For future updates, please refer to the MDT website at http://www.mdt.mt.gov/. Once at the site, click on Doing Business tab, then Contracting and Bidding OR click on http://www.mdt.mt.gov/business/contracting/.

The following Subsections have been revised since September 11, 2014. Current revisions are noted by an * before the date on this index.

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SUPPLEMENTAL SPECIFICATIONS

The following are supplementary or amendatory to the 2014 Edition of the Standard Specifications for Road and Bridge Construction insofar as they apply to this contract.

101.02-ACRONYMS AND ABBREVIATIONS Page 2 2-26-15

Rescind and replace the following Acronym:

D/A .....Dust to actual asphalt ratio

Add the following Acronym:

DP .....Dust to effective asphalt ratio

101.03 DEFINITIONS (CALENDAR DAY) Page 6 4-16-15

Rescind and replace the following definition:

CALENDAR DAY
Every day shown on the calendar, beginning and ending at midnight.
For calendar day contracts, all days are assessed except no work days and days on which the Contractor is specifically required by the contract to suspend construction operations. Calendar days will be charged during no work days for each day construction activities occur that have any impact on the traveling public, exclusive of traffic flowing unimpeded on approved detours or emergency and maintenance repairs to the project, when the time requirements under Subsection 104.05.2 are met.

101.03 DEFINITIONS (MAJOR ITEM) Page 8 10-9-14

Rescind and replace the following definition:

MAJOR ITEM
Individual bid items having a bid value equal to or exceeding 5% of the total Contractor's bid.

101.03 DEFINITIONS (NO WORK DAYS) Page 9 4-16-15

Within the definition, rescind the second sentence (that begins, "Travelway maintenance…") and replace with the following:

Travelway maintenance in accordance with Subsection 104.05.2, stormwater BMP maintenance, and providing protection for the public are exempt and this work may be accomplished on no work days without assessment of contract time.

102.03 CONTRACTOR REGISTRATION Page 15 12-11-14

Rescind the first paragraph (that begins, "Montana law…") and replace with the following:

Montana law requires all contractors, except those exempted by MCA 39-9-211, to register with the Montana Department of Labor & Industry.

102.07(B) BIDDING REQUIREMENTS Page 17 10-9-14

Within the third paragraph, rescind the third sentence (that begins, "Return a computer…") and replace with the following:

Return an electronic storage device containing the complete project files for all projects bid with the bid package.

103.09.2 BID DOCUMENTATION INVENTORY AFFIDAVIT AND ESCROW AGREEMENT Page 24 10-9-14

Within the third (last) paragraph, rescind the web link (that begins, “http://www.…”) and replace with the following:

http://www.mdt.mt.gov/publications/forms.shtml#con

103.09.5 RELEASE OF BID DOCUMENTS TO THE DEPARTMENT Page 25 8-6-15

Rescind the second (last) paragraph (that begins, “Upon the Department’s.…”) and replace with the following:

Within three calendar days of the Escrow Agent’s notification that the Bid Documents will be released to the Department, the Contractor may request to the Department that the Contractor have a representative present during the opening of the bid documents.

105.03.3 QUALITY INCENTIVE ALLOWANCE Page 36 8-6-15

Rescind the first paragraph (that begins, “Quality incentive allowances…”) and second paragraphs (that begins, “All quality incentive…”) and replace with the following:

The net incentive or disincentive amount will applied as a line item adjustment on the pay estimate following completion of the item of work.

105.03.3(C) RIDE SPECIFICATION (QUALITY INCENTIVE ALLOWANCE) Page 37 12-11-14

Within Subsection 105.03.3(C), rescind the second paragraph (that begins, “The incentive or disincentive…”) as well as the formulas and variables that follow and replace with the following:

Incentive or disincentive for surface smoothness will be calculated based on the ride category and the entire project length in each travel lane or measured section using the following equation. The calculated value will be applied as a line item adjustment to the plant mix item on the estimate. Calculate the pay adjustment as follows:

Pay adjustment = (Pay Factor -1) x L x Unit Cost
Pay Factor = Calculate using appropriate project category formulas
L = Measured lane length
Unit Cost = Use appropriate value from Table 105-4

Rescind Table 105-4, Unit Cost, and replace with the following:

TABLE 105-4
UNIT COST

Category	Description	Unit Cost/lft.
I or III	Typical section with 0.3 ft. or greater plant mix surfacing	$6.425
I, II, or III	Typical section with 0.2 to 0.29 ft. plant mix surfacing	$4.283
I, II, or III	Typical section with 0.19 ft. or less plant mix surfacing	$3.213

Note: Isolation lifts are not considered part of the surfacing section when determining appropriate overlay depth.

105.17.1(7) FINAL WALK THROUGH PROCESS Page 50 2-26-15

Within part 6, replace the form with the following:
MDT-CON-105_17_1D

Rescind and replace part 7 with the following:

7. The Project Manager will grant Conditional Final Acceptance within 30 calendar days of the receipt of the request for the final walk-through verification. If the punch-list items are fully resolved, no further action is required. If deficiencies still exist, payment will be deducted from the estimate as appropriate. The final acceptance will be granted when all contract-specific warranties have expired and all warranty issues have been resolved.

105.17.2 FINAL ACCEPTANCE Page 50 8-6-15

Within the first paragraph, rescind the first sentence (that begins, "When the Final Walk-through…") and replace with the following:

When the Final Walk-through Process is complete (conditional final acceptance), all project-specific warranties have expired, and all warranty issues have been resolved, submit the Contractor's Certificate of Work Complete using form MDT-CON-105_17_2.

Rescind bullets 4 (that begins, "There are no pending…) and 5 (that begins, "There are no known…).

106.02.5(A) GENERAL Page 56 10-9-14

Within the first paragraph, rescind the second sentence (that begins, "Comply with the …") and replace with the following:

Comply with the pertinent statutes relating to open cut mining (Section 82-4 MCA); hard rock mining (Section 82-4-3 MCA); water quality (Section 75-5 MCA); stream bank preservation (Section 75-5 MCA); the Montana County Noxious Weed Management Act Section 7-22-21 MCA; and all other applicable federal, state, and local statutes, regulations and ordinances.

106.05 FIELD LABORATORY Page 57 8-6-15

Rescind Subsection 106.05 and replace with the following:

106.05 FIELD LABORATORY

The Department will furnish all field offices, laboratories and cure boxes.

Furnish and install electrical power as directed:

- A continuous 200-ampere, 220 to 230 volt, single phase, 60-hertz power supply using a four wire connector; or
- A 110 to 120 volt alternating current of sufficient capacity.

Have the source connected by a Montana licensed electrician.

Furnish a potable water supply to operate all testing equipment for the offices and laboratories.

Notify the Project Manager at least 2 business days prior to producing material to be tested in the field laboratory or cured in the cure boxes. Do not begin production until the test trailer or cure box is fully operational.

No additional payment will be made for providing power and water to the field offices, laboratories or cure boxes. Include these costs in the other items on the project.

106.09 DOMESTIC MATERIALS Page 58 8-6-15

Rescind the fifth paragraph (that begins, "Material inspection…) and replace with the following:

Material inspection of pre-cast products, prefabricated steel products, or prefabrication plants will take place at the point of manufacture. The District Materials Lab, Helena Materials Bureau, or Department representative will inspect the manufacturing of these items and verify that the fabricator is maintaining supporting documentation. All precast products containing steel and prefabricated steel products delivered to the project must be accompanied by signed documentation from the end product manufacturer (precast plant or prefabrication plant) which states that all steel used in the product has been melted/recycled and manufactured entirely in the United States and they have maintained supporting documentation. Original mill test reports from steel fabricators or suppliers are not required to be submitted to the Project Manager for precast and prefabricated steel products. Submit a Form 406 with signed documentation by the end product manufacturer or prefabrication plant that all steel incorporated has been melted/recycled and manufactured entirely in the United States. All supporting documentation (original mill test reports) must be maintained by the fabricator and made available to the Department as requested.

107.11.5 NOXIOUS WEED MANAGEMENT Page 67 10-9-14

Within the fourth paragraph, rescind the web link (that begins, "www.agr…") and replace with the following:

http://agr.mt.gov/agr/Programs/Weeds/

108.01.2 CONTRACT PERFORMANCE Page 77 3-10-16

Add the following paragraph after the first paragraph:

"Specialty Items" are defined as work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole.

Rescind Subsection 108.03 and replace with the following:

108.03 PROSECUTION OF WORK

108.03.1 General

Begin obtaining all air quality, water quality and storm water runoff permits, approval of reclamation plans, and archaeological and historical clearances immediately upon receipt of the notice of contract award letter from the Department. Furnish the completed applications to secure permits, approvals or clearances as they are submitted to the respective agency. Furnish approved permits, reclamation plans and clearances necessary to complete the work in conformance with all federal, state and contract requirements.

The Department will reimburse all reasonable costs incurred in securing the permits, approvals and clearances if the Department does not execute the contract for reasons outside its control.

A pre-construction conference will be held on a mutually agreed date between the Contractor, Department and other parties interested in the work before work within the project limits begins no later than 20 calendar days after the Notice to Proceed date. The Contractor's superintendent in charge of the project must attend the conference. Encourage subcontractors to attend. No payments will be made on the contract until the pre-construction conference has been held.

Obtain written approval before starting night work. Provide work area flood lighting for night work and do not rely solely on equipment lights. Night work approval may be rescinded at any time.

Suspending and resuming work on all or a part of the contract will be by Subsection 105.01.

Work may be suspended on working day contracts for unsuitable weather or for other conditions that are detrimental to the work accuracy and quality. Prevent damage and repair damaged work that was not protected during the suspension at Contractor expense. No time extensions will be approved for work to correct non-protected work.

Store materials to protect against damage and without obstructing, endangering or impeding traffic.

Do not allow water to pond on the roadway or within the construction limits, excluding environmental protective devices. Open ditches and shoulder drains, and take other actions to protect the public and the work.

The Department does not authorize project suspension by the Contractor and time will be charged during unauthorized project suspensions. If the Contractor suspends the project, provide written notification of the suspension to the Project Manager 7 calendar days before the suspension. The Contractor is responsible for all maintenance required during unauthorized suspensions and for all work and materials required due to the suspension.

108.03.2 Project Schedules

Furnish a WN that details the work and time (working days, calendar days or completion date) to complete the contract. The initial schedule must show that the work will be completed in the time frame specified in the contract.

A. ASC Schedules. For projects not subject to Subsection 108.03.2(B) requirements, submit a schedule in accordance with the Table of Contractor Submittals. No other work, except obtaining permits, may begin until the schedule requirements have been met. No payments will be made on the contract until the submitted schedule is reviewed.

The Contractor may use a CPM schedule as the ASC if it meets the requirements described in Subsection 108.03.2(A) herein and results in no additional cost to the Department.

1. Include in the ASC:
   a. A bar chart chronologically sequenced and to time scale showing the following:
      1) All work activities with a completion duration of 5 or more working days. (For this requirement, working days does not exclude the period from November 16th through April 15th.)
      2) Any work activity that has an impact on completion of the project.
   b. The relationship of each work activity listed in Subsection 108.03.2(A)(1)(a) to other work activities, permits, plans, submittals and approvals required to complete the project.
   c. Work activity durations by working days or calendar days as appropriate. Indicate non-working periods exceeding 3 days on each activity bar.
2. Include in the WN:
   a. The proposed work process sequence describing the relationship of the work activities listed in Subsection 108.03.2(A)(1) required to complete the contract, including shop drawing submittals, permits (including estimated maximum waiting periods for all required permits), fabrication and delivery activities.
   b. A detailed description and the progress time of each work activity listed in Subsection 108.03.2(A)(1) measured by working day or calendar day, as appropriate.
   c. A detailed description of the ASC, including holidays, planned workdays per week, number of shifts per day, hours per shift, size of work crews and resources used.
   d. Adjustments to activity durations and production rates to account for weather.

Submit an updated ASC and WN every month in which work is performed, one week before the end of the project's monthly estimate cycle. The ASC and WN should show current progress and all revisions or modifications that reflect changes in the method or manner of the work, specification changes, extra work, changes in duration, changes in shifts, work crews or resources. If the work is not proceeding consistently with the Contractor's most recently reviewed ASC and WN, the Project Manager may require that the Contractor submit 2 copies of an updated ASC and WN that accurately reflect the Contractor's progress, resource allocation for the project, and revised

schedule. Submit the updated ASC and WN within 1 working day of the Project Manager's request. Ensure that the WN and ASC submitted meet the above requirements and accurately reflect the work progress.

Any delay in beginning or prosecuting work that is caused by the Contractor's failure to provide an ASC or WN when and as required is solely the responsibility of the Contractor, and is not an excusable delay.

Prosecute the work with the resources required to complete the contract within the time shown in the Contractor's updated ASC and WN.

The Department may withhold 10% of each monthly progress estimate for failure to submit an initial or updated ASC or WN on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of the required ASC and WN. The Project Manager's review does not attest to the validity of the ASC or WN.

B. CPM Scheduling. Develop, maintain and provide a detailed time-scaled computer generated progress schedule using the critical path method that is compatible with Primavera P6 or other Primavera product which generates a .xer file type.

Submit a schedule in accordance with the Table of Contractor Submittals. No other work, except obtaining permits, may begin until the schedule requirements have been met. No payments will be made on the contract until the submitted schedule is reviewed.

Schedule all contract work including that of subcontractors, vendors and suppliers. The initial schedule must show that the work will be completed in the time frame specified in the contract.

Prepare the initial CPM schedule as an Activity On Node (AON) or Precedence Diagramming Method (PDM).

The Project Manager may withhold 10% of each monthly progress estimate for failure to submit an original or updated CPM schedule on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of the required CPM schedule. The Project Manager's approval of the CPM schedule does not attest to the validity of the Contractor's assumptions, logic constraints, dependency relationships, resource allocations, labor and equipment or other schedule aspects.

1. Preparation and Submission of Schedule. Prepare an initial schedule and submit an electronic file compatible with Primavera P6 or other Primavera product which generates a .xer file type. Once an accepted baseline schedule is submitted, furnish one ANSI D (24-inch by 36-inch) paper copy. Submit all items listed in Subsection 108.03.3(C).

   Attend a meeting scheduled by the Project Manager within 10 calendar days of the Project Manager's receipt of the CPM schedule to review, correct or adjust the CPM schedule if required.

   Make all schedule adjustments and corrections discussed at the meeting and re-submit the revised schedule within 15 calendar days after the meeting. Plan and execute the work to meet project milestones and completion dates.
2. Initial Schedule Requirements. Include the requirements listed in Subsection 108.03.3(C) and the following:
   a. Total float sort; responsibility/early start sort; area/early start sort;
   b. 60-day look ahead bar charts by early start; and
   c. Logic diagram having a maximum 100 activities for each ANSI D (24-inch by 36-inch) size sheet. Ensure each sheet includes project number, page number, title, match data or diagram correlation and key to identify all components used in the diagram.
3. Schedule Requirements. Submit schedules that include:
   a. Activity identification numbers;
   b. Project milestones;
   c. Activity descriptions;
   d. Appropriate relationships;
   e. Activity durations of no more than 30 days. Submit activity manpower, equipment, unit quantities and production rates to the Project Manager for review;
   f. Procurement of permits;
   g. Material procurement separated into at least two activities, fabrication and delivery. Include time for delivering all submittals and Department review of working drawing submittals as separate items in the schedule logic for all items requiring submittal, review and approval;
   h. Activities coded to reflect the party performing each activity (only one party performs each activity) including subcontractors and suppliers and the area/location of each activity;
   i. Work days per week, holidays, number of shifts per day, hours per shift and major equipment to be used;
   j. Phasing (staging) details, if the work has phasing or is to be performed in phases;
   k. A WN which describes the following:
      - Anticipated work in an orderly sequence of the construction phasing;
      - Activity relationships;
      - Anticipated problems; and
      - Anticipated project completion dates, in a detailed description.

      Narratives that are a listing of the work will not be accepted. Include written narratives with each submission;
   l. Calendars, including weekends, holidays, or other Contractor non-work periods. Use project specific calendars. All activities must be identified by entry of their appropriate calendar; and
   m. Adjustments to activity durations and production rates to account for weather.

   Use only contractual constraints in the schedule logic.

Float is defined as the amount of time between when an activity "can start" and when it "must start". Total float is float shared with all other activities and is defined as the amount of time an activity can be delayed without affecting the overall time of project completion. Float is a shared commodity, not for the exclusive use or financial benefit of either party. Either party has the full use of float until it is depleted.

The critical path is defined as the longest continuous sequence of activities through the network schedule that establishes the minimum overall project duration. The submitted activity sequence and durations must generate a CPM schedule having a critical path with zero float. Keep multiple critical paths and near-critical paths to a minimum. Describe multiple critical paths and near-critical paths with thorough and reasonable justification in the written narrative.

Show the sequence and interdependence of all activities required for the complete performance of all items of work under this contract, including acquiring all the environmental permits. Show all network "dummies" on the diagram.

The Department reserves the right to limit the number of activities on the schedule to between 50 and 1000 activities.

Describe the activities so that the work is identifiable and the progress on each activity is measurable.

4. Schedule Updates and Progress Payments. Schedule and attend monthly project progress meetings to compare the schedule to the actual finish dates of completed activities, the remaining duration of uncompleted activities and the proposed logic and/or time estimate revisions. Provide the status of activities at these meetings, and the schedule updates based on this information, once it has been verified.

   Each month of the project, one week before the end of the project's monthly estimate cycle, submit an electronic file using Primavera P6 or other Primavera product which generates a .xer file type and a .PDF file containing:

   a. Total float sort;
   b. The data date and current date line on the bar chart.
   c. A narrative report describing the critical path, logic revisions or modifications to the schedule, including, but not limited to: changes in the method or manner of the work, changes in specifications, extra work, changes in duration, etc.; and
   d. Any revised activity on node diagrams for the following:
      1) Delay in the completion of any critical activity;
      2) Actual prosecution of the work that is different than that represented on the CPM schedule; and
      3) The addition, deletion, or revision of activities required by contract modification or logic revisions.

   Ensure monthly schedule updates reflect the previous month's actual work. The contract time will be adjusted only as specified in the contract. Furnish documentation to support requests for time extensions for milestone dates or the contract completion date.

   The Project Manager may suspend work under Subsection 105.01(A) if the WN or project schedule does not accurately reflect the actual progress of the work; the suspension may continue until an accurate WN and project schedule is submitted.

   Failure to submit either a CPM or ASC schedule or schedule update to the Project Manager within 2 calendar days of its due date will result in a monthly deduction in accordance with Table 108.1A.

TABLE 108-1A
PROJECT SCHEDULE DEDUCTIONS

Original Contract Amount		Monthly Deduction
From More Than	To and Including	
$ 0	$ 1,000,000	$ 300
$ 1,000,000	$ 3,000,000	$ 700
$ 3,000,000	—	$ 1,000

C. CPM Scheduling Method of Measurement

   CPM schedule is measured by the lump sum. Other scheduling requirements are not measured for payment.

D. CPM Scheduling Basis of Payment

   Payment for all costs associated with CPM scheduling is included in the lump sum contract unit price for CPM scheduling. Payment for all costs associated with other scheduling requirements is included in the payment for other items of work.

   Failure to submit a revised CPM schedule as specified may also result in withholding 10% of each monthly progress estimate. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of the required schedule.

   Partial payments for CPM scheduling will be made based on the lump sum contract unit price as follows:

   1. 50% when the initial schedule is finalized.
   2. 75% when the overall project is 50% complete.
   3. 100% when all updates have been submitted.

108.07.5 EXTENSIONS Page 85 8-6-15

Rescind the third paragraph (that begins, "The contract time…") and replace with the following:

The contract time as awarded is based on the estimated quantities as defined in Subsection 102.05. No decrease in contract time will be made for an underrun in a contract item quantity. The contract time will be modified based on the quantity and difficulty of added or deleted work and how it impacts the critical activities of the Contractor's operation as shown on the most current work schedule as required under Subsection 108.03 or as justified to the Project Manager.

108.08 FAILURE TO COMPLETE ON TIME Page 86 12-11-14

Rescind Table 108-2 and replace with the following:

TABLE 108-1
SCHEDULE OF LIQUIDATED DAMAGES

ORIGINAL CONTRACT AMOUNT		DAILY CHARGE
From More Than	To and Including	Working Day or Calendar Day
$ 0	$ 150,000	$ 993
$ 150,000	$ 350,000	$ 1,167
$ 350,000	$ 700,000	$ 1,396
$ 700,000	$ 1,000,000	$ 1,553
$ 1,000,000	$ 2,000,000	$ 2,084
$ 2,000,000	$ 4,000,000	$ 2,380
$ 4,000,000	$ 7,000,000	$ 2,969
$ 7,000,000	$ 12,000,000	$ 3,604
$ 12,000,000	—	$ 4,338

109.06 PARTIAL PAYMENTS Page 94 4-16-15

Rescind the second paragraph (that begins, "The Department reserves…") and replace with the following:

The Department reserves the right to withhold all or part of any partial payments earned under the contract until all tax payments due or owed to the State of Montana are paid in full.

109.07 STOCKPILED MATERIALS Page 95 8-6-15

Add the following sentence at the end of the seventh paragraph (that begins, "Partial Payments…):

Submit stockpiled materials requests using the same unit of measure as the contract item.

109.10 OVERPAYMENTS Page 97 8-6-15

Within part 1 rescind the forth sentence (that begins, "The interest rate…") and replace with the following:

The interest rate charged will be the greater of 10% or the highest rate allowed by the law for the period in which the overpayment is not repaid.

201.03.1 GENERAL Page 99 10-9-14

Rescind the seventh paragraph (that begins, "Stake construction limits …") and replace with the following:

Stake construction limits for cuts, fills, channel changes, ditches, fence lines, utility relocation, roadside development areas, selective thinning for sight distance, grubbing, and similar areas to establish clearing and grubbing limits in accordance with Subsection 105.08.

203.03.1 EXCAVATION Page 108 10-9-14

Rescind the second paragraph of Subsection (G) Digout, (that begins, "Provide special…") and replace with the following:

Furnish replacement material for digouts in accordance with Subsection 701.12.

Rescind the first and second paragraphs of Subsection (H) Sub Excavation, (that begins, “In areas of…”) and replace with the following:

Unless otherwise shown in the contract or directed by the Project Manager, in areas of sub excavation, excavate the full road width to a depth of 2 feet (600 mm) below the top of the subgrade soils or to a depth where the subgrade soils are firm and stable, whichever is shallower. Excavate parallel to the finish grade, day lighting to the left and right slopes. Slope the ends of the excavation no steeper than a 10H:1V. Dispose of the excavated material to the satisfaction of the Project Manager.

Furnish sub-ex replacement material in accordance with Subsection 701.12.

206.03.2(B) STRUCTURES Page 129 12-11-14

Rescind Subsection 206.03.2(B) and replace with the following:

B. Structures. If a bridge is chosen as means for conveyance of the waterway, provide a minimum waterway opening of sufficient size to accommodate the 2-year flood event, spanning the active channels with 1-foot (305 mm) minimum freeboard. Construct all temporary bents in a manner that the current remains un-deflected. Provide adequate bulkheads at the approach fills to prevent fill materials from entering the waterway.

Provide the detour bridge with a width greater than or equal to that of the existing bridge, with a design live load capacity of HL-93 loading, for LRFD designs, or AASHTO HS-20 (MS-18), for ASD and LFD designs. Provide a rail system with blunt end protection at all bridge ends. Ensure the approach rail system meets either NCHRP 350 or MASH crash test requirements in accordance with Table 206-1. Ensure the bridge rail can resist railing design forces as specified in the AASHTO LRFD (Table A13.2-1) for the detour design speed in accordance with Table 206-1.

TABLE 206-1
DETOUR BRIDGE DESIGN

Design Speed	Bridge Rail	Approach Rail Elements
≤ 30 mph	TL-1	TL-1
> 30 mph – 45 mph	TL-1	TL-2
> 45 mph	TL-2	TL-3

208.03.2 WATER POLLUTION CONTROL Page 133 4-16-15

Within part C, rescind the fifth (last) paragraph (that begins, “BMPs will be…”) and replace with the following:

BMPs will be inspected during construction and during the final inspection to ensure they are installed, maintained, and functioning as required by the contract and permits. BMPs will be inspected as part of the final walk-through to ensure they are adequate, maintained, and functioning properly.

Within part D, rescind the sixth (last) sentence (that begins, “Provide a copy…”) and replace with the following:

Provide a copy of the NOI package submitted and confirmation for receipt of a complete NOI package from the permitting agency to the Project Manager prior to conducting any ground disturbance activities.

Rescind the second paragraph of Subsection 208.03.2 (the paragraph following part D) (that begins, “Do not transfer…”) and replace with the following:

Do not transfer or terminate the General Storm Water Permit coverage until the BMPs are inspected and accepted and all records required under the permit, including inspection and monitoring reports, are furnished to the Project Manager. The Department may require that certain BMPs be removed and/or replaced by another type of BMP as a condition of permit transfer.

Within the fifth (last) paragraph of Subsection 208.03.2, rescind the first sentence (that begins, “When submitting the…”) and replace with the following:

When submitting the MPDES General Storm Water Permit transfer package/application to the Department, include a check for the permit transfer fee.

208.03.3 AQUATIC RESOURCE PROTECTION Page 135 4-16-15

Within part A, rescind the part 1 (that begins, “Do not operate…”) and replace with the following:

1. Do not operate mechanized equipment in any regulated aquatic resource, unless authorized in accordance with Subsection 208.03.3(B).

Within part A, rescind the part 2 (that begins, “Isolate work zones…”) and replace with the following:

2. Isolate work zones from flowing and standing waters during construction, unless authorized in accordance with Subsection 208.03.3(B).

Within part A, rescind the part 5 (that begins, “Do not place …”) and replace with the following:

5. Do not place fill or other materials in any regulated aquatic resource unless included in the contract or authorized in accordance with Subsection 208.03.3(B).

Within part B, add the following sentence to the end of the first paragraph:

Submit Temporary Facility and Construction Activity permit applications for COE 404 and SPA 124 Notifications in accordance with Subsection 107.11.2.

Rescind the fifth (last) paragraph of Subsection 208.03.3 (that begins, “Submit copies of…”) and replace with the following:

Submit copies of the plans and application packages, their modifications, or their revisions to the Project Manager. The Department will review each submittal of the plans and application packages, their modifications, or their revisions, and either request revisions or submit to applicable resource and regulatory agencies within 21 calendar days. Resource and regulatory agency review time does not begin until the Department submits the application to the applicable agencies. Do not begin work on temporary construction facilities or modifications to approved plans until receiving written notification from the Project Manager that all of the required approvals from the regulatory and resource agencies have been obtained and distributed. The Department will distribute COE 404 and SPA 124 approvals within 5 business days of receipt of all required approvals.

208.05 BASIS OF PAYMENT Page 137 4-16-15

Within the second paragraph, rescind the first sentence (that begins, “Failure to implement…”) and replace with the following:

Failure to provide erosion and sediment controls that prevent discharges to adjacent properties and/or aquatic resources, implement BMPs identified in the SWPPP, update the SWPPP as required by the Construction General Permit, or conduct BMP inspections and submit inspection reports renders the BMPs unacceptable.

208.05.1 TEMPORARY EROSION AND SEDIMENT CONTROL - LUMP SUM Page 138 2-26-15

Within Table 208-1, rescind the term “substantial work complete date” and replace with “Conditional final acceptance”.

Within the third paragraph, rescind the third sentence (that begins “Payment for quantities..”) and replace with the following:

Payment for quantities required by an event or extra work, and approved by the Project Manager, will be measured and paid for in accordance with the Erosion Control Rate Schedule contained in the contract at a unit price of $1.00 per unit.

Rescind the fourth paragraph (that begins, “The installation of additional…”) and replace with the following”

The installation of additional BMPs requested by the Department at the final inspection will be measured and paid for in accordance with the Erosion Control Rate Schedule.

212.01 DESCRIPTION Page 149 4-16-15

Rescind the first (only) paragraph (that begins, “Obliterate roadway…”) and replace with the following:

Obliterate roadway includes removal of the existing roadway and related items, rehabilitating the abandoned roadway area by scarifying and shaping, and re-vegetation.

212.03 CONSTRUCTION REQUIREMENTS Page 149 4-16-15

Within the third paragraph, rescind the third (last) sentence (that begins, “Spread the salvaged…”) and replace with the following:

Re-vegetate the disturbed areas in accordance with Section 610..

212.04 METHOD OF MEASURMENT Page 149 4-16-15

Rescind the second and third paragraphs and replace with the following:

Re-vegetation is measured and paid for in accordance with Section 610.

212.05 BASIS OF PAYMENT Page 149 4-16-15

Remove the following pay items and units from the table:

Pay Item	Pay Unit
Seeding	Acre (ha)
Topsoil	Cubic Yard (m^3)

301.02.4 AGGREGATE TREATMENT Page 151 8-6-15

Rescind the first paragraph (that begins, “Choose the material…) and replace with the following:

Choose the material that will be used to treat the aggregate, which may include MC-70, emulsified prime or calcium or magnesium chloride.

301.03.5 AGGREGATE SURFACING CONSTRUCTION Page 155 2-26-15

Within Table 301-1 Surface Smoothness, replace the aggregate size (that specifies, “1-inch (25 mm) and less”) with the following:

Less than 1½-inch (40 mm)

304.02.5 COMPOSITION AND PROPORTIONING Page 164 3-10-16

Rescind Part 8 and replace with the following:

8. Sand equivalent determined in accordance with AASHTO T 176 alternate method No. 2 using stock solution with formaldehyde.

401.03 CONSTRUCTION REQUIREMENTS Page 170 8-6-15

Rescind the fourth paragraph (that begins, “For non-commercial mix …”) and replace with the following:

For non-commercial mix, set the initial job mix targets before producing more than 2000 tons (2000 MT) of plant mix surfacing. Plant mix produced prior to setting initial targets is defined as start-up mix. Furnish the Project Manager 1 copy of form CB30QA-VM (S) with the proposed job mix targets for VMA, VFA, VTM, and D/A. Once the job mix targets are set, Quality Assurance (QA) will be applied to all subsequent plant mix produced. No pay incentive will be applied to the plant mix until the targets are set. Produce start-up mix meeting the criteria listed in accordance with the Start-Up Job Mix Range in Table 701-18. A Hamburg wheel track test (Hamburg) will be run in accordance with Subsection 401.03.2 when the produced mix does not meet all the criteria specified in accordance with the start-up job mix range in Table 701-18.

Within the fifth paragraph, rescind the fourth sentence (that begins, “Submit to the…”) and replace with the following:

Submit to the Project Manager 1 signed copy of form CB30-QA-VM (S) with the revised job mix targets for VMA, VFA, VTM and D/A.

401.03.1 MIX DESIGN Page 171 8-6-15

Within the first paragraph, following the first sentence (that begins, “Submit to the…”) add the following sentences:

Use form MDT-MAT-009 as a mix design cover sheet. Ensure all fields are completed. The mix design and cover sheet may be submitted electronically. Mix designs submitted without the cover sheet or submitted with a cover sheet that doesn't contain all the applicable information will be rejected.

Within the first paragraph, rescind the eighth sentence (that begins, "For mix designs using…") and replace with the following:

For mix designs using RAP, furnish the asphalt content and gradation of the RAP and furnish the total asphalt content and Job Mix Formula gradation including the RAP.

401.03.2 HAMBURG WHEEL TRACK TESTING (HAMBURG) Page 171 8-6-15

Rescind the first paragraph (that begins, "Provide the Project…) and replace with the following:

Furnish a sample of plant mix surfacing material for Hamburg acceptance after initial job mix targets have been established for non-commercial mix. Furnish additional samples as directed by the Project Manager. The Department may require Hamburg samples at any time. Hamburg samples may be run on the applicable gyratory pucks and/or in-place mix represented by the pucks. Hamburg test results for the initial target set will be furnished to the Contractor within 7 business days. Hamburg test results in all other cases will be furnished to the Contractor as soon as they are available.

Within the second paragraph, rescind the first sentence (that begins "If production non-commercial…) and replace with the following:

If plant mix fails the Hamburg, make adjustments to produce plant mix meeting the requirements specified in the contract.

Rescind the fifth paragraph (that begins "For non-commercial…) and replace with the following:

Remove and replace any plant mix represented by a failing Hamburg test. Plant mix removal and replacement is at no cost to the Department.

401.03.3 TEST PROCEDURES Page 172 10-9-14

Add the following paragraph following the test procedures:

When material is tested in accordance with MT 332, if the height of gyratory specimens is out of tolerance, an evaluation will be conducted to determine if the specimen will be retained or discarded. The Department will check plant production information, test equipment, processes, calculations, etc. for issues. If a problem is noted in processes controlled by the Contractor, the test will be considered valid. If a problem is found with the testing or other Department process, or no issues with Contractor production are identified, the test will be redone on material from the same sample, if possible. If a non-correctable testing problem is found, the specimen will be discarded.

401.03.5 ACCEPTANCE COMMERCIAL PLANT MIX SURFACING Page 172 10-9-14

Rescind the second paragraph (that begins, "A $3.00/ton…") and replace with the following:

For the first 1000 tons (1000 MT), a $3.00/ton maximum price reduction in the unit bid price for plant mix surfacing will be applied for any mix represented by a test not meeting the VMA, VFA, VTM, or D/A specified. A $3.00/ton price reduction ($9.00/ton maximum) in the unit bid price for plant mix surfacing will be applied to any subsequent mix for each test not meeting the VMA, VFA, VTM, or D/A specified. Price reductions will be assessed on the quantity of material represented by each failing sample. The quantity of material represented by each sample is the total tons of material produced divided by the total number of samples representing the material.

401.03.6 ACCEPTANCE OF NON-COMMERCIAL PLANT MIX SURFACING (QA) Page 173 8-6-15

Rescind the first paragraph of Subsection 401.03.6 (that begins, "The properties listed…") and replace with the following:

For the start-up mix, a $3.00/ton price reduction ($9.00/ton maximum) in the unit bid price for plant mix surfacing will be applied for each test not meeting the VMA, VFA, VTM, or D/A specified. Price reductions will be assessed on the quantity of material represented by each failing sample. The quantity of material represented by each sample is the total tons of start-up mix produced divided by the total number of samples representing the material.

Once targets have been set, the properties listed in Table 701-18 for non-commercial plant mix are designated for acceptance on a lot-by-lot basis in accordance with Subsection 105.03.2. The pay factor in Table 401-1 is applied to plant mix surfacing lots for VMA, VFA, VTM and D/A. The asphalt content used for calculations is determined in accordance with MT

319. The D/A is calculated in accordance with MT 319, and the gradation determined in accordance with MT 320 on the aggregate remaining after the ignition oven test.

401.03.17 TACK COAT Page 178 8-6-15

Rescind the second paragraph (that begins, “Apply tack coat on…”) and replace with the following:

Apply tack coat on aggregate treated surfaces, existing surfacing to be overlaid and between lifts when pavement is constructed in multiple lifts.

401.03.23(A) RIDE SPECIFICATION Page 181 8-6-15

Within the sixth paragraph, rescind the third sentence (that begins, “Data collected for…”) and replace with the following:

For each pass, data collected for each wheel path will be averaged for that lane. The results of the two passes will then be averaged to arrive at a result for that lane.

402.03 CONSTRUCTION REQUIREMENTS Page 187 10-9-14

Rescind the first (only) paragraph (that begins, “Mix and apply…”) and replace with the following:

Mix and apply bituminous material meeting the applicable requirements in Sections 401, 407, 409, and 410.

402.04 METHOD OF MEASURMENT Page 192 10-9-14

Within the sixth (last) paragraph, rescind the first sentence (that begins, “Use flow rate…”) and replace with the following:

Use flow rate meters in accordance with Subsection 401.03.12, to measure the material.

403.02 MATERIALS Page 193 8-6-15

Rescind Subsection 403.02(A) and replace with the following:

A. Crack Sealant. Use a sealant that is listed on the QPL and in accordance with Subsection 707.01.

Rescind Subsection 403.02(B) and replace with the following:

B. Backer Rod. Furnish backer rod that is listed on the QPL. Furnish backer rod in accordance with ASTM D5249, Type 1. The backer rod used must be compatible with the crack sealant placement temperature and sized for cracks in accordance with Subsection 403.03.4.

403.03.4 SEALING Page 194 12-11-14

Within the first paragraph, rescind the third (last) sentence (that begins, “Do not rout further…”) and replace with the following:

Place sealant material within 24 hours of routing.

409.03.3 SEAL COAT LIMITATIONS Page 198 2-26-15

Add the following to the end of the list:

7. Do not apply bituminous material within 72 hours of performing crack sealing.

409.03.10(B) FINAL SWEEPING AND BROOMING Page 200 4-16-15

Rescind Subsection 409.03.10(B) and replace with the following:

B. Final Sweeping and Brooming. Perform final sweeping and brooming operations to remove excess loose material no sooner than 5 calendar days before final pavement markings. Coordinate with the Project Manager to ensure Final Sweeping and Brooming is necessary. Provide traffic control in accordance with Section 618.

501.02.1(B) AIR-ENTRAINING ADMIXTURES Page 209 10-9-14

Rescind the first (only) sentence (that begins, "Furnish air-entraining…") and replace with the following:

Furnish air-entraining admixtures in accordance with Subsection 551.02.6.

501.03.13 JOINTS Page 216 10-9-14

Add the following paragraphs following the first paragraph (that begins, "Construct the joints…):

Space the transverse joints not less than 10 feet (3.0 m) and not more than 15 feet (4.5 m). Space longitudinal joints not further than 13 feet (3.96 m) and as close to lane lines as possible. Skew longitudinal lines along mainline to match lane lines ahead.

Construct transverse joints at a 90° angle to the centerline. Continue transverse joints through the curb. Skew longitudinal and transverse joints to intersect all manholes, boxes, and inlets. The angle of joint intersection or between joints and a free edge must not be less than 60°. Space joint offsets not less than 18 inches (455 mm).

501.03.16 OPENING TO TRAFFIC Page 220 10-9-14

Rescind Subsection 501.03.16 Opening to traffic and replace with the following:

Do not permit traffic or Contractor equipment, excluding joint sawing and sealing equipment, on the concrete until one of the following test results indicate the concrete has developed sufficient strength.

A. Flex Beam Method. Prepare the concrete flex beams in accordance with MT 101 and test for modulus of rupture using AASHTO T 97.

One test set consists of 3 beams. Take the concrete for the test beams from different concrete batches for each 2,500 square yards (2,100 m^2) of concrete pavement and make at least 2 sets per day. Test the beam sets for modulus of rupture. Cure the test beams under the same environmental conditions as the pavement they represent. The pavement, represented by the beams, may be opened to traffic when the average modulus of rupture of the set exceeds 350 psi (2,415 kPa) and no individual beam's modulus of rupture is less than 300 psi (2,070 kPa).

The Contractor may select the time for testing the beams. Test the flex beams on or near the project, using Contractor furnished equipment and with a Department Inspector witnessing the tests.

Include all costs to make, cure and test the flex beams in the contract unit price for PCCP.

B. Maturity Meter Method. Prepare concrete flex beams or compressive test cylinders to validate the maturity meter performance curves. Furnish the Project Manager the maturity-strength relationship and maturity curves along with supporting data for verification. Maturity-strength relationship must indicate compressive strengths of 2500 psi or greater. Develop the maturity meter index curves before construction has commenced.

Determine the time for testing flex beams. Furnish suitable testing equipment.

The pavement may be opened to traffic and construction equipment, with Project Manager's approval, when the maturity meter readings reflect target values have been met.

Furnish all equipment, including maturity meter, thermocouples, wire, and a qualified technician to monitor the maturity meter system.

C. Concrete Test Cylinder Method. Prepare concrete test cylinders according to MT 101 and MT 105, and test for compressive strength according to AASHTO T 22.

Make a minimum of one set of three compressive test cylinders, sampled from random locations, for each 2,500 square yards (square meters) of concrete pavement but not less than two sets per day. Test compressive test cylinders in sets of three for compressive strength. Cure test cylinders under the same conditions as the pavement they represent.

The pavement may be opened to traffic and construction equipment, with Project Manager's approval, when the average compressive strength of a set of test cylinders is 2500 psi (17,237 kPa) or greater with no single test less than 2,000 psi (13,790 kPa).

Determine the time for testing cylinders. Furnish suitable equipment and test compressive cylinders on or near the project.

Opening to traffic does not constitute a final acceptance of the pavement. The pavement is accepted upon confirmation of the 28-day flexural strength. Repair all concrete damaged prior to the final acceptance at Contractor expense.

551.02.1 CEMENT Page 225 8-6-15

Rescind Subsection 551.02.1 and replace with the following:

Furnish low-alkali hydraulic cements meeting the following requirements as specified in the contract. Use cements meeting A or B unless otherwise specified.

A. Furnish low-alkali portland cement in accordance with AASHTO M 85, Type I, II, III, or V.
B. Furnish low-alkali hydraulic blended cement in accordance with AASHTO M 240, Type IP or IS. When fly ash or ground granulated blast furnace slag (GGBFS) is used in blended cement, limit the replacement amount to the maximums specified in Subsection 551.03.2(A)(5).
C. Furnish low-alkali hydraulic cement in accordance with ASTM C1157, Type GU, HE, MS, HS, MH, or LH.

Meet the following requirements for all types of cement:

- The total alkali content does not exceed 0.6%, calculated as the percentage of sodium oxide (NaO) plus 0.658 times the percentage of potassium oxide (K2O).
- Use only 1 brand of any 1 type of cement on the contract except by written approval from the Project Manager. Different brands or grades, if approved, cannot be used alternately in any 1 pour.
- Do not use air-entraining cements.

551.03.1 CLASSIFICATION Page 227 3-10-16

Within Table 551-2, rescind the “Use” for “Drilled Shaft” concrete and replace with the following:

Used for drilled shafts.

Add the following row to the bottom of Table 551-2:

Lean	Used for setting metal fence posts and braces and similar uses where high quality concrete is not necessary.

551.03.2 COMPOSITION OF CONCRETE Page 227 3-10-16

Within Table 551-3, rescind the slump tolerance requirements for Classes General, Pave, Pre and Structure and replace with the following:

+1½ (37) to -2 (50)

Add the following row for Class Lean to the bottom of Table 551-3:

Class	Nominal Maximum Aggregate Size	Maximum Cementitious Materials Content	Indicated Compressive Strength	Minimum Required Compressive Strength	Maximum Water/ Cement Ratio	Maximum Target Value for Slump	Slump Tolerance	Required Air Content
Lean	1 ½ (37.5) - 3/4 (19)	-	-	-	0.53	-	-	See Note 14

Add the following Note 14 below Table 551-3:

14. The minimum required air content is 3%. Tests will be conducted as required by the Project Manager.

Within Part (A), Design, under Bullet (2), rescind the forth (last) sentence and replace with the following:

Submit a final mix design for approval at least 15 business days before intended use on form MDT-MAT-008.

Within Part (B), Class Deck and Overlay-SF, rescind the first bullet (that begins, “Include silica fume…”) and the second bullet (that begins, “Mix requires trial…”) and replace with the following:

- Use silica fume. Include fly ash and/or GGBFS as SCMs.
- SCMs replacement quantities must meet the requirements of Subsection 551.03.2(A)(5).
- Use compatible air entraining, water reducing and/or super-plasticizing admixtures.
- Mix requires trial batch surface resistivity test results in accordance with AASHTO T 358 greater than 21 kilohm-centimeters at 28 days. Rapid chloride permeability test results in accordance with AASHTO T 277 less than 2000 coulombs at 28 days or 1500 coulombs at 56 days will also be accepted.

Within Part (B), Class Deck and Overlay-SF, rescind Number (3), and replace with the following:

3. Include in the mix surface resistivity test results in accordance with AASHTO T 358 greater than 21 kilohm-centimeters at 28 days.

Rescind the third paragraph of Part (E) (that begins, “Furnish aggregates for…”) and replace with the following:

Furnish aggregates in accordance with Table 551-4 or Table 701-2.

Within Part (E), Controlled Low Strength Material (CLSM), rescind the row showing the No. 200 sieve in Table 551-4 and replace with the following:

No. 200 (0.075 mm)	0 - 30

Within Part (F), Self-Consolidating Concrete (SCC), under Number (2), rescind the first sentence (that begins, “Provide a slump-flow …”) and replace with the following:

Provide a slump-flow within ± 2 inches (± 50 mm) of the target value. Set target within the range of 20 to 26 inches (450 to 710 mm).

Within Part (F), Self-Consolidating Concrete (SCC), under Number (4), within the second paragraph, rescind the second sentence (that begins, “If SCC is…”) and replace with the following:

If SCC is used in the production of precast items, meet the testing requirements in Subsection 554.03.6.

Rescind Part (H), Class Pre Concrete, and replace with the following:

H. Class Pre Concrete. Design and produce Class Pre concrete in accordance with Table 551-3.
Alternative mix designs not in accordance with Table 551-3 may be accepted provided the following requirements are met.

1. Include in the design compressive strength test results according to AASHTO T 22 for 3, 7, and 28 days. Also include strength tests at intended de-tensioning/release times (e.g. 12 hrs, 16 hrs, 24 hrs, etc.) The 28-day results must exceed specified strength.
2. Include in the mix design shrinkage test results according to AASHTO T 160.
3. Include in the mix design creep test results at 28 days according to ASTM C512.
4. Include in the mix design MOE results according to ASTM C469.

Within Part (I), Prepackaged Concrete, rescind the first sentence (that begins, “Prepackaged concrete or…”) and replace with the following:

Prepackaged concrete or rapid set patching material must contain a product data sheet proving the product meets the specifications required for its intended use.

Add the following part (J), Lean Concrete:

J. Lean Concrete. Design and produce Class Lean concrete in accordance with Table 551-3. Submit material proportioning to the Project Manager for acceptance. A mix design in accordance with MT 100 is not required for Class Lean concrete.

551.03.3 BATCHING, MIXING, HANDLING AND SAMPLING Page 233 3-10-16

Within the second paragraph, rescind the second sentence (that begins, “MT 224 will be…) and replace with the following:

MT 122 will be used to calculate combined gradations.

Rescind the fifth paragraph (that begins, “Concrete batch plants…”) and replace with the following:

Meet the requirements of ASTM C94 for all concrete batch plants and operations prior to and throughout production of concrete for any work, including concrete for any field trial batches. In addition to ASTM C94, meet the following requirements throughout the production of concrete:

551.03.3(H) JOB-SITE ADDITIONS Page 234 12-11-14

Rescind the first paragraph (that begins, “Do not make any…”) and replace with the following:

On-site addition of air entraining or high range water reducing admixtures is permitted up to 2 times. Do not re-dose with other admixtures without the approval of the Project Manager. On-site dosing of water or admixture in no way relieves the contractor of producing passing plastic and hardened concrete test results.

551.03.6(B)(1) COLD WEATHER PLAN Page 239 8-6-15

Add the following sentence to the end of Part (b):

If using the maturity method, submit a plan meeting ASTM C1074 requirements.

551.03.7 CURING CONCRETE Page 240 3-10-16

Add the following sentence to the end of the seventh paragraph (that begins, “Protect exposed concrete…):

Do not use intermediate monomolecular film curing agents (evaporation retarders) as a method to reduce moisture loss.

Within Part (A) Water Cure, rescind paragraphs 3, 4 and 5.

Within Part (B) Liquid Membrane-Forming Curing Compound, rescind the first paragraph (that begins, “Furnish and uniformly…) and replace with the following:

Furnish and uniformly apply a liquid membrane-forming curing compound in accordance with Subsection 717.01.3 or 717.01.4 over exposed surfaces.

Within Part (B) Liquid Membrane-Forming Curing Compound, rescind the sixth paragraph (that begins, “Use a clear…) and replace with the following:

Use products in accordance with 717.01.4 on curbs, sidewalks, and barrier rail. Use a product in accordance with 717.01.3 on substructure components, superstructure components other than those requiring a water cure, and all other exposed concrete surfaces. Ensure products furnished in accordance with Subsection 717.01.3 are clear and contain a fugitive dye that makes the film visible on the concrete for at least 4 hours after application but does not affect the concrete surfaces natural color after curing.

551.03.8 TESTING AND ACCEPTANCE OF CONCRETE Page 243 3-10-16

Rescind Subsection 551.03.8 and replace with the following:

551.03.8 Testing and Acceptance of Concrete

A. Pre-testing of Concrete (Classes Structure, Deck and Overlay). Pre-testing is not required for concrete placements smaller than 7 cubic yards (m^3). The Department will perform pre-tests for air content and slump at the start of each concrete production run and any time there is a significant change in the pumping configuration or concrete placement as determined by the Project Manager. Meet the following requirements:
    1. Discharge and waste a minimum of 0.25 cubic yards (0.2 cubic meters) of concrete.
    2. Collect a sample.
    3. If slump and air content pre-tests indicate the sampled concrete meets applicable specifications, placement may begin.
    4. If a pre-test produces a failing result, the truck may be dosed with approved admixtures included in the mix design, in accordance with Subsection 551.03.3(H).
    5. If the pre-test again produces a failing result, the truck will be rejected. The testing process will be repeated on subsequent trucks until passing air and slump results are achieved. Pre-test results are not used for concrete lot acceptance.
B. Sampling and Testing. Furnish an adequate and representative sample of concrete in accordance with MT 105 from the point of placement to an area designated by the Project Manager for testing of concrete properties and molding of test specimens. Do not drop or agitate samples. The sampling and transport must be witnessed by the Department. The Department will take possession of the sample and begin the following applicable tests.
    1. Compressive Strength Testing. Furnish samples for determining compressive strength following MT 105. Test cylinders will be cast and cured following MT 101 and tested in accordance with AASHTO T 22 at a frequency determined by MT 601. Test cylinders for SCC will be cast and cured in accordance with MT 117. Compressive strength tests may be molded at any time if inconsistency between batches is identified or suspected. A compressive strength set consists of 4 test cylinders made at the same time from the same batch of concrete. Tests for plastic properties will also be run from the same sample used for compressive strength tests.

The Contractor may make additional cylinders to determine strength gain and to maintain job control. Make additional cylinders anytime strengths must be determined before 7 days for cure times, form removal, post-tensioning, or any other scenario requiring field-cured strength tests.

Standard compressive strength tests will be made at 7 and 28 days, except as specified below for concrete used in prestressed members.

The compressive strength results of the cylinders tested will determine if the concrete meets the required compressive strength in Table 551-3 or specified in the contract.

2. Testing of Plastic Concrete. Perform quality control sampling/testing during the concrete placement, including air content, temperature, and slump to maintain job control.

Furnish samples for determining slump, air, and temperature in accordance with MT 105. Slump will be tested in accordance with MT 104. Air content will be determined in accordance with MT 102. Temperature will be tested in accordance with ASTM C1064 at a frequency determined in accordance with MT 601. Plastic properties tests may be run at any time if inconsistency between batches is identified or suspected.

Slump flow and air content for SCC will be evaluated in accordance with MT 116 and MT 118.

Plastic concrete will also be subjected to a visual test for segregation. If segregation is identified by a “halo”, bleeding, aggregate agglomerations, or aggregate settlement (identified by a high sheen or bubbling) during the slump test, do not place the concrete. Take immediate steps to resolve the problem. Remove and replace any concrete placed showing signs of segregation at no expense to the department.

3. Flexural Strength Testing. In addition to the compressive strength requirements, Class Pave hydraulic cement concrete pavements require beam tests to determine the concretes flexural strength.

The number of flexural strength tests required for acceptance is determined by the Department on a random basis. The flexural strength results from 1 or a combination of the beams tested will be used to determine whether the concrete meets the required flexural strength specified in Table 551-3.

Flexural beams made in the field will be cast and cured in accordance with MT 101 and tested in accordance with AASHTO T 97.

4. Durability Testing. When applicable, furnish samples for determining permeability following MT 105. Test cylinders will be cast and cured following MT 101 and tested in accordance with AASHTO T 358.

The Department may test hardened air content in accordance with ASTM C457 for acceptance.

5. Gradations. Samples for determining gradations of aggregates for concrete will be sampled in accordance with MT 201 and tested in accordance with MT 202. Combined gradations are determined in accordance with MT 215.

C. Acceptance of Concrete. The concrete must meet all contract specifications and the following:

1. Classes General, Deck, Pave, Structure, Overlay and Drilled Shaft Concrete. These classes of concrete are evaluated for acceptance on a lot-by-lot basis.

An individual lot is defined as a single days pour or every 200 yd^3 (150 m^3) of concrete poured (i.e. 200 yd^3 = 1 lot, 400 yd^3 = 2 lots, etc.) whichever is less, excluding Class Pave. An individual lot of Class Pave concrete is defined as a single day’s pour or every 1,000 yd^3 (750 m^3) of concrete poured, whichever is less. Each lot is accepted or rejected based on the lot acceptance air tests, strength tests, gradation tests and when applicable, permeability tests. The pay factors for each lot accepted are determined from Table 551-5, 551-6, 551-7 and 551-8.

The overall lot pay factor (OLPF) will be calculated for each bid item that has concrete as a component poured on the project and will be applied as a line item adjustment on the estimate.

Except for concrete barrier rail, pay factors will not be calculated for precast items. Concrete barrier rail will be tested and accepted the same as cast in place items,

a. Strength. A minimum of 2 standard compressive strength sets will be made for each lot. Each set will be made from concrete taken from a separate batch or load randomly selected from all loads or batches in the lot. For a lot less than 30 cubic yards (23 m^3), the Project Manager may elect to make 1 set of compressive strength cylinders to represent that lot.

Three cylinders from each set of cylinders are tested for compressive strength at 28 days and the fourth is tested at 7 days. The test result is the average of the strengths of the 3 individual 28 day cylinder specimens unless an outlier is identified.

The Department will analyze the test results for outliers. The results of the 2 specimens with the closest compressive strengths will be averaged. If the strength result of the remaining cylinder differs by more than 10% from that average, it will be considered an outlier. If an outlier is identified, that specimen will be removed and, the average strength of the set will be determined using the remaining 2 specimens.

The lot acceptance strength is the average of all sets for the lot.

TABLE 551-5
CONCRETE STRENGTH PAY FACTORS

Strength Pay Factors Classes Deck, Overlay, Structure, General, Pave, and Drilled Shaft Concrete lot acceptance strength, x psi (1 psi = 6.9 kPa)	
strength, x (psi)	strength pay factor, PF_S
x ≥ 4,000	$PF_S = 1.00$
4,000 > x ≥ 3,500	$PF_S = 1.00 - \frac{0.15(4000 - x)}{500}$
3,500 > x ≥ 2,800	$PF_S = 0.85 - \frac{0.85(3500 - x)}{700}$
2,800 > x	PF_S = 0, remove and replace

The pay factors shown will be used when the department determines the concrete is acceptable at less than the specified strength. The Department may require removal and replacement or corrective action for any concrete not in accordance with the required strength.

b. Air Content. Concrete air content will be determined in accordance with MT 102 or ASTM C457 on the same sample used to make the compression test cylinders for acceptance and on samples taken according to MT 601. A separate air content pay factor will be computed for each test result and the lot air content pay factor will be the average of the individual test result pay factors. The pay factor for each lot based on air content is determined from Table 551-6.

TABLE 551-6
AIR CONTENT PAY FACTORS

Lot Acceptance, Air Content			
Classes General, Pave, Deck, Overlay, and Structure Concrete		Used when mix design incorporates ≥ 1½-inch nominal maximum aggregate gradation	
Air content, x (%)	Air content pay factor, PF_{AC}	Air content, x (%)	Air content pay factor, PF_{AC}
x ≥ 5.5%	$PF_{AC} = 1.00$	x ≥ 4.5%	$PF_{AC} = 1.00$
5.5% > x ≥ 4.5%	$PF_{AC} = 1.00 - 0.10(5.5 - x)$	4.5% > x ≥ 4.0%	$PF_{AC} = 1.00 - 0.20(4.5 - x)$
4.5% > x ≥ 3.0%	$PF_{AC} = 0.90 - 0.60(4.5 - x)$	4.0% > x ≥ 2.5%	$PF_{AC} = 0.90 - 0.60(4.0 - x)$
3.0% > x	Remove and Replace	2.5% > x	Remove and Replace

The pay factors shown will be used when the department determines the air content of the in-place concrete is acceptable at percentages less than specified. The Department may require removal and replacement or corrective action for any concrete not in accordance with the required air contents.

In addition to the air content pay factor, coating concrete with an approved penetrating epoxy sealer at no cost to the Department will be required any time concrete having an air content less than 4.0% (3.5% for concrete containing 1½-inch nominal aggregate) for Classes Deck, Overlay, and Structure concrete allowed to remain in place.

Air content pay factors will not be used on Class Drilled Shaft concrete.

c. Permeability. Concrete permeability will be determined at 28 days in accordance with either AASHTO T 358 (Table 551-7). At least one set of compressive strength cylinders per lot will also be tested for permeability. The lot acceptance permeability is the average of the test results for the lot. The pay factor for each lot based on permeability is determined from Table 551-7.

TABLE 551-7
CONCRETE PERMEABILITY PAY FACTORS

Lot Acceptance, Permeability, x (kΩ-cm) Classes Deck and Overlay[1]	
lot chloride permeability test result, x (kΩ-cm)	permeability pay factor, PF_P
x ≥ 29	$PF_P = 1.05$
29 > x ≥ 21	$PF_P = 1.05 - \frac{0.05(29 - x)}{8}$
21 > x ≥ 21	$PF_P = 1.00 - \frac{0.30(21 - x)}{5}$
16 > x	0.70

Note 1: If Class Structure is specified for a bridge deck, the incentive may be paid, but no deduction will occur for permeability results.

The pay factors shown will be used when the department determines the permeability of the in-place concrete is acceptable with results less than specified. The Department may require removal and replacement or corrective action for any concrete not in accordance with the required permeability.

d. Gradation. Concrete aggregate gradations will be determined in accordance with MT 202 or MT 215, if applicable. A minimum of one gradation test will be performed per 200 cubic yards (150 m^3) excluding class Pave. The test result will be used in the OLPF calculation for each lot of concrete placed within that 200 cubic yards (150 m^3). For class Pave, a minimum of one gradation test will be performed per 1000 cubic yards (750 m^3).

1) Conventional Gradations. For concrete designed with conventional gradations, the Department will calculate the pay factor for the gradation using the following formula.

$$PF_G = 1.00 - \frac{(x)}{1000}$$

Where:
x = The sum of the individual percentages out of range on each aggregate fraction.
PF = Pay Factor

2) Optimized Gradations. For concrete designed with optimized gradations the Department will calculate the pay factor for the gradation using the following formula.

$$PF_G = 1.00 - \frac{0.25(x) + 2(y)}{250}$$

Where:
x = The sum of percentages out of tolerance on each individual aggregate fraction (each rounded to the whole number).
y = Percentage out of tolerance on the No. 200 (0.075 mm) sieve fraction (rounded to the tenth of a percent).
PF = Pay Factor

If all gradation tests in the lot produce passing results, the following pay factor will be used:

$$PF_G = 1.02$$

The following formulas are used to calculate the OLPF and unit price adjustment ADJ. All pay factors (PF_S, PF_P, PF_{AC}, and PF_G) must be 1.00 or greater for the production lot to be eligible for positive ADJ (incentive). If any individually calculated pay factor (PF_S, PF_P, PF_{AC}, and PF_G) is less than 1.00, the maximum value for its companion pay factor (PF_S, PF_P, PF_{AC}, and PF_G) to be used in the OLPF calculation for the respective production lot will not exceed 1.00. No OLPF can exceed 1.07.

$$OLPF = PF_S \times PF_{AC} \times PF_P \times PF_G$$
$$ADJ = (OLPF - 1) \times Price$$

Where
ADJ = Price adjustment per pay unit to be applied to the production lot quantity
Price = Contract unit price for the pay item

If a pay factor is not applicable to a specific class of concrete, the pay factor (PF) will be 1.00. Use Table 551-9 to determine pay factors applicable to specific classes of concrete.

TABLE 551-9
PAY FACTORS FOR CONCRETE

PF Type	Deck	Overlay	Structure	General	Drilled Shaft	Pave
PF_S	X	X	X	X	X	X
PF_{AC}	X	X	X	X		X
PF_P	X	X				
PF_G	X	X	X	X	X	X

2. Class Pre Concrete. Class Pre concrete is evaluated for acceptance on a lot-by-lot basis based on the average of the 28-day compressive strength cylinders and variation in test results as measured by the standard deviation.

   Each lot will be judged against the formula:

$$F'c + 0.35S$$

   Where:
   S is the standard deviation of the strengths for the three 28-day cylinders.
   F'c is the concrete strength required for final acceptance as specified in the contract.

   A lot is defined as all the concrete that is placed in a single pre-cast prestressed member.

   Lots with any actual average cylinder strengths less than that calculated from the above formula will be rejected.

   Three 28-day compressive test cylinders will be made for each lot, and each 28-day test cylinder sample will be randomly selected from all batches or loads.

   The strengths of other cylinders made from a sample and tested at an earlier age will not be considered for acceptance purposes.

   The cylinders for acceptance will be cast in accordance with MT 101, sampled in accordance with MT 111 and tested in accordance with AASHTO T 22.

   The cylinders will be cured within the curing enclosure under the exact conditions and methods used to cure the prestressed member until transfer of pre-stress. After transfer of pre-stress, the cylinders will be transported and continue curing in accordance with MT 101.
3. Controlled Low Strength Material. CLSM is evaluated for acceptance on a lot by lot basis. A lot is defined as a single day's pour or every 100 yd^3 or 100 m^3 of CLSM placed whichever is less. A minimum of 1 set of 6 x 12-inch (152 x 305 mm) or 4 x 8-inch (102 x 203 mm) compressive test cylinders will be made for each lot in accordance with ASTM D4832. Do not apply additional loads until CLSM has reached its design strength.
4. Small Concrete Quantities. The Project Manager may accept 7 cubic yards (5.4 m^3) or less of concrete without a formal mix design. Submit a batch proportion sheet to the Project Manager for approval before use. Classes Deck, Overlay, and Structure concrete are excluded from this exception.

553.03.1 FABRICATION Page 268 10-9-14

Add the following sentences to the end of the second paragraph, (that begins, "Furnish a copy…"):

New manufacturing plants may operate under the parent plant's quality assurance and control programs for a maximum of 18 months from the date of opening. Plants currently operating under this exemption may do so only until January 1, 2016.

553.03.11 TRANSFER OF PRESTRESS Page 274 12-11-14

Within the tenth paragraph, rescind the second (last) sentence, (that begins, "The Project Manager may…") and replace with the following:

The Engineer may direct other tests to determine release strengths.

556.03.1 PRE-QUALIFICATION FOR STEEL FABRICATORS Page 287 10-9-14

Rescind Subsection 556.03.1 and replace with the following:

Use metal fabricators that are pre-qualified under the AISC Quality Certification Program for the items listed below. The Department will make an exemption for new manufacturing plants that are of the same ownership as an existing certified plant, provided the new manufacturing plant operates under the same quality assurance and control programs as the certified plants, modified to address any production differences, and all fabrication is performed under the direct supervision of a quality assurance and control manager provided by an existing pre-qualified plant. Direct supervision means that the quality assurance and control manager is on site during all fabrication performed in the new fabrication plant and is responsible for the quality assurance and control activities. For new manufacturing plants, submit and receive approval of any proposed modifications to the parent plant's quality assurance and control program prior to beginning production. Allow 30 business days from the date submitted for Department review and approval. New manufacturing plants may operate under the parent plant's quality assurance and control programs for a maximum of 18 months from the date of opening. Plants currently operating under this exemption may do so only until January 1, 2016. Items not listed may be fabricated by non-certified shops. Use metal fabricators having the following AISC quality certification categories:

1. Use fabricators having Advanced Bridges (ABR) certification to fabricate the following:
   a. Fracture critical members and attachments. Fabricators must have the fracture critical endorsement (F).
   b. Tub, trapezoidal or closed box girders, large or non-preassembled trusses [over 200 feet (60 m)], cable supported bridges, bascule bridges, arches and bridges with tight radius.
2. Use fabricators having Intermediate Bridges (IBR) certification to fabricate the following:
   a. Fracture critical members and attachments. Fabricators must have the Fracture Critical Endorsement (F).
   b. Rolled beams with field or shop splices, either straight or with a radius over 500 ft.
   c. Built-up I-shaped plate girders with constant depth, either straight or with a radius over 500 feet (150 m).
   d. Built-up I-shaped plate girders with variable web depth (e.g., haunched), either straight or with a radius over 1000 feet (305 m).
   e. A truss with a length of 200 feet (60 m) or less that is entirely or substantially pre-assembles at a certified facility and shipped in no more than three sub-assemblies.
   f. Welded floor beams.
   g. Diaphragms for horizontally curved girders.
3. Use fabricators having Simple Bridges (SBR) certification to fabricate the following:
   a. Non-spliced rolled beams.
   b. Non-spliced rolled floor beams.
   c. Non-spliced rolled diaphragms for straight girders (does not include diaphragms used for concrete beams).
4. Use fabricators having an SBR or Bridge and Highway Metal Component Manufacturers certification to fabricate the following:
   a. Bridge expansion joints.
   b. Steel grid decking.
   c. Bridge expansion bearings.
   d. Overhead sign bridge and cantilever sign structures.
   e. Lighting poles and anchor bases.

561.03.3 PROCEDURES Page 313 10-9-14

Under (A) Hydrodemolition, rescind the third paragraph (that begins, "Remove any remaining…").

Following Subsection (B), rescind the first and second paragraphs (that begins, "Remove concrete in…") and replace with the following:

Remove concrete, in areas designated for removal that milling equipment cannot reach, with chipping hammers no larger than a nominal 15 pound (7 kg) class or other equipment as approved by the project manager. This work is measured and paid for as Bridge Deck Milling.

Thoroughly clean the deck of all aggregate, paste, residue, oil, and any other substance that may interfere with the repair or overlay concrete. Use cleaning methods that do not damage remaining concrete, reinforcing steel, or that cause debonding of remaining concrete and reinforcing steel.

562.03.3 LOCATION AND INSPECTION OF REPAIR AREAS Page 315 10-9-14

Rescind bullets 1, 2 and 3 and replace with the following:

1. Complete milling operations, if included in the contract, prior to the locating of Class A or B repair areas
2. Use compressed air to dry the deck and to blow it clean of debris. The Project Manager will then locate and mark areas of Class A and Class B deck repair.
3. Notify the Project Manager if repair work reveals areas which differ from the marked areas.

562.03.4 CONCRETE REMOVAL Page 315 10-9-14

Within bullet 2, rescind the third sentence (that begins, “If the bond…).

562.03.5 REINFORCING STEEL Page 316 10-9-14

Within the first paragraph, rescind the second (last) sentence (that begins, “Remove concrete as…).

562.04 METHOD OF MEASUREMENT Page 317 10-9-14

Rescind the fourth (last) paragraph (that begins, “Replacement of reinforcing…) and replace with the following:

Replacement of reinforcing bars will be measured and paid for in accordance with Subsection 109.04. Replace any reinforcing bars damaged by Contractor operations at Contractor expense. When not located in an area of Class A or B repair, work necessary to provide reinforcement clearance in accordance with Subsection 562.03.5 will be measured and paid for in accordance with Subsection 109.04.

564.03 CONSTRUCTION REQUIREMENTS Page 323 3-10-16

Within Table 564-1, within the row showing Substructure: Walls, Footings, Columns, rescind the row showing Deviation from Plumb and replace with the following:

Substructure: Walls, Footings, Columns	Deviation from Plumb	±0.2%

Within Table 564-1, rescind the row showing Pre-Stressed Concrete Beam requirements and replace with the following:

Pre-Stressed Concrete Beams	Refer to Subsection 553.03.15

603.03.4 BACKFILLING Page 336 2-26-15

Add the following sentence at the end of the fourth paragraph (which begins “Compact backfill equally…”):

Meet the moisture and density requirements of Subsection 203.03.3.

603.03.5 RESTORATION AND MAINTENANCE OF EXISTING PAVEMENT Page 336 2-26-15

Rescind Subsection 603.03.5 and replace with the following:

Restore the existing pavement excavated for pipe installation using material equal to or better than the in place pavement. Restoration includes replacing and compacting excavated aggregate base with materials equal to those in the existing roadway and placing either CLSM or new plant mix surfacing equal to the existing, but not less than 3 inches (75 mm) in thickness. Place and compact the replacement plant mix surfacing to match the adjacent pavement providing a smooth riding surface, including the joints.

Maintain the restored areas in good condition until the new surfacing is placed.

605 CONCRETE BARRIER RAIL Page 341 3-10-16

Add the following Section 605:

SECTION 605
CONCRETE BARRIER RAIL

605.01 DESCRIPTION

This work is the constructing and installation of concrete barrier rail.

605.02 MATERIALS

605.02.1 Concrete

Furnish Class Deck concrete in accordance with Section 551.

605.02.2 Reinforcing Steel

Furnish reinforcing steel in accordance with Section 555 and Subsection 711.01.

605.03 CONSTRUCTION REQUIREMENTS

605.03.1 Fabrication Submittals

Submit the following information to the Project Manager 10 business days prior to casting members:

1. A tentative fabrication schedule;
2. A mix design in accordance with Section 551;
3. The product data sheet for proposed cure and seal product.
4. Any other information necessary to fabricate and install the product.

Do not begin fabrication until the Department approved submittals are received by both the Contractor and the Project Manager.

Coordinate the fabrication schedule with the Project Manager.

605.03.2 Sampling, Handling, Batching, and Mixing

Sample, handle, batch, and mix materials for concrete in accordance with Subsection 551.03.3.

605.03.3 Forms and Forming

Meet the form requirements in Subsection 552.03.3.

605.03.4 Placing Concrete

Place concrete in accordance with Subsection 552.03.4 and 551.03.5.

605.03.5 Weather and Temperature Limitations.

Meet the requirements of Subsection 551.03.6 when constructing concrete barrier rail in hot or cold weather conditions.

605.03.6 Curing Concrete Barrier Rail

Cure concrete barrier rail in accordance with 551.03.7 using material in accordance with Subsection 717.01.4 requirements.

605.03.7 Testing and Acceptance of Concrete Barrier Rail

A. Sampling and Testing. Sample and test in accordance with Subsection 551.03.8(B).

B. Acceptance of Concrete Barrier Rail. Concrete Barrier Rail is evaluated on a lot-by-lot basis in accordance with 551.03.8(C) for Class Deck Concrete except for the following:

1. An individual lot is defined as 30 concrete barrier rail units or one day's production, whichever is less.
2. A minimum of one standard compressive strength set will be made for each lot.

605.03.8 Form Removal

Remove lateral support forms only when it does not damage the concrete. Do not interrupt curing and protection in excess of 30 minutes for form removal. Replace all damaged units at Contractor expense.

605.03.9 Finish on Exposed Surfaces

Produce concrete surfaces free from rock pockets, depressions, or projections.

Scattered holes from surface trapped air are not considered defects. Apply an ordinary finish to surfaces not smooth and uniform in texture and appearance in accordance with Subsection 552.03.11.

605.03.10 Handling, Transporting, and Storage

The concrete barrier rail may be moved from the casting area to an adjacent staging area when they have reached 75% of design strength and the strength is adequate to prevent damage. Replace all cracked or broken items at Contractor expense.

Handle, transport, and store precast concrete items without damage. Replace or repair all damaged units at Contractor expense. Transport the concrete barrier rail from their casting or adjacent staging location only after strength tests indicate the lot they represent has reached the design strength. If shipping is desired before the Department's 28-day acceptance tests are performed, supply compressive strength results representing the lot of concrete to the Department indicating design strength has been met. Ensure this testing is conducted by an ACI certified technician. Final acceptance of the concrete barrier rail will be based on the Department's test results for acceptance.

605.03.11 Install Concrete Barrier Rail

Install concrete barrier rail meeting the contract requirements and the Detailed Drawings.

605.03.12 Reset Concrete Barrier Rail

Reset concrete barrier rail as specified in the contract.

605.04 METHOD OF MEASUREMENT

605.04.1 Concrete Barrier Rail

Concrete barrier rail is measured by each 10-foot (3.05 m) section. Connections to the existing barriers are included in the cost of the rail.

Measurement does not include those portions of barrier constructed as an integral part of sign foundations.

605.04.2 Reset Concrete Barrier Rail
Reset concrete barrier rail is measured by each 10-foot (3.05 m) section.

605.04.3 Concrete Barrier Rail Transition
Concrete barrier rail transitions are measured by each 10-foot (3.05 m) section.

605.04.4 Concrete Barrier Rail Terminal Section
Concrete barrier rail terminal sections are measured by each 10-foot (3.05 m) section.

605.04.5 Remove Concrete Barrier Rail
Remove concrete barrier rail is measured by each 10-foot (3.05 m) section.

605.05 BASIS OF PAYMENT
Payment for the completed and accepted quantities is made under the following:

Pay Item	Pay Unit
Concrete Barrier Rail	Each
Concrete Barrier Rail Transition	Each
Concrete Barrier Rail Terminal Section	Each
Remove Concrete Barrier Rail	Each

Payment at the contract unit price is full compensation for all necessary resources to complete the item of work in accordance with the contract.

606 GUARDRAIL AND CONCRETE BARRIER RAIL Page 341 3-10-16

Rescind the title only of Section 606 and replace with the following:

SECTION 606
GUARDRAIL

606.01 DESCRIPTION Page 341 3-10-16

Rescind the first (only) paragraph (that begins, “The work is…) and replace with the following:

This work is the furnishing, installing, removing, resetting, replacing and revising metal beam guardrail, cable guardrail, and box beam guardrail.

606.02 MATERIALS Page 341 3-10-16

Rescind the first paragraph (that begins, “Furnish metal beam…) and replace with the following:

Furnish metal beam guardrail, cable guardrail, and box beam guardrail materials in accordance with the following section and subsection requirements:

Within the list of materials, rescind only the line shown below:

Concrete Barrier Rail 554

606.03.1 GENERAL Page 341 3-10-16

Within the first paragraph, rescind the first sentence (that begins, “Install guardrail and…) and replace with the following:

Install guardrail meeting the requirements of Detailed Drawings and the contract.

606.03.2 INSTALLING POSTS Page 342 12-11-14

Rescind the first paragraph (that begins, “If the posthole is…) and replace with the following:

Complete guardrail widening prior to new post installation.

Install posts in accordance with manufacturer recommendations. Drive posts unless conditions require excavation and backfilling. If the posthole is excavated, compact the posthole bottom, insert the post, and backfill and compact around the post in 6-inch (150 mm) loose layers ensuring the material is at optimum moisture before placing and compacting the next layer. Maintain the post line and grade.

Rescind the second paragraph (that begins, “Always drive steel …”).

606.03.7 CONCRETE BARRIER RAIL Page 342 3-10-16

Rescind Subsection 606.03.7 and replace with the following:

606.03.7 Reserved

606.04.9 CONCRETE BARRIER RAIL Page 344 3-10-16

Rescind Subsection 606. 04.9 and replace with the following:

606.04.9 Reserved

606.04.12 CONCRETE BARRIER RAIL TRANSITION Page 344 3-10-16

Rescind Subsection 606. 04.12 and replace with the following:

606.04.12 Reserved

606.04.13 CONCRETE BARRIER RAIL TERMINAL SECTION Page 344 3-10-16

Rescind Subsection 606. 04.13 and replace with the following:

606.04.13 Reserved

606.04.16 REMOVE CONCRETE BARRIER RAIL Page 344 3-10-16

Rescind Subsection 606. 04.16 and replace with the following:

606.04.16 Reserved

606.05 BASIS OF PAYMENT Page 345 3-10-16

Remove the following pay items and units from the table:

Pay Item	Pay Unit
Concrete Barrier Rail	Each
Concrete Barrier Rail Terminal Section	Each
Concrete Barrier Rail Transition	Each
Remove Concrete Barrier Rail	Each

607.03.3(B) TOP RAIL OR CABLE Page 348 3-10-16

Rescind Subsection 603.03.3(B) and replace with the following:

B. Top Cable or Rail. Furnish a ⅜-inch (10 mm) diameter galvanized steel cable for the top brace. Pass the top cable through the line post tops, providing a continuous brace from end-to-end of each fence section.

Use a top rail in place of the top cable when fences are used in low speed residential applications. Join top rail sections using sleeve-type couplings. Fasten the top rails to the terminal posts using pressed steel fittings.

608.02 MATERIALS Page 353 4-16-15

Rescind the second, third, and fourth (last) paragraphs of Subsection 618.02 and replace with the following:

Use cast iron DWDs having a natural grey finish. Use DWDs – Type 1 for new sidewalk construction. DWDs – Type 1 are cast directly into sidewalk. Use DWDs – Type 2 for retrofits on existing sidewalks. Ensure gray iron castings are manufactured from iron conforming to ASTM A48 Class 30B, as noted in AASHTO M 306. Ensure ductile iron castings are manufactured from iron conforming to ASTM A536 Grade 80-55-06

Furnish DWDs listed on the QPL.

608.03.3 DETECTABLE WARNING DEVICES Page 353 4-16-15

Rescind the Subsection 618.03.3 and replace with the following:

608.03.3 Detectable Warning Devices

A. General. Install DWDs so they extend the full width of the ramp, and the edge of the dome panel is located no more than 6 inches (150 mm) from the back of curb. Ensure that DWD edges are flush with adjacent sidewalk without gap or lip, with domes protruding above adjacent surfaces. If DWDs require cutting, locate non-factory edges on the exterior side of DWD installation.
B. Type 2. Saw cut from existing sidewalk the minimum area required to allow installation. Remove the old sidewalk full depth within the cut area. Place new concrete meeting Section 608 requirements, and install DWD in accordance with manufacturer recommendation.

608.04 METHOD OF MEASURMENT Page 353 4-16-15

Rescind the second paragraph of (that begins, “DWDs are measured…”) and replace with the following:

DWDs are measured by the square yard (m^2) installed and accepted. For Type 2 DWDs, removal of existing devices, concrete sawing and removal, and all new concrete is not measured separately for payment.

609.03.6 BITUMINOUS CURBS Page 356 12-11-14

Rescind Subsection 609.03.6 and replace with the following:

609.03.6 Reserved

610.02 MATERIALS Page 359 10-9-14

Add the following material to the existing table:

Weed Control Mat.....713.06

610.03.2 SEEDING, FERTILIZING, AND MULCHING Page 359 8-6-15

Add the following sentence to the end of Bullet (B) Seeding Season:

If contract time has been stopped awaiting the seeding season, contract time assessment will resume when the seeding begins or October 15th, whichever occurs first.

Add the following sentence to the end of Bullet (G) Composting:

Compost rates are dry weight equlivalent.

610.03.4 EROSION CONTROL BLANKET Page 362 2-26-15

Rescind the title of Subsection 610.03.4 and replace with the following:

610.03.4 Rolled Erosion Control Products

Within the first paragraph, rescind the first sentence (that begins, “Prepare, fertilize, and seed…”) and replace with the following:

Prepare, fertilize, and seed the rolled erosion control products areas before placement.

610.03.5 WEED CONTROL MAT Page 362 10-9-14

Add the following Subsection:

610.03.5 Weed Control Mat
Handle and place weed control mat following the manufacturer’s recommendations.

610.04.7 SOIL RETENTION BLANKET Page 363 2-26-15

Rescind Subsection 610.04.7 and replace with the following:

610.04.7 Rolled Erosion Control Products
Rolled Erosion Control Products is measured by the square yard (m^2) in place.

610.04.9 WEED CONTROL MAT Page 363 10-9-14

Add the following Subsection:

610.04.9 Weed Control Mat
Weed control mat is measured by the square yard (m^2) in place.

610.05 BASIS OF PAYMENT Page 363 2-26-15

Rescind and replace the pay item “Soil Retention Blanket” with “Rolled Erosion Control Products”

Add the following pay items and unit to the end of the existing table:

Pay Item	Pay Unit
Weed Control Mat	Square Yard (m^2)

612.03.3(C)(1) SHOP PAINT Page 369 10-9-14

Within the first paragraph, rescind the second sentence (that begins, “Do not paint…”) and replace with the following:

Do not paint surfaces in contact with other metal surfaces or concrete, except as noted in Subsection 612.03.5(A).

613.03.4 CONCRETE DRAINAGE CHUTES Page 374 10-9-14

Rescind Subsection 613.03.4 and replace with the following:

613.03.4 Drainage Chutes
Construct drainage chutes as shown in the Detailed Drawings.

618.03.12 TRAFFIC CONTROL FOR STRIPING OPERATIONS Page 402 10-9-14

Rescind Subsection 618.03.12 and replace with the following:

618.03.12 Traffic Control for Striping and Sweeping Operations
Provide the following traffic control for striping and final sweep and broom operations not performed under closed lane or pilot car situations.

1. Furnish and operate a shadow vehicle equipped with a truck or trailer-mounted attenuator in accordance with Subsection 618.02 conforming to appropriate test levels. Position the truck to follow within 150 to 1,000 feet (45 - 305 m) on pavement marking removal and application, and sweeping and brooming. When placing or removing traffic

cones that protect the pavement markings, use a vehicle with a truck-mounted attenuator or follow with a shadow vehicle possessing a truck mounted attenuator.

2. Equip shadow vehicles with an arrow board facing rear-approaching traffic.
   a. On multiple-lane roadways, place the arrow board display in lane shift mode (sequential arrow mode).
   b. On two-lane two-way roadways, place the arrow board in a hazard warning mode not displaying the lane-shift mode
3. If peak hours are specified in the contract, provide the Project Manager a schedule of striping and final sweep and broom operations at least 48 hours prior to work. Perform work during off-peak hours in order to minimize impacts to the traveling public unless approved differently by the Project Manager.
4. For striping operations, include all costs associated with this work in the striping bid item.
5. If requested by the Project Manager, provide a WN identifying the proposed traffic control devices to be used for striping or final sweep and broom operations. If the Contractor and Project Manager agree that additional traffic control devices not listed in items 1 through 3 are warranted; the additional traffic control devices will be measured and paid in accordance with Subsections 618.04 and 618.05.

Failure to properly notify the Project Manager or provide adequate traffic control renders the striping or final sweep and broom operation unacceptable and unauthorized. Unacceptable or unauthorized work will be addressed in accordance with Subsection 105.12.

619.03.8 DELINEATORS Page 411 10-9-14

Add the following sentence to the end of the first paragraph (that begins, “Furnish and install new…):

Furnish and install snow poles, if required, in accordance with the Detailed Drawings.

619.04.4 DELINEATORS Page 412 10-9-14

Rescind the first paragraph (that begins, “Delineators of each...) and replace with the following:

Delineators of each type specified are measured by the unit and include the reflector, mounting hardware, post, and snow pole, if applicable, complete in place.

622.03.3 SUBSURFACE DRAINAGE GEOTEXTILE FILTER Page 425 10-9-14

Within the fifth paragraph, rescind the second (last) sentence (that begins, “If a perforated…).

623.02 MATERIALS (MAILBOXES) Page 429 12-11-14

Within the first paragraph, rescind the first sentence (that begins, “Use mailboxes listed…) and replace with the following:

Use metal mailboxes listed on the QPL for Mailbox and Mailbox - Large.

701.02.1 GENERAL REQUIREMENTS Page 436 3-10-16

Following the first paragraph, rescind the list of test methods, and replace with the following:

Fracture..... MT 217
Liquid Limit, Plastic Limit, Plasticity Index..... MT 208
Micro-Deval..... MT 233
Sand Equivalent..... AASHTO T 176 [1]
Sieve Analysis for Fine and Coarse Aggregate..... MT 202
Sulfate Soundness..... AASHTO T 104 or ASTM C88
Wear Test ..... MT 209

Notes:

1. As determined by alternate method No. 2 using stock solution with formaldehyde.

701.02.8 CRUSHED COVER AGGREGATE - COVER MATERIAL Page 440 3-10-16

Rescind Table 701-12 and replace with the following:

TABLE 701-12
TABLE OF GRADATIONS - COVER MATERIAL

Percentage By Weight Passing Square Mesh Sieves			
Sieve Size	Type 1	Type 2	Type 3
½-inch (12.5 mm)			100
⅜-inch (9.5 mm)	100	100	40-80
No. 4 (4.75 mm)	0-15	0-8	0-8
No. 200 (0.075 mm)	0-2	0-1	0-1

701.02.9 AGGREGATE FOR CTB Page 441 10-9-14

Within Table 701-13, rescind the 4-12 percent passing the No. 200 (0.075 mm) sieve, and replace with 2-12 percent passing the No. 200 (0.075 mm) sieve.

701.03.1 GENERAL REQUIREMENTS Page 441 3-10-16

Within Table 701-14, rescind row showing Sand equlivant, and replace with the following:

Sand equivalent (AASHTO T 176 [3])	45% min.

Rescind Note 3 and replace with the following:

3. As determined by alternate method No. 2 using stock solution with formaldehyde.

701.03.2 AGGREGATE FOR PLANT MIX SURFACING Page 443 2-26-15

Within Table 701-15, rescind the ≥13.5% minimum VMA for the ½-inch mix, and replace with ≥14.5% minimum VMA for the ½-inch mix.

Within Table 701-18, rescind the rows showing VMA and D/A requirements for non-commercial mix and replace with the following:

VMA	13.0 to 17.0	14.5 to 18.0	15.5 to 18.4	± 0.6	12.4 to 17.6	13.9 to 18.6	14.9 to 19.0
D/A [2]	0.6 to 1.4			±0.2	0.4 to 1.6		

Within Table 701-18, rescind the rows showing VMA and D/A requirements for commercial mix and replace with the following:

VMA	12.4 to 17.6	13.9 to 18.6	14.9 to 19.0	N/A	N/A
D/A	0.4 to 1.6			N/A	N/A

701.12 DIGOUT AND SUB-EX REPLACEMENT MATERIAL Page 449 10-9-14

Rescind Subsection 701.12 Digout and Sub-ex Replacement Material and replace with the following:

Furnish replacement material for digout and sub excavation areas consisting of a well-graded sand and gravel, free of organic and other deleterious material, meeting the AASHTO M 145 requirements for A-1-a group classification as amended by Table 701-24. The material may consist of up to 50% RAP, uniformly blended. Crusher reject material may be used for either application provided it meets the requirements in Table 701-24.

TABLE 701-24
DIGOUT AND SUB EXCAVATION REPLACEMENT MATERIAL

Percentage By Weight Passing Square Mesh Sieves		
	Sieve size	Percent Passing
Digout	2-inch (50 mm)	100
	No. 200 (0.075 mm)	8 maximum
Sub excavation	6-inch (152 mm)	100

	No. 200 (0.075 mm)	8 maximum
Crusher Reject	4-inch (100 mm)	100
	No. 4 (4.75 mm)	0-50
	No. 40 (0.425 mm)	0-30
	No. 200 (0.075 mm)	8 maximum

704.01.1 SHEET ALUMINUM Page 465 10-9-14

Within Table 704-1, rescind the third heading "Maximum Back Brace Spacing Thickness" and replace with the following:

Maximum Back Brace Spacing

704.01.10(A) GENERAL Page 468 10-9-14

Remove the following Traffic Control Rate Schedule Group Numbers from Table 704-3:

18 (sign panel), 23, and 28.

704.02.1 ALUMINUM SIGNS Page 469 10-9-14

Within the second paragraph, rescind the third sentence (than begins, "Coat in accordance…") and replace with the following:

Coat in accordance with ASTM B921 or B449 Class 2, 10 to 35 milligrams thick per square foot (0.093 m^2).

707.01 CONCRETE JOINT FILLERS Page 475 12-11-14

Rescind the heading only (707.01 CONCRETE JOINT FILLERS) and replace with the following:

707.01 JOINT FILLERS

707.01.1 CONCRETE PAVEMENTS Page 475 12-11-14

Rescind Subsection 707.01.1 and replace with the following:

707.01.1 Pavement

A. Expansion Joint Filler. Furnish expansion joint filler Type II cork in accordance with AASHTO M 153.
B. Joint Sealing Material. Furnish sealing material for all types of pavement joints that is a hot-poured thermoplastic rubber or rubber asphalt compound in accordance with ASTM D6690, furnished in one grade only. Use ready-mixed, cold applied joint fillers for sealing concrete pavement joints only with the Project Manager's prior written approval.

708.03 PERFORATED CONCRETE PIPE Page 477 3-10-16

Rescind Subsection 708.03 and replace with the following:

708.03 RESERVED

708.05 PVC GRAVITY SEWER AND DRAIN PIPE Page 477 4-16-15

Rescind Subsections 708.05, 708.05.1, 708.05.2 and 708.05.3 and replace with the following:

708.05 PVC GRAVITY PIPE

Furnish PVC pipe in accordance with ASTM D1784, and produced by a continuous extrusion process employing a prime grade of unplasticized polyvinyl chloride. Ensure the grade used is highly resistant to hydrogen sulfide, sulfuric acid, gasoline, oil, detergents and other chemicals found in sewage and industrial wastes. Furnish perforated pipe in accordance with ASTM D2729.

Ensure each pipe length is marked with nominal size, PVC cell classification, ASTM designation and SDR, if applicable. Ensure pipe has a minimum SDR of 35.

With the exception of Schedule 40 or 80 PVC conduit, ensure each pipe length has a bell providing a watertight joint when jointing the bell and spigot with a rubber ring. Make joint using a rubber gasket compressed between the outer surface of the spigot and the inner surface of the bell. Ensure the joint is completely sealed by the gasket, providing a watertight joint under all service conditions, including expansion, contraction, settlement and pipe deformation. Assemble the rubber ring joint according to manufacturer recommendation.

708.05.1 Schedule 40 or 80 PVC Conduit
For non-electrical conduit, furnish schedule 40 or 80 PVC pipe.

708.05.2 PSM PVC Pipe
Furnish PSM PVC pipe 4-inch through 15-inch nominal diameter gravity pipe in accordance with ASTM D3034.

708.05.3 Large diameter PVC Pipe
Furnish large diameter PVC pipe 18-inch through 48-inch in accordance with ASTM F679.

708.05.4 Profile Wall PVC
Furnish corrugated exterior with smooth wall interior profile wall PVC gravity pipe 4-inch through 36-inch (100 - 900 mm) nominal diameter in accordance with ASTM F949.

708.06 PVC PRESSURE WATER PIPE Page 478 4-16-15

Rescind Subsections 708.06, 708.06.1 and 708.06.2 and replace with the following:

708.06 PVC PRESSURE PIPE

708.06.1 Pressurized Water Pipe
Furnish pressure PVC water pipe 4-inch through 12-inch (100 mm - 300 mm) nominal diameter in accordance with AWWA Specification C-900.
Furnish pressure PVC pipe 14-inch through 48-inch (350 mm-1200 mm) nominal diameter in accordance with AWWA Specification C-905.
Use DR 25 Class 165 pipe. Ensure pipe joints are bell and spigot and include an elastomeric gasket. Pipe sections must be marked with diameter, code designation, DR, pressure class, and AWWA specification.

708.06.2 Pressurized Sewer Pipe
Furnish pressure PVC sewer pipe in accordance with ASTM D2241.

710.03 POWDER COATING PREQUIALIFICATION AND CERTIFICATION Page 487 2-26-15

Within Table 710-7, replace the ASTM Designation for testing Thickness with D7091.

711.01.3 WIRE AND WIRE MESH Page 489 10-9-14

Rescind the third (last) paragraph (than begins, “Furnish bar mats …”) and replace with the following:

Furnish bar mats in accordance with AASHTO M 54.

711.19 METRIC PLATE SUBSTITUTION Page 493 10-9-14

Rescind the first sentence of the first paragraph (than begins, “Define the requirements…”) and replace with the following:

Substituting standard inch-sized steel plate for metric steel plate is allowed.

713.06 TOPSOIL Page 501 3-10-16

Rescind Parts 1, 2 and 3 following the second paragraph (that begins, “Meet the following…”) and replace with the following:

1. Soil pH between 5.5 and 8.0 or up to 8.5 if the exchangeable sodium is less than 10%;
2. Soil electrical conductivity less than 4.0 dS/m or up to 4.5 dS/m if the exchangeable sodium is less than 10%; and
3. Organic content between 2% and 10%. When landscape grade topsoil is specified, ensure organic content is between 5% and 10%.

Rescind the third (last) paragraph (that begins, “Topsoil is sampled…”) and replace with the following:

Topsoil is sampled and tested in accordance with MT 601.

713.06 RESERVED Page 501 10-9-14

Rescind Subsection 713.06 and replace with the following:

713.06 WEED CONTROL MAT

Furnish a machine woven weed control mat composed of synthetic polypropylene or polyolefin fibers. Meet the requirements in Table 713-9.

TABLE 713-9
WEED CONTROL MAT

Property	Value	Test Method
Average weight	minimum 4 oz/yd^2	ASTM D3776
Water permeability	10-15 gallons per min per square foot	ASTM D4491
UV stability (minimum % tensile retention)	70%	ASTM D4355 (2,500-hour exposure)
Grab tensile strength	Warp:90 lbs minimum Fill: 50 lbs minimum	ASTM D4632

713.12 ROLLED EROSION CONTROL PRODUCTS Page 503 12-11-14

Rescind Subsection 713.12 and replace with the following:

713.12 Rolled Erosion Control Products

Furnish rolled erosion control products listed on the Department’s QPL, as specified in the contract and meeting the requirements of this Subsection. If required, furnish natural fiber netting or stitching consisting of woven 100% biodegradable natural fibers such as coir, jute or sisal. Furnish blankets designed to stabilize and hold previously applied mulch or compost on slopes as well as newly constructed stream banks and slopes.

Natural fiber netting is available in various fiber types, strengths, weights and mesh-opening sizes.

A. Erosion Control Blankets. Furnish 100% biodegradable products for all types.
   1. Short Term Blanket. An erosion control blanket composed of 100% straw or 100% excelsior.
   2. Long Term Blanket. An erosion control blanket composed of 70% straw and 30% coconut or 100% excelsior.
   3. High Performance Blanket. An erosion control blanket composed of 100% coconut or 100% excelsior.

B. Permanent Turf Reinforcement Mat.
   1. Synthetic Fiber Matrix. Furnish a web of mechanically bonded synthetic fibers that are entangled to form a strong and dimensionally stable mat. Place fibers between 2 or 3 high-strength, biaxially oriented nets mechanically bound together by stitching with polyolefin thread. The netting material must be resistant to biological, chemical, and ultra-violet degradation.
   2. Natural Fiber Matrix. Furnish a natural fiber matrix constructed of two or three nets of heavy-duty polypropylene, polyethylene or nylon. The internal matrix fiber is composed of a natural fiber such as curled wood, straw or coconut.

TABLE 713-4
ROLLED EROSION CONTROL

Type	Mass[1] (lbs/Yd)	Tensile Strength – MD[2] (lbs/ft)	Min. Shear Strength (lbs/ft^2)
Short term	0.5	190	1.70 [3]
Long term	0.5	190	2.0 [3]
High performance	0.6	190	2.25 [3]
TRM – natural fiber matrix	0.8	500	10.0 [4]
TRM – synthetic fiber matrix	0.5	300	12.0 [4]

Notes:
1. Combined fiber matrix and netting
2. Machine direct
3. Minimum shear stress the rolled erosion control product (un-vegetated) can sustain without physical damage or excess erosion (>1⁄2-inch soil loss) during a 30-minute flow event per ASTM D6460.
4. Minimum shear stress the TRM (fully vegetated) can sustain without physical damage or excess erosion (>1⁄2-inch soil loss) during a 30-minute flow event per ASTM D6460.

713.13 COMPOST Page 504 10-9-14

Rescind the second paragraph (that begins, “Furnish compost in…”) and replace with the following:

Furnish compost listed on the QPL and in accordance with Table 713-8.

714.04 WATERBORNE TRAFFIC PAINT Page 507 4-16-15

Add the following sentence to the end of the first (only) paragraph:

Blue, red or black paint may be used without being NTPEP tested if the base paint is the same chemical composition as a NTPEP tested paint.

Below Table 714-2, add the following note referring to the “Color” section of Table 714-2:

Note 1: Furnish black paint in accordance with color chip 37038 of Federal Standard 595B.

714.05 HIGH DURABILITY WATERBORNE TRAFFIC PAINT Page 508 4-16-15

Add the following sentence to the end of the first (only) paragraph:

Blue, red or black paint may be used without being NTPEP tested if the base paint is the same chemical composition as a NTPEP tested paint.

Below Table 714-3, add the following note referring to the “Color” section of Table 714-3:

Note 1: Furnish black paint in accordance with color chip 37038 of Federal Standard 595B.

714.06 EPOXY OR OTHER POLYMERIC TRAFFIC PAINT Page 509 4-16-15

Add the following sentence to the end of the first (only) paragraph:

Blue, red or black paint may be used without being NTPEP tested if the base paint is the same chemical composition as a NTPEP tested paint.

Below Table 714-4, add the following note referring to the “Color” section of Table 714-4:

Note 1: Furnish black paint in accordance with color chip 37038 of Federal Standard 595B.

714.08 REFLECTIVE GLASS BEADS Page 512 4-16-15

Rescind Subsection 714.08 and replace with the following:

714.08 REFLECTIVE GLASS BEADS

Furnish glass beads for reflectorizing traffic pavement markings in accordance with AASHTO M 247. Gradation and roundness will be determined in accordance with AASHTO PP 74. In the event of a dispute, ASTM D1274 will be used for gradation determination and ASTM D1155 will be used for roundness determination.

717.01.4 CONCRETE CURE AND SEAL COMPOUNDS Page 519 3-10-16

Add the following Subsection:

717.01.4 Concrete Cure and Seal Compounds

Furnish liquid cure and seal compounds for concrete in accordance with ASTM C1315 Type 1, Class A. Furnish clear products.

717.02.2(C) DECK SEALANT SAND Page 519 10-9-14

Rescind Subsection 717.02.2(C) and replace with the following:

C. Deck Sealant Sand. Furnish sand for bridge deck crack sealing operations in accordance with manufacturer's recommendations.