

This Document is for informational purposes only.

“Standard and Supplemental Specifications for Road and Bridge Construction 2020 V1.3 Edition” can be found at the following link:

<https://www.mdt.mt.gov/other/webdata/external/const/specifications/2020/SPEC-BOOK/2020-SPEC-BOOK-V1-3.pdf>

Specification Revisions

December 17, 2020

The Department has revisions to 37 Standard Specifications.

1. 102.06 EXAMINATION OF DOCUMENTS AND SITE OF WORK
2. 103.11 PROPOSED AGGREGATE SOURCE(S)
3. 104.09 CONSTRUCTION CHANGE DIRECTIVE
4. 105.08.7 Method of Measurement
5. 106.02.3 Contractor-Furnished Sources
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- 25. 607.03.4 Constructing Barbed and Woven Wire Fence
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- 27. 608.04 METHOD OF MEASUREMENT
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- 30. 617.03.11 Service and Control Assembly
- 31. 618.04 METHOD OF MEASUREMENT
- 32. 620.03.7 Final Pavement Markings
- 33. 703.14 CLASS 4 TREATED TIMBER POLES
- 34. 704.01.4 Aluminum and Steel Posts
- 35. 704.01.6 Treated Wood Posts and Poles
- 36. 704.02.3 Inspection and Acceptance
- 37. 706.04.1 Treating
- 38. 708.06.1 Pressurized Water Pipe

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NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

102.06 EXAMINATION OF DOCUMENTS AND SITE OF WORK

Examine the proposed work site including the existing field staking and documents before submitting a proposal. Submitting a proposal is an affirmative statement by the bidder that the bidder has examined the site and is satisfied with the conditions to be encountered in performing the work and the bid package requirements.

The Department is not bound by any statement or representation concerning conditions or description of the work unless included in the bid package. Do not rely on oral explanations or instructions given by Department employees or agents before award of the contract. Accept these as non-binding oral explanations or instructions and relying on them is solely at the Bidder's risk.

The following are for informational purposes only and are not part of the contract:

1. Mass Diagrams
2. Dirt runs
3. Bridge as-builts

The Department does not guarantee the accuracy of these documents.

The information contained in the mass diagrams and dirt runs are only one example of how the project can be built.

The contractor should not rely solely on the bridge as-built drawings provided for bidding purposes.

~~Mass diagrams and dirt runs are for informational purposes only and are not part of the contract. The Department does not guarantee the accuracy of these documents. The information contained in the mass diagrams and dirt runs are only one example of how the project can be built.~~

REASON: To include Bridge as-builts with advertised bid package when applicable.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT

FINAL ACCEPTANCE

103.11 PROPOSED AGGREGATE SOURCE(S)

No later than 7 calendar days after the date of bid opening (the date of bid opening to count as the first full day), the apparent low bidder must submit via email to ECCB (mdtcps@mt.gov), during its regular work hours, a fully completed Proposed Aggregate Source (Form MDT-CON-106-02-3) for each aggregate source the bidder used to prepare its bid or a subcontractor used to prepare its quote, if used by the bidder for its bid. If the 7th day is a holiday, turn the documentation in earlier.

Form MDT-CON-106-02-3 is available at the following web page:
https://www.mdt.mt.gov/publications/forms/const_forms.shtml

The bid proposal may be considered non-responsive and rejected if the above form(s) are not submitted within the required time frame.

101.02 ACRONYMS AND ABBREVIATIONS

ECCB.....Engineering Construction Contracting Bureau

REASON: Add Special to Standard Specs.

COMMENTS

NO CHANGES TO THE PROPOSED DRAFT

FINAL ACCEPTANCE

104.09 CONSTRUCTION CHANGE DIRECTIVE

If the Department determines that the Contractor is due additional compensation, time, or both, but the Department and the Contractor cannot reach an agreement, the Department may issue a Construction Change Directive. The Contractor reserves the right to pursue a claim for any disputed construction change directive in accordance with Subsection 105.16.

101.03 DEFINITIONS

Construction Change Directive. A written order issued and signed by the Department directing a change in the work by the Contractor with an adjustment for Contract Sum or Contract Time or both. The compensation, is as determined to be fair and equitable by the Department and does not require the consent or signature of the Contractor or Surety.

REASON: To allow work to continue and to be able to pay for the work as it being done.

COMMENTS: MCA: Concerned the spec would not allow them to negotiate as they currently do and have to file a claim.

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

105.08.7 Method of Measurement

A. **Finish Grade Control.** Finish grade control is not measured for payment. ~~measured by the course foot (km) along the roadway centerline. A course foot (CR km) is one foot (1 km) for each two-lane roadway including shoulders and ditches. Each traffic lane is considered as one-half course foot (one-half CR km) including the adjacent shoulder, ditch, parking, turning, median lanes, and chain up areas.~~

~~The subgrade and each surfacing course requiring finish grade control are measured separately by the course foot (CR Km) for each roadway section, ramp, intersecting roadway, PTW connection, temporary detour, and each frontage road. Finished grade control for approaches is not measured for payment.~~

B. **Contractor Survey and Layout.** Contractor survey and layout is measured by the lump sum.

C. **Bridge Survey.** Bridge survey is not measured for payment. ~~measured by the lump sum.~~

105.08.8 Basis of Payment

Payment for the completed and accepted quantities is made as follows:

<u>Pay Item</u>	<u>Pay Unit</u>
Finish Grade Control	Course Foot (km)
Contractor Survey and Layout	Lump Sum
Bridge Survey	Lump Sum

REASON: The items will no longer have their own bid item, and will be incidental to other items.

COMMENTS: To the proposed changes in 105.08.7 & 105.08.8 → Design personnel for both Road Design & Bridge (District & Headquarters) along with the Consultant World will need to be informed of this upcoming change and the effective date for implementation (i.e. - Design Memo) as this will affect the summary frames and bid items used in developing the plans package.

Probably should add a statement to include the costs in the respective items of work.

On the proposed changes for 105.08.7, recommend adding statements for both A. and C to include the cost in other items.

This Supplemental Spec was implemented in V1.3 Spec book to give design personnel time implement into plan packages. It was out for comment during the month of May 2020.

NO CHANGES TO THE PROPOSED DRAFT

FINAL ACCEPTANCE

106.02.3 Contractor-Furnished Sources

The Department's approval of the source does not release the Contractor from the responsibility to produce materials meeting all specified acceptance requirements.

- A. Borrow Source Approval.** ~~The 85th percentile, rounded to the next highest whole number,~~ of the samples taken from the source(s) must meet the R-value and/or the soils classification specified in the contract.

Furnish a minimum of 8 Department-witnessed samples at the locations and depths designated within the limits of the proposed source(s). The minimum number of furnished samples may be adjusted based on the amount of Borrow with the approval of the Materials Bureau.

Samples will be tested for R-value according to AASHTO T 190. The R-value at a 300 psi (2,068 kPa) exudation pressure will be used for evaluation. Samples will be tested for soils classification according to AASHTO M 145. If the source is approved, it may be limited to certain areas, layers, or soil classes within a source, during or after source approval testing. Approval of the source does not preclude the Department from sampling from the roadway.

- B. Aggregate Source Approval.** The Department will process and test samples to determine the suitability of the material in accordance with Subsections 701.01, 701.02.1 and 701.03.1.

Passing wear and sulfate soundness test results are mandatory for Department approval of concrete aggregate sources. Passing wear and Micro-Deval or sulfate soundness~~and equivalent~~ test results are mandatory for Department approval of bituminized material aggregate sources. ~~Passing wear test results are mandatory for Department approval of untreated surfacing and bituminized~~ aggregate sources.

Assume all risk for producing aggregate from sources not meeting the wear test (AASHTO T 96) and sulfate soundness test (AASHTO T 104) or Micro-Deval test (AASHTO T 327) as applicable~~and equivalent test (AASHTO T 176).~~ The Department will ~~randomly~~ test stockpiled aggregate for wear, sulfate soundness, or Micro-Deval~~and sand equivalent~~ from sources that are not approved.

REASON: Spec update

COMMENTS:

THE PROPOSED DRAFT WAS NOT IMPLEMENTED AT THIS TIME. DISCUSS FUTHER AT NEXT MCA-MDT MEETING

108.01.1 Subcontracting

**TABLE 108-1
SUBCONTRACT REQUIREMENTS**

Activity	Subcontract Required	Payroll Required
Physical work within the project limits	Yes	Yes
Material application (dust palliative, water, oil products, etc.)	Yes	Yes
Commercially supplied materials	No	No
Owner/Operator of heavy haul trucks	No	*
Crushing operations at a site dedicated to the project	Yes	*
Concrete pump truck (no labor by operator)	No	No
Equipment rentals (w/operator)	No	Yes
Work performed by a Contractor on the prime's payroll	No	Yes
Survey work	Yes	*
Consultant services within project limits	Yes	*
Consultant services not within project limits	No	No

*Contact the Department's Labor Compliance office for a determination.

REASON: No longer allowed.

COMMENTS: MCA: Several concerns that they would need to get a subcontract for an item that many only take a few hours to complete. MCA was concerned that the extra paperwork would make it extremely difficult to find people willing to do the work.

This spec will not be implemented in V1.3 Spec book and will be revisited at the next MCA-MDT meeting.

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

108.03.1 General

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. For projects with Notice to Proceed dates from March 1 through October 31 hold the pre-construction conference no later than 20 calendar days after the Notice to Proceed date. For projects with Notice to Proceed dates from November 1 through February 28 hold the pre-construction conference no later than March 20. 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.

REASON So pre-construction conferences can be held closer to when a contractor is going to start work.

COMMENTS: MCA: It is beneficial to everyone to have the pre-con closer to when the work will actually be done. It is also beneficial to everyone to get materials as early as possible. Contractors should be able to get paid for materials and storage prior to the pre-con.

If the contractor wants to be paid for material in storage, they need to have a precon first.

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

108.08 FAILURE TO COMPLETE ON TIME

**TABLE 108-4
SCHEDULE OF LIQUIDATED DAMAGES**

ORIGINAL CONTRACT AMOUNT		DAILY CHARGE
From More Than	To and Including	Working Day or Calendar Day
\$ 0	\$ 100,000 50,000	\$ 1,116 1,206
\$ 100,000 50,000	\$ 300,000 100,000	\$ 1,430 1,344
\$ 300,000 100,000	\$ 700,000 300,000	\$ 1,629 1,497
\$ 700,000 300,000	\$ 1,500,000 900,000	\$ 1,898 1,880
\$ 1,500,000 900,000	\$ 3,000,000 1,500,000	\$ 2,066 2,150
\$ 3,000,000 1,500,000	\$ 5,000,000 3,000,000	\$ 2,501 2,528
\$ 5,000,000 3,000,000	\$ 10,000,000 5,000,000	\$ 3,053 2,778
<u>\$5,000,000</u>	<u>\$8,000,000</u>	<u>\$ 3,468</u>
\$ 10,000,000 8,000,000	— \$12,000,000	\$ 3,850 3,587
<u>\$12,000,000</u>	<u>—</u>	<u>\$ 3,858</u>

REASON: The Federal Highway Administration (FHWA) requires MDT to establish specific liquidated damages rates applicable to projects. The rates are subject to FHWA approval and must be reviewed by MDT every two years.

COMMENTS: It seems like we have been changing the LD schedule a lot over the last few years. It has not changed much and seems like it's tough to keep of. Is it worth changing again?

This is a requirement in the CFR and needs to be updated.

NO CHANGES TO THE PROPOSED DRAFT

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

109.07 Stockpiled Material

5. A written request is accompanied with an invoice(s) for all items received at least one week before the end of the monthly estimate cycle. Include the quantity for which payment is requested, the length of time the material is to be stored, the location for material stored off the project site, and sufficient detail to justify the costs. If the material is manufactured by the Contractor, include the manufacturing costs in the request.

Submit a new request and invoice(s) to the Project Manager whenever items are added to the stockpile. Clearly identify the project number, location, designation and the entire inventory on these sheets. Keep each project's stockpiled material separated from stockpiles belonging to other projects. Only use stockpiled material for the designated project.

Steel or iron items meeting Subsection 106.09 may be stored at property owned or leased by the Contractor or approved Subcontractor if approved by the Project Manager. The property must be accessible to Department representatives at all times and must be located in Montana except that completed and tagged beams and diaphragms may be stored outside of Montana.
~~be located in Montana and accessible to Department personnel at all times.~~

REASON: To allow stockpile material payments for certain bridge items that are made and stored out of state.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

109.07 Stockpiled Material

~~—The value of the stockpile material will be recovered in full when 80% of the bid item is paid or the work is complete.~~

REASON: The spec was implemented in V1.2 of the spec book but was immediately withdrawn with a special provision.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

203.03.1 Excavation

G. Digout. In areas of digout, excavate the full road width to a depth as shown in the contract or as directed by the Project Manager. Excavate parallel to the finish grade, daylighting to the left and right slopes. Slope the ends of the digout no steeper than 4H:1V. Dispose of the excavated material to the satisfaction of the Project Manager.

Furnish replacement material for digouts in accordance with Subsection 701.12.

~~Provide special borrow for digout replacement material 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, with 100% passing the 2-inch (50 mm) sieve and a maximum of 8% passing the No. 200 (0.075 mm) sieve. The material may consist of up to 50% millings, uniformly blended. Crusher fines and reject material may be used if the requirements in Table 701-22 are met.~~

REASON: The information is already in the spec book under 701.12 with greater detail.

COMMENTS:

PROPOSED DRAFT

401.03.2 Hamburg Wheel Track (Hamburg) Testing and Acceptance

A. Hamburg Testing. Furnish a sample of plant mix surfacing material for Hamburg acceptance after initial job mix targets have been established for non-commercial mix and as directed for 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.

If plant mix ~~fails~~ exceeds 13.0 mm of rut in 10,000 passes during production Hamburg testing, make adjustments to produce plant mix meeting the requirements specified in the contract. After a failing Hamburg no more than 300 tons (300 MT) of plant mix may be produced until passing Hamburg results are received.

**TABLE 401-3
HAMBURG TESTING PAY FACTORS**

PG 58-XX and 64-XX	
# of wheel passes	Pay factor
$x \geq 10,000$	PF = 1.0
$10,000 > x \geq 8,000$	$PF = 1.00 - \frac{0.50(10000 - x)}{2000}$
$x < 8,000$	PF = 0, Remove and Replace ¹

Note 1: In the areas listed below, material represented by Hamburg tests exceeding 13.0 mm of rut between 6,000 and 8,000 passes, may remain in place at a 0.5 pay factor:

- Bicycle, pedestrian, or shared use (non-vehicular) paths
- Roadway shoulders, only if the entire width of the paver pass occurred within the width of the shoulder.
- Lower layers below 0.25 feet from the finished surface of plant mix.
- Remove and replace plant mix exceeding 13.0 mm of rut in less than 6,000 passes.

~~Remove and replace plant mix exceeding 13.0 mm of rut in less than 6,000 passes.~~

~~The above exclusions Table 401-3 do not~~ does not apply and all mix will be evaluated according to 401.03.2(B)(1) if the entire plan thickness section of plant mix is not completed prior to winter suspension.

REASON: Spec update

COMMENTS:

FINAL ACCEPTANCE

401.03.2 Hamburg Wheel Track (Hamburg) Testing and Acceptance

B. Hamburg Testing. Furnish a sample of plant mix surfacing material for Hamburg acceptance after initial job mix targets have been established for non-commercial mix and as directed for 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.

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If the entire plan thickness section of plant mix is not completed prior to winter suspension Table 401-3 does not apply and all mix will be evaluated in accordance with Subsection 401.03.2(B)1.

PROPOSED DRAFT

401.03.4 Composition of Mixtures

- B. **Sampling.** Furnish samples of plant mix surfacing in accordance with MT 601 as directed by the Project Manager. The Project Manager will randomly select when plant mix samples are taken. Sample in accordance with MT 303. A Department Inspector will witness plant mix sampling. Furnish the sample to the Inspector immediately after it is taken or, upon request, deliver the sample to the Department's designated test location after the Inspector seals the sample in a tamper proof container.

REASON: Clarify the intent

COMMENTS: The wording still leaves ambiguity. Instead of "upon request" can we say ***Upon Project Manager Directive*** ?

FINAL ACCEPTANCE

- B. **Sampling.** Furnish samples of plant mix surfacing in accordance with MT 601 as directed by the Project Manager. The Project Manager will randomly select when plant mix samples are taken. Sample in accordance with MT 303. A Department Inspector will witness plant mix sampling. Furnish the sample to the Inspector immediately after it is taken or upon Project Manager directive deliver the sample to the Department's designated test location after the Inspector seals the sample in a tamper proof container.

PROPOSED DRAFT

401.03.5 Acceptance Commercial Plant Mix Surfacing

A minimum of 1 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). Commercial plant mix will not be tested on temporary crossovers, detours, guardrail widening, patching or where the volume is less than 500 tons (500 MT). Acceptance in these areas will be based on conformance with the established mix design proportions or agreed upon adjustments. Compact these areas to 9793% of ~~a control strip the~~ Rice Gravity. Verification testing will be performed as determined necessary by the Project Manager.

REASON: Spec update

COMMENTS: On hand patch areas is 93% still needed for compaction? Under regular compaction specs there is a lower compaction requirement for the PMS placed on CAC. This should be adjusted to take into account PMS placed on CAC and PMS placed on asphalt.

FINAL ACCEPTANCE

401.03.5 Acceptance Commercial Plant Mix Surfacing

A minimum of 1 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.

Commercial plant mix will not be tested ~~for volumetrics on crossovers, detours, guardrail widening, patching or~~ where the volume is less than 500 tons (500 MT). Acceptance in these areas will be based on conformance with the established mix design proportions or agreed upon adjustments. Compact these areas to at least 9793.0% of ~~a control strip the~~ Rice Gravity with the following exception:

- 92.0% - any mix placed directly on a crushed aggregate surfacing.

Compaction ~~Verification testing will be performed~~ as determined necessary by the Project Manager.

PROPOSED DRAFT

401.03.21 Compaction, Compaction Control Testing, and Density Acceptance Testing

Complete compaction rolling within the temperature range recommended by the asphalt cement manufacturer included in the mix design or before the mat temperature falls below 175°F (80 °C). Compaction rolling after the temperature is below 175 °F (80 °C) is cause to suspend paving operations. Compaction rolling is rolling in the vibratory mode. The Project Manager may adjust the minimum 175 °F (80 °C) temperature if compaction rolling damages the new pavement or has received written approval from the asphalt cement manufacturer. Compact Warm Mixes in accordance with Subsection 401.02.4.

Perform all necessary density testing to control compaction.

Once the plant mix is spread, struck off, and surface irregularities are corrected, compact to the plant mix to at least 93.0% of target maximum specific gravity as determined in accordance with MT 328 with the following exceptions:

- 92.0% - 3/8-inch (9.5 mm) mixes with plan depths of less than 0.12-foot (36 mm).
- 92.0% - any mix placed directly on a crushed aggregate surfacing.

Compact plant mix placed ~~directly on over any typical section containing~~ CTB to 93.0% for the full width of the typical section.

REASON: To clarify the spec for when an inverted pavement design (compacted CAC on top of CTB layer) is used.

COMMENTS: Several comments were received to make it more clear that the PMS needs to be compacted to 93% when placed directly on CTB and adjacent CAC shoulders.

FINAL ACCEPTANCE

401.03.21 Compaction, Compaction Control Testing, and Density Acceptance Testing

Complete compaction rolling within the temperature range recommended by the asphalt cement manufacturer included in the mix design or before the mat temperature falls below 175°F (80 °C). Compaction rolling after the temperature is below 175 °F (80 °C) is cause to suspend paving operations. Compaction rolling is rolling in the vibratory mode. The Project Manager may adjust the minimum 175 °F (80 °C) temperature if compaction rolling damages the new pavement or has received written approval from the asphalt cement manufacturer. Compact Warm Mixes in accordance with Subsection 401.02.4.

Perform all necessary density testing to control compaction.

Once the plant mix is spread, struck off, and surface irregularities are corrected, compact to the plant mix to at least 93.0% of target maximum specific gravity as determined in accordance with MT 328 with the following exceptions:

- 92.0% - 3/8-inch (9.5 mm) mixes with plan depths of less than 0.12-foot (36 mm).
- 92.0% - any mix placed directly on a crushed aggregate surfacing.

Compact plant mix placed directly on ~~over any typical section containing~~ CTB to 93.0% for the full width of the typical section ~~including crushed aggregate shoulders.~~ .

NO CHANGES TO THE PROPOSED DRAFT

FINAL ACCEPTANCE

501.03.5 Placing and Finishing Concrete

- C. **Final Surface Finish.** Hand-float the surface only as needed to produce a uniform surface and sharp corners. ~~Adding finishing water to unfinished concrete is prohibited. Do not add water to the surface of concrete before or during finishing.~~ Do not use excess mortar to build up slab edges or round the slab corners. Before the concrete's initial set, work the pavement edges along each side of transverse isolation joints, transverse construction joints, and fixed forms to produce a ¼-inch (6 mm) continuous radius and a smooth, dense mortar finish. Check the surface of the fresh concrete with a long-handled straightedge that is 10 feet (3 m) or longer. Remove high areas indicated by the straightedge.

REASON: Change the sentence to active voice.

COMMENTS: *(A general comment was received for all proposed specs concerning not adding finishing water to concrete.)* Since MDT requires a 1 year warranty on some concrete items we shouldn't be directing their operations with a spec such as this one. The 1 year warranty should dictate the contractors operations.

I contacted several experts in the concrete field and the consensus was MDT should implement the changes. The main reasons being that adding finishing water is not good for the concrete and the distresses may not show up for several years after the warranty is over. The concrete warranty is for only certain items and is added by special provision. If any changes were to be made because of the 1 year warranty then it should be made by special provision.

Several other subsections reference this requirement by circular reference. The reason for the other concrete spec changes was to make it easier to find in the spec book.

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

501.03.13 Open to Traffic

A. Concrete Test Cylinder Method. Prepare concrete test cylinders according to [MT 101](#) and AASHTO R 60, 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~~-compressive strength. Repair all concrete damaged prior to the final acceptance at Contractor expense.

REASON: MDT does not make flexural beams for acceptance.

COMMENTS:

TABLE 551-2

CONCRETE REQUIREMENTS

Class	Nominal Maximum Aggregate Size inches (mm) ^{6 & 9}	Cementitious Materials Content, lbs./yd ³ (kg/m ³) ¹¹	Indicated Compressive Strength, 7-Day, PSI (MPa)	Minimum Required Compressive Strength, 28-Day, PSI (MPa) ⁵	Water / Cement Ratio (W/C) ⁵	Maximum Target Value for Slump, inches (mm) ²	Slump Tolerance, inches (mm)	Required Air Content, (%) ⁷	
General ⁸	1½ (37.5) - ¾ (19)	658 (390) max	—	4000 (28)	0.45 max	5 (130)	+1½ (37) to -2 (50)	5.0-8.5	
Pave	1½ (37.5) - ¾ (19)		Note 3			3 (75)			
Pre ¹	¾ (19)	—	—	Note 1	0.40 max	—	—	—	
SCC	¾ (19)	—	—	Note 4	0.42 max	See Special Requirements for SCC Concrete		5.0-8.5	
Deck	1½ (37.5) - ¾ (19)	564 (334) max	—	4000 (28)	0.42 – 0.45	5 (130)	+1½ (37) to -2 (50)		
Overlay-SF	½ (12.5)	580 (344) max	Note 10			5 (130)			
Overlay-LM	½ (12.5)	660 (392) min	Note 10		0.30 - 0.40	5 (130)			3.0-6.5
Structure	1½ (37.5) - ¾ (19)	580 (344) max	—		0.42 max	6 (150)			5.0-8.5
Drilled Shaft	¾ (19)	—	—		0.45 max	See Special Requirements for Drilled Shaft Concrete			—
Lean	1½ (37.5) - ¾ (19)	—	—	—	0.53 max	—		Note 12	

Notes:

- The strength for transfer of pre-stress and the 28-day strength requirement vary with beam length and design. Check plans and specifications for each project.
- The designed target value for slump may be changed, within requirements, when necessary to facilitate proper placement.
- For full-depth concrete pavement, the flexural strength requirement to open to traffic is 350 psi (~~3-52.4~~ MPa) minimum determined by AASHTO T 97 or ~~23~~500 psi (~~24-17.2~~MPa) compressive strength.
- For self-consolidating concrete, the 28-day strength may vary with the class of concrete specified. Check plans and specifications for each project.
- Maximum water cement ratios and minimum 28-day design strength requirements do not relieve the contractor of supplying concrete producing adequate freeze-thaw protection.
- Mix designs with other nominal maximum aggregate sizes may be requested based on certain placement and design scenarios.
- If 1½-inch (37.5 mm) nominal maximum aggregate is used in the design, the air content requirement is reduced to 4.0% - 7.5%.
- When class General is specified for seal concrete, air entrainment is not required.
- Nominal Maximum aggregate size is defined as one sieve size larger than the first size to retain more than 10%.
- Compressive strength must reach a minimum of 3,000 psi (21 MPa) before opening to traffic.
- When high-early strength concrete is required by contract, higher cement contents may be submitted with the mix design for approval.
- The minimum required air content is 3%. Tests will be conducted as required by the Project Manager.

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

551.03.5 Placing Concrete

Place concrete in a continuous operation between expansion or construction joints.

Do not add water to the surface of concrete before or during finishing.

Thoroughly clean all chutes, troughs, and pipes after each run.

Discharge any flushing water away from the forms and in place concrete.

Once the concrete has taken initial set, avoid jarring the forms or straining the projecting reinforcement ends.

REASON: Clarify, this is already a requirement by way of circular references.

COMMENTS:

PROPOSED DRAFT

554.03.5 Placing Concrete

Place concrete in accordance with Subsection s 552.03.4 and 551.03.5.

REASON: Clarify, this is already a requirement by way of circular references.

COMMENTS: Place Subsections in order

FINAL ACCEPTANCE

554.03.5 Placing Concrete

Place concrete in accordance with Subsection s 551.03.5 and 552.03.4

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

558.03.7 Permanent Casing

1. Furnish and install permanent casing when specified in the contract. Permanent casing remains in place and is included in the design of the drilled shaft. ~~The permanent casing diameter may be oversized up to 3 inches (75 mm) if necessary, to facilitate temporary casing installation~~ The Contractor may elect to oversize the permanent casing diameter up to 3 inches (75mm).

558.04.4 Drilled Shaft Casing

Permanent drilled shaft casing will be measured by the pound (kg) of permanent casing installed as shown in the contract or as directed by the Project Manager in writing. If the contractor elects to oversize the casing diameter, measurement will be based on the diameter shown in the contract.

REASON: Spec update

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

604.04.5 ~~Slotted Drain Reserved~~

~~Slotted drain, as shown in the Detailed Drawings, is measured by the foot (m) and includes both end cap and inlet elbow connection.~~

604.05 BASIS OF PAYMENT

Payment for the completed and accepted quantities is made under the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Manhole Structure Base	Each
Inlet Structure Base	Each
Additional Barrel	Foot (m)
Concrete Apron	Each
Curb Inlet Frame and Grate	Each
Drop Inlet Frame and Grate	Each
Manhole Frame and Lid	Each
Slotted Drain	Foot (m)
Median Inlet	Each

Payment for all costs associated with excavation and backfill required for above items is included in the contract unit price of each respective drainage item.

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

REASON: Slotted drains are no longer used and no longer in the Detailed Drawings.

COMMENTS

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

604.05 BASIS OF PAYMENT

~~Payment for completed and accepted quantities is made under the following:~~

<u>Pay Item</u>	<u>Pay Unit</u>
Manhole, Manhole and Inlet, and Inlet	Each
Slotted Drain	Foot (m)

~~Payment for all costs associated with excavation and backfill required for manholes, manhole and inlets, inlets, and slotted drains is included in the contract unit price of each respective drainage item.~~

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

REASON: This was supposed to be removed with V1.1 of the spec book and is currently rescinded with a special provision

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

607.03.4 Constructing Barbed and Woven Wire Fence

Construct barbed, smooth and woven wire fences meeting the contract requirements and the following:

- A. Posts and Braces.** Excavate post holes, footing excavations, and anchors as shown in the Detailed Drawings.

Wood posts may be driven. Repair or replace all damaged posts at Contractor expense.

Treat cut or trimmed areas on posts and braces with 3 applications of a copper naphthenate solution containing a minimum of 2% copper metal ~~or with chromated copper arsenate (CCA)~~ in accordance with AWP M4.

REASON: CCA is no longer approved by the American Wood Protection Association (AWPA) as a field treatment pesticide.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

608.03.3 Detectable Warning Devices

- A. **General.** Install DWDs as shown in the Detailed Drawings. ~~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 or modification, locate non-factory edges on the exterior side of DWD installation.
- B. **~~Type 2~~Retro-Fitting.** 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 recommendations.

608.04 METHOD OF MEASUREMENT

Concrete sidewalk is measured by the square yard (m²), including wheelchair ramps and concrete under detectable warning devices.

DWDs are measured by the square yard (m²) installed and accepted. ~~For Type 2 Retro-Fitting~~ DWDs, removal of existing devices, and concrete sawing and removal, ~~and all new concrete~~ is not measured separately for payment.

608.05 BASIS OF PAYMENT

Payment for the completed and accepted quantities is made under the following:

<u>Pay Item</u>	<u>Pay Unit</u>
DWD – Type 1	Square Yard (m ²)
DWD – Type 2	Square Yard (m²)
Sidewalk-Concrete	Square Yard (m ²)

REASON: DWD Type 2 is no longer a bid item. The Detail Drawings show how to install DWD in different types of situations.

COMMENTS

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

609.03.1 General

Construct curbs and integral curb and gutter having uniform surfaces and true lines. Remove and replace curb sections that prevent drainage or proper joining of subsequent work at Contractor expense.

Material may be placed adjacent to curbs and curbs and gutters 24 hours after the curbs or curbs and gutters are placed as long as no damage is caused. Correct all damages at Contractors expense.

Do not add water to the surface of concrete before or during finishing.

REASON: Spec update

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

617.03.11 Service and Control Assembly

Equip and locate service and control assemblies as shown in the contract. Meet all applicable Codes and local utility company requirements.

Furnish lock and 3 keys to the lock.

Service pole locations shown in the contract are approximate. The Contractor, Project Manager and serving utility will jointly determine the exact locations. The utility must specify the riser location when the Contractor is to install the lower section of a riser on a utility pole. Include the cost of the 6 x 6 inch (150 x 150 mm) wood post, if necessary, as part of the service assembly bid item. ~~Full length~~ Pressure-treat all S4S timber posts and poles in accordance with Subsection 706.04.

Seat, backfill, and compact around the poles. Compact backfill in 9-inch (230 mm) lifts. Plumb and rake the pole as directed.

Treat injuries, cuts, and holes in poles after treatment with three applications of copper naphthenate (CuN) solution containing a minimum 2% copper metal ~~or with CCA~~ in accordance with AWPAs M4.

REASON: To be pressure treated the entire post must be in the sealed chamber during treatment. CCA is no longer approved by the American Wood Protection Association (AWPA) as a field treatment pesticide.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

618.04 METHOD OF MEASUREMENT

The contract quantities for traffic control devices, ~~temporary pavement markings, flagging, and pilot car operation~~ are an estimate only and may vary from the actual quantities used or required in the contract. ~~No additional compensation is considered or allowed due to these quantity differences.~~

REASON: To allow contractors to request price adjustment if plan quantities underrun as per spec 104.02

COMMENTS

PROPOSED DRAFT

620.03.7 Final Pavement Markings

Apply final pavement markings a minimum of 30 calendar days, and a maximum of 45 calendar days for the following:

- After concrete is placed, ~~or~~ after seal coat operations
- After microsurfacing operations.
- New asphalt pavement that will not receive a surface treatment.
- After seal coat operations through initial sweeping are completed.

Fog sealed surfaces must be free of excess asphalt emulsions and oils.

When final pavement markings are the only remaining item of work on the project, contract time assessment will be suspended until either, beginning final pavement markings application, or 45 calendar days elapse after seal coat operations are completed or concrete placement is completed. The Project Manager may extend the 45 days due to holidays or inclement weather that prevent the application of final pavement markings.

Use the material specified in the contract.

REASON: Spec update

COMMENTS: On a project with 3/8 mix the epoxy was placed within a couple of days of paving and the epoxy had good long term results. We shouldn't preclude contractors from doing this. It saves us money for interim striping and expedites finishing projects.

The epoxys listed on the QPL have very similar manufacture specifications that require a minimum of 14 days before placing on new asphalt and recommend even longer on asphalts that have a high oil content.

FINAL ACCEPTANCE

620.03.7 Final Pavement Markings

Apply final pavement markings a minimum of 30 calendar days, and a maximum of 45 calendar days for the following:

- ~~After concrete is placed~~ or after seal coat operations
- After microsurfacing operations.
- New asphalt pavement that will not receive a surface treatment.
- After seal coat operations through initial sweeping are completed.

Fog sealed surfaces must be free of excess asphalt emulsions and oils.

When final pavement markings are the only remaining item of work on the project, contract time assessment will be suspended until either:

- ~~beginning~~ Beginning final pavement markings application, or
- 45 calendar days elapse after seal coat operations are completed, or
- Microsurfacing operations completed, or
- New asphalt pavement that will not receive a surface treatment is completed, or
- ~~concrete~~ Concrete placement is completed.

The Project Manager may extend the 45 days due to holidays or inclement weather that prevent the application of final pavement markings.

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

703.14 CLASS 4 TREATED TIMBER POLES

Furnish the pole length and place as specified in the contract.

Furnish ANSI Class 4 poles as specified in the contract. ~~Full length P~~pressure-treat poles with a 5% solution of pentachlorophenol or copper naphthenate (CuN) in accordance with AWPA Standards and Commodity ~~S~~specification D and ~~U~~use ~~C~~category 4A

REASON: : In order to be pressure treated the entire post must be in the sealed chamber during treatment.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

704.01.4 Aluminum and Steel Posts

2. **Steel U Sign Posts.** Furnish steel posts formed into a “flying U” shape ~~having a nominal weight exceeding 3 pounds per foot (4.5 kg/m)~~ meeting AASHTO M 281. Bid these posts as “steel U sign posts”.

REASON: Match the detail drawings.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

704.01.6 Treated Wood Posts and Poles

Furnish posts and poles 10 feet (3 m) in length or less free of crooks and sweeps greater than $\frac{3}{4}$ -inch (19 mm) from the post centerline. The maximum offset from centerline for posts and poles longer than 10 feet (3 m) is $\frac{3}{4}$ -inch (19 mm) plus $\frac{1}{16}$ -inch (2 mm) per additional foot of length. The centerline is defined as a straight line from the center of the tip to the center of the butt. Gain and chamfer posts and poles in accordance with the Detailed Drawings. Perform all machining before treatment. ~~Full length P~~pressure-treat all timber posts and poles in accordance with Subsection 706.04, regardless of length.

REASON: : In order to be pressure treated the entire post must be in the sealed chamber during treatment.

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

704.02.3 Inspection and Acceptance

Completed signs will be inspected ~~where fabricated~~ for acceptance. Signs will be rejected for defects including, but not limited to cracks, tears, splits, crazing, gouges and curled edges of background sheeting or legends.

REASON: Spec update

COMMENTS:

NO CHANGES TO THE PROPOSED DRAFT FINAL ACCEPTANCE

706.04.1 Treating

Treat injuries, cuts, and holes in wood after treatment with three applications of copper naphthenate solution containing a minimum of 2% copper metal ~~or with CCA~~ meeting AWPAs M4 requirements.

REASON: CCA is no longer approved by AWPAs as a field treatment pesticide.

COMMENTS:

PROPOSED DRAFT

708.06.1 Pressurized Water Pipe

Furnish pressure PVC water pipe 4-inch through ~~42~~60-inch (100 mm - ~~300~~1500 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

REASON: American Water Works Association (AWWA) pipe specification for C-905 pipe was merged into C-900 specification.

COMMENTS: Add a requirement that requires all pipe sections be installed with the markings up.



FINAL ACCEPTANCE

708.06.1 Pressurized Water Pipe

Furnish pressure PVC water pipe 4-inch through ~~42~~60-inch (100 mm - ~~300~~1500 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. **Ensure all pipe sections are installed with the markings facing up.**