jan. 1, 2009	April 1, 2012
80221	Preventive Maintenance – Slurry Seal	Recurring CS #37	Jan. 1, 2009	April 1, 2012
80224	Restoring Bridge Approach Pavements Using High-Density Foam	Recurring CS #39	Jan. 1, 2009	Jan. 1, 2012

File Name	Special Provision Title	New Location	Effective	Revised
80255	Stone Matrix Asphalt	Sections 406, 1003, 1004, 1030, and 1011	Jan. 1, 2010	Aug. 1, 2013
80143	Subcontractor Mobilization Payments	Article 109.12	April 2, 2005	April 1, 2011
80308	Synthetic Fibers in Concrete Gutter, Curb, Median and Paved Ditch	Articles 606.02 and 606.11	Nov. 1, 2012	
80286	Temporary Erosion and Sediment Control	Articles 280.04 and 280.08	Jan. 1, 2012	
80225	Temporary Raised Pavement Marker	Recurring CS #38	Jan. 1, 2009	
80256	Temporary Water Filled Barrier	Section 708 and Article 1106.02	Jan. 1, 2010	Jan. 1, 2013
80273	Traffic Control Deficiency Deduction	Article 105.03	Aug. 1, 2011	
80270	Utility Coordination and Conflicts	Articles 105.07, 107.19, 107.31, 107.37, 107.38, 107.39 and 107.40	April 1, 2011	Jan. 1, 2012

The following special provisions require additional information from the designer. The additional information needs to be included in a separate document attached to this check sheet. The Project Development and Implementation section will then include the information in the applicable special provision. The Special Provisions are:

- Bridge Demolition Debris
- Building Removal-Case I
- Building Removal-Case II
- Building Removal-Case III
- Building Removal-Case IV
- Completion Date
- Completion Date Plus Working Days
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

Special Provisions Generated Checklist
Generated – 01/21/2014 3: 17 PM

April 25, 2014 & June 13, 2014 Lettings

SPECIAL PROVISIONS CHECK LIST
Generated - 1/21/14 3:17 PM

Designer: _____ **FAP:** _____
Contract No.: _____ **Section:** _____
County: _____

√	Dir	File Name	Spec Title	Spec Dates
	BRG\	APSLRP-1.DOC	Approach Slab Repair	E 3/13/97
	DES\	00000.doc	STATE OF ILLINOIS	
	DES\	10500.doc	Construction Station Layout	E 7/30/10
	DES\	10506.doc	Prestage Site Construction Meetings	E 6/1/92
	DES\	10507.doc	Removal of Abandoned Underground Utilities	E 1/15/96 R 11/21/96
	DES\	10507a.doc	Status of Utilities/Utilities To Be Adjusted	E 1-21-05
	DES\	10507b.doc	Utilities - Locations/Information on Plans	E 11/8/13
	DES\	10700a.doc	Nationwide 404 Permit Requirements	E 1/22/01 R 8/2/02
√	DES\	10731.doc	Location of Underground State Maintained Facilities	E 8/3/07 R 7/31/09
	DES\	10732.doc	Right-of-Way Restrictions	E 7/1/94
	DES\	10803.doc	Delayed Start of Multiple Contracts	E 11/1/01
	DES\	10805a.doc	Date of Completion	E 3/1/90 R 4/28/08
	DES\	10805b.doc	Date of Completion (Plus Working Days)	E 3/1/90 R 7/1/94
	DES\	20400.doc	Borrow and Furnished Excavation	E 3/7/00 R 4/27/07
	DES\	20500.doc	Geotechnical Reinforcement	E 6/10/93 R 1/1/07
	DES\	20504.doc	Embankment (Restrictions)	E 1/21/05 R 8/3/07
	DES\	20505.doc	Embankment	E 7/1/90 R 8/3/07
	DES\	20505a.doc	Embankment (Small Embankment)	E 10/1/99 R 1/1/07
	DES\	25000.doc	Seeding, Minor Areas	E 7/1/90 R 1/1/07
	DES\	25006a.doc	Mowing	E 12/11/01 R 1/1/12
	DES\	25006b.doc	Mowing	E 12/11/01 R 1/1/12
	DES\	25300a.doc	Tree Whip Mixture	E 8/15/91 R 4/25/08
	DES\	25300b.doc	Seedling Mixture A	E 5/5/00 R 11/1/08
	DES\	28100.doc	Grout for Use With Riprap	E 7/30/10
	DES\	28104.doc	Stone Dumped Riprap*	E 4/15/91 R 1/1/07
	DES\	28106.doc	Stone Riprap	E 11/5/10
	DES\	28303.doc	Aggregate Ditch	E 4/15/91 R 10/15/01
	DES\	30101.doc	Proof Rolling	E 4/23/04 R 1/1/07
	DES\	30103.doc	Subgrade Treatment	E 7/1/90 R 4/28/08
	DES\	30200.doc	Soil Modification	E 7/1/90 R 7/30/10
	DES\	31100.doc	Rock Fill	E 10/15/95 R 4/26/13
	DES\	31101.doc	Subbase Granular Material	E 11/5/04
	DES\	35500d.doc	Temporary Pavement	E 10/1/95 R 4/23/10
	DES\	35600.doc	Temporary Base Course Widening ___"	E 4/26/13
	DES\	40600.doc	Clean Existing Pavement Edge Joint	E 1/3/00 R 1/1/07
	DES\	40601.doc	Anti-Strip Additive for Hot-Mix Asphalt	E 7/30/10
	DES\	40602.doc	Hot-Mix Asphalt – Prime Coat (BMPR)	E 4/25/14
	DES\	40604a.doc	Hot-Mix Asphalt Surface Course Surface Tests	E 11/1/03 R 1/1/07
	DES\	40613.doc	Payment for Use of Material Transfer	E 4/23/10

SPECIAL PROVISIONS CHECK LIST
Generated - 1/21/14 3:17 PM

Designer: _____ **FAP:** _____
Contract No.: _____ **Section:** _____
County: _____

			Device	
	DES\	40706.doc	Bituminous Prime Coat for Hot-Mix Asphalt Pavement (Full-Depth)	E 8/3/07 R 4/23/10
	DES\	40713.doc	Grooved-in Rumble Strip	E 11/16/07 R 7/30/10
	DES\	42020.doc	Railroad Approach Pavement	E 10/1/95 R 1/1/07
	DES\	42401.doc	Sidewalk Drains	E 3/1/91 R 1/1/07
	DES\	42402.doc	Temporary Sidewalks	E 3/1/91 R 2/1/96
	DES\	44000.doc	Partial Depth Patching	E 4/26/13
	DES\	44001.doc	Bridge Wearing Surface Removal	E 7/1/90 R 1/1/07
	DES\	44002.doc	Longitudinal Joint Repair	E 4/26/13
	DES\	44003.doc	Protection of Frames and Lids of Utility Structures	E 3/6/91 R 1/1/07
	DES\	44003a.doc	Hot-Mix Asphalt Surface Removal, **" (** mm)	E 3/1/93 R 11/8/13
	DES\	44003b.doc	Hot-Mix Asphalt Surface Removal, **" (** mm)	E 2/5/93 R 11/8/13
	DES\	44003c.doc	Center Joint Repair System	E 3/1/91 R 4/25/14
	DES\	44003d.doc	Pavement Drainage After Cold Milling	E 3/15/96 R 1/1/07
	DES\	44003e.doc	Pavement Patching with Hot-Mix Asphalt Surface Removal	E 3/1/97 R 1/1/07
	DES\	44003f.doc	Hot-Mix Asphalt Concrete Milling Material	E 11/1/03 R 8/3/07
	DES\	44200.doc	Class (*) Patches, Type (**),(***) "	E 1/1/99 R 11/1/07
	DES\	44300.doc	Reflective Crack Control Treatment	E 3/1/96 R 1/1/07
	DES\	45100.doc	Crack and Joint Sealing	E 6/15/97 R 1/1/07
	DES\	48205.doc	Hot-Mix Asphalt Shoulder Resurfacing Required to be Constructed Simultaneously with Mainline Paving	E 4/23/10
	DES\	48206.doc	Hot-Mix Asphalt Shoulder Resurfacing Constructed Simultaneously with Mainline Paving	E 1/22/01 R 1/1/07
	DES\	50103.doc	Concrete Headwall Removal	E 7/1/90
	DES\	50104.doc	Concrete Handrail Removal	E 7/1/90 R 1/1/07
	DES\	50300.doc	Bin-Type Retaining Wall	E 7/1/90 R 1/1/07
	DES\	50301.doc	Concrete Wearing Surface	E 7/1/90 R 1/1/07
	DES\	50302.doc	Surface Filler, Special (Gallon)	E 4/23/10
	DES\	50312.doc	Plug Existing Deck Drains	E 1/1/96 R 3/22/01
	DES\	50312a.doc	Floor Drain Extension	E 3/22/01
	DES\	50317.doc	Bridge Floor Finishing Machine	E 5/1/95 R 1/1/07
	DES\	50319.doc	Protective Coat, Special	E 4/23/10
	DES\	52100b.doc	Jack and Reposition Bearings	E 11/15/93 R 1/1/09
	DES\	52100c.doc	Jacking and Cribbing	E 1/1/94 R 1/1/07
	DES\	54200.doc	Seepage Collar	E 12/1/96
	DES\	54201.doc	Remove and Relay Pipe Culverts	E 7/1/90 R 1/1/07
	DES\	54202.doc	Pipe Culverts (Jacked)	E 1/1/14
	DES\	54204.doc	Pipe Culverts	E 7/1/90 R 1/1/07
	DES\	54204e.doc	Backfill - Pipe Culverts	E 10/15/95 R 1/1/07

SPECIAL PROVISIONS CHECK LIST
Generated - 1/21/14 3:17 PM

Designer: _____ **FAP:** _____
Contract No.: _____ **Section:** _____
County: _____

	DES\	55000.doc	Storm Sewer, (Water Main Quality Pipe)	E 1/1/11 R 1/1/12
	DES\	55007.doc	Backfill, Building Removal	E 8/20/91 R 1/1/07
	DES\	55200.doc	Steel Pipe Culvert, Special (Jacked) * inches (* mm)	E 7/1/94 R 1/1/07
	DES\	55201.doc	(*Storm Sewer/Pipe Culvert) Jacked in Place, ** inches (** mm)	E 7/1/94 R 1/1/07
	DES\	56100.doc	Steel Casings * Inches	E 7/1/90 R 1/1/13
	DES\	56101.doc	Steel Casings * Inches	E 7/1/90 R 1/1/13
	DES\	60101.doc	Pipe Underdrain	E 8/1/03
	DES\	60200a.doc	Inlets, Type G-1	E 10/1/95 R 1/1/07
	DES\	60200b.doc	Inlets, Type G-1, Special	E 10/1/95 R 1/1/07
	DES\	60200c.doc	Inlets, Type G-1, Double, Special	E 10/1/95 R 1/1/07
	DES\	60200d.doc	Inlet Manhole, Type G-1, 4' (1.2 m) Diameter	E 10/1/95 R 1/1/07
	DES\	60200e.doc	Inlet-Manhole, Type G-1, 4' (1.2 m) Diameter, Special	E 10/1/95 R 1/1/07
	DES\	60200f.doc	Inlet-Manhole, Type G-1, 5' (1.5 m) Diameter	E 10/1/95 R 1/1/07
	DES\	60200g.doc	Inlet-Manhole, Type G-1, 5' (1.5 m) Diameter, Special	E 10/1/95 R 1/1/07
	DES\	60200h.doc	Inlet-Manhole, Type G-1, 5' (1.5 m) Diameter, Double, Special	E 10/1/95 R 1/1/07
	DES\	60200i.doc	Inlet-Manhole, Type G-1, 8' (2.4 m) Diameter, Double, Special	E 10/1/95 R 1/1/07
	DES\	60200j.doc	Manhole to be Adjusted with New Type G-1 Frame and Grate	E 10/1/95 R 1/1/07
	DES\	60200k.doc	Temporary Inlet Drainage Treatment	E 1/1/97
	DES\	60200l.doc	Inlets, Type G-2	E 11/1/03 R 1/1/07
	DES\	60200m.doc	Inlets, Type G-1, Double	E 7/31/09
	DES\	60200n.doc	Inlets, Type " * ", With Special Frame and Grate	E 8/2/13
	DES\	60200o.doc	Manhole, Type A, of the Diameter Specified with Special Frame and Grate	E 8/2/13
	DES\	60504.doc	Filling Existing Inlets	E 7/1/90 R 7/1/94
	DES\	60504a.doc	Filling Existing Culverts	E 10/15/95 R 1/1/07
	DES\	60504b.doc	Filling Existing Drainage Structures	E 10/15/95 R 1/1/07
	DES\	60608.doc	Island Pavement Constructed on Existing Pavement	E 1/1/97 R 1/1/07
	DES\	60612.doc	Drainage Holes	E 7/1/90 R 1/1/07
	DES\	63000.doc	Erosion Control Curb	E 4/1/91 R 1/1/07
	DES\	63001.doc	Guardrail Aggregate Erosion Control	E 2/1/93 R 1/1/07
	DES\	63008.doc	Steel Plate Beam Guardrail, Type A, 6.75 Foot Posts	E 7/31/09 R 4/27/12
	DES\	63104.doc	Traffic Barrier Terminals, Type 1, Special (Flared) or (Tangent)	E 7/31/09 R 4/26/13
	DES\	63107.doc	Traffic Barrier Terminals, Type 6	E 7/31/09
	DES\	63111c.doc	Traffic Barrier Terminals	E 2/1/96 R 11/5/04
	DES\	63114.doc	Traffic Barrier Terminals, Type 2	E 7/31/09

SPECIAL PROVISIONS CHECK LIST
Generated - 1/21/14 3:17 PM

Designer: _____ **FAP:** _____
Contract No.: _____ **Section:** _____
County: _____

	DES\	63200.doc	Guard Post Removal	E 7/1/90 R 1/1/07
	DES\	63500.doc	Flexible Delineator Maintenance	E 5/5/92 R 1/1/94
	DES\	63501.doc	Flexible Delineators	E 10/1/95 R 1/1/07
	DES\	66701.doc	Permanent Survey Markers	E 1/1/14
	DES\	66704.doc	Permanent Survey Marker, Type 1, Bridge Placement	E 7/1/90 R 3/11/11
	DES\	66802.doc	Permanent Survey Ties	E 4/1/91 R 4/27/12
	DES\	67005.doc	Equipment Vault for Nuclear Testing Equipment	E 6/24/93 R 7/1/94
	DES\	68000.doc	Railroad Track Removal	E 11/1/94 R 1/1/07
	DES\	68000a.doc	Railroad Ties Removal and Disposal	E 11/1/94 R 10/1/95
	DES\	68300.doc	Mortared Stone Wall	E 3/1/91 R 1/1/07
√	DES\	70100.doc	Traffic Control Plan	E R
	DES\	70106.doc	Speeding Penalty	E 1/21/05
	DES\	70108b.doc	Traffic Control and Protection Standard 701331 (Special)	E 10/15/95 R 7/31/09
	DES\	70114.doc	Width Restriction Signing	E 11/1/07 R 1/1/12
	DES\	70120.doc	Traffic Control and Protection BLR 21 and BLR 21 (Special)	E 4/25/08
	DES\	70121.doc	Traffic Control and Protection BLR 22 and BLR 22 (Special)	E 4/25/08 R 7/31/09
	DES\	70122.doc	Traffic Control and Protection Standard 701606 (Special)	E 7/31/09
	DES\	70300.doc	Pavement Marking Removal/Work Zone Pavement Marking Removal	E 4/29/05
	DES\	70400.doc	Temporary Concrete Barrier, State Owned and Temporary Concrete Barrier Terminal Sections, State Owned	E 5/1/91 R 1/1/07
	DES\	70400a.doc	Temporary Concrete Barrier Reflectors	E 1/21/05
	DES\	73300.doc	Re-Tightening Anchor Bolts for Cantilever Sign Structures	E 4/25/14
	DES\	78000.doc	Thermoplastic Pavement Marking Equipment	E 7/1/90 R 1/1/07
	DES\	78001.doc	Thermoplastic Pavement Marking Equipment	E 7/1/90 R 1/1/07
	DES\	78002.doc	Thermoplastic Pavement Marking Equipment	E 7/1/90 R 1/1/07
	DES\	81000.doc	Conduit, Pushed or Trenched	E 10/1/91 R 1/1/07
	DES\	81500.doc	Trench & Backfill, Special for Conduit Installation Beneath Bituminous Shoulders	E 3/21/94 R 1/1/07
	DES\	86300.doc	Terminal Facility	E 3/21/94 R 1/1/07
	DES\	87300.doc	Electric Cable in Conduit, Lead-In, No. 18	E 3/21/94 R 10/15/01
	DES\	88600.doc	Detector Loop, Special for Traffic Counters	E 3/21/94 R 1/1/07
	DES\	88600a.doc	Detector Loops, Type 1	E 3/1/96 R 8/3/07
	DES\	100400.doc	Aggregate Optimization of Class PV Mix for Slipform Paving	E 8/3/12
	DES\	100401.doc	Coarse Aggregate Fill	E 4/29/11

SPECIAL PROVISIONS CHECK LIST
Generated - 1/21/14 3:17 PM

Designer: _____ **FAP:** _____
Contract No.: _____ **Section:** _____
County: _____

	DES\	100402.doc	Concrete Superstructure Aggregate Optimization	E 8/4/06 R 8/3/12
	DES\	100403b.doc	Coarse Aggregate for Bituminous Courses, Class A	E 6/29/93 R 1/1/07
	DES\	100404.doc	Aggregate Quality	E 7/1/90 R 4/26/13
	DES\	103000.doc	Hot Mix Asphalt Quality Control for Performance (D4)	E 4/26/13
	DES\	103001.doc	Hot-Mix Asphalt - Pay for Performance Using Percent within Limits - Jobsite Sampling (D4)	E 4/26/13
	DES\	103002.doc	HMA Mixture Design Requirements, Volumetric Requirements, Verification and Production (D-4)	E 01/01/13 R 11/01/13
	DES\	103100.doc	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS) (D-4)	E 04/25/14
	DES\	110300.doc	PCC QC/QA Electronic Report Submittal	E 4/26/13
	DES\	110303.doc	PCC Automatic Batching Equipment	E 4/23/10 R 11/8/13

BDE Special Provisions

Numeric Index

REVISED INDEX

NUMERIC DESIGN INTERIM SPECIAL PROVISIONS (ISP's)

Get a copy of the current check list from the Program Development Secretary, indicate which ISP's are to be included in your set of special provisions, fill in any blanks as indicated on the check list, and include with your set of special provisions to be sent to Springfield where they will be inserted.

Standard Spec. No.	PC No.	Item
100.00	10000	Errata for the 2012 Standard Specifications
107.01	10701	Construction Air Quality – Diesel Retrofit
107.11a	10711a	Railroad Protective Liability Insurance
107.11b	10711b	Railroad Protective Liability Insurance (5 and 10)
107.19a	10719a	Building Removal Case I
107.19b	10719b	Building Removal Case II
107.19c	10719c	Building Removal Case III
107.19d	10719d	Building Removal Case IV
107.38	10738	Bridge Demolition Debris
108.05	10805	Working Days
108.05a	10805a	Completion Date (Via Calendar Days)
108.05b	10805b	Completion Date (Via Calendar Days) Plus Working Days
108.06	10806	Training Special Provision
108.06a	10806a	Disadvantaged Business Enterprise Participation
108.06b	10806b	Weekly DBE Trucking Reports
109.00a	10900a	Steel Cost Adjustment
109.01	10901	Bituminous Materials Cost Adjustments
109.03	10903	Fuel Cost Adjustment
109.09	10909	Contract Claims
202.03	20203	Removal and Disposal of Surplus Materials
250.07	25007	Seeding

NUMERIC DESIGN INTERIM SPECIAL PROVISIONS (ISP's)

Standard Spec. No.	PC No.	Item
280.02	28002	Above Grade Inlet Protection
303.00	30300	Aggregate Subgrade Improvement
312.06	31206	Stabilized Subbase
406.00	40600	Warm Mix Asphalt
406.01	40601	Hot-Mix Asphalt – Mixture Design Verification and Production
406.00f	40600f	Material Transfer Device
406.03	40603	Surface Testing of Hot-Mix Asphalt Overlays
406.07	40607	Hot-Mix Asphalt – Density Testing of Longitudinal Joints
406.14	40614	Hot-Mix Asphalt – Mixture Design Composition and Volumetric Requirements
440.00	44000	Longitudinal Joint and Crack Patching
440.01	44001	Paved Shoulder Removal
440.02	44002	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching
504.00	50400	Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet
504.04	50404	Concrete Box Culverts with Skews ≤ 30 Degrees Regardless of Design Fill and Skews >30 Degrees with Design Fills > 5 Feet
508.05	50805	Reinforcement Bars
542.00	54200	Concrete End Sections for Pipe Culverts
542.01	54201	Traversable Pipe Grate
542.02	54202	LRFD Pipe Culvert Burial Tables
543.00	54300	Insertion Lining of Culverts
550.00	55000	LRFD Storm Sewer Burial Tables
606.02	60602	Concrete Gutter, Curb, Median, and Paved Ditch

NUMERIC DESIGN INTERIM SPECIAL PROVISIONS (ISP's)

Standard Spec. No.	PC No.	Item
669.01	69901	Removal and Disposal of Regulated Substances
701.00	70100	Automated Flagger Assistance Devices
701.17	70117	Pavement Patching
703.02	70302	Pavement Marking Tape Type IV
780.00	780.00	Wet Reflective Thermoplastic Pavement Marking
780.02	78002	Preformed Plastic Pavement Marking Type D - Inlaid
780.03	780.03	Grooving for Recessed Pavement Markings
888.00	88800	Accessible Pedestrian Signals (APS)
1003.04	100304	Granular Materials
1004.01	100401	Friction Aggregate
1004.02	100402	Coarse Aggregate in Bridge Approach Slabs/Footings
1008.27	100827	Moisture Cured Urethane Paint System
1020.05a	102005a	Concrete Mix Design – Department Provided
1020.16	102016	Quality Control/Quality Assurance of Concrete Mixtures
1031.00	103100	Reclaimed Asphalt Pavement and Reclaimed Asphalt Shingles
1088.01	108801	Coated Galvanized Steel Conduit
1103.03	110303	Portland Cement Concrete Equipment

BDE Special Provisions

Alphabetic Index

REVISED INDEX

ALPHABETIC LIST OF DESIGN INTERIM SPECIAL PROVISIONS (ISP's)

Get a copy of the current check list from the Program Development Secretary, indicate which ISP's are to be included in your set of special provisions, fill in any blanks as indicated on the check list, and include with your set of special provisions to be sent to Springfield where they will be inserted.

Standard Spec. No.	PC No.	Item
280.02	28002	Above Grade Inlet Protection
888.00	88800	Accessible Pedestrian Signals (APS)
303.00	30300	Aggregate Subgrade Improvement
701.00	70100	Automated Flagger Assistance Devices
109.01	10901	Bituminous Materials Cost Adjustment
107.38	10738	Bridge Demolition Debris
503.19	50319	Bridge Relief Joint Sealer
107.19a	10719a	Building Removal Case I
107.19b	10719b	Building Removal Case II
107.19c	10719c	Building Removal Case III
107.19d	10719d	Building Removal Case IV
1004.02	100402	Coarse Aggregate in Bridge Approach Slabs/Footings
1088.01	108801	Coated Galvanized Steel Conduit
108.05a	10805a	Completion Date (Via Calendar Days)
108.05b	10805b	Completion Date (Via Calendar Days) Plus working Days
504.00	50400	Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet
504.04	50404	Concrete Box Culverts with Skews ≤ 30 Degrees Regardless of Design Fill and Skews >30 Degrees with Design Fills > 5 Feet
542.00	54200	Concrete End Sections for Pipe Culverts
606.02	60602	Concrete Gutter, Curb, Median, and Paved Ditch

REVISED INDEX

ALPHABETIC LIST OF DESIGN INTERIM SPECIAL PROVISIONS (ISP's)

Standard Spec. No.	PC No.	Item
1020.05a	102005a	Concrete Mix Design – Department Provided
107.01	10701	Construction Air Quality – Diesel Retrofit
109.09	10909	Contract Claims
108.06a	10806a	Disadvantaged Business Enterprise Participation
100.00	10000	Errata for the 2012 Standard Specifications
1004.01	100401	Friction Aggregate
109.03	10903	Fuel Cost Adjustment
1003.04	100304	Granular Materials
780.03	780.03	Grooving for Recessed Pavement Markings
406.07	40607	Hot-Mix Asphalt-Density Testing of Longitudinal Joints
406.14	40614	Hot-Mix Asphalt – Mixture Design Composition and Volumetric Requirements
406.01	40601	Hot-Mix Asphalt – Mix Design Verification and Production
440.00	44000	Longitudinal Joint and Crack Patching
543.00	54300	Insertion Lining of Culverts
542.02	54202	LRFD Pipe Culvert Burial Tables
550.00	55000	LRFD Storm Sewer Burial Tables
406.00f	40600f	Material Transfer Device
1008.27	100827	Moisture Cured Urethane Paint System
440.01	44001	Paved Shoulder Removal
703.02	70302	Pavement Marking Tape Type IV
701.17	70117	Pavement Patching

REVISED INDEX

ALPHABETIC LIST OF DESIGN INTERIM SPECIAL PROVISIONS (ISP's)

Standard Spec. No.	PC No.	Item
1103.03	110303	Portland Cement Concrete Equipment
440.02	44002	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching
780.00	78000	Preformed Plastic Pavement Marking Type D - Inlaid
1020.16	102016	Quality Control/Quality Assurance of Concrete Mixtures
107.11	10711a	Railroad Protective Liability Insurance
107.11	10711b	Railroad Protective Liability Insurance (5 and 10)
1031.00	103100	Reclaimed Asphalt Pavement and Reclaimed Asphalt Singles
508.05	50805	Reinforcement Bars
669.01	66901	Removal and Disposal of Regulated Substances
202.03	20203	Removal and Disposal of Surplus Materials
250.07	25007	Seeding
312.06	31206	Stabilized Subbase
109.00	10900a	Steel Cost Adjustment
406.03	40603	Surface Testing of Hot-Mix Asphalt Overlays
280.04	28004	Temporary Erosion and Sediment Control
108.06	10806	Training Special Provision
542.01	54201	Traversable Pipe Grate
406.00	40600	Warm Mix Asphalt
108.06b	10806b	Weekly DBE Trucking Reports (BDE)
780.00	78000	Wet Reflective Thermoplastic Pavement Marking
108.05	10805	Working Days

BDE Special Provisions

Designer Note: Insert into all contracts.

CONTRACT CLAIMS (BDE)

Effective: April 1, 2014

Revise the first paragraph of Article 109.09(a) of the Standard Specifications to read:

"(a) Submission of Claim. All claims filed by the Contractor shall be in writing and in sufficient detail to enable the Department to ascertain the basis and amount of the claim. As a minimum, the following information must accompany each claim submitted."

Revise Article 109.09(e) of the Standard Specifications to read:

"(e) Procedure. The Department provides two administrative levels for claims review.

Level I Engineer of Construction
Level II Chief Engineer/Director of Highways or Designee

(1) Level I. All claims shall first be submitted at Level I. Two copies each of the claim and supporting documentation shall be submitted simultaneously to the District and the Engineer of Construction. The Engineer of Construction, in consultation with the District, will consider all information submitted with the claim and render a decision on the claim within 90 days after receipt by the Engineer of Construction. Claims not conforming to this Article will be returned without consideration. The Engineer of Construction may schedule a claim presentation meeting if in the Engineer of Construction's judgment such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted. If a Level I decision is not rendered within 90 days of receipt of the claim, or if the Contractor disputes the decision, an appeal to Level II may be made by the Contractor.

(2) Level II. An appeal to Level II shall be made in writing to the Engineer of Construction within 45 days after the date of the Level I decision. Review of the claim at Level II shall be conducted as a full evaluation of the claim. A claim presentation meeting may be scheduled if the Chief Engineer/Director of Highways determines that such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted. A Level II final decision will be rendered within 90 days of receipt of the written request for appeal.

Full compliance by the Contractor with the provisions specified in this Article is a contractual condition precedent to the Contractor's right to seek relief in the Court of Claims. The Director's written decision shall be the final administrative action of the Department. Unless the Contractor files a claim for adjudication by the Court of Claims within 60 days after the date of the written decision, the failure to file shall constitute a release and waiver of the claim."

Designer Note: Insert into contracts using the construction of HMA stabilized subbase and stabilized subbase (which would allow the Contractor the option of choosing HMA).

STABILIZED SUBBASE (BDE)

Effective: April 1, 2014

Revise Article 312.06 of the Standard Specifications to read:

"312.06 Finishing. The compacted subbase shall meet the lines and grades shown on the plans."

Designer Note: Don't use this BDE Special. Use the District Special named "Hot-Mix Asphalt – Mixture Design Composition and Volumetric Requirements (D-4)".

HOT-MIX ASPHALT – MIXTURE DESIGN COMPOSITION AND VOLUMETRIC REQUIREMENTS (BDE)

Effective: November 1, 2013

Revise Article 406.14(b) of the Standard Specifications to read:

"(b) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was not produced within 2.0 to 6.0 percent air voids or within the individual control limits of the JMF, the mixture and test strip will not be paid for and the mixture shall be removed at the Contractor's expense. An additional test strip and mixture will be paid for in full, if produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF."

Revise Article 406.14(c) of the Standard Specifications to read:

"(c) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF, the mixture shall be removed. Removal will be paid in accordance to Article 109.04. This initial mixture and test strip will be paid for at the contract unit prices. The additional mixture will be paid for at the contract unit price, and any additional test strips will be paid for at one half the unit price of each test strip."

Revise Article 1030.04(a)(1) of the Standard Specifications to read:

"(1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) [1/]										
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)		100								
1 in. (25 mm)	90	100		100						
3/4 in. (19 mm)		90	82	100		100				
1/2 in. (12.5 mm)	45	75	50	85	90	100		100		100
3/8 in. (9.5 mm)						89	90	100		100
#4 (4.75 mm)	24	42 [2/]	24	50 [2/]	28	65	32	69	90	100
#8 (2.36 mm)	16	31	20	36	28	48 [3/]	32	52 [3/]	70	90
#16 (1.18 mm)	10	22	10	25	10	32	10	32	50	65
#50 (300 µm)	4	12	4	12	4	15	4	15	15	30
#100 (150 µm)	3	9	3	9	3	10	3	10	10	18
#200 (75 µm)	3	6	3	6	4	6	4	6	7	9
Ratio Dust/Asphalt Binder		1.0		1.0		1.0		1.0		1.0 [4/]

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the #4 (4.75 mm) sieve for binder courses with Ndesign ≥ 90.

3/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign ≥ 90.

4/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer."

Delete Article 1030.04(a)(4) of the Standard Specifications.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

"(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

VOLUMETRIC REQUIREMENTS High ESAL						
	Voids in the Mineral Aggregate (VMA), % minimum					Voids Filled with Asphalt Binder (VFA), %
Ndesign	IL-25.0	IL-19.0	IL-12.5	IL-9.5	IL-4.75 1/	
50	12.0	13.0	14.0	15.0	18.5	65 – 78 2/
70						65 - 75
90						
105						

1/ Maximum Drain-down for IL-4.75 shall be 0.3 percent

2/ VFA for IL-4.75 shall be 76-83 percent"

Delete Article 1030.04(b)(4) of the Standard Specifications.

Revise the Control Limits Table in Article 1030.05(d)(4) of the Standard Specifications to read:

"CONTROL LIMITS					
Parameter	High ESAL Low ESAL Individual Test	High ESAL Low ESAL Moving Avg. of 4	All Other Individual Test	IL-4.75 Individual Test	IL-4.75 Moving Avg. of 4
% Passing: 1/					
1/2 in. (12.5 mm)	± 6%	± 4%	± 15%		
No. 4 (4.75 mm)	± 5%	± 4%	± 10%		
No. 8 (2.36 mm)	± 5%	± 3%			
No. 16 (1.18 mm)				± 4%	± 3%
No. 30 (600 µm)	± 4%	± 2.5%			
Total Dust Content	± 1.5%	± 1.0%	± 2.5%	± 1.5%	± 1.0%

No. 200 (75 µm)					
Asphalt Binder Content	± 0.3%	± 0.2%	± 0.5%	± 0.3%	± 0.2%
Voids	± 1.2%	± 1.0%	± 1.2%	± 1.2%	± 1.0%
VMA	-0.7% 2/	-0.5% 2/		-0.7% 2/	-0.5% 2/

1/ Based on washed ignition oven

2/ Allowable limit below minimum design VMA requirement"

Designer Note: Consider using on contracts with longitudinal partial depth patching. There is a District Special Provision (Longitudinal Joint Repair, 440.02) that only uses one pay item by the foot. If using the BDE version and you cannot allow the milled trench to be left open overnight, specify the holes shall be filled every night.

LONGITUDINAL JOINT AND CRACK PATCHING (BDE)

Effective: April 1, 2014

Description. This work shall consist of partial depth removal of the existing portland cement concrete pavement or hot-mix asphalt (HMA) pavement and replacement with HMA.

Materials. Materials shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Bituminous Material for Prime Coat	406.02
(b) Hot-Mix Asphalt (Note 1)	1030

Note 1. If the patch is going to be resurfaced, the HMA for partial depth patches shall be a surface mixture of the same type as the proposed resurfacing or as approved by the Engineer. If the patch is not going to be resurfaced, the mix shall be as shown on the plans.

Equipment. Equipment shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Self-Propelled Milling Machine	1101.16
(b) Concrete Saw	442.03(f)
(c) Wheel Saw	442.03(g)
(d) Rollers	442.03
(e) Mechanical Sweeper	1101.03
(f) Air Equipment (Note 1)	1101.03

Note 1. The air equipment shall be capable of supplying compressed air at a minimum pressure 100 psi (690 kPa) and shall have sufficient flow rate to remove all disturbed pavement debris. The equipment shall also be according to ASTM D 4285.

CONSTRUCTION REQUIREMENTS

General. The patch width shall be 2 ft (600 mm), the length shall be a minimum of 10 ft (3 m), and the depth as shown on the plans.

Partial Depth Removal. Partial depth removal of the pavement shall be accomplished by the use of a milling machine and/or the wheel saw. The patch area shall be cleaned by air equipment or mechanical sweeper and all disturbed pavement debris and any loose or unsound

concrete shall be removed. Materials resulting from the removal shall be disposed of according to Article 202.03 of the Standard Specifications.

Exposed reinforcement shall be removed back to the point where the steel is in contact with sound concrete. Where high steel is encountered, the depth of the patch may be reduced as directed by the Engineer.

Replacement with HMA. Bituminous prime coat shall be applied to the exposed pavement according to Article 406.05(b) of the Standard Specifications.

The prepared patch shall be filled with HMA surface course with a maximum lift thickness of 3 in. (75 mm). Where more than one lift is needed, the top lift shall be a minimum of 2 in. (50 mm) thick. The HMA mixtures and density control limits shall conform to Article 1030 of the Standard Specifications.

Patch Maintenance. Patches opened to traffic which are high or become rough by rutting, shoving, or heaving shall be corrected by trimming off high areas and/or filling depressions. Filled areas shall be rolled again.

Method of Measurement. Partial depth removal of the pavement will be measured for payment in feet (meters) along the center of the removed pavement.

HMA for longitudinal partial depth patching will be measured for payment in tons (metric tons) according to Article 406.13 of the Standard Specifications.

Basis of Payment. Partial depth removal of the pavement will be paid for at the contract unit price per foot (meter) for LONGITUDINAL PARTIAL DEPTH REMOVAL, of the thickness specified.

HMA for longitudinal partial depth patching will be paid for at the contract unit price for ton (metric ton) for LONGITUDINAL PARTIAL DEPTH PATCHING.

80336

Designer Note: Insert into contracts with either HMA or PCC shoulder removal.

PAVED SHOULDER REMOVAL (BDE)

Effective: April 1, 2014

Revise the first paragraph of Article 440.07(b) of the Standard Specifications to read:

"(b) Measured Quantities. Pavement removal, driveway pavement removal, and paved shoulder removal will be measured for payment in place and the area computed in square yards (square meters)."

Revise Article 440.07(c) of the Standard Specifications to read:

"(c) Adjustment of Quantities. The quantity of pavement removal and paved shoulder removal will be adjusted if their respective thickness varies more than 15 percent from that shown on the plans. The quantity will be either increased or decreased according to the following table.

% change of thickness	% change of quantity
0 to less than 15	0
15 to less than 20	10
20 to less than 30	15
30 to less than 50	20

If the thickness of the existing pavement varies by 50 percent or more from that shown on the plans, the character of the work will be considered significantly changed and an adjustment to the contract will be made according to Article 104.02.

When an adjustment is made for variations in pavement or shoulder thickness a resulting adjustment will also be made in the earthwork quantities when applicable.

No adjustment will be made for variations in the amount of reinforcement."

Designer Note: Use on resurfacing projects to address areas which need repair, but do not warrant full depth repair. Joints and cracks, which exhibit environmental distresses, such as, spalling and "D" cracking or contains maintenance patching, are eligible for using this method of repair. Joints and cracks which exhibit load related stresses, such as, pumping, alligator cracking, corner breaks, compression failures, subgrade failures, or punch-outs should not use this method of repair. Discuss use with your Project Engineer.

PORTLAND CEMENT CONCRETE PARTIAL DEPTH HOT-MIX ASPHALT PATCHING (BDE)

Effective: April 1, 2014

Description. This work shall consist of partial depth removal of the existing Portland cement concrete pavement structure and replacement with hot-mix asphalt (HMA).

The partial depth removal on a lane width or less shall be classified by type/size as follows.

Type I	Less than 8 sq yd (9 sq m)
Type II	8 sq yd (9 sq m) or more, but less than 50 sq yd (42 sq m)
Type III	50 sq yd (42 sq m) or more, but less than 100 sq yd (84 sq m)
Type IV	100 sq yd (84 sq m) or more

Materials. Materials shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Bituminous Material for Prime Coat	406.02
(b) Hot-Mix Asphalt (Note 1)	1030

Note1. If the patch is going to be resurfaced, the HMA for partial depth patches shall be a surface mixture of the same type as the proposed resurfacing or as approved by the Engineer. If the patch is not going to be resurfaced, the mix shall be as shown on the plans.

Equipment. Equipment shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Self-Propelled Milling Machine	1101.16
(b) Concrete Saw	442.03(f)
(c) Wheel Saw	442.03(g)
(d) Rollers	442.03
(e) Mechanical Sweeper	1101.03
(f) Air Equipment (Note 1)	

Note 1. The air equipment shall be capable of supplying compressed air at a minimum pressure of 100 psi (690 kPa) and shall have sufficient flow rate to remove all disturbed pavement debris. The equipment shall also be according to ASTM D 4285.

CONSTRUCTION REQUIREMENTS

General. The minimum patch dimension shall be 24 in. x 24 in. (600 mm x 600 mm).

Partial Depth Removal. Partial depth removal of the pavement shall be accomplished by the use of a milling machine and/or the wheel saw. The patch area shall be cleaned by air equipment or mechanical sweeper and all disturbed pavement debris and any loose or unsound concrete shall be removed. Materials resulting from the removal shall be disposed of according to Article 202.03 of the Standard Specifications.

Exposed reinforcement shall be removed back to the point where the steel is in contact with sound concrete. Where high steel is encountered, the depth of the patch may be reduced as directed by the Engineer.

Replacement with HMA. When the Engineer determines the exposed pavement will be suitable for a partial depth patch, a bituminous prime coat shall be applied according to Article 406.05(b) of the Standard Specifications.

The prepared patch shall be filled with HMA with a maximum lift thickness of 3 in. (75 mm). Where more than one lift is needed, the top lift shall be a minimum of 2 in. (50 mm) thick. At the option of the Contractor, the 2 in. (50 mm) top layer may be constructed using HMA surface course. The HMA shall be compacted to the satisfaction of the Engineer.

Patch Maintenance. Patches opened to traffic which are high or become rough by rutting, shoving, or heaving shall be corrected by trimming off high areas and/or filling depressions. Filled areas shall be rolled again.

Areas Unsuitable for a Partial Depth Patch. When the Engineer determines the exposed pavement will not be suitable for a partial depth patch, or removal is one half or more of the pavement thickness, the remaining portion of the pavement shall be removed and a full depth patch shall be constructed according to Section 442 of the Standard Specifications for the Class of full depth patches included in the contract. The exposed area may be filled with HMA and the full depth patch constructed at a later date. HMA shall be placed as specified for the partial depth repair.

Method of Measurement. Partial depth removal of the Portland cement concrete pavement will be measured for payment in place and the area computed in square yards (square meters).

HMA for partial depth patching of the Portland cement concrete pavement and for the backfilling of partial depth removal when it is determined the area is not suitable for a partial depth patch will be measured for payment in Tons (Metric Tons) according to Article 406.13 of the Standard Specifications.

Basis of Payment. Partial depth removal of the Portland cement concrete pavement will be paid for at the contract unit price per Square Yard (Square Meter) for PARTIAL DEPTH REMOVAL, of the type and thickness specified.

HMA for partial depth patching and for backfilling areas unsuitable for a partial depth patch will be paid for at the contract unit price per Ton (Metric Ton) for PARTIAL DEPTH PATCHING.

When the Engineer determines to convert any partial depth patch to a full depth patch after the partial depth removal of the Portland cement concrete pavement has begun, the partial depth removal will still be paid for at the contract unit price for PARTIAL DEPTH REMOVAL. The remaining removal for the full depth patch will be considered as included in the appropriate full depth patching pay item.

Designer Note: Insert into contracts with precast concrete or cast-in-place box culvert having a skew >30 degrees and a design fill ≤ 5 feet. Also, read All Bridge Designer Memo for LRFD Design Requirements for Precast and CIP Concrete Box Culverts to ensure the proper information is shown on the plans.

CONCRETE BOX CULVERTS WITH SKEWS > 30 DEGREES AND DESIGN FILLS ≤ 5 FEET (BDE)

Effective: April 1, 2012
Revised: April 1, 2014

Revise the second paragraph of Article 540.04 of the Standard Specifications to read:

"Unless otherwise noted on the plans, the Contractor shall have the option, when a cast-in-place concrete box culvert is specified, of constructing the box culvert using precast box culvert sections when the design cover is 6 in. (150 mm) minimum. The precast box culvert sections shall be designed for the same design cover shown on the plans for cast-in-place box culvert; shall be of equal or larger size opening, and shall satisfy the design requirements of ASTM C 1577."

Add the following after the seventh paragraph of Article 540.06 of the Standard Specifications:

"Precast concrete box culverts with skews greater than 30 degrees and having design covers less than or equal to 5 feet are not covered by the standard design table shown in ASTM C 1577. The design table provided herein is provided to address this design range. The same notes, reinforcement configurations, clearances, and requirements of ASTM C 1577 apply to this special design table. A box designated 7' x 6' x 8" indicates a span of 7 ft., a rise of 6 ft., and top slab, bottom slab, walls and haunches of 8 in. unless otherwise noted on the tables.

3 ft. by 2 ft. by 4 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.168	0.900	0.295	0.096	0.269	0.168	0.853	0.144	
2<3	0.134	0.180	0.182	0.096					31
3-5	0.096	0.115	0.117	0.096					29

*top slab 7 in., bottom slab 6.0 in.

3 ft. by 3 ft. by 4 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.168	0.956	0.326	0.096	0.290	0.168	0.849	0.144	
2<3	0.101	0.214	0.218	0.096					31
3-5	0.096	0.136	0.140	0.096					31

*top slab 7.0 in., bottom slab 6.0 in.

4 ft. by 2 ft. by 5 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.204	0.790	0.262	0.120	0.268	0.180	0.846	0.144	
2<3	0.201	0.203	0.196	0.120					32
3-5	0.129	0.134	0.136	0.120					32

*top slab 7.5 in., bottom slab 6.0 in.

4 ft. by 3 ft. by 5 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.180	0.876	0.303	0.120	0.305	0.180	0.831	0.144	
2<3	0.160	0.245	0.238	0.120					38
3-5	0.120	0.161	0.165	0.120					35

*top slab 7.5 in., bottom slab 6.0 in.

4 ft. by 4 ft. by 5 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.180	0.927	0.334	0.120	0.327	0.180	0.822	0.144	
2<3	0.130	0.277	0.270	0.120					38
3-5	0.120	0.181	0.188	0.120					38

*top slab 7.5 in., bottom slab 6.0 in.

5 ft. by 3 ft. by 6 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.197	0.682	0.269	0.144	0.280	0.192	0.705	0.168	
2<3	0.206	0.259	0.246	0.144					37
3-5	0.144	0.180	0.179	0.144					35

*top slab 8.0 in., bottom slab 7.0 in.

5 ft. by 4 ft. by 6 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.192	0.735	0.299	0.144	0.307	0.192	0.693	0.168	
2<3	0.180	0.294	0.282	0.144					46
3-5	0.144	0.204	0.205	0.144					40

*top slab 8.0 in., bottom slab 7.0 in.

5 ft. by 5 ft. by 6 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.192	0.774	0.324	0.144	0.327	0.192	0.685	0.168	
2<3	0.155	0.322	0.312	0.144					45
3-5	0.144	0.224	0.228	0.144					45

*top slab 8.0 in., bottom slab 7.0 in.

6 ft. by 3 ft. by 7 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.270	0.566	0.257	0.168	0.263	0.192	0.575	0.168	
2<3	0.260	0.269	0.273	0.168					41
3-5	0.186	0.192	0.197	0.168					39

*top slab 8.0 in.

6 ft. by 4 ft. by 7 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.245	0.617	0.297	0.168	0.293	0.192	0.565	0.168	
2<3	0.225	0.305	0.313	0.168					42
3-5	0.168	0.220	0.227	0.168					41

*top slab 8.0 in.

6 ft. by 5 ft. by 7 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.226	0.657	0.331	0.168	0.317	0.192	0.551	0.168	
2<3	0.198	0.338	0.348	0.168					59
3-5	0.168	0.242	0.252	0.168					48

*top slab 8.0 in.

6 ft. by 6 ft. by 7 in.

Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2*	0.208	0.692	0.363	0.168	0.337	0.192	0.540	0.168	
2<3	0.176	0.364	0.379	0.168					52
3-5	0.168	0.261	0.275	0.168					52

*top slab 8.0 in.

7 ft. by 4 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.339	0.599	0.372	0.192	0.271	0.192	0.697	0.192	
2<3	0.287	0.335	0.342	0.192					44
3-5	0.206	0.241	0.248	0.192					42

7 ft. by 5 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.317	0.637	0.417	0.192	0.293	0.192	0.684	0.192	
2<3	0.256	0.370	0.381	0.192					49
3-5	0.192	0.266	0.276	0.192					46

7 ft. by 6 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.296	0.672	0.458	0.192	0.312	0.192	0.658	0.192	
2<3	0.230	0.401	0.416	0.192					59
3-5	0.192	0.288	0.302	0.192					55

7 ft. by 7 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.276	0.703	0.496	0.192	0.330	0.192	0.653	0.192	
2<3	0.210	0.428	0.447	0.192					59
3-5	0.192	0.307	0.326	0.192					59

8 ft. by 4 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.397	0.510	0.400	0.192	0.283	0.192	0.568	0.192	
2<3	0.399	0.415	0.423	0.192					45
3-5	0.285	0.298	0.306	0.192					45

8 ft. by 5 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.368	0.555	0.446	0.192	0.305	0.192	0.559	0.192	
2<3	0.360	0.458	0.470	0.192					48
3-5	0.259	0.328	0.340	0.192					45

8 ft. by 6 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.342	0.596	0.488	0.192	0.325	0.192	0.556	0.192	
2<3	0.328	0.496	0.512	0.192					56
3-5	0.237	0.355	0.371	0.192					50

8 ft. by 7 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.319	0.633	0.527	0.192	0.343	0.192	0.555	0.192	
2<3	0.301	0.529	0.551	0.192					65
3-5	0.219	0.379	0.399	0.192					61

8 ft. by 8 ft. by 8 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.297	0.668	0.565	0.192	0.360	0.192	0.531	0.192	
2<3	0.280	0.560	0.587	0.192					65
3-5	0.204	0.400	0.427	0.192					65

9 ft. by 5 ft. by 9 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.361	0.411	0.416	0.216	0.275	0.216	0.465	0.216	
2<3	0.425	0.484	0.496	0.216					49
3-5	0.306	0.348	0.360	0.216					49

9 ft. by 6 ft. by 9 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.335	0.439	0.455	0.216	0.294	0.216	0.467	0.216	
2<3	0.390	0.524	0.541	0.216					55
3-5	0.282	0.376	0.393	0.216					52

9 ft. by 7 ft. by 9 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.313	0.464	0.491	0.216	0.311	0.216	0.453	0.216	
2<3	0.360	0.561	0.583	0.216					64
3-5	0.262	0.402	0.423	0.216					58

9 ft. by 8 ft. by 9 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.286	0.488	0.514	0.216	0.327	0.216	0.454	0.216	
2<3	0.336	0.594	0.621	0.216					72
3-5	0.244	0.426	0.453	0.216					73

9 ft. by 9 ft. by 9 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.274	0.511	0.557	0.216	0.342	0.216	0.452	0.216	
2<3	0.316	0.625	0.659	0.216					72
3-5	0.231	0.448	0.481	0.216					72

10 ft. by 5 ft. by 10 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.370	0.393	0.392	0.240	0.263	0.240	0.240	0.240	
2<3	0.492	0.509	0.522	0.240					52
3-5	0.354	0.366	0.379	0.240					52

10 ft. by 6 ft. by 10 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.348	0.420	0.432	0.240	0.282	0.240	0.418	0.240	
2<3	0.455	0.552	0.570	0.240					56
3-5	0.329	0.397	0.414	0.240					52

10 ft. by 7 ft. by 10 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.321	0.445	0.463	0.240	0.298	0.240	0.240	0.240	
2<3	0.423	0.591	0.614	0.240					59
3-5	0.307	0.425	0.447	0.240					56

10 ft. by 8 ft. by 10 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.301	0.469	0.496	0.240	0.314	0.240	0.240	0.240	
2<3	0.394	0.627	0.655	0.240					72
3-5	0.288	0.451	0.478	0.240					66

10 ft. by 9 ft. by 10 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.284	0.492	0.527	0.240	0.329	0.240	0.240	0.240	
2<3	0.371	0.660	0.694	0.240					79
3-5	0.272	0.475	0.508	0.240					85

10 ft. by 10 ft. by 10 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.272	0.514	0.559	0.240	0.344	0.240	0.240	0.240	
2<3	0.353	0.691	0.732	0.240					79
3-5	0.259	0.497	0.537	0.240					79

11 ft. by 4 ft. by 11 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.414	0.341	0.333	0.264	0.264	0.264	0.264	0.264	
2<3	0.609	0.481	0.491	0.264					60
3-5	0.436	0.348	0.357	0.264					56

11 ft. by 6 ft. by 11 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.356	0.399	0.407	0.264	0.265	0.264	0.264	0.264	
2<3	0.521	0.580	0.597	0.264					56
3-5	0.377	0.418	0.435	0.264					56

11 ft. by 8 ft. by 11 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.314	0.449	0.471	0.264	0.298	0.264	0.264	0.264	
2<3	0.457	0.659	0.687	0.264					67
3-5	0.333	0.475	0.502	0.264					63

11 ft. by 10 ft. by 11 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.285	0.494	0.532	0.264	0.328	0.264	0.264	0.264	
2<3	0.409	0.727	0.769	0.264					86
3-5	0.300	0.524	0.565	0.264					86

11 ft. by 11 ft. by 11 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.276	0.516	0.562	0.264	0.342	0.264	0.264	0.264	
2<3	0.391	0.758	0.808	0.264					86
3-5	0.289	0.548	0.596	0.264					86

12 ft. by 4 ft. by 12 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.426	0.329	0.316	0.288	0.288	0.288	0.321	0.288	
2<3	0.682	0.503	0.512	0.288					64
3-5	0.489	0.364	0.373	0.288					60

12 ft. by 6 ft. by 12 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.367	0.385	0.387	0.288	0.288	0.288	0.320	0.288	
2<3	0.590	0.606	0.624	0.288					60
3-5	0.427	0.438	0.456	0.288					56

12 ft. by 8 ft. by 12 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.326	0.435	0.449	0.288	0.288	0.288	0.288	0.288	
2<3	0.521	0.690	0.719	0.288					67
3-5	0.381	0.499	0.527	0.288					64

12 ft. by 10 ft. by 12 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.298	0.481	0.507	0.288	0.305	0.288	0.288	0.288	
2<3	0.467	0.762	0.804	0.288					93
3-5	0.344	0.551	0.592	0.288					79

12 ft. by 12 ft. by 12 in.									
Design Earth Cover, ft.	Circumferential Reinforcement Areas, sq. in./ft.								
	As1	As2	As3	As4	As5	As6	As7	As8	"M", in.
0<2	0.288	0.525	0.566	0.288	0.333	0.288	0.288	0.288	
2<3	0.431	0.827	0.886	0.288					93
3-5	0.320	0.599	0.656	0.288					93"

Designer Note: Insert into contracts with precast concrete or cast-in-place concrete box culverts with skew ≤ 30 degrees regardless of the design fill **and** also skews > 30 degrees with design fill > 5 feet. Also, read All Bridge Designer Memo for LRFD Design Requirements for Precast and CIP Concrete Box Culverts to ensure the proper information is shown on the plans.

CONCRETE BOX CULVERTS WITH SKEWS ≤ 30 DEGREES REGARDLESS OF DESIGN FILL AND SKEWS > 30 DEGREES WITH DESIGN FILLS > 5 FEET (BDE)

Effective: April 1, 2012
Revised: April 1, 2014

Revise the second paragraph of Article 540.04 of the Standard Specifications to read:

"Unless otherwise noted on the plans, the Contractor shall have the option, when a cast-in-place concrete box culvert is specified, of constructing the box culvert using precast box culvert sections when the design cover is 6 in. (150 mm) minimum. The precast box culvert sections shall be designed for the same design cover shown on the plans for cast-in-place box culvert; shall be of equal or larger size opening, and shall satisfy the design requirements of ASTM C 1577."

Designer Note: Insert into contracts using Highway standard 542311. It can be used for pipe culverts or box culverts.

TRAVERSABLE PIPE GRATE (BDE)

Effective: January 1, 2013
Revised: April 1, 2014

Description. This work shall consist of constructing a traversable pipe grate on a concrete end section.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Traversable Pipe Grate Components (Note 1)	
(b) Chemical Adhesive Resin System	1027
(c) High Strength Steel Bolts, Nuts, and Washers (Note 2)	1006.08

Note 1. All steel pipe shall be according to ASTM A 53 (Type E or S), Grade B, or ASTM A 500 Grade B, standard weight (SCH. 40). Structural steel shapes and plates shall be according to AASHTO M270 Grade 50 (M 270M Grade 345) and the requirements of Article 1006.04 of the Standard Specifications. All steel components of the grating system shall be galvanized according to AASHTO M 111 or M 232 as applicable.

Anchor rods shall be according to ASTM F 1554, Grade 36 (Grade 250).

Note 2. Threaded rods conforming to the requirements of ASTM F 1554, Grade 105 (Grade 725) may be used for the thru bolts.

CONSTRUCTION REQUIREMENTS

Fabrication of the traversable pipe grate shall be according to the requirements of Section 505 of the Standard Specifications and as shown on the plans.

Anchor rods shall be set according to Article 509.06 of the Standard Specifications. Bolts and anchor rods shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench. Thru bolts shall be snug tightened and shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

Splicing of pipes shall be made by utilizing full penetration butt welds according to Article 505.04(q) of the Standard Specifications. In lieu of welding, bolted or sleeve type splices may be utilized, provided the splices are located over intermediate supports with no more than one splice per pipe run with the exception that no splice may occur in pipe runs under 30 ft. (9 m) in length.

Method of Measurement. This work will be measured for payment in place in Feet (Meters). The length measured shall be along the pipe grate elements from end to end for both longitudinal and intermediate support pipes.

Basis of Payment. This work will be paid for at the contract unit price per Foot (Meter) for TRAVERSABLE PIPE GRATE.

Designer Note: Insert into all contracts with proposed pipe culverts.

LRFD PIPE CULVERT BURIAL TABLES (BDE)

Effective: November 1, 2013
Revised: April 1, 2014

Revise Article 542.02 of the Standard Specifications to read as follows:

"

Item	Article/Section
(a) Corrugated Steel Pipe	1006.01
(b) Corrugated Steel Pipe Arch	1006.01
(c) Bituminous Coated Corrugated Steel Pipe	1006.01
(d) Bituminous Coated Corrugated Steel Pipe Arch	1006.01
(e) Zinc and Aramid Fiber Composite Coated Corrugated Steel Pipe	1006.01
(f) Aluminized Steel Type 2 Corrugated Pipe	1006.01
(g) Aluminized Steel Type 2 Corrugated Pipe Arch	1006.01
(h) Precoated Galvanized Corrugated Steel Pipe	1006.01
(i) Precoated Galvanized Corrugated Steel Pipe Arch	1006.01
(j) Corrugated Aluminum Alloy Pipe	1006.03
(k) Corrugated Aluminum Alloy Pipe Arch	1006.03
(l) Extra Strength Clay Pipe	1040.02
(m) Concrete Sewer, Storm Drain, and Culvert Pipe	1042
(n) Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	1042
(o) Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe	1042
(p) Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe	1042
(q) Polyvinyl Chloride (PVC) Pipe	1040.03
(r) Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior	1040.03
(s) Corrugated Polypropylene (CPP) pipe with smooth Interior	1040.07
(t) Corrugated Polyethylene (PE) Pipe with a Smooth Interior	1040.04
(u) Polyethylene (PE) Pipe with a Smooth Interior	1040.04
(v) Rubber Gaskets and Preformed Flexible Joint Sealants for Concrete Pipe	1056
(w) Mastic Joint Sealer for Pipe	1055
(x) External Sealing Band	1057
(y) Fine Aggregate (Note 1)	1003.04
(z) Coarse Aggregate (Note 2)	1004.05
(aa) Packaged Rapid Hardening Mortar or Concrete	1018
(bb) Nonshrink Grout	1024.02
(cc) Reinforcement Bars and Welded Wire Fabric	1006.10
(dd) Handling Hole Plugs	1042.16

Note 1. The fine aggregate shall be moist.

Note 2. The coarse aggregate shall be wet."

Revise the table for permitted materials in Article 542.03 of the Standard Specifications as follows:

"Class	Materials
A	Rigid Pipes: Extra Strength Clay Pipe Concrete Sewer Storm Drain and Culvert Pipe, Class 3 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
C	Rigid Pipes: Extra Strength Clay Pipe Concrete Sewer Storm Drain and Culvert Pipe, Class 3 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe Flexible Pipes: Aluminized Steel Type 2 Corrugated Pipe Aluminized Steel Type 2 Corrugated Pipe Arch Precoated Galvanized Corrugated Steel Pipe Precoated Galvanized Corrugated Steel Pipe Arch Corrugated Aluminum Alloy Pipe Corrugated Aluminum Alloy Pipe Arch Polyvinyl Chloride (PVC) Pipe Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior Polyethylene (PE) Pipe with a Smooth Interior Corrugated Polypropylene (CPP) Pipe with Smooth Interior
D	Rigid Pipes: Extra Strength Clay Pipe Concrete Sewer Storm Drain and Culvert Pipe, Class 3 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe Flexible Pipes: Corrugated Steel Pipe Corrugated Steel Pipe Arch Bituminous Coated Corrugated Steel Pipe Bituminous Coated Corrugated Steel Pipe Arch Zinc and Aramid Fiber Composite Coated Corrugated Steel Pipe Aluminized Steel Type 2 Corrugated Pipe Aluminized Steel Type 2 Corrugated Pipe Arch Precoated Galvanized Corrugated Steel Pipe Precoated Galvanized Corrugated Steel Pipe Arch Corrugated Aluminum Alloy Pipe Corrugated Aluminum Alloy Pipe Arch Polyvinyl Chloride (PVC) Pipe Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior Corrugated Polyethylene (PE) Pipe with a Smooth Interior Polyethylene (PE) Pipe with a Smooth Interior" Corrugated Polypropylene (CPP) Pipe with Smooth Interior

Revise Articles 542.03(b) and (c) of the Standard Specifications to read:

"(b) Extra strength clay pipe will only be permitted for pipe culverts Type 1, for 10 in., 12 in., 42 in. and 48 in. (250 mm, 300 mm, 1050 mm and 1200 mm), Types 2, up to and including 48 in. (1200 mm), Type 3, up to and including 18 in. (450 mm), Type 4 up to and including 10 in. (250 mm), for all pipe classes.

(c) Concrete sewer, storm drain, and culvert pipe Class 3 will only be permitted for pipe culverts Type 1, up to and including 10 in (250 mm), Type 2, up to and including 30 in. (750 mm), Type 3, up to and including 15 in. (375 mm); Type 4, up to and including 10 in. (250 mm), for all pipe classes."

Replace the pipe tables in Article 542.03 of the Standard Specifications with the following:

"Table IA: Classes of Reinforced Concrete Pipe
for the Respective Diameters of Pipe and Fill Heights over the Top of the Pipe

Nominal Diameter in.	Type 1 Fill Height: 3' and less 1' min cover	Type 2 Fill Height: Greater than 3' not exceeding 10'	Type 3 Fill Height: Greater than 10' not exceeding 15'	Type 4 Fill Height: Greater than 15' not exceeding 20'	Type 5 Fill Height: Greater than 20' not exceeding 25'	Type 6 Fill Height: Greater than 25' not exceeding 30'	Type 7 Fill Height: Greater than 30' not exceeding 35'
12	IV	II	III	IV	IV	V	V
15	IV	II	III	IV	IV	V	V
18	IV	II	III	IV	IV	V	V
21	III	II	III	IV	IV	V	V
24	III	II	III	IV	IV	V	V
30	IV	II	III	IV	IV	V	V
36	III	II	III	IV	IV	V	V
42	II	II	III	IV	IV	V	V
48	II	II	III	IV	IV	V	V
54	II	II	III	IV	IV	V	V
60	II	II	III	IV	IV	V	V
66	II	II	III	IV	IV	V	V
72	II	II	III	IV	V	V	V
78	II	II	III	IV	2020	2370	2730
84	II	II	III	IV	2020	2380	2740
90	II	III	III	1680	2030	2390	2750
96	II	III	III	1690	2040	2400	2750
102	II	III	IV	1700	2050	2410	2760
108	II	III	1360	1710	2060	2410	2770

Notes:
A number indicates the D-Load for the diameter and depth of fill and that a special design is required.
Design assumptions; Water filled pipe, Type 2 bedding and Class C Walls

Table IA: Classes of Reinforced Concrete Pipe
for the Respective Diameters of Pipe and Fill Heights over the Top of the Pipe
(Metric)

Nominal Diameter mm	Type 1 Fill Height: 1 m and less 0.3 m min cover	Type 2 Fill Height: Greater than 1 m not exceeding 3 m	Type 3 Fill Height: Greater than 3 m not exceeding 4.5 m	Type 4 Fill Height: Greater than 4.5 m not exceeding 6 m	Type 5 Fill Height: Greater than 6 m not exceeding 7.5 m	Type 6 Fill Height: Greater than 7.5 m not exceeding 9 m	Type 7 Fill Height: Greater than 9 m not exceeding 10.5 m
300	IV	II	III	IV	IV	V	V
375	IV	II	III	IV	IV	V	V
450	IV	II	III	IV	IV	V	V
525	III	II	III	IV	IV	V	V
600	III	II	III	IV	IV	V	V
750	IV	II	III	IV	IV	V	V
900	III	II	III	IV	IV	V	V
1050	II	II	III	IV	IV	V	V
1200	II	II	III	IV	IV	V	V
1350	II	II	III	IV	IV	V	V
1500	II	II	III	IV	IV	V	V
1650	II	II	III	IV	IV	V	V
1800	II	II	III	IV	V	V	V
1950	II	II	III	IV	100	110	130
2100	II	II	III	IV	100	110	130
2250	II	III	III	80	100	110	130
2400	II	III	III	80	100	110	130
2550	II	III	IV	80	100	120	130
2700	II	III	70	80	100	120	130

Notes:
A number indicates the D-Load for the diameter and depth of fill and that a special design is required.
Design assumptions; Water filled pipe, Type 2 bedding and Class C Walls

TABLE IB: THICKNESS OF CORRUGATED STEEL PIPE
FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 2 2/3"x1/2", 3"x1" AND 5"x1" CORRUGATIONS

Nominal Diameter in.	Type 1			Type 2			Type 3			Type 4			Type 5			Type 6			Type 7		
	Fill Height: 3' and less 1' min. cover			Fill Height: Greater than 3' not exceeding 10'			Fill Height: Greater than 10' not exceeding 15'			Fill Height: Greater than 15' not exceeding 20'			Fill Height: Greater than 20' not exceeding 25'			Fill Height: Greater than 25' not exceeding 30'			Fill Height: Greater than 30' not exceeding 35'		
	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"
12*	0.109			0.079			0.079			0.079			0.079			0.079			0.079		
15	0.109			0.079			0.079			0.079			0.079			0.109			0.109		
18	0.109			0.079			0.079			0.079			0.109			0.109			0.109		
21	0.109			0.079			0.079			0.079			0.109			0.109			0.109		
24	0.109			0.079			0.079			0.109			0.109			0.109			0.109		
30	0.109			0.079			0.109			0.109			0.109			0.109			0.109		
36	0.109E			0.079			0.109			0.109			0.109			0.109			0.138E		
42	0.109	0.109	0.109	0.079	0.079	0.079	0.109	0.079	0.109	0.109	0.079	0.109	0.109	0.109	0.109	0.109E	0.109	0.109	0.138E	0.109	0.109
48	0.109	0.109	0.109	0.109	0.079	0.079	0.109	0.079	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.138E	0.109	0.109	0.138E	0.109	0.109
54	0.109	0.109	0.109	0.109	0.079	0.109	0.109	0.079	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.138E	0.109	0.109	0.168E	0.138	0.138
60	0.109	0.109	0.109	0.109	0.079	0.109	0.109	0.079	0.109	0.109	0.109	0.109	0.138	0.109	0.109	0.138E	0.109	0.138	0.168E	0.138E	0.138E
66	0.138	0.109	0.109	0.138	0.079	0.109	0.138	0.109	0.109	0.138	0.109	0.109	0.138	0.109	0.109	0.138E	0.138	0.138	0.168E	0.138E	0.168E
72	0.138	0.109	0.109	0.138	0.079	0.109	0.138	0.109	0.109	0.138	0.109	0.109	0.138	0.109	0.138	0.168E	0.138E	0.138E	0.168E	0.138E	0.168E
78	0.168	0.109	0.109	0.168	0.079	0.109	0.168	0.109	0.109	0.168	0.109	0.109	0.168	0.138	0.138	0.168E	0.138E	0.138E	0.168E	0.168E	0.168E
84	0.168	0.109	0.138	0.168	0.079	0.109	0.168	0.109	0.109	0.168	0.109	0.109	0.168	0.138	0.138	0.168E	0.138E	0.168E	0.168E	0.168E	0.168E
90		0.138	0.138		0.079	0.109		0.109	0.109		0.109	0.138		0.138	0.138		0.168E	0.168E		0.168E	0.168E
96		0.138	0.138		0.109	0.109		0.109	0.109		0.138	0.138		0.138	0.168		0.168E	0.168E		0.168E	0.168E
102		0.138Z	0.138Z		0.109	0.109		0.109	0.109		0.138	0.138		0.138	0.168		0.168E	0.168E			
108		0.138Z	0.168Z		0.109	0.109		0.109	0.109		0.138	0.138		0.168	0.168		0.168E	0.168E			
114		0.138Z	0.168Z		0.109	0.109		0.109	0.109		0.138	0.168		0.168	0.168		0.168E	0.168E			
120		0.138Z	0.168Z		0.109	0.109		0.109	0.138		0.138	0.168		0.168	0.168						
126		0.168Z	0.168Z		0.138	0.138		0.138	0.138		0.138	0.168		0.168	0.168						
132		0.168Z	0.168Z		0.138	0.138		0.138	0.138		0.168	0.168		0.168	0.168						
138		0.168Z	0.168Z		0.138	0.138		0.138	0.138		0.168	0.168		0.168	0.168						
144		0.168Z	0.168Z		0.168	0.168		0.168	0.168		0.168	0.168									

Notes:

* 1 1/2" x 1/4" corrugations shall be use for 6", 8", and 10" diameters.

E Elongation according to Article 542.04(e), the elongation requirement for Type 1 fill heights may be eliminated for fills above 1'-6"

Z 1'-6" Minimum fill

Longitudinal seams assumed.

TABLE IB: THICKNESS OF CORRUGATED STEEL PIPE
FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 68 mm x 13 mm, 75 mm x 25 mm AND 125 mm x 25 mm CORRUGATIONS
(Metric)

Nominal Diameter mm	Type 1 Fill Height: 1 m and less 0.3 m min. cover			Type 2 Fill Height: Greater than 1 m not exceeding 3 m			Type 3 Fill Height: Greater than 3 m not exceeding 4.5 m			Type 4 Fill Height: Greater than 4.5 m not exceeding 6 m			Type 5 Fill Height: Greater than 6 m not exceeding 7.5 m			Type 6 Fill Height: Greater than 7.5 m not exceeding 9 m			Type 7 Fill Height: Greater than 9 m not exceeding 10.5 m		
	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm
300*	2.77			2.01			2.01			2.01			2.01			2.01			2.01		
375	2.77			2.01			2.01			2.01			2.01			2.77			2.77		
450	2.77			2.01			2.01			2.01			2.77			2.77			2.77		
525	2.77			2.01			2.01			2.01			2.77			2.77			2.77		
600	2.77			2.01			2.01			2.77			2.77			2.77			2.77		
750	2.77			2.01			2.77			2.77			2.77			2.77			2.77		
900	2.77E			2.01			2.77			2.77			2.77			2.77			3.51E		
1050	2.77	2.77	2.77	2.01	2.01	2.01	2.77	2.01	2.77	2.77	2.01	2.77	2.77	2.77	2.77	2.77E	2.77	2.77	3.51E	2.77	2.77
1200	2.77	2.77	2.77	2.77	2.01	2.01	2.77	2.01	2.77	2.77	2.77	2.77	2.77	2.77	2.77	3.51E	2.77	2.77	3.51E	2.77	2.77
1350	2.77	2.77	2.77	2.77	2.01	2.77	2.77	2.01	2.77	2.77	2.77	2.77	2.77	2.77	2.77	3.51E	2.77	2.77	4.27E	3.51	3.51
1500	2.77	2.77	2.77	2.77	2.01	2.77	2.77	2.01	2.77	2.77	2.77	2.77	3.51	2.77	2.77	3.51E	2.77	3.51	4.27E	3.51E	3.51E
1650	3.51	2.77	2.77	3.51	2.01	2.77	3.51	2.77	2.77	3.51	2.77	2.77	3.51	2.77	2.77	3.51E	3.51	3.51	4.27E	3.51E	4.27E
1800	3.51	2.77	2.77	3.51	2.01	2.77	3.51	2.77	2.77	3.51	2.77	2.77	3.51	2.77	3.51	4.27E	3.51E	3.51E	4.27E	3.51E	4.27E
1950	4.27	2.77	2.77	4.27	2.01	2.77	4.27	2.77	2.77	4.27	2.77	2.77	4.27	3.51	3.51	4.27E	3.51E	3.51E	4.27E	4.27E	4.27E
2100	4.27	2.77	3.51	4.27	2.01	2.77	4.27	2.77	2.77	4.27	2.77	2.77	4.27	3.51	3.51	4.27E	3.51E	4.27E	4.27E	4.27E	4.27E
2250		3.51	3.51		2.01	2.77		2.77	2.77		2.77	3.51		3.51	3.51		4.27E	4.27E		4.27E	4.27E
2400		3.51	3.51		2.77	2.77		2.77	2.77		3.51	3.51		3.51	4.27		4.27E	4.27E		4.27E	4.27E
2550		3.51Z	3.51Z		2.77	2.77		2.77	2.77		3.51	3.51		3.51	4.27		4.27E	4.27E			
2700		3.51Z	4.27Z		2.77	2.77		2.77	2.77		3.51	3.51		4.27	4.27		4.27E	4.27E			
2850		3.51Z	4.27Z		2.77	2.77		2.77	2.77		3.51	4.27		4.27	4.27		4.27E	4.27E			
3000		3.51Z	4.27Z		2.77	2.77		2.77	3.51		3.51	4.27		4.27	4.27						
3150		4.27Z	4.27Z		3.51	3.51		3.51	3.51		3.51	4.27		4.27	4.27						
3300		4.27Z	4.27Z		3.51	3.51		3.51	3.51		4.27	4.27		4.27	4.27						
3450		4.27Z	4.27Z		3.51	3.51		3.51	3.51		4.27	4.27		4.27	4.27						
3600		4.27Z	4.27Z		4.27	4.27		4.27	4.27		4.27	4.27									

Notes:

* 38 mm x 6.5 mm corrugations shall be use for 150 mm, 200 mm, and 250 mm diameters.

E Elongation according to Article 542.04(e), the elongation requirement for Type 1 fill heights may be eliminated for fills above 450 mm

Z 450 mm Minimum Fill

Longitudinal seams assumed.

TABLE IC: THICKNESS OF CORRUGATED ALUMINUM ALLOY PIPE
FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 2 2/3"x1/2" AND 3"x1" CORRUGATIONS

Nominal Diameter in.	Type 1 Fill Height: 3' and less 1' min. cover		Type 2 Fill Height: Greater than 3' not exceeding 10'		Type 3 Fill Height: Greater than 10' not exceeding 15'		Type 4 Fill Height: Greater than 15' not exceeding 20'		Type 5 Fill Height: Greater than 20' not exceeding 25'		Type 6 Fill Height: Greater than 25' not exceeding 30'		Type 7 Fill Height: Greater than 30' not exceeding 35'	
	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"
12	0.06		0.06		0.06		0.06		0.06		0.06		0.06	
15	0.06		0.06		0.06		0.06		0.06		0.06		0.06	
18	0.06		0.06		0.06		0.06		0.06		0.06		0.075	
21	0.075E		0.06		0.06		0.06		0.06		0.075		0.075E	
24	0.075E		0.06		0.06		0.06		0.06		0.075		0.075E	
30	0.105E		0.075		0.075		0.075		0.075		0.105E		0.105E	
36	0.105E		0.075		0.075		0.075		0.105		0.105E		0.105E	
42	0.105E	0.06	0.105	0.06	0.105	0.06	0.105	0.06	0.105	0.06	0.105E	0.105	0.105E	0.105E
48	0.105E	0.105	0.105	0.06	0.105	0.06	0.105	0.06	0.105	0.105	0.105E	0.105E	0.135E	0.135E
54	0.105E	0.105	0.105	0.06	0.105	0.06	0.105	0.105	0.105	0.105	0.105E	0.135E	0.135E	0.135E
60	0.135E	0.105	0.135	0.06	0.135	0.06	0.135	0.105	0.135	0.105	0.135E	0.135E	0.164E	0.135E
66	0.164E	0.105	0.164	0.06	0.164	0.06	0.164	0.105	0.164	0.135	0.164E	0.135E		0.135E
72	0.164E	0.135	0.164	0.06	0.164	0.105	0.164	0.105	0.164	0.135		0.135E		0.164E
78		0.135		0.075		0.105		0.135		0.135		0.135E		0.164E
84		0.135		0.105		0.105		0.135		0.135		0.164E		0.164E
90		0.135		0.105		0.105		0.135		0.135		0.164E		0.164E
96		0.135		0.105		0.105		0.135		0.164		0.164E		
102		0.135Z		0.135		0.135		0.135		0.164		0.164E		
108		0.135Z		0.135		0.135		0.135		0.164				
114		0.164Z		0.164		0.164		0.164		0.164				
120		0.164Z		0.164		0.164		0.164		0.164				

Notes:
E Elongation according to Article 542.04(e), the elongation requirement for Type 1 fill heights may be eliminated for fills above 1'-6"

TABLE IC: THICKNESS OF CORRUGATED ALUMINUM ALLOY PIPE
FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 2 2/3"x1/2" AND 3"x1" CORRUGATIONS
(Metric)

Nominal Diameter in.	Type 1 Fill Height: 1 m and less 0.3 m min. cover		Type 2 Fill Height: Greater than 1 m not exceeding 3 m		Type 3 Fill Height: Greater than 3 m not exceeding 4.5 m		Type 4 Fill Height: Greater than 4.5 m not exceeding 6 m		Type 5 Fill Height: Greater than 6 m not exceeding 7.5 m		Type 6 Fill Height: Greater than 7.5 m not exceeding 9 m		Type 7 Fill Height: Greater than 9 m not exceeding 10.5 m	
	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm
300	1.52		1.52		1.52		1.52		1.52		1.52		1.52	
375	1.52		1.52		1.52		1.52		1.52		1.52		1.52	
450	1.52		1.52		1.52		1.52		1.52		1.52		1.91	
525	1.91E		1.52		1.52		1.52		1.52		1.91		1.91E	
600	1.91E		1.52		1.52		1.52		1.52		1.91		1.91E	
750	2.67E		1.91		1.91		1.91		1.91		2.67E		2.67E	
900	2.67E		1.91		1.91		1.91		2.67		2.67E		2.67E	
1050	2.67E	1.52	2.67	1.52	2.67	1.52	2.67	1.52	2.67	1.52	2.67E	2.67	2.67E	2.67E
1200	2.67E	2.67	2.67	1.52	2.67	1.52	2.67	1.52	2.67	2.67	2.67E	2.67E	3.43E	3.43E
1350	2.67E	2.67	2.67	1.52	2.67	1.52	2.67	2.67	2.67	2.67	2.67E	3.43E	3.43E	3.43E
1500	3.43E	2.67	3.43	1.52	3.43	1.52	3.43	2.67	3.43	2.67	3.43E	3.43E	4.17E	3.43E
1650	4.17E	2.67	4.17	1.52	4.17	1.52	4.17	2.67	4.17	3.43	4.17E	3.43E		3.43E
1800	4.17E	3.43	4.17	1.52	4.17	2.67	4.17	2.67	4.17	3.43		3.43E		4.17E
1950		3.43		1.91		2.67		3.43		3.43		3.43E		4.17E
2100		3.43		2.67		2.67		3.43		3.43		4.17E		4.17E
2250		3.43		2.67		2.67		3.43		3.43		4.17E		4.17E
2400		3.43		2.67		2.67		3.43		4.17		4.17E		
2550		3.43Z		3.43		3.43		3.43		4.17		4.17E		
2700		3.43Z		3.43		3.43		3.43		4.17				
2850		4.17Z		4.17		4.17		4.17		4.17				
3000		4.17Z		4.17		4.17		4.17		4.17				

Notes:
E Elongation according to Article 542.04(e), the elongation requirement for Type 1 fill heights may be eliminated for fills above 450 mm.

Table IIA: THICKNESS FOR CORRUGATED STEEL PIPE ARCHES AND CORRUGATED ALUMINUM ALLOY PIPE ARCHES FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE

Equivalent Round Size in.	Corrugated Steel & Aluminum Pipe Arch 2 2/3" x 1/2"		Corrugated Steel & Aluminum Pipe Arch 3" x 1"		Corrugated Steel Pipe Arch 5" x 1"		Min. Cover	Type 1					Type 2					Type 3				
								Fill Height: 3' and less					Fill Height: Greater than 3' not exceeding 10'					Fill Height: Greater than 10' not exceeding 15'				
	Span (in.)	Rise (in.)	Span (in.)	Rise (in.)	Span (in.)	Rise (in.)	Steel & Aluminum	Steel			Aluminum		Steel			Aluminum		Steel			Aluminum	
								2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"	2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"	2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"
15	17	13					1'-6"	0.079			0.060		0.079			0.060		0.079			0.060	
18	21	15					1'-6"	0.109			0.060		0.079			0.060		0.079			0.060	
21	24	18					1'-6"	0.109			0.060		0.079			0.060		0.079			0.060	
24	28	20					1'-6"	0.109			0.075		0.079			0.075		0.079			0.075	
30	35	24					1'-6"	0.109			0.075		0.079			0.075		0.109			0.075	
36	42	29					1'-6"	0.109			0.105		0.079			0.105		0.109			0.105	
42	49	33					1'-6"	0.109			0.105		0.109			0.105		0.109			0.105	
48	57	38	53	41	53	41	1'-6"	0.109	0.079	0.109	0.135	0.060	0.109	0.079	0.109	0.135	0.060	0.109	0.079	0.109	0.135	0.060
54	64	43	60	46	60	46	1'-6"	0.109	0.109	0.109	0.135	0.060	0.109	0.079	0.109	0.135	0.060	0.109	0.079	0.109	0.135	0.060
60	71	47	66	51	66	51	1'-6"	0.138	0.109	0.109	0.164	0.060	0.138	0.079	0.109	0.164	0.060	0.138	0.109	0.109	0.164	0.060
66	77	52	73	55	73	55	1'-6"	0.168	0.109	0.109		0.105	0.168	0.079	0.109		0.075	0.168	0.109	0.109		0.105
72	83	57	81	59	81	59	1'-6"	0.168	0.109	0.109		0.105	0.168	0.079	0.109		0.105	0.168	0.109	0.109		0.105
78			87	63	87	63	1'-6"		0.109	0.109		0.105		0.079	0.109		0.105		0.109	0.109		0.105
84			95	67	95	67	1'-6"		0.109	0.109		0.105		0.109	0.109		0.105		0.109	0.109		0.105
90			103	71	103	71	1'-6"		0.109	0.109		0.135		0.109	0.109		0.135		0.109	0.109		0.135
96			112	75	112	75	1'-6"		0.109	0.109		0.164		0.109	0.109		0.164		0.109	0.109		0.164
102			117	79	117	79	1'-6"		0.109	0.109		0.164		0.109	0.109		0.164		0.109	0.109		0.164
108			128	83	128	83	1'-6"		0.138	0.138				0.138	0.138				0.138	0.138		
114			137	87	137	87	1'-6"		0.138	0.138				0.138	0.138				0.138	0.138		
120			142	91	142	91	1'-6"		0.168	0.168				0.168	0.168				0.168	0.168		

Notes:
The Type 1 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 3 tons per square foot.
The Type 2 and 3 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 2 tons per square foot.
This minimum bearing capacity will be determined by the Engineer in the field.

Table IIA: THICKNESS FOR CORRUGATED STEEL PIPE ARCHES AND CORRUGATED ALUMINUM ALLOY PIPE ARCHES FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE
(Metric)

Equivalent Round Size (mm)	Corrugated Steel & Aluminum Pipe Arch 68 x 13 mm		Corrugated Steel & Aluminum Pipe Arch 75 x 25 mm		Corrugated Steel Pipe Arch 125 x 25 mm		Min. Cover	Type 1 Fill Height: 1 m and less					Type 2 Fill Height: Greater than 1 m not exceeding 3 m					Type 3 Fill Height: Greater than 3 m not exceeding 4.5 m				
	Span (mm)	Rise (mm)	Span (mm)	Rise (mm)	Span (mm)	Rise (mm)	Steel & Aluminum	Steel			Aluminum		Steel			Aluminum		Steel			Aluminum	
								68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm
375	430	330					0.5 m	2.01			1.52		2.01			1.52		2.01			1.52	
450	530	380					0.5 m	2.77			1.52		2.01			1.52		2.01			1.52	
525	610	460					0.5 m	2.77			1.52		2.01			1.52		2.01			1.52	
600	710	510					0.5 m	2.77			1.91		2.01			1.91		2.01			1.91	
750	870	630					0.5 m	2.77			1.91		2.01			1.91		2.77			1.91	
900	1060	740					0.5 m	2.77			2.67		2.01			2.67		2.77			2.67	
1050	1240	840					0.5 m	2.77			2.67		2.77			2.67		2.77			2.67	
1200	1440	970	1340	1050	1340	1050	0.5 m	2.77	2.01	2.77	3.43	1.52	2.77	2.01	2.77	3.43	1.52	2.77	2.01	2.77	3.43	1.52
1350	1620	1100	1520	1170	1520	1170	0.5 m	2.77	2.77	2.77	3.43	1.52	2.77	2.01	2.77	3.43	1.52	2.77	2.01	2.77	3.43	1.52
1500	1800	1200	1670	1300	1670	1300	0.5 m	3.51	2.77	2.77	4.17	1.52	3.51	2.01	2.77	4.17	1.52	3.51	2.77	2.77	4.17	1.52
1650	1950	1320	1850	1400	1850	1400	0.5 m	4.27	2.77	2.77		2.67	4.27	2.01	2.77		1.91	4.27	2.77	2.77		2.67
1800	2100	1450	2050	1500	2050	1500	0.5 m	4.27	2.77	2.77		2.67	4.27	2.01	2.77		2.67	4.27	2.77	2.77		2.67
1950			2200	1620	2200	1620	0.5 m		2.77	2.77		2.67		2.01	2.77		2.67		2.77	2.77		2.67
2100			2400	1720	2400	1720	0.5 m		2.77	2.77		2.67		2.77	2.77		2.67		2.77	2.77		2.67
2250			2600	1820	2600	1820	0.5 m		2.77	2.77		3.43		2.77	2.77		3.43		2.77	2.77		3.43
2400			2840	1920	2840	1920	0.5 m		2.77	2.77		4.17		2.77	2.77		4.17		2.77	2.77		4.17
2550			2970	2020	2970	2020	0.5 m		2.77	2.77		4.17		2.77	2.77		4.17		2.77	2.77		4.17
2700			3240	2120	3240	2120	0.5 m		3.51	3.51				3.51	3.51				3.51	3.51		
2850			3470	2220	3470	2220	0.5 m		3.51	3.51				3.51	3.51				3.51	3.51		
3000			3600	2320	3600	2320	0.5 m		4.27	4.27				4.27	4.27				4.27	4.27		

Notes:
The Type 1 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 290 kN per square meter.
The Type 2 and 3 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 192 kN per square meter.
This minimum bearing capacity will be determined by the Engineer in the field.

Table IIB: CLASSES OF REINFORCED CONCRETE ELLIPTICALL AND REINFORCED CONCRETE ARCH PIPE FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE

Equivalent Round Size (in.)	Reinforced Concrete Elliptical pipe (in.)		Reinforced Concrete Arch pipe (in.)		Minimum Cover	Type 1 Fill Height: 3' and less		Type 2 Fill Height: Greater than 3' not exceeding 10'		Type 3 Fill Height: Greater than 10' not exceeding 15'	
	Span	Rise	Span	Rise	RCCP HE & A	HE	Arch	HE	Arch	HE	Arch
15	23	14	18	11	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
18	23	14	22	13 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
21	30	19	26	15 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
24	30	19	28 1/2	18	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
27	34	22	36 1/4	22 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
30	38	24	36 1/4	22 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
36	45	29	43 3/4	26 5/8	1' -0"	HE-II	A-II	HE-III	A-III	HE-IV	A-IV
42	53	34	51 1/8	31 5/16	1' -0"	HE-I	A-II	HE-III	A-III	HE-IV	A-IV
48	60	38	58 1/2	36	1' -0"	HE-I	A-II	HE-III	A-III	1460	1450
54	68	43	65	40	1' -0"	HE-I	A-II	HE-III	A-III	1460	1460
60	76	48	73	45	1' -0"	HE-I	A-II	HE-III	A-III	1460	1470
66	83	53	88	54	1' -0"	HE-I	A-II	HE-III	A-III	1470	1480
72	91	58	88	54	1' -0"	HE-I	A-II	HE-III	A-III	1470	1480

Notes:
A number indicates the D-Load for the diameter and depth of fill and that a special design is required.
Design assumptions; Water filled pipe, AASHTO Type 2 installation per AASHTO LRFD Table 12.10.2.1-1

Table IIB: CLASSES OF REINFORCED CONCRETE ELLIPTICALL AND REINFORCED CONCRETE ARCH PIPE FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE (Metric)

Equivalent Round Size (mm)	Reinforced Concrete Elliptical pipe (mm)		Reinforced Concrete Arch pipe (mm)		Minimum Cover	Type 1 Fill Height: 1 m and less		Type 2 Fill Height: Greater than 1 m not exceeding 3 m		Type 3 Fill Height: Greater than 3 m not exceeding 4.5 m	
	Span	Rise	Span	Rise	RCCP HE & A	HE	Arch	HE	Arch	HE	Arch
375	584	356	457	279	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
450	584	356	559	343	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
525	762	483	660	394	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
600	762	483	724	457	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
686	864	559	921	572	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
750	965	610	921	572	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
900	1143	737	1111	676	0.3 m	HE-II	A-II	HE-III	A-III	HE-IV	A-IV
1050	1346	864	1299	795	0.3 m	HE-I	A-II	HE-III	A-III	HE-IV	A-IV
1200	1524	965	1486	914	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1350	1727	1092	1651	1016	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1500	1930	1219	1854	1143	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1676	2108	1346	2235	1372	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1800	2311	1473	2235	1372	0.3 m	HE-I	A-II	HE-III	A-III	70	70

Notes:
A number indicates the D-Load for the diameter and depth of fill and that a special design is required.
Design assumptions; Water filled pipe, AASHTO Type 2 installation per AASHTO LRFD Table 12.10.2.1-1

TABLE IIIA: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 1 Fill Height: 3' and less, with 1' min					Type 2 Fill Height: Greater than 3', not exceeding 10'					Type 3 Fill Height: Greater than 10', not exceeding 15'					Type 4 Fill Height: Greater than 15', not exceeding 20'			
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPP
10	X	X	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	X	X	X	NA
12	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
15	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	NA	X	X	X	NA	X
18	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
21	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA
24	X	X	X	X	X	X	X	X	X	X	X	X	NA	NA	NA	X	X	X	NA
30	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
36	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA	NA	X	X	X	NA
42	X	NA	X	X	NA	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA
48	X	NA	X	X	X	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA

Notes:

PVC Polyvinyl Chloride (PVC) pipe with a smooth interior
CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
PE Polyethylene (PE) pipe with a smooth interior
CPE Corrugated Polyethylene (PE) pipe with a smooth interior
CPP Corrugated Polypropylene (CPP) pipe with a smooth interior
X This material may be used for the given pipe diameter and fill height
NA Not Available

TABLE IIIA: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE
(Metric)

Nominal Diameter (mm)	Type 1					Type 2					Type 3					Type 4			
	Fill Height: 1 m and less, with 0.3 m min. cover					Fill Height: Greater than 1 m, not exceeding 3 m					Fill Height: Greater than 3 m, not exceeding 4.5 m					Fill Height: Greater than 4.5 m, not exceeding 6 m			
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPP
250	X	X	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	X	X	X	NA
300	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
375	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	NA	X	X	X	NA	X
450	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
525	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA
600	X	X	X	X	X	X	X	X	X	X	X	X	NA	NA	NA	X	X	X	NA
750	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
900	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA	NA	X	X	X	NA
1000	X	NA	X	X	NA	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA
1200	X	NA	X	X	X	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA

Notes:

PVC Polyvinyl Chloride (PVC) pipe with a smooth interior
CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
PE Polyethylene (PE) pipe with a smooth interior
CPE Corrugated Polyethylene (PE) pipe with a smooth interior
CPP Corrugated Polypropylene (CPP) pipe with a smooth interior
X This material may be used for the given pipe diameter and fill height
NA Not Available

TABLE IIIB: PLASTIC PIPE PERMITTED

FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 5			Type 6			Type 7	
	Fill Height: Greater than 20', not exceeding 25'			Fill Height: Greater than 25', not exceeding 30'			Fill Height: Greater than 30', not exceeding 35'	
	PVC	CPVC		PVC	CPVC		CPVC	
10	X	X		X	X		X	
12	X	X		X	X		X	
15	X	X		X	X		X	
18	X	X		X	X		X	
21	X	X		X	X		X	
24	X	X		X	X		X	
30	X	X		X	X		X	
36	X	X		X	X		X	
42	X	NA		X	NA		NA	
48	X	NA		X	NA		NA	

Notes:

PVC Polyvinyl Chloride (PVC) pipe with a smooth interior

CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior

X This material may be used for the given pipe diameter and fill height

NA Not Available

TABLE IIIB: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE
(metric)

Nominal Diameter (mm)	Type 5			Type 6			Type 7	
	Fill Height: Greater than 6 m, not exceeding 7.5 m			Fill Height: Greater than 7.5 m, not exceeding 9 m			Fill Height: Greater than 9 m, not exceeding 10.5 m	
	PVC	CPVC		PVC	CPVC		CPVC	
250	X	X		X	X		X	
300	X	X		X	X		X	
375	X	X		X	X		X	
450	X	X		X	X		X	
525	X	X		X	X		X	
600	X	X		X	X		X	
750	X	X		X	X		X	
900	X	X		X	X		X	
1000	X	NA		X	NA		NA	
1200	X	NA		X	NA		NA	

Notes:

PVC	Polyvinyl Chloride (PVC) pipe with a smooth interior
CPVC	Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
PE	Polyethylene (PE) pipe with a smooth interior
X	This material may be used for the given pipe diameter and fill height
NA	Not Available"

Revise the first sentence of the first paragraph of Article 542.04(c) of the Standard Specifications to read:

"Compacted aggregate, at least 4 in. (100 mm) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except compacted impervious material shall be used for the outer 3 ft. (1 m) at each end of the pipe culvert."

Revise the seventh paragraph of Article 542.04(d) of the Standard Specifications to read:

"PVC, PE and CPP pipes shall be joined according to the manufacturer's specifications."

Replace the third sentence of the first paragraph of Article 542.04(h) of the Standard Specifications with the following:

"The total cover required for various construction loadings shall be the responsibility of the Contractor."

Delete "Table IV: Wheel Loads and Total Cover" in Article 542.04(h) of the Standard Specifications.

Revise the first and second paragraphs of Article 542.04(i) of the Standard Specifications to read:

"(i) Deflection Testing for Pipe Culverts. All PE, PVC and CPP pipe culverts shall be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted. The testing shall be performed in the presence of the Engineer.

For PVC, PE, and CPP pipe culverts with diameters 24 in. (600 mm) or smaller, a mandrel drag shall be used for deflection testing. For PVC, PE, and CPP pipe culverts with diameters over 24 in. (600 mm), deflection measurements other than by a mandrel shall be used."

Revise Articles 542.04(i)(1) and (2) of the Standard Specifications to read:

"(1) For all PVC pipe: as defined using ASTM D 3034 methodology.

(2) For all PE and CPP pipe: the average inside diameter based on the minimum and maximum tolerances specified in the corresponding ASTM or AASHTO material specifications."

Revise the second sentence of the second paragraph of Article 542.07 of the Standard Specifications to read:

"When a prefabricated end section is used, it shall be of the same material as the pipe culvert, except for polyethylene (PE), polyvinylchloride (PVC), and polypropylene (PP) pipes which shall have metal end sections."

Revise the first paragraph of Article 1040.03 of the Standard Specifications to read:

"**1040.03 Polyvinyl Chloride (PVC) Pipe.** Acceptance testing of PVC pipe and fittings shall be accomplished during the same construction season in which they are installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements."

Delete Articles 1040.03(e) and (f) of the Standard Specifications.

Revise Articles 1040.04(c) and (d) of the Standard Specifications to read:

"(c) PE Profile Wall Pipe for Insertion Lining. The pipe shall be according to ASTM F 894. When used for insertion lining of pipe culverts, the pipe liner shall have a minimum pipe stiffness of 46 psi (317 kPa) at five percent deflection for nominal inside diameters of 42 in. (1050 mm) or less. For nominal inside diameters of greater than 42 in. (1050 mm), the pipe liner shall have a minimum pipe stiffness of 32.5 psi (225 kPa) at five percent deflection. All sizes shall have wall construction that presents essentially smooth internal and external surfaces.

(d) PE Pipe with a Smooth Interior. The pipe shall be according to ASTM F 714 (DR 32.5) with a minimum cell classification of PE 335434 as defined in ASTM D 3350. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties and the resin used to manufacture the pipe meets or exceeds the minimum cell classification requirements."

Add the following to Section 1040 of the Standard Specifications:

"**1040.08 Polypropylene (PP) Pipe.** Storage and handling shall be according to the manufacturer's recommendations, except in no case shall the pipe be exposed to direct sunlight for more than six months. Acceptance testing of the pipe shall be accomplished during the same construction season in which it is installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.

(a) Corrugated PP Pipe with a Smooth Interior. The pipe shall be according to AAHSTO M 330 [nominal size – 12 to 60 in. (300 to 1500 mm)]. The pipe shall be Type S or D.

(b) Perforated Corrugated PP Pipe with A Smooth Interior. The pipe shall be according to AASHTO M 330 [nominal size – 12 in. to 60 in. (300 mm to 1500 mm)]. The pipe shall be Type SP. In addition, the top centerline of the pipe shall be marked so that it is readily visible from the top of the trench before backfilling, and the upper ends of the slot perforations shall be a minimum of ten degrees below the horizontal."

Designer Note: Insert into all contracts with concrete gutter, curb, median, or paved ditch.

CONCRETE GUTTER, CURB, MEDIAN, AND PAVED DITCH (BDE)

Effective: April 1, 2014

Add the following to Article 606.02 of the Standard Specifications:

"(i) Polyurethane Joint Sealant ..... 1050.04"

Revise the fifth paragraph of Article 606.07 of the Standard Specifications to read:

"Transverse contraction and longitudinal construction joints shall be sealed according to Article 420.12, except transverse joints in concrete curb and gutter shall be sealed with polysulfide or polyurethane joint sealant."

Add the following to Section 1050 of the Standard Specifications:

"**1050.04 Polyurethane Joint Sealant.** The joint sealant shall be a polyurethane sealant, Type S, Grade NS, Class 25, Use T, according to ASTM C 920."

Designer Note: Continue to use the District version, "Reclaimed Asphalt Pavement and Reclaimed Asphalt shingles (D-4)" and not the BDE version.

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)

Effective: November 1, 2012
Revise: April 1, 2014

Revise Section 1031 of the Standard Specifications to read:

"SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

1031.01 Description. Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

(a) Reclaimed Asphalt Pavement (RAP). RAP is the material produced by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

(b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 93 percent passing the #4 (4.75 mm) sieve based on a dry shake gradation. RAS shall be uniform in gradation and asphalt binder content and shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.

(1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.

(2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

1031.02 Stockpiles. RAP and RAS stockpiles shall be according to the following.

(a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

Prior to milling, the Contractor shall request the District provide documentation on the quality of the RAP to clarify the appropriate stockpile.

(1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. All FRAP shall be fractionated prior to testing by screening into a minimum of two size fractions with the separation occurring on or between the #4 (4.75 mm) and ½ in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP shall pass the sieve size specified below for the mix into which the FRAP will be incorporated.

Mixture FRAP will be used in:	Sieve Size that 100% of FRAP Shall Pass
IL-25.0	2 in. (50 mm)
IL-19.0	1 1/2 in. (40 mm)
IL-12.5	1 in. (25 mm)
IL-9.5	3/4 in. (20 mm)
IL-4.75	1/2 in. (13 mm)

(2) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.

(3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag.

(4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from Class I, HMA (High or Low ESAL), or "All Other" (as defined by Article 1030.04(a)(3)) mixtures. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag.

(5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP/FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall not be intermingled. Each stockpile shall be signed indicating what type of RAS is present.

Unless otherwise specified by the Engineer, mechanically blending manufactured sand (FM 20 or FM 22) up to an equal weight of RAS with the processed RAS will be permitted to improve workability. The sand shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The sand shall be accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type and lot number shall be maintained by project contract number and kept for a minimum of three years.

1031.03 Testing. RAP/FRAP and RAS testing shall be according to the following.

(a) RAP/FRAP Testing. When used in HMA, the RAP/FRAP shall be sampled and tested either during or after stockpiling.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2,000 tons (1,800 metric tons) and one sample per 2,000 tons (1,800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4,000 tons (3,600 metric tons).

(2) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Each sample shall be split to obtain two equal samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

(b) RAS Testing. RAS or RAS blended with manufactured sand shall be sampled and tested during stockpiling according to Illinois Department of Transportation Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Source".

Samples shall be collected during stockpiling at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1,000 tons (900 metric tons) and one sample per 250 tons (225 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1,000 tons (900 metric tons). Once a ≤ 1,000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS or RAS blended with manufactured sand shall be stockpiled in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

Before testing, each sample shall be split to obtain two test samples. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall perform a washed extraction and test for unacceptable materials on the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

If the sampling and testing was performed at the shingle processing facility in accordance with the QC Plan, the Contractor shall obtain and make available all of the test results from start of the initial stockpile.

1031.04 Evaluation of Tests. Evaluation of tests results shall be according to the following.

(a) Evaluation of RAP/FRAP Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation and, when applicable G_{mm}. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	FRAP/Homogeneous /Conglomerate	Conglomerate "D" Quality
1 in. (25 mm)		± 5%
1/2 in. (12.5 mm)	± 8%	± 15%
No. 4 (4.75 mm)	± 6%	± 13%
No. 8 (2.36 mm)	± 5%	
No. 16 (1.18 mm)		± 15%
No. 30 (600 µm)	± 5%	
No. 200 (75 µm)	± 2.0%	± 4.0%
Asphalt Binder	± 0.4% 1/	± 0.5%
G_{mm}	± 0.03%	

1/ The tolerance for FRAP shall be ± 0.3%.

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, the RAP/FRAP shall not be used in HMA unless the RAP/FRAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

(b) Evaluation of RAS and RAS Blended with Manufactured Sand Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5%
No. 16 (1.18 mm)	± 5%

No. 30 (600 µm)	± 4%
No. 200 (75 µm)	± 2.0%
Asphalt Binder Content	± 1.5%

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, or if the percent unacceptable material exceeds 0.5 percent by weight of material retained on the # 4 (4.75 mm) sieve, the RAS or RAS blend shall not be used in Department projects. All test data and acceptance ranges shall be sent to the District for evaluation.

1031.05 Quality Designation of Aggregate in RAP/FRAP.

(a) RAP. The aggregate quality of the RAP for homogenous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

(1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from Superpave/HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.

(3) RAP from Class I, Superpave/HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

(4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

(b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Coarse and fine FRAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lbs. (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant prequalified by the Department for the specified testing. The consultant shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the BMPR Aggregate Lab for MicroDeval Testing, according to Illinois Modified AASHTO T 327. A maximum loss of 15.0 percent will be applied for all HMA applications.

1031.06 Use of RAP/FRAP and/or RAS in HMA. The use of RAP/FRAP and/or RAS shall be a Contractor's option when constructing HMA in all contracts.

(a) RAP/FRAP. The use of RAP/FRAP in HMA shall be as follows.

(1) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.

(2) Steel Slag Stockpiles. Homogeneous RAP stockpiles containing steel slag will be approved for use in all HMA (High ESAL and Low ESAL) Surface and Binder Mixture applications.

(3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be FRAP or homogeneous in which the coarse aggregate is Class B quality or better. RAP/FRAP from Conglomerate stockpiles shall be considered equivalent to limestone for frictional considerations. Known frictional contributions from plus #4 (4.75 mm) homogeneous RAP and FRAP stockpiles will be accounted for in meeting frictional requirements in the specified mixture.

(4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP, homogeneous, or conglomerate, in which the coarse aggregate is Class C quality or better.

(5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, homogeneous, conglomerate, or conglomerate DQ.

(6) When the Contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in Article 1031.06(c)(1) below for a given N Design.

(b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

(c) RAP/FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA mixtures up to a maximum of 5.0% by weight of the total mix.

(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the Max RAP/RAS ABR table listed below for the given Ndesign.

RAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures [1/, 2/]	RAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10
105	10	10	10

1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28). If warm mix asphalt (WMA) technology is utilized, and production temperatures do not exceed 275 F (135°C) the high and low virgin asphalt binder grades shall each be reduced by one grade when RAP/RAS ABR exceeds 25 percent (i.e. 26 percent RAP/RAS ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).

(2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the FRAP/RAS table listed below for the given N design.

FRAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures 1/, 2/	FRAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified 3/, 4/
30	50	40	10
50	40	35	10
70	40	30	10
90	40	30	10
105	40	30	10

1/ For HMA "All Other" (shoulder and stabilized subbase) N30, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When FRAP/RAS ABR exceeds 20 percent for all mixes the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28). If warm mix asphalt (WMA) technology is utilized, and production temperatures do not exceed 275°F (135 C) the high and low virgin asphalt binder grades shall each be reduced by one grade when FRAP/RAS ABR exceeds 25 percent (i.e. 26 percent ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).

3/ For SMA the FRAP/RAS ABR shall not exceed 20 percent.

4/ For IL-4.75 mix the FRAP/RAS ABR shall not exceed 30 percent.

1031.07 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

(a) RAP/FRAP and/or RAS. RAP/FRAP and/or RAS mix designs shall be submitted for verification. If additional RAP/FRAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP/FRAP stockpile and HMA mix design, and meets all

of the requirements herein, the additional RAP/FRAP stockpiles may be used in the original mix design at the percent previously verified.

(b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design. A RAS stone bulk specific gravity (Gsb) of 2.500 shall be used for mix design purposes.

1031.08 HMA Production. HMA production utilizing RAP/FRAP and/or RAS shall be as follows.

(a) RAP/FRAP. The coarse aggregate in all RAP/FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP/FRAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP/FRAP and either switch to the virgin aggregate design or submit a new RAP/FRAP design.

(b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) RAP/FRAP and/or RAS. HMA plants utilizing RAP/FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

d. Accumulated dry weight of RAP/FRAP/RAS in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

g. Residual asphalt binder in the RAP/FRAP material as a percent of the total mix to the nearest 0.1 percent.

h. Aggregate and RAP/FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP are printed in wet condition.)

(2) Batch Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

d. Mineral filler weight to the nearest pound (kilogram).

e. RAP/FRAP/RAS weight to the nearest pound (kilogram).

f. Virgin asphalt binder weight to the nearest pound (kilogram).

g. Residual asphalt binder in the RAP/FRAP/RAS material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.09 RAP in Aggregate Surface Course and Aggregate Shoulders. The use of RAP in aggregate surface course (temporary access entrances only) and aggregate wedge shoulders Type B shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used to construct aggregate surface course and aggregate shoulders shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

(b) Gradation. One hundred percent of the RAP material shall pass the 1½ in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted."

District Special Provisions

Numeric Index

SECTION 100

District Special Provisions

Standard Specifications	Item/Description	Doc. #
105.00	CONSTRUCTION STATION LAYOUT	10500
105.06	PRESTAGE SITE CONSTRUCTION MEETINGS	10506
105.07	REMOVAL OF ABANDONED UNDERGROUND UTILITIES	10507
105.07a	STATUS OF UTILITIES/UTILITIES TO BE ADJUSTED	10507a
105.07b	UTILITIES – LOCATION/INFORMATION ON PLANS	10507b
107.00a	NATIONWIDE 404 PERMIT REQUIREMENTS	10700a
107.31	LOCATION OF UNDERGROUND STATE MAINTAINED FACILITIES	10731
107.32	RIGHT-OF-WAY RESTRICTIONS	10732
108.03	DELAYED START OF MULTIPLE CONTRACTS	10803
108.05a	DATE OF COMPLETION	10805a
108.05b	DATE OF COMPLETION (PLUS WORKING DAYS)	10805b

SECTION 200

District Special Provisions

Standard Specifications	Item/Description	Doc. #
204.00	BORROW AND FURNISHED EXCAVATION	20400
205.00	GEOTECHNICAL REINFORCEMENT	20500
205.04	EMBANKMENT (RESTRICTIONS)	20504
205.05	EMBANKMENT	20505
205.05a	EMBANKMENT (SMALL EMBANKMENTS)	20505a
250.00	SEEDING, MINOR AREAS	25000
250.06a	MOWING	25006a
250.06b	MOWING	250.06b
253.00	TREE WHIP MIXTURE	25300
253.00b	SEEDLING MIXTURE A	25300b
281.00	GROUT FOR USE WITH RIPRAP	28100
281.04	STONE DUMPED RIPRAP *	28104
281.06	STONE RIPRAP	28106
283.03	AGGREGATE DITCH	28303

SECTION 300

District Special Provisions

Standard Specifications	Item/Description	Doc. #
301.01	PROOF ROLLING	30101
301.03	SUBGRADE TREATMENT	30103
302.00	SOIL MODIFICATION	30200
311.00	ROCKFILL	31100
311.01	SUBBASE GRANULAR MATERIAL	31101
355.00	TEMPORARY PAVEMENT	35500
356.00	TEMPORARY BASE COURSE WIDENING	35600

SECTION 400

District Special Provisions

Standard Specifications	Item/Description	Doc. #
406.00	CLEAN EXISTING PAVEMENT EDGE JOINT	40600
406.01	ANTI-STRIP ADDITIVE FOR HOT-MIX ASPHALT	40601
406.02	HOT-MIX ASPHALT – PRIME COAT (BMPR)	40602
406.04a	HOT-MIX ASPHALT SURFACE COURSE SURFACE TESTS	40604a
406.13	PAYMENT FOR USE OF MATERIAL TRANSFER DEVICE	40613
407.06	BITUMINOUS PRIME COAT FOR HOT-MIX ASPHALT PAVEMENT (FULL DEPTH)	40706
407.13	GROOVED-IN RUMBLE STRIP	40713
420.20	RAILROAD APPROACH PAVEMENT	42020
424.01	SIDEWALK DRAINS	42401
424.02	TEMPORARY SIDEWALKS	42402
440.00	PARTIAL DEPTH PATCHING	44000
440.01	BRIDGE WEARING SURFACE REMOVAL	44001
440.02	LONGITUDINAL JOINT REPAIR	44002
440.03	PROTECTION OF FRAMES AND LIDS OF UTILITY STRUCTURES	44003
440.03a	HOT-MIX ASPHALT SURFACE REMOVAL, **" (** MM)	44003a
440.03b	HOT-MIX ASPHALT SURFACE REMOVAL, **" (** MM)	44003b
440.03c	CENTER JOINT REPAIR SYSTEM	44003c
440.03d	PAVEMENT DRAINAGE AFTER COLD MILLING	44003d
440.03e	PAVEMENT PATCHING WITH HOT-MIX ASPHALT SURFACE REMOVAL	44003e
440.03f	HOT-MIX ASPHALT CONCRETE MILLING MATERIAL	44003f
442.00	CLASS (*) PATCHES, TYPE (**), (***")	44200
443.00	REFLECTIVE CRACK CONTROL TREATMENT	44300
451.00	CRACK AND JOINT SEALING	45100
482.05	HOT-MIX ASPHALT SHOULDER RESURFACING REQUIRED TO BE CONSTUCTED SIMULTANEOUSLY WITH MAINLINE PAVING	48205
482.06	HOT-MIX ASPHALT SHOULDER RESURFACING CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING	48206

SECTION 500

District Special Provisions

Standard Specifications	Item/Description	Doc. #
501.03	CONCRETE HEADWALL REMOVAL	50103
501.04	CONCRETE HANDRAIL REMOVAL	50104
503.00	BIN-TYPE RETAINING WALL	50300
503.01	CONCRETE WEARING SURFACE	50301
503.02	SURFACE FILLER, SPECIAL (GALLON)	50302
503.12a	FLOOR DRAIN EXTENSIONS	50312a
503.12	PLUG EXISTING DRAINS	50312
503.17	BRIDGE FLOOR FINISHING MACHINE	50317
503.19	PROTECTING COAT, SPECIAL	50319
521.00b	JACK AND REPOSITION BEARINGS	52100b
521.00c	JACKING AND CRIBBING	52100c
542.00	SEEPAGE COLLAR	54200
542.01	REMOVE AND RELAY PIPE CULVERTS	54201
542.02	PIPE CULVERTS (JACKED)	54202
542.04	PIPE CULVERTS	54204
542.04e	BACKFILL - PIPE CULVERTS	54204e
550.00	STORM SEWER (WATER MAIN QUALITY PIPE)	55000
550.07	BACKFILL, BUILDING REMOVAL	55007
552.00	STEEL PIPE CULVERT, SPECIAL (JACKED) *" (* MM)	55200
552.01	(*STORM SEWER/PIPE CULVERT) JACKED IN PLACE, *" (* MM)	55201
561.00	STEEL CASINGS (*") INCHES	56100
561.01	STEEL CASINGS (*") INCHES	56101

SECTION 600

District Special Provisions

Standard Specifications	Item/Description	Doc. #
601.01	PIPE UNDERDRAIN	60101
602.00a	INLETS, TYPE G-1	60200a
602.00b	INLETS, TYPE G-1, SPECIAL	60200b
602.00c	INLETS, TYPE G-1, DOUBLE, SPECIAL	60200c
602.00d	INLET-MANHOLE, TYPE G-1, 4' (1.2 M) DIAMETER	60200d
602.00e	INLET-MANHOLE, TYPE G-1, 4' (1.2 M) DIAMETER, SPECIAL	60200e
602.00f	INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER	60200f
602.00g	INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, SPECIAL	60200g
602.00h	INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, DOUBLE, SPECIAL	60200h
602.00i	INLET-MANHOLE, TYPE G-1, 8' (2.4 M) DIAMETER, DOUBLE, SPECIAL	60200i
602.00j	MANHOLE TO BE ADJUSTED WITH NEW TYPE G-1 FRAME AND GRATE	60200j
602.00k	TEMPORARY INLET DRAINAGE TREATMENT	60200k
602.00l	INLETS, TYPE G-2	60200l
602.00m	INLETS, TYPE G-1, DOUBLE	60200m
602.00n	INLETS, TYPE "*", WITH SPECIAL FRAME AND GRATE	60200n
602.00o	MANHOLE, TYPE A, OF THE DIAMETER SPECIFIED WITH SPECIAL FRAME AND GRATE	60200o
605.04	FILLING EXISTING INLETS	60504
605.04a	FILLING EXISTING CULVERTS	60504a
605.04b	FILLING EXISTING DRAINAGE STRUCTURES	60504b
606.08	ISLAND PAVEMENT CONSTRUCTED ON EXISTING PAVEMENT	60608
606.12	DRAINAGE HOLES	60612

SECTION 600

District Special Provisions

Standard Specifications	Item/Description	Doc. #
630.00	EROSION CONTROL CURB	63000
630.01	GUARDRAIL AGGREGATE EROSION CONTROL	63001
630.08	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS	63008
631.04	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (FLARED) OR (TANGENT)	63104
631.07	TRAFFIC BARRIER TERMINALS, TYPE 6	63107
631.11c	TRAFFIC BARRIER TERMINALS	63111c
631.14	TRAFFIC BARRIER TERMINALS, TYPE 2	63114
632.00	GUARD POST REMOVAL	63200
635.00	FLEXIBLE DELINEATOR MAINTENANCE	63500
635.01	FLEXIBLE DELINEATORS	63501
667.01	PERMANENT SURVEY MARKERS	667.01
667.04	PERMANENT SURVEY MARKER, TYPE I, BRIDGE PLACEMENT	66704
668.02	PERMANENT SURVEY TIES	66802
670.05	EQUIPMENT VAULT FOR NUCLEAR TESTING EQUIPMENT	67005
680.00a	RAILROAD TIES REMOVAL AND DISPOSAL	68000a
680.00	RAILROAD TRACK RAIL REMOVAL	68000
683.00	MORTARED STONE WALL	68300

SECTION 700

District Special Provisions

Standard Specifications	Item/Description	Doc. #
701.00	TRAFFIC CONTROL PLAN	70100
701.06	SPEEDING PENALTY	70106
701.08b	TRAFFIC CONTROL AND PROTECTION STANDARD 701331 (SPECIAL)	70108b
701.14	WIDTH RESTRICTION SIGNING	70114
701.20	TRAFFIC CONTROL AND PROTECTION STANDARD BLR 21 AND BLR 21 (SPECIAL)	70120
701.21	TRAFFIC CONTROL AND PROTECTION STANDARD BLR 22 AND BLR 22 (SPECIAL)	70121
701.22	TRAFFIC CONTROL AND PROTECTION STANDARD 701606 (SPECIAL)	70122
703.00	PAVEMENT MARKING REMOVAL/WORK ZONE PAVEMENT MARKING REMOVAL	70300
704.00a	TEMPORARY CONCRETE BARRIER REFLECTORS	70400a
704.00	TEMPORARY CONCRETE BARRIER, STATE OWNED AND TEMPORARY CONCRETE BARRIER TERMINAL SECTIONS, STATE OWNED	70400
733.00	Re-Tightening Anchor Bolts for Cantilever Sign Structures	73300
780.00	THERMOPLASTIC PAVEMENT MARKING EQUIPMENT	78000
780.01	PREFORMED PLASTIC PAVEMENT MARKNIG, TYPE B-INLAID	78001
780.02	GROOVING FOR RECESSED PAVEMENT MARKING	78002

SECTION 800

District Special Provisions

Standard Specifications	Item/Description	Doc. #
810.00	CONDUIT, PUSHED OR TRENCHED	81000
815.00	TRENCH & BACKFILL, SPECIAL FOR CONDUIT INSTALLATION BENEATH BITUMINOUS SHOULDERS	81500
863.00	TERMINAL FACILITY	86300
873.00	ELECTRIC CABLE CONDUIT NO. 18	87300
886.00	DETECTOR LOOP, SPECIAL FOR TRAFFIC COUNTERS	88600
886.00a	DETECTOR LOOPS, TYPE 1	88600a

SECTION 900

District Special Provisions

Standard Specifications	Item/Description	Doc. #

SECTION 1000

District Special Provisions

Standard Specifications	Item/Description	Doc. #
1004.00	AGGREGATE OPTIMIZATION OF CLASS PV MIX FOR SLIPFORM PAVING	100400
1004.01	COARSE AGGREGATE FILL	100401
1004.02	PCC SUPERSTRUCTURE AGGREGATE OPTIMIZATION	100402
1004.03b	COARSE AGGREGATE FOR BITUMINOUS COURSES, CLASS A	d100403b
1004.04	AGGREGATE QUALITY	d100404
1030.00	HOT-MIX ASPHALT QUALITY CONTROL FOR PERFORMANCE (D4)	103000
1030.01	HOT-MIX ASPHALT – PAY FOR PERFORMANCE USING PERCENT WITHIN LIMITS – JOBSITE SAMPLING (D4)	103001
1030.02	HMA MIXTURE DESIGN REQUIREMENTS, VOLUMETRIC REQUIREMENTS, VERIFICATION AND PRODUCTION (D-4)	103002
1031.00	RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D4)	103100
1103.00	PCC QC/QA ELECTRONIC REPORT SUBMITTAL	110300
1103.03	PCC AUTOMATIC BATCHING EQUIPMENT	110303

District Special Provisions

Alphabetic Index

1/21/2014

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

Item/Description	Standard Specification	Filename
DATE OF COMPLETION (PLUS WORKING DAYS)	108.05b	10805b
DELAYED START OF MULTIPLE CONTRACTS	108.03	10803
DETECTOR LOOP, SPECIAL FOR TRAFFIC COUNTERS	886.00	88600
DETECTOR LOOPS, TYPE 1	886.00a	88600a
DRAINAGE HOLES	606.12	60612
ELECTRIC CABLE CONDUIT, LEAD-IN, NO. 18	873.00	87300
EMBANKMENT	205.05	20505
EMBANKMENT (RESTRICTIONS)	205.04	205.04
EMBANKMENT (SMALL EMBANKMENTS)	205.05a	20505a
EQUIPMENT VAULT FOR NUCLEAR TESTING EQUIPMENT	670.05	67005
EROSION CONTROL CURB	630.00	63000
FILLING EXISTING CULVERTS	605.04a	60504a
FILLING EXISTING DRAINAGE STRUCTURES	605.04b	60504b
FILLING EXISTING INLETS	605.04d	60504d
FLEXIBLE DELINEATOR MAINTENANCE	635.00	63500
FLEXIBLE DELINEATORS	635.01	63501
FLOOR DRAIN EXTENSION	503.12a	50312a
GEOTECHNICAL REINFORCEMENT	205.00	20500
GROOVED-IN RUMBLE STRIP	407.13	40713
GROOVING FOR RECESSED PAVEMENT MARKING	780.02	78002
GROUT FOR USE WITH RIPRAP	281.00	28100
GUARD POST REMOVAL	632.00	63200
GUARDRAIL AGGREGATE EROSION CONTROL	630.01	63001
HOT-MIX ASPHALT CONCRETE MILLING MATERIAL	440.03f	44003f

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

Item/Description	Standard Specification	Filename
HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION	1030.04	103004
HOT-MIX ASPHALT – PAY FOR PERFORMANCE USING PERCENT WITHIN LINMITS – JOBSITE SAMPLING (D4)	1030.01	103001
HOT-MIX ASPHALT – PRIME COAT (BMPR)	406.02	40602
HOT-MIX ASPHALT QUALITY CONTROL FOR PERFORMANCE (D4)	1030.00	103000
HOT-MIX ASPHALT SHOULDER RESURFACING CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING	482.06	48206
HOT-MIX ASPHALT SHOULDER RESURFACING REQUIRED TO BE CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING	482.05	48205
HOT-MIX ASPHALT SURFACE COURSE SURFACE TESTS	406.04a	40604a
HOT-MIX ASPHALT SURFACE REMOVAL, **" (** MM)	440.03a	44003a
HOT-MIX ASPHALT SURFACE REMOVAL, **" (** MM)	440.03b	44003b
INLET-MANHOLE, TYPE G-1, 4' (1.2 M) DIAMETER	602.00d	60200d
INLET-MANHOLE, TYPE G-1, 4' (1.2 M) DIAMETER, SPECIAL	602.00e	60200e
INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER	602.00f	60200f
INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, DOUBLE, SPECIAL	602.00h	60200h
INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, SPECIAL	602.00g	60200g
INLET-MANHOLE, TYPE G-1, 8' (2.4 M) DIAMETER, DOUBLE, SPECIAL	602.00i	60200i
INLETS, TYPE G-1	602.00a	60200a
INLETS, TYPE G-1, DOUBLE	602.00m	60200m
INLETS, TYPE G-1, DOUBLE, SPECIAL	602.00c	60200c
INLETS, TYPE G-1, SPECIAL	602.00b	60200b
INLETS, TYPE G-2	602.00l	60200l
INLETS, TYPE "*", WITH SPECIAL FRAME AND GRATE	602.00n	60200n
ISLAND PAVEMENT CONSTRUCTED ON EXISTING PAVEMENT	606.08	60608

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

Item/Description	Standard Specification	Filename
STATUS OF UTILITIES/UTILITIES TO BE ADJUSTED	105.07	10507
STEEL CASINGS (*") INCHES	561.00	56100
STEEL CASINGS (*") INCHES	561.01	56101
STEEL PIPE CULVERT, SPECIAL (JACKED) *" (* MM)	552.00	55200
STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS	630.08	63008
STONE DUMPED RIPRAP*	281.04	28104
STONE RIPRAP	281.06	28106
STORM SEWER/PIPE CULVERT) JACKED IN PLACE **" (** MM)	552.01	55201
STORM SEWER (WATER MAIN QUALITY PIPE)	550.00	55000
SUBBASE GRANULAR MATERIAL	311.01	31101
SUBGRADE TREATMENT	301.03	30103
SURFACE FILLER, SPECIAL (GALLON)	503.02	50302
TEMPORARY BASE COURSE WIDENING	356.00	35600
TEMPORARY CONCRETE BARRIER REFLECTORS	704.00a	70400a
TEMPORARY CONCRETE BARRIER, STATE OWNED & TEMPORARY CONCRETE BARRIER TERMINAL SECTIONS, STATE OWNED	704.00d	70400d
TEMPORARY INLET DRAINAGE TREATMENT	602.00k	60200k
TEMPORARY PAVEMENT	355.00	35500
TEMPORARY SIDEWALKS	424.02	42402
TERMINAL FACILITY	863.00	86300
THERMOPLASTIC PAVEMENT MARKING EQUIPMENT	780.00	78000
TRAFFIC BARRIER TERMINALS	631.11c	63111c
TRAFFIC BARRIER TERMINALS, TYPE 1, SPECIAL (FLAMED) OR (TANGENT)	631.04	631.04
TRAFFIC BARRIER TERMINALS, TYPE 2	631.14	63114

ALPHABETIC INDEX OF DISTRICT SPECIAL PROVISIONS

Item/Description	Standard Specification	Filename
TRAFFIC BARRIER TERMINALS, TYPE 6	631.07	63107
TRAFFIC CONTROL AND PROTECTION STANDARD 701331 (SPECIAL)	701.08b	70108b
TRAFFIC CONTROL AND PROTECTION STANDARD BLR 21 AND BLR 21 (SPECIAL)	701.20	70120
TRAFFIC CONTROL AND PROTECTION STANDARD BLR 22 AND BLR 22 (SPECIAL)	701.21	701.21
TRAFFIC CONTROL AND PROTECTION STANDARD 701606 (SPECIAL)	701.22	70122
TRAFFIC CONTROL PLAN	701.00	70100
TREE WHIP MIXTURE	253.00	25300
TRENCH & BACKFILL, SPECIAL FOR CONDUIT INSTALLATION BENEATH BITUMINOUS SHOULDERS	815.00	81500
UTILITIES – LOCATIONS/INFORMATION ON PLANS	105.07b	10507b.
WIDTH RESTRICTION SIGNING	701.14	70114

District Special Provisions

Designer Note: The District Landscape Architect should be consulted to determine if tree replacement will be in the form of seedlings or ball and burlap trees. Existing trees to be removed on a project are replaced with ball and burlap trees on a 1:1 basis and a 1:3 basis for seedlings.. Pay item code numbers for the specified trees are contained on the attached sheet.

SEEDLING MIXTURE A

Effective: May 5, 2000
Revised: November 1, 2008

This work shall consist of planting replacement seedling trees at the locations specified in the plans and in accordance with Article 253 of the Standard Specifications. Seedlings shall consist of an equal distribution of the following five species:

Kentucky Coffee
Northern Red Oak
Redbud
White Oak
Washington Hawthorn

This work will be paid for at the contract unit price per unit for SEEDLINGS MIXTURE A.

Designer Note: Include in all contracts with HMA overlays or full-depth HMA pavements.

HOT-MIX ASPHALT – PRIME COAT (BMPR)

Effective: April 25, 2014

Revise Note 1 of Article 406.02 of the Standard Specifications to read:

"Note 1. The bituminous material used for prime coat shall be one of the types listed in the following table.

When emulsified asphalts are used, any dilution with water shall be performed by the emulsion producer. The emulsified asphalt shall be thoroughly agitated within 24 hours of application and show no separation of water and emulsion.

Application	Bituminous Material Types
Prime Coat on Brick, Concrete, or HMA Bases	SS-1, SS-1h, SS-1hP, SS-1vh, CSS-1, CSS-1h, CSS-1hP, HFE-90, RC-70
Prime Coat on Aggregate Bases	MC-30, PEP"

Revise Article 406.05(b) of the Standard Specifications to read:

"(b) Prime Coat. The bituminous material shall be prepared according to Article 403.05 and applied according to Article 403.10. The use of RC-70 shall be limited to air temperatures less than 60°F (15°C)."

(1) Brick, Concrete or HMA Bases. The base shall be cleaned of all dust, debris and any substance that will prevent the prime coat from adhering to the base. Cleaning shall be accomplished by sweeping and vacuuming or sweeping and air blasting methods, as approved by the Engineer. The base shall be free of standing water at the time of application. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface as specified in the following table.

Type of Surface to be Primed	Residual Asphalt Rate lb./sq. ft. (kg/sq. m)
Milled HMA, Aged Non-Milled HMA, Milled Concrete, Non-Milled Concrete & Tined Concrete	0.05
Fog Coat between HMA Lifts, IL-4.75 & Brick	0.025

The bituminous material for the prime coat shall be placed one lane at a time. The primed lane shall remain closed until the prime coat is fully cured and does not pickup under traffic. When placing prime coat through an intersection where it is not possible to keep the lane closed, the prime coat may be covered immediately following its application with fine aggregate mechanically spread at a uniform rate of 2 to 4 lb./sq. yd. (1 to 2 kg/sq. m).

(2) Aggregate Bases. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface of 0.25 lb./sq. ft. ± 0.01 (1.21 kg/sq. m ± 0.05).

The prime coat shall be permitted to cure until the penetration has been approved by the Engineer, but at no time shall the curing period be less than 24 hours for MC-30 or four hours for PEP. Pools of prime occurring in the depressions shall be broomed or squeegeed over the surrounding surface the same day the prime coat is applied.

The base shall be primed 1/2 width at a time. The prime coat on the second half/width shall not be applied until the prime coat on the first half/width has cured so that it will not pick up under traffic.

The residual asphalt binder rate will be verified a minimum of once per type of surface to be primed as specified herein for which at least 2000 tons of HMA will be placed. The test will be according to the "Determination of Residual Asphalt in Prime and Tack Coat Materials" test procedure.

Prime coat shall be fully cured prior to placement of HMA to prevent pickup by haul trucks or paving equipment. If pickup occurs, paving shall cease in order to provide additional cure time.

Prime coat shall be placed no more than five days in advance of the placement of HMA. If after five days loss of prime coat is evident prior to covering with HMA, additional prime coat shall be placed as determined by the Engineer at no additional cost to the Department."

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

"Aggregate for covering prime coat will not be measured for payment."

Revise the first paragraph of Article 406.14 of the Standard Specifications to read:

"Prime Coat will be paid for at the contract unit price per pound (kilogram) of residual asphalt applied for BITUMINOUS MATERIALS (PRIME COAT), POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT) or NON-TRACKING BITUMINOUS MATERIALS (PRIME COAT)."

Revise Article 1032.02 of the Standard Specifications to read:

"1032.02 Measurement. Asphalt binders, emulsified asphalts, rapid curing liquid asphalt, medium curing liquid asphalts, slow curing liquid asphalts, asphalt fillers, and road oils will be measured by weight.

A weight ticket for each truck load shall be furnished to the inspector. The truck shall be weighed at a location approved by the Engineer. The ticket shall show the weight of the empty truck (the truck being weighed each time before it is loaded), the weight of the loaded truck, and the net weight of the bituminous material.

When emulsion is used, the proportions of emulsion and any water added to the emulsion shall be shown on the Bill of Lading.

Payment will not be made for bituminous materials in excess of 105 percent of the amount specified by the Engineer."

Add the following to the table in article 1032.04 of the Standard Specifications:

"SS-1vh	160 – 180	70 – 80"

Add the following to Article 1032.06 of the Standard Specifications:

"(g) Non Tracking Emulsified Asphalt SS-1vh:

Requirements for SS-1vh			
Test		SPEC	AASHTO Test Method
Saybolt Viscosity @ 25C,	SFS	20-200	T 72
Storage Stability, 24hr.,	%	1 max.	T 59
Residue by Evaporation,	%	50 min.	T 59
Sieve Test,	%	0.3 max.	T 59
Tests on Residue from Evaporation			
Penetration @25°C, 100g., 5 sec., dmm		20 max.	T 49
Softening Point,	°C	65 min.	T 53
Solubility,	%	97.5 min.	T 44
Orig. DSR @ 82°C,	kPa	1.00 min.	T 315"

Revise the last table of Article 1032.06 to read:

"Grade	Use
SS-1, SS-1h, CSS-1, CSS-1h, HFE-90, SS-1hP, CSS-1hP, SS-1vh	Prime or fog seal
PEP	Bituminous surface treatment prime
RS-2, HFE-90, HFE-150, HFE-300, CRSP, HFP, CRS-2, HFRS-2	Bituminous surface treatment
CSS-1h Latex Modified	Microsurfacing"

Designer Note: To be used for milling deteriorated pavement longitudinal joints 3" inches deep, 2' feet wide and placement of Hot-Mix Asphalt (HMA) surface mix in trench.

When different depths and widths are needed, revise and use as a project specific special.

Consider when using BDE special "Longitudinal Joint and Crack Patching" before using the District version.

LONGITUDINAL JOINT REPAIR

Effective April 26, 2013 Revised August 2, 2013

This work shall include all labor, equipment, and material required to mill out an area along and either side of an existing pavement longitudinal joint and replacement with Hot-Mix Asphalt (HMA). The replacement HMA material shall be as specified in the HMA Mixtures Design table in the plans. The removal shall be done with a cold milling machine of sufficient size and weight to remove the pavement to a depth of three inches (3") and a width of two feet (2') in a single operation; skid steer mounted mills will not be allowed. After cold milling the existing joint, all loose material shall be removed with a mechanical sweeper or vacuum, then air blast cleaned to the satisfaction of the Engineer.

Prior to placement of the HMA material, the milled trench shall be primed in accordance with Article 406.05 of the Standard Specifications using a SS-1h or SS-1hP bituminous material. The prime shall be applied at a residual rate of 0.05 gal./sy by means of a mechanical distributor and shall be placed on all surfaces of the milled trench.

The HMA mixtures and density control limits shall conform to Article 1030 of the Standard Specifications. Placement shall be in a single lift by machine methods and shall match the profile of the existing pavement after final compaction. Compaction shall be accomplished using a vibratory roller that conforms to the applicable sections of Article 1101.01 of the Standard Specifications.

The Contractor shall fill all trenches with HMA in the same day they are milled. No open trench will be allowed to remain overnight.

This work will be paid for at the contract unit price per Foot for LONGITUDINAL JOINT REPAIR.

Designer Note: To be used for milling deteriorated pavement longitudinal joints 2-1/2" (65 mm) deep, 3'± (900± mm) wide and placement of bituminous concrete surface course in trench. Discuss width and depth with Construction and modify as needed.

CENTER JOINT REPAIR SYSTEM

Effective March 1, 1991 Revised January 1, 2014

This work shall include all labor, equipment, and material required to mill out an area along and either side of an existing pavement longitudinal joint and replacement with Hot-Mix Asphalt (HMA) material. The removal shall be done with a cold milling machine of sufficient size and weight to remove the concrete to a depth of 2-1/2" (65 mm) and a width of 3 feet (900 mm) in a single operation. After cold milling the existing joint, all loose material shall be removed, and the milled area cleaned with a mechanical sweeper or vacuum to the satisfaction of the Engineer. Replacement HMA material shall be a HMA Binder material for pavements to be resurfaced and a HMA Surface Material for pavements which will not be subsequently overlaid.

Prior to placement of the HMA material, the milled trench shall be primed in accordance with Article 406.05 of the Standard Specifications using an SS-1h or SS-1hP bituminous material. The prime shall be applied at the rate of 0.10 gal./sq.yd. (0.5 L/square meter) by means of a mechanical or hand-held sprayer, and shall be placed on all surfaces of the milled trench. Placement of prime with brooms will not be permitted.

The HMA surface course mixture shall conform to Section 406 of the Standard Specifications. Placement shall be in a single lift by machine methods. Placement of the HMA material shall match the profile of the existing pavement after final compaction. Compaction shall be to the satisfaction of the Engineer.

Roller Requirements: Compaction shall be accomplished using a vibratory roller that conforms to the applicable sections of Article 1101.01 of the Standard Specifications.

Sequence of Operations: The Contractor shall perform work on the centerline joint only when the right lane (driving lane) is open to traffic.

The Contractor shall fill all trenches opened by cold milling in a day with HMA material in the same day. No open trench will be allowed to remain overnight. The barricades and/or drums shall be relocated after the trench is compacted so there is a minimum 12' (3.6 m) lane width in the open lane.

This work will be paid for at the contract unit price per Foot (Meter) for CENTER JOINT REPAIR SYSTEM measured along the pavement centerline joint.

Designer Note: To be used for milling deteriorated pavement longitudinal joints 2-1/2" (65 mm) deep, 3'± (900± mm) wide and placement of bituminous concrete surface course in trench. Discuss width and depth with Construction and modify as needed.

CENTER JOINT REPAIR SYSTEM

Effective March 1, 1991 Revised January 1, 2014

This work shall include all labor, equipment, and material required to mill out an area along and either side of an existing pavement longitudinal joint and replacement with Hot-Mix Asphalt (HMA) material. The removal shall be done with a cold milling machine of sufficient size and weight to remove the concrete to a depth of 2-1/2" (65 mm) and a width of 3 feet (900 mm) in a single operation. After cold milling the existing joint, all loose material shall be removed, and the milled area cleaned with a mechanical sweeper or vacuum to the satisfaction of the Engineer. Replacement HMA material shall be a HMA Binder material for pavements to be resurfaced and a HMA Surface Material for pavements which will not be subsequently overlaid.

Prior to placement of the HMA material, the milled trench shall be primed in accordance with Article 406.05 of the Standard Specifications using an SS-1h or SS-1hP bituminous material. The prime shall be applied at the rate of 0.10 gal./sq.yd. (0.5 L/square meter) by means of a mechanical or hand-held sprayer, and shall be placed on all surfaces of the milled trench. Placement of prime with brooms will not be permitted.

The HMA surface course mixture shall conform to Section 406 of the Standard Specifications. Placement shall be in a single lift by machine methods. Placement of the HMA material shall match the profile of the existing pavement after final compaction. Compaction shall be to the satisfaction of the Engineer.

Roller Requirements: Compaction shall be accomplished using a vibratory roller that conforms to the applicable sections of Article 1101.01 of the Standard Specifications.

Sequence of Operations: The Contractor shall perform work on the centerline joint only when the right lane (driving lane) is open to traffic.

The Contractor shall fill all trenches opened by cold milling in a day with HMA material in the same day. No open trench will be allowed to remain overnight. The barricades and/or drums shall be relocated after the trench is compacted so there is a minimum 12' (3.6 m) lane width in the open lane.

This work will be paid for at the contract unit price per Foot (Meter) for CENTER JOINT REPAIR SYSTEM measured along the pavement centerline joint.

Designer Note: Include in contracts with cantilever sign structures.

RE-TIGHTENING ANCHOR BOLTS FOR CANTILEVER SIGN STRUCTURES

Effective April 25, 2014

After the cantilever sign structure has been installed with all required signs for a minimum of 30 calendar days, the Contractor shall re-tighten the anchor bolts to the original specifications shown on the plan details and/or Standard Specifications.

Designer Note: This district special provision shall be included in all projects including HMA. This special shall be used in lieu of the BDE Special Provisions "HMA Mix Design Composition and Volumetric Requirements" and "HMA Mix Design Verification and Production".

HMA MIXTURE DESIGN REQUIREMENTS, VOLUMETRIC REQUIREMENTS, VERIFICATION AND PRODUCTION (D-4)

Effective: April 25, 2014

Design Composition and Volumetric Requirements

Revise the following table in Article 1030.01 of the Standard Specifications to read:

High ESAL	IL-25.0 binder; IL-19.0 binder; IL-12.5 surface; IL-9.5 surface; IL-4.75; SMA
Low ESAL	IL-19.0L binder; IL-9.5L surface
All Other	Stabilized Subbase (HMA), HMA Shoulders

Revise the following table in Article 1030.04(a)(1):

"(1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) [1]														
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm		IL-9.5 mm		IL-4.75 mm		SMA [4] IL-12.5 mm		SMA [4] IL-9.5 mm	
	Min	max	min	max	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)		100												
1 in. (25 mm)	90	100		100										
3/4 in. (19 mm)		90	82	100		100						100		
1/2 in. (12.5 mm)	45	75	50	85	90	100		100		100	80	100		100
3/8 in. (9.5 mm)						89	90	100		100		65	90	100
#4 (4.75 mm)	24	42 [2]	24	50 [2]	28	65	32	69	90	100	20	30	36	50
#8 (2.36 mm)	16	31	20	36	28	48 [3]	32	52 [3]	70	90	16	24 [5]	16	32
#16 (1.18 mm)	10	22	10	25	10	32	10	32	50	65				
#30 (600 µm)											12	16	12	18
#50 (300 µm)	4	12	4	12	4	15	4	15	15	30				
#100 (150 µm)	3	9	3	9	3	10	3	10	10	18				
#200 (75 µm)	3	6	3	6	4	6	4	6	7	9 [6]	7.0	9.0 [6]	7.5	9.5 [6]
Ratio Dust/Asphalt Binder		1.0		1.0		1.0		1.0		1.0		1.5		1.5

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the #4 (4.75 mm) sieve for binder courses with Ndesign ≥ 90.

3/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign ≥ 90.

4/ The maximum percent passing the 20 μm sieve shall be ≤ 3 percent.

5/ When establishing the Adjusted Job Mix Formula (AJMF) the #8 (2.36mm) sieve shall not be adjusted above 24 percent.

6/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer."

Delete Article 1030.04(a)(4) of the Standard Specifications.

Revise Article 1030.04(b)(1) of the Standard Specifications to read.

"(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent, except for IL-4.75 which shall be 3.5 percent, at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

<table>
<tr><th colspan="7">VOLUMETRIC REQUIREMENTS
High ESAL</th></tr>
<tr><th rowspan="2"></th><th colspan="5">Voids in the Mineral Aggregate (VMA),
% minimum</th><th rowspan="2">Voids Filled with Asphalt Binder (VFA),
%</th></tr>
<tr><th>Ndesign</th><th>IL-25.0</th><th>IL-19.0</th><th>IL-12.5</th><th>IL-9.5</th><th>IL-4.75[1/]</th></tr>
<tr><td>50</td><td rowspan="4">12.0</td><td rowspan="4">13.0</td><td rowspan="4">14.0</td><td rowspan="4">15.0</td><td>18.5</td><td>65 – 78 [2/]</td></tr>
<tr><td>70</td><td rowspan="3"></td><td rowspan="3">65 - 75</td></tr>
<tr><td>90</td></tr>
<tr><td>105</td></tr>
</table>

1/ Maximum Draindown for IL-4.75 shall be 0.3%

2/ VFA for IL-4.75 shall be 72-85%"

Delete Article 1030.04(b) (4) of the Standard Specifications.

Add table in Article 1030.04(b) as follows:

"(5) SMA Mixtures.

Volumetric Requirements SMA [1/]			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 [4/]	3.5	17 [2/]	75 - 83
		16 [3/]	

1/ Maximum Draindown shall be 0.3%.

2/ Applies when specific gravity of coarse aggregate is ≥ 2.760.

3/ Applies when specific gravity of coarse aggregate is < 2.760.

4/ For surface course, coarse aggregate shall be Class B Quality; the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone. Blending of different types of aggregate will not be permitted.

Revise the "Control Limits" table in Article 1030.05(d)(4) of the Standard Specifications to read:

CONTROL LIMITS					
Parameter	High ESAL Low ESAL Individual Test	High ESAL Low ESAL Moving Avg. of 4	All Other Individual Test	IL-4.75 Individual Test	IL-4.75 Moving Avg. of 4
% Passing: [1/]					
1/2 in. (12.5 mm)	± 6 %	± 4 %	± 15 %		
No. 4 (4.75 mm)	± 5 %	± 4 %	± 10 %		
No. 8 (2.36 mm)	± 5 %	± 3 %			
No. 16 (1.18 mm)				± 4 %	± 3 %
No. 30 (600 µm)	± 4 %	± 2.5 %			
Total Dust Content No. 200 (75 µm)	± 1.5 %	± 1.0 %	± 2.5 %	± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.5 %	± 0.3 %	± 0.2 %
Voids	± 1.2 %	± 1.0 %	± 1.2 %	± 1.2 %	± 1.0 %
VMA	-0.7 % [2/]	-0.5 % [2/]		-0.7 % [2/]	-0.5 % [2/]

Design Verification and Production

Description. The following states the requirements for Hamburg Wheel and Tensile Strength testing for High ESAL, IL-4.75, and Stone Matrix Asphalt (SMA) Hot-Mix Asphalt (HMA) mixes during mix design verification and production. The following also defines an acceptable test strip. In addition it provides the plant requirements for hydrated lime addition systems used in the production of High ESAL, IL-4.75 and SMA mixtures.

When the options of Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement are used by the Contractor, the Hamburg Wheel and tensile strength requirements in this special provision will be superseded by the special provisions for Warm Mix Asphalt and/or by the District special provision for Reclaimed Asphalt Pavement and Reclaimed Asphalt Shingles as applicable.

Mix Design Testing.

Add the following to Article 1030.04 of the Standard Specifications:

"(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department's verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification meeting the following requirements:

(1)Hamburg Wheel Test criteria.

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.

For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 415 kPa (60 psi) for non-polymer modified performance graded (PG) asphalt binder and 550 kPa (80 psi) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 1380 kPa (200 psi)."

Production Testing.

Revise Article 1030.06(a) to read:

"(a) High ESAL and IL-4.75 Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for IL -4.75 it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture with a quantity of 3000 tons (2750 metric tons) or more according to the Manual of Test Procedures for Materials "Hot-Mix Asphalt Test Strip Procedures"."

Before start-up, target values shall be determined by applying gradation correction factors to the JMF when applicable. These correction factors shall be determined from previous experience. The target values, when approved by the Engineer, shall be used to control HMA production. Plant settings and control charts shall be set according to target values.

Before constructing the test strip, target values shall be determined by applying gradation correction factors to the JMF when applicable. After any JMF adjustment, the JMF shall become the Adjusted Job Mix Formula (AJMF). Upon completion of the first acceptable test strip, the JMF shall become the AJMF regardless of whether or not the JMF has been adjusted. If an adjustment/plant change is made, the Engineer may require a new test strip to be constructed. If the HMA placed during the initial test strip is determined to be unacceptable to remain in place by the Engineer, it shall be removed and replaced.

The limitations between the JMF and AJMF are as follows.

Parameter	Adjustment
1/2 in. (12.5 mm)	± 5.0%
No. 4 (4.75 mm)	± 4.0%
No. 8 (2.36 mm)	± 3.0%
No. 30 (600 µm)	*
No. 200 (75 µm)	*
Asphalt Binder Content	± 0.3%

* In no case shall the target for the amount passing be greater than the JMF.

Any adjustments outside the above limitations will require a new mix design.

Mixture sampled to represent the test strip shall include additional material sufficient for the Department to conduct Hamburg Wheel testing according to Illinois Modified AASHTO T 324 (approximately 60 lbs. (27 kg) total).

Revise the title of Article 1030.06(b) of the Standard Specifications to read:

"(b) Low ESAL and All Other Mixtures."

Add the following to Article 1030.06 of the Standard Specifications:

"(c) Hamburg Wheel Test. All HMA mixtures shall be sampled within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1,500 tons (1,350 metric tons) or one day's production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

The Department may conduct additional Hamburg Wheel Tests on production material as determined by the Engineer. If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria."

The Contractor shall immediately cease production upon notification by the Engineer of failing Hamburg Wheel test. All prior produced material may be paved out provided all other mixture criteria are being met. No additional mixture shall be produced until the Engineer receives passing Hamburg Wheel tests.

Test Strip.

Revise Article 406.14(b) of the Standard Specifications to read.

"(b) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was not produced within 2.0 to 6.0 percent air voids or within the individual control limits of the JMF, the mixture and test strip will not be paid for and the mixture shall be removed at the Contractor's expense. An additional test strip and mixture will be paid for in full, if produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF."

Revise Article 406.14(c) of the Standard Specifications to read.

"(c) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF, the mixture shall be removed. Removal will be paid in accordance to Article 109.04 of the Standard Specifications. This initial mixture and test strip will be paid for at the contract unit prices. The additional mixture will be paid for at the contract unit price, and any additional test strips will be paid for at one half the unit price of each test strip."

Plant Requirements for Hydrated Lime Addition Systems.

Revise the fourth sentence of the third paragraph of Article 1030.04(c) of the Standard Specifications to read:

"The method of application shall be according to Article 1102.01(a)(10)."

Replace the first three sentences of the second paragraph of Article 1102.01(a)(10) of the Standard Specifications to read:

"When hydrated lime is used as the anti-strip additive, a separate bin or tank and feeder system shall be provided to store and accurately proportion the lime onto the aggregate either as a slurry, as dry lime applied to damp aggregates, or as dry lime injected onto the hot aggregates prior to adding the liquid asphalt cement. If the hydrated lime is added either as a slurry or as dry lime on damp aggregates, the lime and aggregates shall be mixed by a power driven pugmill to provide a uniform coating of the lime prior to entering the dryer. If dry hydrated lime is added to the hot dry aggregates in a dryer-drum plant, the lime shall be added in such a manner that the lime will not become entrained into the air stream of the dryer-drum and that thorough dry mixing shall occur prior to the injection point of the liquid asphalt. When a batch plant is used, the hydrated lime shall be added to the mixture in the weigh hopper or as approved by the Engineer."

Basis of Payment.

Revise the seventh paragraph of Article 406.14 of the Standard Specifications to read:

"For all mixes designed and verified under the Hamburg Wheel criteria, the cost of furnishing and introducing anti-stripping additives in the HMA will not be paid for separately, but shall be considered as included in the contract unit price of the HMA item involved.

No additional compensation will be awarded to the Contractor because of reduced production rates associated with the addition of the anti-stripping additive."