Prince George's County
Department of Permitting,
Inspections and Enforcement
SITE/ROAD PLAN REVIEW DIVISION
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CONCRETE STRUCTURE (BRIDGE/CULVERT) CONSTRUCTION INSPECTION CHECKLIST

This checklist has been prepared for key construction activities of Concrete Structures (concrete box culvert, concrete pipe culvert, concrete bridge) to standardize inspection procedures. The following activities are not included in this check list: Traffic Control, Grading, Drainage, Roadway Paving, Roadway Shoulders, Landscaping, Traffic Signal, Lighting, and Utilities. For other construction activities, refer to MDOT SHA construction Manual (updated 4/26/2016) at the following link: https://www.roads.maryland.gov/OOC/OOC_Construction_Manual.pdf. Any questions regarding items contained herein should be referred to DPIE's Bridge/NPDES Section. See below "**Points of Contact**". Below are some general instructions:

- Construction Inspectors are authorized to inspect all work done and all materials used to ensure the work done is completed in conformance with the Contract Documents.
- The Construction Inspector shall have the following minimum qualification
  - Valid driver's license, and
  - High School diploma, and
  - Minimum 10 years of experience in Highway and Bridge construction management and inspection, and
  - Valid Concrete Field Certification, and
  - Valid Soils & Aggregate Certification, and
  - Valid HMA Field Certification, and
- The Construction Inspector shall receive the County's approval before commencing his/her work. The Construction Inspector must become thoroughly familiar with the Contract Documents that apply to the work being inspected. The Inspector should always plan ahead by being familiar with the construction schedule. The Inspector should anticipate and resolve problems to maintain work progress. The Inspector's job is to enforce the Contract Documents by being "firm" and "fair".
- The Project Engineer and the Construction Inspector should always function as a well-organized team. The team work will enhance the quality of the work.
- Safety is a definite team effort. The team members should look out for each other. The majority of highway construction is done while traffic is being maintained and everyone must be safety minded. Always be alert and observant. When performing duties under traffic, review the Traffic Control Plan (TCP) and ensure all work is done in conformance with the TCP. Wear proper attire, hard hat, hard-soled shoes, safety vest and other personal protective equipment (PPE) required for the work being performed.

- Construction Inspector shall prepare and assemble project documentation, which become permanent written records detailing the history of a construction project and providing evidence of compliance or non-compliance of all parties with the Contract Documents. The project documentation must be Clear, Concise, Comprehensive, Complete and Correct.

- The Construction Inspector performs inspection throughout the construction phase and shall prepare daily reports. The Inspector's Daily Report (IDR) is the chronological history of the daily events that take place during construction and is therefore the single most important original document on the construction site.

- Upon completion of the structure's construction, the finished structure shall be inspected by a qualified Bridge Inspector in accordance with The National Bridge Inspection Standards (NBIS), who shall prepare a complete Bridge Inspection Report. The Contractor or Developer shall provide the County this Report that includes the following documents:
  - Location map
  - Bridge Sketches
  - Sounding Sheet
  - Inspection and Rating Summary
  - Bridge Inspector's Recommendation for Maintenance Repairs
  - Condition Rating Forms
  - Color Photographs
  - Structure Inventory and Appraisal Forms
  - Element Form
  - Approach Traffic Barrier Form

  The Bridge Inspectors shall receive the County's approval before performing the hands-on inspection. The Bridge Inspection Report shall be signed and sealed by a Professional Engineer registered in the State of Maryland. All defects listed in the Bridge Inspector's Recommendation for Maintenance Repairs shall be addressed to the County's satisfaction before turning over the maintenance responsibility to the county.

- The Bridge Inspector must possess the following minimum qualifications:
  i. Be a registered professional engineer and have successfully completed a FHWA approved comprehensive bridge inspection training course; or
  ii. Have five years of bridge inspection experience and have successfully completed a FHWA approved comprehensive bridge inspection training course; or
  iii. Be certified as a Level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's program for National Certification in Engineering Technologies (NICET) and have successfully completed a FHWA approved comprehensive bridge inspection training course, or
  iv. Have the following combined qualifications:
    - Bachelor's degree in engineering from a college or university accredited or determined as substantially equivalent by the Accreditation Board for Engineering and Technology;
    - Successfully passed the National Council of Examiners for Engineering and Surveying Fundamentals of Engineering examination;
    - Two years of bridge inspection experience; and

- Successfully completed an FHWA approved comprehensive bridge inspection training course, or

v. Have the following combined qualifications:
   - An associate degree in engineering or engineering technology from a college or university accredited or determined as substantially equivalent by the Accreditation Board for Engineering and Technology;
   - Four years of bridge inspection experience; and
   - Successfully completed an FHWA approved comprehensive bridge inspection training course.

Points of Contact (DPW&T)

Highway and Bridge Design Division
Prince George's County DPW&T
Office of Engineering and Project Management
9400 Peppercorn Place, Suite 310
Largo, Maryland 20774
General Office Phone: 301-883-5642

Division Chief: Erv T. Beckert, PE
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Points of Contact (DPIE)

Site/Road Plan Review Division
Prince George's County DPIE Bridge/NPDES Section
9400 Peppercorn Place, Suite 230
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General Office Phone: 301-883-5717

Tuan Duc, PE Chief
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The Construction Checklist must be filled out and signed by the Construction Inspector, and submitted along with the Bridge Inspection Report.

Site/Project Name:			
Permit Number:		Today's Date:	
Inspector:		**Applicant**:	
Phone Number:		Phone Number:	
Email Address:		Email Address:	

Inspector: Please complete the checklist below by indicating the following:
✓ = Complete or checked; X = Not Applicable; O = Outstanding, need to address Please place the appropriate symbol in the "Status" column

Notation: In the "Phase" column of checklist, "(A)" denotes "Before Construction"; "(B)" denotes "During Construction"; "(C)" denotes "After Construction".

CONSTRUCTION INSPECTION CHECKLIST FOR CONCRETE STRUCTURES (BOX CULVEERT, PIPE CULVERT, BRIDGE)

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
				General
		1		A preconstruction meeting between the Contractor, the Inspector, owner, DPWT and DPIE is required. The Inspector should go over the site with the Contractor, and they should agree on the order of the various operations to be performed.
		2		Complete contract drawings, including any revisions that have been authorized, is on site. The Inspector should review the Plans and applicable Specifications in detail.
		3		Standards and Supplemental Specifications are on site
		4		All construction inspection shall be performed in accordance with Construction Manual, Office of Construction, Maryland State Highway Administration. The construction manual can be found at the following link, https://www.roads.maryland.gov/OOC/OOC_Construction_Manual.pdf
		5		The Inspector should examine the plans carefully at the construction site, comparing the location as shown on the Plans with the site and checking the plans.
		6		The Inspector should go over the applicable MDOT SHA Standard Specifications and the applicable DPW&T supplemental Specifications and Provisions with the Contractor
		7		Right-of-Way plats, options, entry agreements, entry rights obtained under the immediate possession law, and a record of properties under condemnation is on site
		8		Plans for adjustments to, or relocations of, any utilities that may be affected, is on site
		9		Material test equipment is on site, including compaction test equipment, slump cone and tamping rod, air meter for air-entrained concrete.
		11		Material test reports and approved sources of supply is on site
		12		Sketchbook, report forms, office supplies and field books is on site
		13		Transit tripod, and plumb bob, measuring devices (tapes, scales, etc.) are on site
		14		Pertinent correspondence is on site
		15		Inspector shall prepare, in duplicate, an Inspector's Daily Report (IDR), submitting the original to the field office and retaining the duplicate
		16		Inspector shall take sufficient photographs before, during and after construction with dates and time stamped for the performed inspection and store them with project files.
		17		Inspector shall ensure temporary stream diversion are part of culvert installations
				Structure Excavation
		18	(A)	All applicable permits are approved and copies are in the Engineers Office
		19	(A)	Contractor's layout is checked
		20	(A)	Enough elevations are taken to define the original ground surface at each area where material is to be excavated.
		21	(B)	Suitable material is separated from unsuitable material, and all suitable material is stored for future use
		22	(B)	All excavated material is stored in locations where it will not bear against any part of the structure
		23	(B)	The depth of the excavation and its limits are checked frequently
		24	(B)	DPW&T is informed of any unusual soil conditions or unexpected rock found in the excavation
		25	(B)	When required, sheeting is approved and completed in conformance to the working drawings
		26	(B)	The bottom of the excavation is at the correct elevation
		27	(B)	Enough measurements and cross sections are taken to permit accurate determination of excavation quantities
		28	(B)	Arrangements are made for any required bearing tests.
		29	(B)	The foundation is approved and authorization to proceed with construction is obtained.
		30	(B)	Satisfactory arrangements are made to drain the excavation or to seal out water before placing concrete.
		31	(B)	The backfill area is inspected to ensure that all embankment material will be supported on solid ground.
		32	(C)	Backfill is placed and properly compacted

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		33	(C)	Arrangements are made for required drainage
				Porous Backfill
		34	(A)	Backfill material is approved by DPW&T
		35	(A)	The material is free from large or frozen lumps, large rock, wood, or undesirable foreign matter
		36	(A)	The Contractor has proper equipment for placing the fill or backfill
		37	(A)	The surface that will hold the backfill is prepared in accordance with the Specifications
		38	(A)	The curing period for the concrete on which the fill will be placed is completed
		39	(B)	The moisture content of the fill material is controlled properly
		40	(B)	The placement method conforms to the Specifications to prevent wedging
		41	(B)	The porous material is placed as specified, and precautions are taken to prevent contamination
		42	(C)	The fill is finished neatly to the section and elevation shown on the Plans
				Pipe Culvert
		43	(A)	All pipe has been checked for size, type, Laboratory approval, and Certification
		44	(A)	Proper repairs are made to damaged pipe
		45	(A)	Damaged or defective pipe is rejected and the mark of approval is removed or obliterated
		46	(A)	Pipe is stored and handled properly, laid correctly, and bedded properly on a firm foundation
		47	(A)	The location of the culvert has been checked for suitability
		48	(A)	As specified, the embankment material has been placed and fully compacted to the height above the level of the top of the pipe, before the trench is started in a location where the top of the pipe would be above the natural ground surface
		49	(A)	The elevation of the flow line has been checked
		51	(B)	Line and grade controls are established
		52	(B)	Trench excavation is started at the low end of the trench, and the bottom is kept fairly smooth and sufficiently sloped
		53	(B)	The trench has the width and depth specified or shown on the Plans, and all unstable material at the bottom of the trench is removed and replaced with suitable material
		54	(B)	The trench has been braced, as required, for the safety of the workers
		55	(B)	The spoil bank is at a safe distance from the trench
		56	(B)	The trench bottom is fine graded to the proper grade
		57	(B)	The trench bottom has been shaped with a template to provide proper bedding for pipe 48 inches or more in nominal horizontal diameter
		58	(B)	The centerline and the grade of the flow line are checked
		59	(B)	The depression for each bell is located in the proper place, the bell end of each piece is free from the trench bottom, and the inside surface of each bell is cleaned, if using bell and spigot joints
		60	(B)	Joints are sealed as specified in the Contract Documents
		61	(B)	Lay holes are sealed as specified in the Contract Documents
		62	(B)	All pipe is inspected in place before backfilling begins
		63	(B)	Structure No. and Year-built numerals, if required, are properly installed
		64	(B)	The trench is backfilled and compacted simultaneously on both sides of the pipe in layers not exceeding 6 in. uncompacted depth
		65	(B)	Density tests are made on the backfill on both sides of the pipe as required

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
				Concrete Box Culverts
		66	(A)	All precast concrete box segments and prestressing strands have been checked for size, type and certification
		67	(A)	Proper repairs are made to damaged boxes. Defective segment is rejected.
		68	(A)	Box segment is stored and handled properly, laid correctly, and bedded properly on a firm foundation
		69	(A)	The foundation material is of suitable quality or is removed and replaced with selected backfill
		70	(A)	The flow line is checked for proper elevation
		71	(B)	All box segments are placed properly in accordance with Contract Documents
		72	(B)	Post tensioning of box segments is provided
		73	(B)	Segment Joints are sealed as specified in the Contract Documents
		74	(B)	Waterproofing are provided as specified in the Contract Documents
		75	(B)	Structure No. and Year-built numerals, if required, are properly installed
		76	(C)	All box segments are inspected in place
		77	(C)	Concrete of cast-in-place headwall has attained adequate strength before backfill is placed and compacted
				Riprap Scour Protection
		78	(A)	All grades and dimensions are in accordance with the Plans
		79	(A)	Natural stones are of adequate size and weight
		80	(A)	The specified class of Geotextile is on site
		81	(B)	The subgrade is true to line and grade
		82	(B)	Geotextile is placed with adjacent edges overlapped at a minimum of 2 ft.
		83	(B)	All masonry is placed on firm, unfrozen ground
		84	(C)	Slopes have been checked for tolerance
				Gabion
		85	(A)	All materials are approved by DPW&T
		86	(A)	The ground surface is relatively smooth and even
		87	(A)	The limits of gabions are checked
		88	(B)	Geotextile is placed in conformance with specifications
		89	(B)	All kinks are out of gabion baskets
		90	(B)	Corners are wired together and diaphragms are fixed to the side panels
		91	(B)	Gabions are placed front to front and back to back (to expedite stone fillings and lid lacing operations)
		92	(B)	Empty gabions are jointed together along all edges both horizontally and vertically
		93	(B)	Gabions are filled with the required amount of lifts with connection (or tie) wires as specified
		94	(B)	After filling, lids are closed and wired along all edges
		95	(C)	Excess material is removed and the area is clean
				Selected Backfill
		96	(A)	The excavation is properly prepared
		97	(A)	Materials and sources of supply are approved by DPW&T
		98	(B)	The backfill is uniformly placed
		99	(B)	The backfill is compacted and brought to uniform grade at the planned depth

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
				Pile Hammers and Equipment
		100	(A)	The hammer meets the Specifications requirements and it is approved by DPW&T
		101	(A)	The Contractor is notified that jetting should or should not be used
		102	(A)	The diameter of the supply hose for a steam or air hammer is large enough
		103	(B)	The supply of steam or air to a power hammer is adequate, and the required pressure is maintained during steady driving
		104	(B)	Any power hammer is operated at the speed recommended by the manufacturer, and the method of operation complies with the instructions in the manufacturer's manual. A diesel hammer with an enclosed ram is operated so that the hammer is just lifted off the pile after each upstroke
				Test Piles
		105	(A)	Heat numbers for 'H' Piles are recorded and compared with certification
		106	(A)	The results of previous borings are examined, and the length of the test pile is determined
		107	(A)	Each test pile is of proper size, type, and length, and meets the Specifications requirements
		108	(A)	The hammer, leads, steam and air hoses, and other equipment are approved by DPW&T
		109	(A)	A cap or driving head for the piles is available
		110	(A)	Each pile is properly marked, and the marks are numbered in measured intervals
		111	(A)	The test pile is driven at the location shown on the plans
		112	(A)	A reference marker is set at the proper elevation
		113	(B)	During pile driving operation a Registered Professional Geotechnical Engineer should be present.
		114	(B)	A power hammer is operated in accordance with the manufacturer's specifications and DPW&T's approval
		115	(B)	The number of blows required for each interval of penetration is counted and recorded using Saximeter
		116	(B)	Unusual driving conditions or bearing values are noted and reported to DPW&T
		117	(B)	The Plans are checked for details of a splice if one is permissible
		118	(B)	Each test pile is driven to the specified depth and bearing in one continuous operation
		119	(B)	A pile is not overdriven, split, broomed, curled, or otherwise damaged
		120	(C)	The pile data sheet is accurate and complete
		121	(C)	Obtain as-built survey of piles by a licensed surveyor before footing concrete is placed
				Foundation Piles
		122	(A)	The piles are the proper type, heat numbers are recorded for 'H' piles and piling conforms with the Plans and Specifications
		123	(A)	The hammer, the steam or air hose, and other equipment comply with the specifications, and the operation of the hammer is observed and approved
		124	(A)	The piles are properly marked, and the marks are numbered in measured intervals
		125	(A)	A reference marker is set for determining the proper elevation of each pile
		126	(A)	A pile-numbering system is set up
		127	(B)	During pile driving operation a Registered Professional Geotechnical Engineer should be present.
		128	(B)	Each pile is properly located
		129	(B)	Plumb piles are set vertically, and each batter pile is set on the axis it is to follow
		130	(B)	Each pile is driven continuously. If driving of a pile must be suspended before it reaches its final position, the elevation of the tip at the time of the shutdown and the duration of the delay must be noted and recorded
		131	(B)	Piles are not overdriven. If the hammer bounces or the pile bends or kicks, the DPW&T must be notified
		132	(B)	Jetting is used only if permitted and only to the authorized depth

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		133	(B)	Piles are driven to the final position after jetting and are re-driven after nearby jetting operations
		134	(B)	Piles are checked for heaving or uplift
		135	(B)	Steel Pipe Piles are free from dents and contain no mud or water at the time concrete is placed
		136	(B)	Concrete for Steel Pipe Piles is placed as specified in the Contract Documents
		137	(B)	Complete records are kept for each pile
		138	(C)	An accurate driving log of each pile is completed on the appropriate form(s)
		139	(C)	The position of each driven pile is checked, and the bearing value is computed by the penetration produced by the full-rated energy of the hammer, by blow count as determined by wave equation analysis, and/or results of data obtained from dynamic monitoring
				Concrete Structures Formwork
		140	(A)	Working drawings, including details of form ties, are submitted and approved prior to starting work
		141	(A)	Form design and the materials used for forms comply with the Specifications requirements
		142	(A)	The alignment and grade of the forms are checked
		143	(B)	All centering is on a firm foundation, and the centering and falsework are adjusted and centering gradually lowered
		144	(B)	Mortar does not leak out of the forms and all required fillets are installed
		145	(B)	Spacing of studs, wales, form ties, spreaders, and bracing is checked
		146	(B)	Parts of forms covering edges that will be exposed are checked for smooth lines
		147	(B)	Structure No. and Year-built numerals shall be cast in each separate concrete structure if required, including culvert endwalls, concrete retaining wall, bridge.
		148	(C)	Forms are clean and free from trash and debris
				Falsework
		149	(A)	Obtain and review the approved falsework plan for each structure prior to building and erecting the falsework
		150	(A)	Allow no changes or alterations without written approval by the design professional of record
		151	(B)	Monitor the construction and erection of the falsework for compliance with the approved falsework plan
		152	(B)	Check forms for camber and settlement allowances specified
		153	(B)	Monitor falsework during pour for allowable settlement
		154	(B)	Monitor placement sequence and placement rate during concrete pour
		155	(C)	Ensure that forms and falsework remain in place for minimum seven days and minimum compressive strength of 3000 psi
		156	(C)	Ensure that forms and falsework are gradually and uniformly lowered to minimized stress in concrete
				Reinforcement
		157	(A)	All shipments are checked for condition, inspection tags, and approval
		158	(A)	A check is made against bar lists, working drawings, and contract plans for size, number of bars, bends, and positions
		159	(A)	Bars are kept in bundles, with tags attached, and stored under proper conditions
		160	(B)	Bars with thick or loose rust or scale, oil, grease, paint, curing compound, mud, or cement mortar are cleaned before use
		161	(B)	Epoxy coated bars are checked and touchup is applied where needed
		162	(B)	All bars are checked for size and position as they are placed in the forms
		163	(B)	Ties and spacer blocks are checked, and bars at all splices are overlapped as specified and tied properly
		164	(B)	Where concrete is placed in a unit or section and bars are left projecting into a section to be constructed later, the bars are in proper position

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		165	(C)	Clearance to the steel from the forms meets the Specifications requirements
		166	(C)	Projecting bars are cleaned and protected against jarring that would destroy the bond in the concrete already placed
				Placing Concrete
		167	(A)	Pre-placement Conference is conducted
		168	(A)	All necessary testing equipment is on hand, such as the slump cone and tamping rod, the cylinder molds, the air meter and check cylinder, and a maximum-minimum thermometer for cold weather
		169	(A)	The concrete mix design is approved
		170	(A)	Contract plans are checked for the quantity of concrete to be placed, and for details of any construction joints
		171	(A)	Working drawings are checked for the rate of placing concrete
		172	(A)	Foundations, forms, reinforcement, and all other items are in an acceptable condition and ready for concrete operations; approvals are obtained for all materials to be incorporated in the construction
		173		The following items are checked with the Contractor:
		174	(A)	a. Concrete mix design and mix number.
		175	(A)	b. Amount of concrete to be placed.
		176	(A)	c. Schedule of placing concrete.
		177	(A)	d. Personnel and equipment used.
		178	(B)	The concrete complies with the concrete mix design, and the amount of water added does not cause the water-cement ratio to exceed that specified by the mix design
		179	(B)	The slump and air content of concrete are checked with the required frequency
		180	(B)	Concrete is placed as required by the Specifications, and the necessary hoppers, chutes, elephant trunks, runways, buggies, and other such equipment are being properly used
		181	(B)	Careful attention is given to the placing of concrete around reinforcement
		182	(B)	A constant check is maintained on the alignment and grade of the forms
		183	(B)	The concrete is properly spaded and vibrated
		184	(B)	Excess water and laitance are removed
		185	(B)	Finishing is as specified
		186	(B)	The required number of test cylinders are made and are protected at the proper temperature
		187	(B)	The Contractor is providing for protection and curing of the concrete to fully comply with the Specifications
		188	(C)	The concrete is protected and cured in accordance with the Specifications
		189	(C)	Forms are not stripped until the specified time has elapsed
		190	(C)	Cylinders for determining the early strength are cured under the same conditions as the concrete just placed
		191	(C)	The cylinders made to check the design of the mix are stored under the specified conditions
				Substructure
		192	(A)	Elevations of beam seats are checked
		193	(A)	Locations of inserts are checked
		194	(A)	Span lengths are double-checked
		195	(A)	All preparations are complete
		196	(B)	The concrete is of uniform consistency, and is placed and screeded properly
		197	(B)	The distance to the reinforcement from the surface of the concrete is checked often
		198	(B)	The approved sequence and method of placing concrete is followed
		199	(B)	The method of curing is applied promptly and continuously for the specified time

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		200	(C)	Forms are first loosened and then removed gradually to avoid sudden chilling of hot concrete
				Prestressed Concrete
		201	(A)	All beam seats are checked for proper elevation and condition
		202	(A)	Suitable arrangements are made for transportation, handling, and storing beams
		203	(A)	All inspection reports or stamps are in order
		204	(A)	Pre-erection meeting is conducted
		205	(B)	The required pads are in place at the bearing points on piers or abutments
		206	(B)	Beams are lifted by the proper lifting points or inserts, and the erection diagram is followed
		207	(B)	Anchor bolts are installed at both the fixed ends and free ends of the beams, and proper provision for expansion is made at the free end
		208	(C)	The spaces around anchor bolts at the fixed ends are filled with grout
		209	(C)	All surfaces are cleaned and excess or spattered mortar is removed
				Anchors, Bearings, and Expansion Pads
		210	(A)	Materials are approved by DPW&T
		211	(A)	Each bridge seat is at the proper elevation and location
		212	(A)	Each area where a bridge seat will be placed is level and finished to provide 100% bearing contact for the plate
		213	(B)	The position of each anchor bolt hole is correct with respect to the span length, skew, and distance from the centerline
		214	(B)	The holes are backfilled with approved non-shrinkable grout that is tamped in placed to completely fill the voids in the holes after anchor bolts are set
		215	(C)	Rockers or expansion shoe plates are positioned with the temperature properly adjusted
		216	(C)	The tilt or offset is in the right direction, and is uniform in amount for all beams in a unit
				Concrete Bridge Deck
		217	(A)	The profile grade of the bridge deck is established and the deflections of beams at control points are computed
		218	(A)	The elevations and slopes of the end dams are computed
		219	(A)	Elevation readings are taken at the predetermined control points
		220	(A)	Pre-deck conference is held
		221	(A)	Telltales are provided, where possible, for checking deck deflections
		222	(A)	Any necessary adjustment in the profile grade is made
		223	(A)	Actual distances above beams for end dams, deck forms, and screed rails are computed, and these items have been set to the computed distances by measurements from the tops of the beams
		224	(A)	The finishing machine and all transverse construction joints are set parallel to the abutment and pier support lines on all bridge deck slabs
		225	(A)	All preparations for placing concrete are checked
		226	(A)	The position of the reinforcement is checked
		227	(B)	The concrete is of uniform consistency, and is placed and screeded properly
		228	(B)	The distance to the reinforcement from the surface of the concrete is checked often
		229	(B)	The approved sequence and method of placing concrete is followed
		230	(B)	The surface is tested with a straightedge, and corrections are made to ensure a smooth riding surface
		231	(B)	The method of curing is applied promptly and continuously for the specified time

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		232	(C)	All portions of the bridge deck comply with the straightedge tolerance, and all points that were too high are corrected by grinding
		233	(C)	All expansion joints are checked for freedom of movement
				Expansion Material
		234	(A)	All materials have inspection stamps
		235	(A)	The erection Plans are checked for the proper locations and proper installation of joints
		236	(B)	Joints are set to exact grade, alignment, and slope
		237	(B)	Sliding plates are in good contact to prevent bending
		238	(B)	Finger-type joints are aligned to ensure free movement without lateral contact
		239	(B)	Joints are adjusted to the correct openings for the temperature at the time of installation
		240	(B)	Compressible expansion joint filler is supported and anchored
		241	(C)	All joints freely move when the structure is under normal dead load
		242	(C)	All joints are cleaned and any foreign material is removed
				Dampproofing and Membrane Waterproofing
		243	(A)	All materials are approved by DPW&T
		244	(A)	All surfaces to be coated are clean, thoroughly dry, and not too cold
		245	(A)	Preparations are made to use the specified materials and method on each area to be covered
		246	(B)	The specified application method is followed
		247	(B)	Priming material is not heated and successive prime coats are not applied until the preceding coat is thoroughly dry
		248	(B)	Each coat contains the specified quantity of material
		249	(C)	Dampproofing or membrane waterproofing is not damaged or punctured, or damage is properly repaired before it is covered or backfill is placed against it
				Pneumatically Applied Mortar
		250	(A)	Materials are stored as specified
		251	(A)	Covered surfaces are thoroughly clean
		252	(A)	Reinforcement is firmly anchored
		253	(A)	Equipment complies with the Specifications requirements
		254	(A)	Shooting strips are installed where needed
		255	(B)	Adjacent surfaces are protected from rebound material
		256	(B)	The proportions of cement, sand, and water are those required by the Specifications for the type of work being done
		257	(B)	The application method is as specified
		258	(B)	Material loss from rebound is not excessive
		259	(B)	All construction joints are made exactly to the Specifications requirements
		260	(B)	Loose rebound material does not accumulate in pockets
		261	(B)	Edges are sharp and true, and surfaces are reasonably smooth
		262	(B)	Curing is started as soon as possible without damage to the mortar
		263	(C)	Curing is continued for the specified period
		264	(C)	In cold weather, protection for curing is provided

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
				Metal Railing
		265	(A)	All material delivered for handrails has the proper material inspection tags
		266	(A)	Anchor bolts or base plates for metal handrails are in the correct position
		267	(A)	The structure is self-supporting before the handrail construction is started
		268	(B)	Bases for metal posts are adjusted for elevation and alignment
		269	(B)	All posts are set to line and grade
		270	(B)	Precautions are taken to prevent damage of handrails
		271	(C)	All handrails have been cleaned
		272	(C)	All required painting of metal handrails has been completed
		273	(C)	All drips or spatters are cleaned from other finished work
				Aggregate Base Course Inspection
		274	(A)	The Contractor submits the proposed plants, equipment, and materials sources to DPW&T for approval at least 30 days prior to the start of work.
		275	(A)	Where the central plant is located and has the plant been certified
		276	(A)	Moisture-density graph is obtained from the laboratory to properly control gradation and moisture content and to determine densities
		277	(A)	When gravel is used for base course, the gravel pit is cleared of vegetation, root mat, and debris and that over-burden is stripped as stipulated by "Soils Report" approval
		278	(A)	An acceptable method has been established for the mixing process where blending materials or using additives is necessary before the material will meet Specifications requirements
		279	(A)	Proper equipment for compaction tests is obtained from the laboratory
		280	(A)	Subgrade is properly compacted, graded, and shaped to required cross section
		281	(A)	The Contractor has all necessary equipment in good working condition, in proper adjustment, and in conformity with Contract Documents
		282	(A)	Bleeder ditches have been constructed through shoulder or median area at sufficiently close intervals to provide adequate drainage
		283	(A)	String line and grade is set by Contractor as required
		284	(A)	Edge supporting berms or shoulders are constructed as necessary
		285	(A)	A system of communication is set up with the Plant for immediate correction of any deficiencies
		286	(B)	No material is spread on wet or frozen grade
		287	(B)	Material is spread uniformly and thoroughly compacted
		288	(B)	Moisture content is checked at job site often and material is not above optimum. Plant is notified if changes are needed
		289	(B)	Base width and depth are checked for compliance with typical section shown on Plans
		290	(B)	Any method used by the Contractor to mix or blend different materials, or any process involving additives, produces the specified finished product
		291	(B)	Calcium chloride or magnesium chloride is placed at specified rate when added at the job site
		292	(B)	Rolling is performed as required
		293	(B)	Sufficient density tests are taken to ensure that layers are compacted to required percentage of maximum density. Results are recorded on forms furnished by the third party laboratory . Copies are retained in the field office
		294	(B)	A curing period is allowed for cement-treated base before construction of any succeeding course
		295	(B)	Emulsified asphalt material is applied to surface of completed cement stabilized base at specified rate with approved equipment
		296	(B)	Temperature requirements are met

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		297	(B)	Daily reports are turned in by the inspector to field office indicating location, description, and pertinent construction data
		298	(B)	Temperature requirements are met
		299	(C)	Base course is checked for proper thickness
		300	(C)	Completed base course is checked for conformity to specified line, grade, and cross section
		301	(C)	Subgrade drains are constructed as required
				Chain Link Fence
		302	(A)	Contractor notified Miss Utility
		303	(A)	All materials and equipment to be used have been approved by DPW&T
		304	(A)	The fence layout plan receives approval from DPW&T.
		305	(A)	The right-of-way line is staked and checked for an accurate location of the chain link fence
		306	(B)	Posts or holes are accurately located so that the fence will have a neat appearance
		307	(B)	Provisions are made to protect finish on the tops of posts that are to be driven
		308	(B)	All posts are checked during installation to make sure that they are properly embedded and are plumb
		309	(B)	All braces are properly installed at the proper locations
		310	(B)	Caps are placed on the required posts
		311	(B)	Horizontal and vertical alignments are as specified, and the fence is in a smooth line and uniformly at the proper height
		312	(B)	Posts that require concrete footers are installed as per Specifications
		313	(C)	Areas are redressed, and all trash or unused material is removed
				Metal Traffic Barrier
		314	(A)	The Contractor notifies Miss Utility.
		315	(A)	All materials and equipment to be used have been approved by DPW&T
		316	(A)	The location and amount of traffic barrier to be installed in accordance with permitted plans and specifications
		317	(A)	The Specified end sections are located as accurately as possible
		318	(B)	Posts are accurately located so that the traffic barrier will have a neat appearance.
		319	(B)	Provision is made to protect the coating on the tops of posts that are to be driven.
		320	(B)	All posts are checked during installation to make sure that they are properly embedded and are plumb.
		321	(B)	Horizontal and vertical alignments are as specified, and the traffic barrier is in a smooth line and uniformly at the proper height above the road shoulder.
		322	(B)	Traffic Barrier End Treatments are installed in conformance with the permitted plans and specifications.
		323	(C)	Shoulders are redressed, and all trash or unused material is removed.
				Concrete Traffic Barrier
		324	(A)	All materials are approved by DPW&T
		325	(A)	The correct type of barrier is checked for each location.
		326	(A)	The alignment and grade of the barriers are carefully checked
		327	(B)	The foundation on which the barrier is to be placed is firmly and fully compacted.
		328	(B)	Forms for a concrete barrier are solidly supported and braced, and they are checked for line and grade by measuring from offset stakes and by sighting along the tops of the forms.

Status	DPIE	Item	Phase	Construction Inspection Checklist Item
		329	(B)	Plans and Specifications are checked for the locations and spacing of joints, and expansion joints and expansion material are located where required.
		330	(B)	Any section of bent or twisted forms is removed and replaced with one that meets the requirements of the Specifications.
		331	(B)	There is no sharp break in the alignment of the forms at a joint between sections
		332	(B)	On a curve, the forms are shaped so that the barrier will have a good appearance
		333	(B)	Barrier is fastened to the concrete pavement by a tie device, as shown in the MDOT SHA Book of Standards
		334	(B)	Forms are marked at all places where drains or drainage inserts are to pass through the barrier
		335	(B)	Forms are clean and lightly coated with form release compound, and the subgrade is sprinkled with water before any concrete is placed.
		336	(B)	The requirements for reinforcement steel tie bars and expansion and contraction joints are as shown on permitted plans.
		337	(B)	The required shape of a drainage opening is discussed with the Contractor before work is started.
		338	(B)	A sloping section is provided as shown in the MDOT SHA Book of Standards
		339	(B)	Concrete is tested for slump and air content and it meets all requirements of the DPW&T Specifications
		340	(B)	Concrete is placed in layers whose depth does not exceed the specified limit, and each layer is properly vibrated
		341	(B)	Water is not added to concrete to re-temper it if it starts to stiffen before being placed
		342	(B)	The top of the barrier is finished with a steel trowel and a brush
		343	(B)	The top edge is given the required radius, and curing is started as soon as the concrete has been finished and has set enough to hold its shape
		344	(C)	Concrete is cured properly and for the proper length of time

Notation: In the “Phase” column, “(A)” denotes “Before Construction”; “(B)” denotes “During Construction”; “(C)” denotes “After Construction”.