

# Final Specification Revisions

2020 V5.1 June 27, 2024

The Department proposed revisions to 12 Standard Specifications and several Detailed Drawings. The proposed revisions were out for comment during the month of April 2024. The final revised specifications are shown.

Red = added text; Green = ~~deleted text~~  
Blue = change from proposed

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## 101.02 Acronyms and Abbreviations

SBE Small Business Enterprise

Reason: add common acronym

Final Draft: **No changes to the draft spec; published as shown.**

## 105.03.2 Items Designated for Acceptance on a Lot Basis (Quality Assurance)

If P is ~~less than 3 or a negative quantity~~ 3.0 or less, the lot will be accepted as being in conformance. If one or more elements for a contract item show a positive P value, the positive values will be added, and the resulting sum used to determine whether the lot is in conformance. If the total P value is between 3.0 and 25.0, the Project Manager may require correction or accept the lot at a reduced price. If P is greater than 25.0, the Project Manager may:

1. Require complete removal and replacement with specification material at Contractor expense.
2. Require corrective action to bring the material into conformance at Contractor expense; or
3. Where the finished product is found to be capable of initially performing the intended purpose but with a reduced service life expectancy, permit leaving the material in place with an appropriate price adjustment calculated using a P value ranging between 25.0 and 50.0.

Immediately halt production following written notification when either of the following has occurred:

1. Three consecutive lots for a contract item have an individual total P value of 5.0 or more.
2. Beginning with the second lot, when three tests within one lot have one or more elements outside the specification bands and the total P value for the lot is 5.0 or more.

## 105.03.3 Quality Incentive Allowance

- B. Density.** A 1.08 pay factor will be applied to the lots of plant mix surfacing when the average density for the lot (Xn) is from ~~94% to 95%~~ 94.0% to 95.0%, inclusive, of the Maximum Specific Gravity (Rice's Method) and the range (R) is 3.0 or less.
- C. Ride Specification.**

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 ~~cumulative rideable~~ lane length

Unit Cost = Use appropriate value from Table [105-4](#)

*Reason: add rounding and decimal criteria for consistency*

**Final Draft: Published as shown with the exception of the following.**

If P is less than 3.0 ~~or a negative quantity~~ 3.0 or less

and the range (R) is less than 3.0.

## 106.02.3 Contractor-Furnished Sources

Added to the end of the Subsection.

If the test results indicate the aggregate does not meet the requirements, the Contractor may make a written request for an independent laboratory to retest the material in question. The Contractor and the Department must agree upon the choice of an independent laboratory before release of the sample for testing. The Department will maintain and provide the original sample in the event of a retest. The independent laboratory results will be averaged with the results provided by the Department and the averaged results will be binding on both parties for acceptance of the material in question. The Contractor must pay the cost of duplicate testing if the average results in a failing test. The Department will pay the cost of duplicate testing if the average results in a passing test.

Furnish aggregate that does not contain wood and other plant material.

The portion of the aggregate retained on the No. 4 (4.75 mm) sieve is defined as coarse aggregate, and that passing the No. 4 (4.75 mm) sieve is defined as fine aggregate.

The Department has 30 calendar days from receipt of the test sample to furnish the test results. Contract time will be increased, working day for working day, for each day the test results are delayed beyond the 30-day review period, if the Departments delay affects the Contractor's operation as shown on the current work schedule. Contract time will not be extended if the delay occurs from November 16th through April 15th unless the Contractor is being charged contract time under Subsection 108.07.3.

*Reason: This language is currently only found in section 701 for aggregate acceptance. The intent of adding it to section 105 is to provide a similar dispute resolution process for aggregate source approvals.*

**Final Draft: Published as shown with the exception of the following:**

If the test results indicate the material does not meet the requirements, the Contractor may make a written request for an independent laboratory to retest the material in question. The Contractor and the Department must agree upon the choice of an independent laboratory before release of the sample for testing. The Department will maintain and provide the original sample in the event of a retest. The independent laboratory results will be averaged with the results provided by the Department and the averaged results will be binding on both parties for approval of the material in question. The Contractor must pay the cost of duplicate testing if the average results in a failing test. The Department will pay the cost of duplicate testing if the average results in a passing test.

Furnish material that does not contain wood and other plant material.

The portion of the material retained on the No. 4 (4.75 mm) sieve is defined as coarse aggregate, and that passing the No. 4 (4.75 mm) sieve is defined as fine aggregate.

The Department has 30 calendar days from receipt of the test sample to furnish the test results. Contract time will be increased, working day for working day, for each day the test results are delayed beyond the 30-day review period, if the Departments delay affects the Contractor's operation as shown on the current work schedule. Contract time will not be extended if the delay occurs from November 16th through April 15th unless the Contractor is being charged contract time under Subsection 108.07.3.

## 204.03.1 Blasting Professional

### 204.03.1 Blasting Professional

- A. Blasting Consultant.** Retain a recognized Blasting Consultant to assist in the blast design. Ensure the Blasting Consultant is an expert in the field of drilling and blasting and is not an employee of the Contractor **or subcontractors**, an explosives manufacturer, or explosives distributor.

*Reason: adding clarification that the consultant is not an employee to not only the Contractor (as by definition is the same as Prime Contractor) but also a Subcontractor as well.*

*Final Draft: Changes to the proposed spec are as follows:*

**Blasting Consultant.** Retain a recognized **Independent** Blasting Consultant to assist in the blast design. Ensure the Blasting Consultant is an expert in the field of drilling and blasting and is not an employee of the Contractor, **blaster, driller, other subcontractor**, an explosives manufacturer, or explosives distributor.

## 208.05 Environmental Protection – Basis of Payment

### 208.05 Basis of Payment

A request may be submitted for compensation resulting from the addition of BMPs due to ~~acts of God described in Subsection 107.17~~ conditions meeting Subsection 107.17, severe weather events, or extra work added by change order. Include documentation in the request that demonstrates such an event has occurred. Proper installation and inspection of BMPs must have been met in accordance with Subsection 208.03.1D & E to request additional compensation. 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 at a unit price of \$1.00 per unit.

*Reason: help clarify that BMPs may be paid for when severe weather events are encountered.*

**Final Draft: Published as shown with the exception of the following.**

A request may be submitted for compensation resulting from the addition of BMPs due to ~~acts of God described in Subsection 107.17~~ conditions meeting Subsection 107.17, unusually severe weather events, or extra work added by change order. Include documentation in the request that demonstrates such an event has occurred. Proper installation and inspection of BMPs must have been met in accordance with Subsection 208.03.1D & E to request additional compensation. 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 at a unit price of \$1.00 per unit.

## 208.05.1 Temporary Erosion and Sediment Control - Lump Sum

Partial payment for Temporary Erosion Control will be monthly based on the lump sum contract price as follows:

**TABLE 208-2  
TEMPORARY EROSION CONTROL  
LUMP SUM PROGRESS PAYMENTS**

<b>% Of Contract Amount Paid</b>	<b>% Of Erosion Control Bid Amount</b>
First estimate after start of erosion control work	60
25	70
50	80
75	90
Conditional final acceptance	100

Note: If no permit exists, the final payment interval is at the Project Managers discretion.

*Reason: help expedite the final payment process when no permit exists*

***Final Draft: Changes to the proposed spec are as follows:***

*Note: If no permit exists, or if the permit has been closed, the final payment interval is at the Project Manager's discretion.*

## 401 Plant Mix

### 401.03.5 Acceptance Commercial Plant Mix Surfacing

A minimum of 1 **volumetric** sample will be taken on permanent crossovers and projects with a plan quantity of 500 tons (500 MT) or more and samples will be tested at a minimum rate of one per 2,000 tons (2,000 MT). Compact according to Subsection 401.03.21.

### 401.03.23 Surface Tolerance for Flexible Pavement

- A. Ride Specification.** Construct all surfacing courses to provide completed plant mix pavements that meet surface smoothness and profile levels derived from the pre-pave IRI. Surface smoothness and surface profile will be analyzed from data collected by the Department using a **Class I laser road profiler Inertial Profiler System meeting AASHTO M 328 requirements** and following Department procedures for profiler operations. The IRI will be measured in inches/mile, regardless of the unit of measure used on the contract.

**No changes to paragraphs not shown.**

Leveling and isolation lifts are not included as an opportunity to improve the ride.

~~Correct surface profile defects greater than 0.40 inches (10 mm) in a distance of 25 feet (7.62 m) within 30 calendar days of notification but prior to seal and cover or plant mix seal operations. Correct surface profile defects by milling and filling deficient pavement depths or by diamond grinding excess pavement depths full travel lane width or at the discretion of the Project Manager. Corrected surface profile defects will be retested and evaluated. Pavement thickness will be measured after profile corrections are made. Ensure corrected pavements do not create a transverse height difference between adjacent lanes exceeding 1/8 inch (3 mm). Fog seal corrected areas if the roadway is not chip sealed prior to winter suspension.~~

The Department will test surface smoothness and surface profile ~~prior to~~ **before** the placement of seal and cover or plant mix seal on the final lift of plant mix surfacing pavement. Testing will consist of 2 passes in each travel lane. 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. Tests will be performed within 10 business days (extended by rain or other inclement weather conditions) of completion of all mainline paving. The Department will test divided highways within 10 business days (extended by rain or other inclement weather conditions) of completion of mainline paving for each direction of travel. Ensure that the entire finished lane width to be tested is not impeded and is available to Department personnel at the time of testing. Test results will be furnished within 2 business days.

**No changes to paragraphs not shown.**

IRI data will not be evaluated for the following roadway sections:



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1. Climbing lanes, passing lanes, and ramps less than 1000 feet (0.30 km) long.
2. Turning lanes.
3. Acceleration and deceleration lanes less than 1000 feet (0.30 km) long.
4. Shoulders and gore areas.
5. Road approaches.
  6. Horizontal curves 900 feet (275 m) or less in centerline radius, and pavement within the super-elevation transitions of these short radius curves; or
  7. Bridge decks with a concrete riding surface, pavement within 50 feet (15 m) of bridge decks with a concrete riding surface, concrete approach slabs, concrete roundabouts, and the terminal paving points of the project.

Areas requiring corrective work will be identified using the surface profile **or surface smoothness** measurements of the finished surface.

Correct surface profile defects greater than 0.40 inches (10 mm) in a distance of 25 feet (7.62 m) within 30 calendar days of notification but prior to seal and cover or plant mix seal operations. Correct surface profile defects by milling and filling deficient pavement depths or by diamond grinding excess pavement depths full travel lane width or at the discretion of the Project Manager. Corrected surface profile defects will be retested and evaluated for compliance. Correction of profile defects will not be cause to reevaluate any section for surface smoothness IRI values.

Pavement thickness may be measured after profile corrections are made. The final in-place thickness must not vary from the planned thickness by more than 0.02 foot upon completion of diamond grinding. No contract adjustment will be allowed for segments which do not meet this requirement. Ensure corrected pavements do not create a transverse height difference between adjacent lanes exceeding 1/8-inch (3 mm). Fog seal corrected areas if the roadway is not chip sealed prior to winter suspension. Quality incentive allowances will be used to offset any price reductions on progress estimates.

~~Correction of profile defects will not be cause to reevaluate any section for calculate a lane average surface smoothness except for locations 0.5 mile segments identified as remove and replace as described below. Quality incentive allowances will be used to offset any price reductions on progress estimates.~~

Remove and replace any 0.5-mile (0.8 km) **or shorter** segment of roadway **that does not meet the applicable IRI requirements for the project category unless other corrective action is approved by the Project Manager** ~~requiring corrective action~~. Remove and replace the segment by milling 0.15 feet (45 mm) or to the lift line if within 0.02 feet (6 mm), whichever is greater and replacing with new material meeting the contract requirements. ~~Remove and replace sections of roadway less than 0.5 miles (0.8 km) that do not meet the applicable IRI requirements for the project category unless other corrective action is approved by the Project Manager. Sections requiring removal and replacement, or other corrective action will be rerun once all the corrective work has been performed. The maximum pay adjustment factor for the affected segment after corrective~~

~~action is 1.00. Disincentives will be applied if applicable.~~ Any segment requiring removal and replacement will be tested and evaluated for compliance only. No IRI values will be adjusted from the original surface profile measurements.

All work to prepare the roadway for testing, including sweeping, grinding and traffic control prior to the ride test, is incidental to the work and is not measured for payment. All work to complete any corrective action and re-testing, including but not limited to sweeping and traffic control, is incidental to the work and is not measured for payment. Include all costs and resources to prepare the roadway for surface tolerance testing in the plant mix surfacing item.

- B. Surface Smoothness.** Finish the surface of the final lift to the specified grade and cross section meeting the surfacing smoothness values for all paved areas excluded from the ride specification in accordance with Subsection [401.03.23\(A\)](#). The Contractor will be notified of ~~sections~~ segments to be corrected within ~~3~~ 10 business days after the surface was placed. Perform all corrective work at Contractor expense. ~~Table 401-7 values specify the maximum allowable variance and divergence from the mean constructed grade.~~

**TABLE 401-7  
MAXIMUM ALLOWABLE VARIANCE AND DIVERGENCE**

Surface	Total Variation Per 100 feet	Rate
New plant mix	0.02 foot (6 mm)	0.20%
Plant mix overlays ≥ 0.3 foot (90 mm)	0.03 foot (9 mm)	0.30%
Plant mix overlays < 0.3 foot (90 mm)	0.03 foot (9 mm)	no rate

~~Note: The rate is applicable only to the longitudinal direction.~~

~~The mean constructed grade for each section is the planned grade or a grade parallel to plan grade, acceptable to the Project Manager.~~

Surfaces will be checked for compliance at joints, bridge ends, and other sections where ride characteristics or other evidence indicates the surface tolerance is outside the specifications.

Surface smoothness ~~will~~ may be evaluated using ~~a Class I laser road profiler~~ an Inertial Profiler System meeting AASHTO M 328 requirements and ~~when appropriate~~ following Department procedures. ~~Correct surface profile defects greater than 0.40 inches (10 mm) within a distance of 25 feet (7.62 m) in any direction, or longitudinally in 100-foot (30.5-m) sections at 10-foot (3-m) intervals, and transversely at 4-foot (1.2-m) intervals.~~ Correct out of specification plant mix surfacing by diamond grinding, cold milling a minimum depth of 0.15 feet (45 mm) the full width of the defect but not less than the paver width, or other approved method. If removing and replacing, extend the repair area for a minimum of 50 feet (15.2 m) each side of the defective pavement and fill with like-material compacted to the specified density.

Ensure the corrected pavement and adjoining surface meet the smoothness specifications.

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*Reason: clean up for ride evaluation and pavement repair intent.*

**Final Draft: Published as shown with the exception of the following:**

Surface smoothness will be analyzed by traditional survey methods or may be evaluated using a Class I laser road profiler an Inertial Profiler System requirements when appropriate following Department procedures. Correct surface profile defects greater than 0.40 inches (10 mm) within a distance of 25 feet (7.62 m) in any direction. of longitudinally in 100-foot (30.5 m) sections at 10-foot (3 m) intervals, and transversely at 4-foot (1.2 m) intervals

## 409.03.12 Underseal

When required by the contract, perform an underseal following approval by the Project Manager of the prepared surface. **Meet all the requirements of Section 409 with the following exceptions:**

1. The underseal operation may be performed prior to May 1<sup>st</sup> and after August 31<sup>st</sup>, on condition that the temperature and weather meet the manufacturer's recommendations for placement.
2. Meet the requirements of Section 411 when performing an underseal on a milled surface.

Do not begin PMS operations until 3 calendar days after the seal and cover has been completed.

*Reason: An underseal may be performed outside of the Seal and Cover limitations.*

**Final Draft: Published as shown with the exception of the following:**

Do not begin PMS operations until 3 calendar days after the ~~seal and cover~~ underseal has been completed.

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## 610.05 Seeding and Condition Seed Bed

### 610.05 BASIS OF PAYMENT

If seeding is performed in conjunction with the condition seed bed operation using approved no-till equipment, the cost of the condition seed will be included in the unit bid cost for seeding.

*Reason: combine the measurement of seeding and condition seed bed when an approved no-till equipment is used.*

**This revision will be removed and added for the 2025 revision. A design memo may need to be issued.**

## 618.03.14 Flagging Operations

**618.03.14A2 Illuminated Flagger Paddles.** Flagging paddles must be of octagonal shape at least 18 inches (455 mm) wide with letters at least 6 inches (150 mm) high, fixed to a rigid handle. Use signs having red colored flashing LED lights inside the STOP face and amber colored flashing lights inside the SLOW face, having a flash rate of 50 to 60 flashes per minute. ~~LED arrangement must display an octagonal shape for STOP and a diamond shape for SLOW.~~ The power source must be fully enclosed within the pole section. **LED arrangement must meet any of the following arrangements:**

1. Two white or red lights, one centered vertically above and one centered vertically below the STOP legend; and/or two white or yellow lights, one centered vertically above and one centered vertically below the SLOW legend.
2. Two white or red lights, one centered horizontally on each side of the STOP legend; and/or two white or yellow lights, one centered horizontally on each side of the SLOW legend.
3. One white or red light centered below the STOP legend; and/or one white or yellow light centered below the SLOW legend.
4. A series of eight or more small white or red lights no larger than  $\frac{1}{4}$  inch in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the border of the STOP face; and/ or a series of eight or more small white or yellow lights no larger than  $\frac{1}{4}$  inch in diameter along the outer edge of the paddle, arranged in a diamond pattern along the border of the SLOW face; or
5. A series of white lights forming the shapes of the letters in the legend.

*Reason: allow for a broader range of options for the Contractor to use.*

**Final Draft: No changes to the draft spec; published as shown.**

## 701.06.4 Ancillary Armor

~~Submit samples before placing Ancillary Armor.~~ The stone must meet the requirements of Table 701-23.

Late change to the specification revisions. This Subsection was updated with the last revisions, but the above change was overlooked. Acceptance for the size fraction will be done with optical granulometry, so a sample is not required.

## 709.12 Type II Aluminized Corrugated Steel Pipe

### ~~709.11 Type II Aluminized Corrugated Steel Pipe~~ **Reserved**

*Reason: Both the Hydraulic Manual and Road Design Manual refer to T2 aluminized coating as 709.12*

*Final Draft: **No changes to the draft spec; published as shown.***

# Final Revision

## Detailed Drawings

The Department has revised various Detailed Drawings. Complete updates can be found on the Department's [Detailed Drawings](#) webpage or by clicking on the following link:

[Proposed Detailed Drawings – June 2024](#)

*Final Draft: No changes to the draft spec; published as shown.*