Final Specification Revisions January 15 2026 Specifications

The Department proposed revisions to 23 Standard Specifications and 23 Detailed Drawings. These proposed revisions were out for comment during the month of October 2025. The following are the final approved changes to the proposed specifications

Red = added text; Green = deleted text; Blue = revised text

Comment period ended October 31st.

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102 DBE and SBE

102.02 Contents of Bid Package

The bid package ordinarily includes the following:

2. DBE and SBE requirements.

102.07 Bidding Requirements

Submit bids only using the Electronic Bid System (EBS) that generates the required Proposal, Schedule of Items, DBE and SBE requirements, and indicates acknowledgement of addenda if applicable.

B. Bidding Requirements. Ensure bids submitted using the EBS format contain a Proposal guarantee, an EBS generated Proposal, Schedule of Items, and DBE, and SBE requirements when applicable.

Written changes to the Schedule of Items, or a bidder's non-submission of every page from the AASHTOWare Project BidsTM EBS file, (including all Schedule of Items pages and all DBE pages), automatically renders the bid non-responsive, and the bid will not be read or considered.

Acknowledge addenda using the amended EBS project file to generate the Proposal, Schedule of Items and DBE and SBE requirements. It is the bidder's responsibility to ensure that they acquire and apply addenda files when applicable.

Reason: Add SBE to our requirements. Current Standard Special

Final Draft: Publish as shown except for:

B. Bidding Requirements. Ensure bids submitted using the EBS format contain a Proposal guarantee, an EBS generated Proposal, Schedule of Items, and DBE and SBE requirements when applicable.

Written changes to the Schedule of Items, or a bidder's non-submission of every page from the AASHTOWare Project BidsTM EBS file, (including all Schedule of Items pages and all DBE and SBE pages), automatically renders the bid non-responsive, and the bid will not be read or considered.

102.08 Rejection Of Bid Proposals

The Commission reserves the right to reject bid Proposals, waive technicalities, or advertise for new Proposals.

- A Proposal is irregular and will be rejected as non-responsive for any of the following:
- **G-7**-Bidder fails to properly complete and sign, by <u>original signatures</u> authorized or <u>electronic signatures</u>, on the most current Department-furnished Proposal and appropriate bid bond forms. <u>Stamped signatures are not authorized</u>.
- H-8. Failure to acknowledge receipt of electronic addenda by using the correct electronic files
- I-9. Failure to provide a complete Schedule of Items, or an unverifiable Schedule of Items. Each sheet of the Schedule of Items must contain the same check number, to ensure that the unit bid prices correspond with the total.
- **J 10**. The bidder does not complete/submit all pages required sections from the AASHTOWare Project Bids[™] EBS file.

A bid Proposal is considered irregular and may be rejected as non-responsive for any of the following:

- A. The Department-furnished Proposal is altered.
- B. Bidder fails to include a name and mailing address.
- C-1-The unit prices contained in the Proposal are mathematically and/or materially unbalanced.
- D. Information entered in the Proposal by the bidder is not legible.
- **E.** There are changes in the Proposal such as erasures, strikeouts, and whiteouts that are not initialed in ink.
- **E-2**-Non-compliance with the DBE and SBE bidding requirements.
 - If Bid Express[™] Software indicates an error, the Department will determine if the Proposal is non-responsive.

Final Draft: Publish as shown except for:

- G-7-Bidder fails to properly complete and sign by electronic signatures on the most current Department-furnished Proposal and appropriate bid bond forms. Stamped signatures are not authorized.
- I-9. Failure to provide submit a complete Schedule of Items, or an unverifiable Schedule of Items. Each sheet of the Schedule of Items must contain the same check number, to ensure that the unit bid prices correspond with the total.
- **E-2**-Non-compliance with the DBE and SBE bidding requirements.

103.09 Bid Documents

103.09.2 Form Submittals for Apparent Low Bidder

A. Bid Documentation Recipients Form. Submit the Bid Documentation Recipients Form (MDT ENG-008) no later than within 5 calendar days after the date of the bid opening (the date of the bid opening to count as the first full day). The Bid Documentation Recipients Form

documents the authorized agent for the Contractor and authorized Escrow Agent to sign the Escrow Agreement.

B. Bid Documentation Inventory and Affirmation Form. Use the current Department form MDT-CON-103-09A Submit the Bid Documentation Inventory and Affirmation (form MDT-CON-103-09A) and submit with the bid documentation submittal files to an approved escrow agent located in the State of Montana within 8 calendar days (the date of the bid opening to count as the first day). Follow all requirements for bid documentation submittal files listed on the Inventory and Affirmation form.

C. Escrow Agreement. The Department will administer distribute the Escrow Agreement (form MDT-CON-103-09B), through DocuSign to the authorized representatives identified on the Bid Documentation Recipients Form. Follow all requirements for the escrow procedure listed on the escrow agreement. The escrow agreement must be fully executed within 8 calendar days (the date of the bid opening to count as the first day).

The forms must be signed by an authorized agent for the bidder. These forms are available at the following web page: https://www.mdt.mt.gov/publications/forms.shtml#hig 103.09.3 Escrow of Bid Documents

Once identified as the apparent low bidder on a contract requiring submission of bid documents, submit the Bid Documentation Recipients form within 5 calendar days (the date of the bid opening to count as the first day).

Submit all bid documentation submittal files and the Bid Documentation Inventory and Affirmation form, to an approved escrow agent located in the State of Montana. Only submit bid documentation as PDF files. When possible, merge the PDF files together.

Use DocuSign to sign the escrow agreement within 7 business 8 calendar days, (the date of the bid opening to count as the first full day). The escrow agreement administered by the Department through DocuSign, will capture the signatures of the bidder's representative, requires signatures from the authorized agent for the Contractor, the authorized escrow agent, and MDT CES representative. The escrow agreement is not to be signed until bid documentation submittal files and the Bid Documentation Inventory and Affirmation form is complete and submitted to the escrow agent. The Escrow Agreement must be fully executed within 8 calendar days.

An approved escrow agent includes any business located in the State of Montana such as a banking institution, title company, or other bonded business which provides secure accommodation for the bid documentation files. The escrow agent must hold the bid documents in trust, fulfilling fiduciary obligations to MDT the Department and all contractors and suppliers of the project. The escrow agent is responsible for holding the bid documents as electronic submittal files.

If the apparent low bid is deemed non-responsive, the second low bid will be reviewed, and the bidder will be notified in writing and will have 7 business 8 calendar days to comply with the above requirements.

103.09.4 Bid Responsiveness

The bid documentation submittal files and Bid Documentation Inventory and Affirmation must be submitted to an escrow agent and the escrow agreement must be fully executed using DocuSign within 8 calendar days; if incomplete or not submitted, the bid will be deemed non-responsive. If the apparent low bid is deemed non-responsive, the second low bid will be reviewed, and the bidder will be notified in writing and will have 7 business 8 calendar days to comply with the above requirements.

Reason: With the current spec, the submittals are due the Friday before the Commission Award meeting. The Department had a recent issue getting everything turned around to the Commission Secretary on time, when the signatures came in late in the day Friday. Now that

this is an electronic process and Contractors do not have to physically drive the documents to a title company in Helena, that one less day will still be feasible/ appropriate.

Final Draft: No changes to the proposed revision, published as shown. If a Holiday lands within the 8 days, a notice will be posted with that Letting allowing an additional day.

106.02.3 Contractor-Furnished Sources

A. Borrow Source Approval. 85%, 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 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.

C. Riprap Source Approval. The Department will approve proposed sources of riprap. Furnish riprap from sources that meet the material requirements of Subsection 701.06. Passing wear (ASTM C535), soundness (AASHTO T 104), absorption (AASHTO T 85), and specific gravity (AASHTO T 85) results are mandatory for Department approval of riprap sources. Do not place riprap without approval. Submit a 100-pound 200-pound sample of plus No.4 material representative of the riprap source. Crush the sample so that the entire sample passes a 2" sieve. Alternatively, 2" core samples may be submitted. Assume all risk for producing riprap from sources not meeting Subsection 701.06.

106.10 MIX DESIGNS AND TESTING OF MATERIAL SOURCES
TABLE 106-2 NUMBER OF MIX DESIGNS VERIFICATIONS OR TESTS FURNISHED AT NO COST

Portland Cement Concrete Mix Design Verification	1 per class
Cement Treated Base Mix Design Verification	2 per grade

Reason: Clarifies the quantity of the sieve sizes needed for adequate testing.

Final Draft: No changes to the proposed revision, published as shown except for the following clarification:

C. Riprap Source Approval. The Department will approve proposed sources of riprap. Furnish riprap from sources that meet the material requirements of Subsection 701.06. Passing wear (ASTM C535), soundness (AASHTO T 104), absorption (AASHTO T 85), and specific gravity (AASHTO T 85) results are mandatory for Department approval of riprap sources. Do not place riprap without approval. Submit a 100-pound 200-pound sample of plus No.4 material representative of the riprap source. Crush the sample so that the entire sample passes a 2" sieve-2 ½" sieve. Alternatively, 2" core samples may be submitted. Assume all risk for producing riprap from sources not meeting Subsection 701.06 unapproved sources.

108.01.4 Certified Payroll Compliance

The Contractor and all subcontractors must use AASHTOWare Project Civil Rights & Labor™ (CRL) to submit Certified Payrolls (CPRs). Assist and ensure that all subcontractors submit CPRs electronically into CRL within 7 calendar days following the Contractor's scheduled payment date. Employees must be paid, and payrolls submitted weekly.

Ensure that all subcontractors have submitted their Vendor Access Form which can be found on the following page: https://www.mdt.mt.gov/business/contracting/prevailing-wage.aspx to the Department and have received their login IDs prior to work.

Provide the information to all subcontractors subject to the FHWA 1273 requirements. This information is also available using the Search Awarded Contracts located at: https://app.mdt.mt.gov/ess-awardedproj/

- A. Electronic Certified Payrolls. The Prime Contractor and all subcontractors regardless of tier must use AASHTOWare Project Civil Rights & Labor™ (CRL) to submit Certified Payrolls (CPRs). Assist and ensure that all subcontractors submit CPRs electronically into CRL within 7 calendar days following the Contractor's scheduled payment date.. Pay and submit employee payrolls weekly.
 - The Prime Contractor and all subcontractors must have access to use AASHTOWare Project Civil Rights & Labor™ (CRL) and have received their login IDs prior to work.
 - **2.** The Vendor Access Request Form can be found on the following page: https://www.mdt.mt.gov/business/contracting/prevailing-wage.aspx.
- **B. FHWA 1273 Requirements.** Provide the information to all subcontractors subject to the FHWA 1273 requirements. This information is also available using the *Search Awarded Contracts* function located at: https://app.mdt.mt.gov/ess-awardedproj/
- **C. Non-compliance with electronic Certified Payrolls.** The Prime Contractor and all subcontractors regardless of tier must comply with certified payroll requirements. If the contract is in non-compliance status, a withholding will be applied to the monthly progress estimate in accordance with Table 108-2. Continued non-compliance status will result in additional monthly withholdings.

If the withholding amount is greater than the monthly progress estimate amount, the entire estimate will be withheld.

When conditional final acceptance is granted, any outstanding payroll withholdings will become a permanent deduction if the "Final Labor Certificate" is issued with a non-compliant finding.

TABLE 108-2 SCHEDULE OF PAYROLL WITHHOLDING

ORIGINAL CONTRACT AMOUNT		MONTHLY WITHHOLDING
From More Than	To and Including	
\$0	\$250,000	\$7,500
\$250,000	\$1,000,000	\$10,000
\$1,000,000	\$3,000,000	\$15,000
\$3,000,000	\$10,000,000	\$20,000
\$10,000,000	\$20,000,000	\$32,500
\$20,000,000	\$40,000,000	\$45,000
\$40,000,000		\$60,000

Reason: Define the requirements and make the withholding uniform across the State.

Final Draft: No changes to the proposed revision, published as shown except for the following:

- D. Electronic Certified Payrolls. The Prime Contractor and all subcontractors regardless of tier must use AASHTOWare Project Civil Rights & Labor™ (CRL) to submit Certified Payrolls (CPRs). Assist and ensure that all subcontractors submit CPRs electronically into CRL within 7 calendar days following the Contractor's scheduled payment date.. Pay and submit employee payrolls weekly.
 - 3. The Prime Contractor and all subcontractors must have access to use AASHTOWare Project Civil Rights & Labor™ (CRL) and have received their login IDs prior to work.
 - **4.** The Vendor Access Request CRL Access Form can be found on the following page: https://www.mdt.mt.gov/business/contracting/prevailing-wage.aspx.
- E. FHWA 1273 Requirements. Provide the information to all subcontractors subject to the FHWA 1273 requirements Provide the certified payroll information to all subcontractors. This information is also available using the Search Awarded Contracts function located at: https://app.mdt.mt.gov/ess-awardedproj/
- **F. Non-compliance with electronic Certified Payrolls.** The Prime Contractor and all subcontractors regardless of tier must comply with certified payroll requirements. If the contract is in non-compliance status, a withholding will be applied to the monthly progress estimate in accordance with Table 108-2. Continued non-compliance status will result in additional monthly withholdings.

If the withholding amount is greater than the monthly progress estimate amount, the entire estimate will be withheld.

If the Contractor fails to submit outstanding payrolls prior to submitting the Final Acceptance, any withholdings will become a permanent deduction if the "Final Labor Certificate" is issued with a non-compliant finding.

TABLE 108-2 SCHEDULE OF PAYROLL WITHHOLDING

ORIGINAL CO	MONTHLY WITHHOLDING	
From More Than	To and Including	
\$0	\$250,000	\$7,500
\$250,000	\$1,000,000	\$10,000
\$1,000,000	\$3,000,000	\$15,000
\$3,000,000	\$10,000,000	\$20,000
\$10,000,000	\$20,000,000	\$32,500
\$20,000,000	\$40,000,000	\$45,000
\$40,000,000		\$60,000

203.03.3 Moisture and Density Requirements

Compact each layer of material to the in-place density requirements of Table 203-1 for the method of moisture and density control used. The moisture and density control used is either by the Proctor method or the Zero Air Voids method, determined by the Project Manager.

If proctors are used for density control, the Contractor may make a written request to compact the soils at lower moisture content. Identify the soil class in the request. The Project Manager may approve the request provided a Department investigation determines the lower moisture content is not detrimental to the soil for the given application. For A-1 material in embankments, MT 218 and MT 230 tests will be used. For all other soil classes, MT 218 and MT 210 will be used.

<u>Reason:</u> <u>Specification is not clear when to use an MT-210 proctor. It's only clear for A-1's and must be by a MT-230. This additional language clarifies what test method to perform for non A-1 soil types for embankment construction.</u>

208.03.5(B) Noxious Weed Control

B. Noxious Weed Control. When Noxious Weed Control is included as a bid item, provide noxious weed control to all lands within the R/W within the project limits.

Monitor the construction, borrow and ,staging areas, and stockpiles during the growing season and treat noxious weeds before plants develop viable seed. Noxious Weeds may be controlled through hand-pulling, mowing, tillage, or herbicide application. Select the most effective and appropriate means of control based upon the species and , size of infestation, and environmental conditions.

If the control is accomplished with the application of herbicides, use only a licensed commercial pesticide applicator certified to apply general and restricted-use herbicides. Use herbicides that meet all applicable state and federal pesticide laws and that are registered with the Montana Department of Agriculture as required by the Montana Pesticide Act. Apply herbicides in a manner that provides immediate control but does not jeopardize or cause potential harm to final reclamation objectives. Follow all applicable state and federal pesticide laws. If it is determined that herbicide application caused or contributed to the failure of reclamation, take corrective action at no additional cost to the Department.

Do not perform noxious Weed control on areas that have received final seeding will be required by the Project Manager when the infestation is preventing the establishment of desired species.

Reason: Cleanup

Final Draft: Publish as shown except for:

Do not perform noxious Weed control on areas that have received final seeding will be required by the Project Manager when the infestation is preventing the establishment of desired species.

The Project Manager will require weed control within areas that have received final seeding when infestation is preventing establishment of desired species.

304 Cement Treated Base

304.02.1 Cement

Furnish Type I or II Portland cement listed on the QPL, in accordance with Subsection 551.02.1. Blended hydraulic cement that conforms to one of the following may be substituted:

AASHTO M 240 Type IL, Type IP, or Type IP (MS) Type IS, or Type IT ASTM C1157 Type GU or Type MS

Fly ash may be used to replace a maximum of 25% of the cement by weight. Furnish fly ash in accordance with AASHTO M 295, Class C requirements. Mixtures with fly ash must meet all of the requirements of cement treated base (CTB).

Supplementary cementitious materials meeting the requirements of Subsection 551.02 may be used to replace a maximum of 25% of the cement by weight.

Reason: cleanup, align with types of blended cement allowed within our specs.

402.05 Basis of Payment

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

Pay Item Pay Unit

Bituminous Material Gallon or Ton

Payment includes all costs to furnish, deliver, heat, haul, and apply the bituminous material.

For plant mix operations, the maximum volume of bituminous material eligible for payment on a shift basis is the target bituminous content plus 0.3%.

Reason: carryover language from when the Department controlled the AC content.

551 Hydraulic Cement Concrete

551.02.2 Fly Ash

When included in the mix design, furnish fly ash in accordance AASHTO M 295, Class C or F, including optional chemical requirements as set forth in Table 2.

551.02.5 Blended Supplementary Cementitious Materials When included in the mix design, furnish terminally blended supplementary cementitious materials in accordance with ASTM C1697.

Note: the remainder of 551.02 will be renumbered accordingly without affecting circular references.

551.03.1 Classification

Table 551-1 Concrete Classification

SCC (Self-consolidating concrete) Use aesthetic structural components.	· · · · · · · · · · · · · · · · · · ·
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Reason: SCC is not a class of concrete. Will be moved under design of concrete

551.03.2 Composition of Concrete

Table 551-2 Concrete Requirements Changes to Class Pre Concrete:

Cementitious Materials Content: 800 max

Maximum Target Value for Slump: 6

Slump Tolerance: +1½ to -2
Required Air Content: Note 4

Notes 4. For self-consolidating concrete, the 28-day strength may vary with the class of concrete specified. Check plans and specifications for each project. Class Pre concrete used in Precast Prestressed Deck Sections must be air entrained 5.0% to 8.5%, except air entraining is not required when overlayed with concrete that is greater than or equal to $2\frac{1}{2}$ " thick or with impermeable overlays that are greater than or equal to $\frac{3}{4}$ " thick. Class Pre concrete used in Precast Prestressed Deck sections having overlays consisting of plant mix surfacing or thin polymers (less than $\frac{3}{4}$ ") requires 5.0% to 8.5% air content.

A. Design

- 7. When Type V cement is specified for sulfate resistance, other cementitious material mixtures tested in accordance with ASTM C1012 may be submitted for approval. Acceptance will be based on expansion less than 0.10% at 18 months. maximum length of change of 0.05% at 6 months or 0.10% at 12 months if the expansion exceeds the 6-month maximum expansion limit.
- 8. The mix design may include provisions that address special conditions of the project that would otherwise not be allowed. The following provisions may be included in the mix design:
 - a. Delayed Initial Set. The mix may be designed for delayed set time to allow for long haul or other project conditions. When delayed set is included in the mix design, the time requirements for placing the concrete in final position in accordance with

- Subsection 551.03.4 may be replaced by time to final placement requirements included in the mix design. Include in the mix design information on the delayed set provisions of the design and specific time to final placement requirements. Support the time to final placement with test results from trial batches.
- b. Delayed Strength and Permeability Testing. The mix design may include cementitious materials or other admixtures that result in slow strength gain or permeability reduction. When included in the mix design, testing at 56 days may be requested. Support this request with test results from trial batches. Upon acceptance, 56-day results will be used in all provisions that refer to 28-day strength, and permeability will be accepted in accordance with Table 551-8.
- c. Self-Consolidating Concrete (SCC). SCC is a highly workable concrete that can flow through densely reinforced or complex structural elements under its own weight and adequately fill voids without segregation or excessive bleeding without the need for vibration.

SCC may be used for Classes General (in precast or aesthetic placements only), Structure, and Drilled Shaft Concrete. Design and produce SCC in accordance with Table 551-2 for the class of concrete selected and the following:

- 1. Design and produce SCC with a nominal aggregate size of 3/4".
- 2. Design and produce SCC with a maximum w/c ratio of 0.42.
- 3. 28-day compressive strength meeting the requirements of the class of concrete specified or established in the contract (e.g., Class Drilled Shaft = 4000 psi). Many precast designs requiring Class General concrete have varying design strengths.
- 4. Provide a slump-flow within ± 2 inches of the target value. Set target within the range of 20 to 26 inches. Test in accordance with AASHTO T 347. When used for a drilled shaft design, include in the design, hourly slump-flow retention testing up to the desired placement time of the shaft.
- 5. Provide a maximum visual stability index (VSI) of 1 in accordance with AASHTO T 351.
- 6. Provide a maximum J-ring value of 2 inches in accordance with AASHTO T 345. When used for drilled shaft, include in the design, hourly J-ring testing up to the desired placement time of the shaft.

The 28-day strength may vary with the class of concrete specified. Check plans and specifications for each project.

Include the above test results in the mix design submittal. If SCC is used in the production of precast items, meet the testing requirements in Subsection 554.03.6.

- 9. The Project Manager may allow "cast in place" placement of Class General Concrete without a formal mix design for items not related to sidewalks, curbs, or gutters. Submit a batch proportioning sheet meeting the requirements for Class General Concrete in accordance with Table 551-2 three calendar days prior to placement. Include all material in the mixture on a cubic yard basis. Class General Concrete will be tested and accepted in accordance with MT 601.
 - a. Delayed Strength and Permeability Testing. The mix design may include cementitious materials or other admixtures that result in slow strength gain or permeability reduction. When included in the mix design, testing at 56 days may be requested. Support this request with test results from trial batches. Upon

acceptance, 56-day results will be used in all provisions that refer to 28-day strength, and permeability will be accepted in accordance with Table 551-8.

- G. Self-Consolidating Concrete (SCC). SCC is a highly workable concrete that can flow through densely reinforced or complex structural elements under its own weight and adequately fill voids without segregation or excessive bleeding without the need for vibration.

 SCC may be used for Classes General (in precast or aesthetic placements only), Structure, and Drilled Shaft concrete. Design and produce SCC in accordance with Table 551-2 and the following:
 - 1. 28 day compressive strength meeting the requirements of the class of concrete specified or established in the contract (e.g., Class Drilled Shaft = 4000 psi). Many precast designs requiring Class General concrete have varying design strengths.
 - 2. Provide a slump flow within ± 2 inches of the target value. Set target within the range of 20 to 26 inches. Test in accordance with AASHTO T 347. When used for a drilled shaft design, include in the design, hourly slump flow retention testing up to the desired placement time of the shaft.
 - 3. Provide a maximum visual stability index (VSI) of 1 in accordance with AASHTO T 351.
 - 4. Provide a maximum J-ring value of 2 inches in accordance with AASHTO T 345. When used for a drilled shaft, include in the design, hourly J-ring testing up to the desired placement time of the shaft.

Include the above test results in the mix design submittal. If SCC is used in the production of precast items, meet the testing requirements in Subsection 554.03.6.

551.03.6 Weather and Temperature Limitations

Concreting during hot or cold weather requires an approved written plan to be implemented upon abrupt changes in weather conditions or equipment failures. When required, use Omega HH309A four channel data logging thermometers.

551.03.8 Testing and Acceptance of Concrete

C. Acceptance of Concrete

1.c. Permeability

TABLE 551-7

28-DAY CONCRETE PERMEABILITY PAY FACTORS

Lot Acceptance, Permeability, x

Classes Deck and Overlay⁴

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

Reason: Class structure low slump was added after this note was added.

553.03.3 Design of Concrete Mixtures

The prestressed girder concrete must have a minimum ultimate compressive strength of 4,000 psi at transfer of prestress and 5,000 psi at 28 days. The actual required strengths are specified in the contract.

Furnish a concrete mix design that produces concrete meeting the specified compressive strengths before use. Approved changes to the mix design may be permitted during fabrication.

Use a concrete design of between 6.5 to 8.0 sacks of cement per cubic yard of concrete. Establish the Class Pre concrete slump range between 1 and 4½ inches. The high and low limits of the range may not exceed 1½ inches. The range may be changed with the Engineer's approval.

Furnish concrete in accordance with Section 551 for Class Pre concrete.

554.02.1 Concrete

Furnish hydraulic cement concrete in accordance with Section 551. Furnish Class General concrete unless otherwise specified. SCC meeting the class general requirements may be used for Precast products provided they meet the additional requirements of Subsection 551.03.2(G).551.03.2(A)(8)(c)

A.Cement. For precast items installed below grade, furnish low alkali hydraulic cements meeting M85/C150 Type V Portland Cement or M240/C595 Blended Cement with the (HS) designation for sulfate resistance meeting the requirements of Section 551.03.2(A)(7) from sources listed on the QPL.

605.02.1 Concrete

Furnish Class Deck concrete in accordance with Section 551. SCC Mixtures may be considered provided they meet the requirements of 551.03.2(A)(8)(c).

Reason. Mostly cleanup. Aligning MDT specs with current practices and ACI recommendations.

552.03.19 Bridge Deck Crack Sealing

D. Application.

Apply the resin epoxy to the deck within 5 minutes of complete mixing. Redistribute excess material continuously, using squeegees or brooms, and stop before resin epoxy gels.

Reason: clarification.

Final Draft: Publish as shown:

Apply the epoxy/resin to the deck within 5 minutes of complete mixing. Redistribute excess material continuously, using squeegees or brooms, and stop before epoxy/resin gels.

559.03.8 Painting Steel Pile or Steel Pipe Pile

B. Surface Preparation. Prepare the pile surface to the paint manufacturer's recommendations.

Prepare the pile surface in accordance with Subsection 612.03.3(B).

C. Painting.

Add the following as the last paragraph:

Refer to Subsection 612.03.4 for additional painting requirements.

Reason: cleanup.

603 Culverts, Storm Drains

603.03.3 Installation

- E. Storm Drain Manhole and Trunkline Connections.
 - Concrete Pipe to Manhole and Trunkline Connections. Install the pipe entering
 the manhole wall so the pipe end is flush with the inside wall of the manhole as
 shown in the <u>Detailed Drawings</u>. Grout the connection using a commercial nonshrink grout.
 - 2. Plastic or Metal Pipe to Manhole Connections. Install the pipe entering the manhole wall so the pipe end is flush with the inside wall of the manhole as shown in the Detailed Drawings. Design joints and furnish gasket and sealant materials in accordance with ASTM C443.
 - 3. Stub Connections to Trunklines. Place the stub pipe with the pipe end projecting a maximum of 2 inches into the trunkline. Contour the projecting end to match the trunklines inside wall. Grout the connection using a commercial non-shrink grout.

Reason: a numbered item has been added to address flexible pipe joint connections to manholes

Final Draft:

- E. Storm Drain Manhole and Trunkline Connections.
 - 1. Pipe to Manhole Connections. Install the pipe entering the manhole wall so the pipe end is flush with the inside wall of the manhole as shown in the Detailed Drawings. Design joints and furnish gasket and sealant materials in accordance with ASTM C923. Use a manhole sleeve at joint connections for corrugated pipes.
 - Alternatively, with the approval of the Project Manager, grout the connection with a non-shrink grout if ASTM C923 cannot be met.
 - 2. Stub Connections to Trunklines. Place the stub pipe with the pipe end projecting a maximum of 2 inches into the trunkline. Contour the projecting end to match the trunklines inside wall. Grout the connection using a commercial non-shrink grout.

604. Manholes

604.02.1 General

Furnish materials and precast structures in accordance with the contract requirements.

Furnish manholes, inlets, combination manholes and inlets in accordance with AASHTO M 199 Precast Reinforced Concrete Manhole Sections (equivalent to ASTM C478 Specification for Circular Precast Reinforced Concrete Manhole Sections) and the contract documents. Use only precast manufacturers listed on the Department's QPL.

604.04.1 Manhole and Inlet Structure Bases

Manhole and Inlet Structure bases are measured by the each for the first 5 vertical feet of the structure. Manhole and Inlet Structures less than 5 feet from the top of the floor slab structure invert to the top of the roof slab or additional barrel manhole lid or inlet grate is one manhole or inlet base.

Structures exceeding 5 feet will include an additional barrel.

604.04.2 Additional Barrel

Additional Barrels are measured by the foot as the vertical distance from the top of floor slab structure invert to the top of the roof slab manhole lid or inlet grate or additional barrel minus the 5-foot base.

<u>Reason:</u> Clarifies that AASHTO M 199 should be used for all inlets, manholes, etc. Also includes the revised measurement of manholes to match the most current design memo.

Final Draft: Publish as shown

609 Curb and Gutter

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 if no damage is caused. Correct all any damage at Contractor expense.

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

Construct curb and gutter prior to any adjacent road construction or surfacing work.

Reason: sequence work to install curb and gutter prior to any road work.

Final Draft: No changes to the proposed revision, published as shown.

Construct curb and gutter prior to any adjacent road construction or surfacing work.

610 Re-Vegetation

SECTION 610 ROADSIDE RE-VEGETATION

610.03.2 Seeding, Fertilizing, and Mulching

- D. Seed Distribution.
 - 4. Hydraulic Seeding. Hydraulic seeding is permissible for Area 2 only when specified, or if broadcast seeding is not possible due to steep slopes or unstable footing. Do not use hydraulic seeding without the Project Manager's prior approval.

Perform hydraulic seeding in two operations:

- **a.** Apply the seed with 1 pound a small amount of wood or recycled paper specified mulch per 3 gallons of water; and for visual metering (500 lbs. per acre).
- **b.** Apply the remaining mulch, and/or compost, along with fertilizer, if specified. See Subsection 610.03.2(F)(5).
- **c.** Start application within 60 minutes after adding seed to the tank.

F. Mulching.

- 3. Applying Fabricated Mulch or Netting. Place fabricated mulch or netting on the specified or directed areas, securing it to the ground using wire staples, wood pegs, or other approved devices. Apply the mulch or netting over the seeded areas.
- 4. Applying Wood Cellulose Fiber or Recycled Paper Mulch. Apply wood cellulose fiber or recycled paper mulch and fertilizer in one operation with a hydraulic distributor using water as the vehicle. Equip the distributor with a continuous agitator keeping the fertilizer and mulch uniformly suspended throughout the distribution cycle. Adjust the pump pressure to maintain a continuous slurry stream. Size the slurry distribution lines to prevent plugging. Equip the discharge line with hydraulic spray nozzles to uniformly distribute the slurry to the seedbed.

Start mulching at the top of the slope and work downward. Use extension hoses to reach the slope extremities.

3. Applying Hydraulic Mulch and Hydraulic Soil Amendments. Mix and apply hydraulically applied products in accordance with the manufacturer's written instructions and at a rate for the soil type, surface conditions, and slope steepness. Apply in successive passes as necessary to achieve the specified application rate. Equip the distributor with a continuous agitator keeping mulch uniformly suspended throughout the distribution cycle. Adjust the pump pressure to maintain a continuous slurry stream. Size the slurry distribution lines to prevent plugging. Equip the discharge line with hydraulic spray nozzles to uniformly distribute the slurry to the seedbed.

Start mulching at the top of the slope and work downward. Use extension hoses to reach the slope extremities.

610.03.4 Rolled Erosion Control Products

Prepare, fertilize, and seed the rolled erosion control products areas before placement. Handle and place it following the manufacturer's recommendations. If recommendations are not provided, install as follows:

1. In ditches, unroll the blanket downstream and lap 4 inches over the adjoining blanket.

Bury the ends and edges to prevent water and wind undercutting.

2. On slopes, the blanket may be unrolled horizontally or vertically to the slope, then lapped 4 inches over the adjoining blanket and stapled as above. Lap the blanket in the direction of flow-

Prepare, fertilize, and seed the soil before placement.

Handle and place rolled erosion control in accordance with the Department's BMP manual. Install in accordance with the requirements shown on drawing SS-6 unless the Contractor submits alternative manufacturer specifications. Use wooden stakes in ephemeral stream channels, streambed and banks, jurisdictional waters and when specified. All fasteners or stakes used must be in accordance with manufacturer's recommendations.

610.04.5 Mulch

- A. Vegetative Mulch and Wood Cellulose Fiber Mulch. Vegetative mulch and wood cellulose fiber mulch is measured by the acre, parallel to the ground surface.
- B. Fabricated Mulch and Netting. Fabricated mulch and netting is measured by the square vard in place.
- C. Bituminous Mulch. Bituminous mulch is measured by the gallon for the gallons applied at the specified rate.

Vegetative mulch, hydraulic mulch and hydraulic soil amendments are measured by the acre, parallel to the ground surface.

610.05 BASIS OF PAYMENT

Pay Item Pay Unit Fabricated Mulch and Netting Acre

Reason: cleanup.

612 Structure Finish

612.03.1B Environmental Pollution Controls

- 2. Removal Procedures. Describe the procedures utilized to remove lead-based paint in locations indicated elsewhere in the contract or as directed. Describe method of ensuring containment integrity prior to lead-based paint removal including description of work to verify that no material (chips, debris, wastewater, etc.) has escaped the containment following removal work.
- 4. Storage and Testing. Store all generated waste which includes but is not limited to spent abrasives, paint scraps, and wastewater material in properly labeled metal containers approved for hazardous waste transport while waiting test results. Generated waste material The waste material generated must be stored on the project limits. Test waste material for proper waste classification. Verify testing detection limits are lower than applicable screening levels. If tests indicate material is hazardous waste, coordinate with the Department to obtain an EPA Hazardous Waste Generator ID Number for MDT. An EPA Hazardous Waste Generator ID Number will be needed for each bridge location.

612.03.2 Containment System Requirements by Method of Preparation.

A. Washing.

1. When pressure washing paint containing toxic metals or inorganic zinc/vinyl systems, the containment must meet SSPC Class 2W. All wash water and debris must be collected and disposed of in accordance with the applicable regulations. Prevent paint chips from falling onto the ground and other waste streams including wastewater from entering the environment.

Reason:.cleanup

624.03.1 Welding - General

Add as last paragraph:

Gas Metal Arc Welding (GMAW) process is only acceptable in spray transfer mode. Welding procedure specifications having parameters that are not within spray transfer are unacceptable. <u>Reason:</u> requirement.

708.01 Reinforced Concrete Pipe

708.01.1 General

Use cement in reinforced concrete pipe in accordance with AASHTO M 85 for Portland cement.

Furnish reinforced concrete pipe and reinforced concrete boxes, inlets, and manholes produced by a manufacturing plant listed on the Department's QPL.

<u>Reason: Removes inlets and manholes from this section since they are now fully covered by Section 604.</u>

709 Metal Pipe

709.02 CORRUGATED STEEL PIPE AND PIPE ARCHES

Furnish corrugated steel pipe formed from zinc-coated steel sheets in accordance with AASHTO M 218 that is lock seam helically corrugated pipe or continuously welded seam corrugated pipe.

A. Corrugated Steel Pipe and Pipe Arches. Furnish corrugated steel pipe and pipe arches and coupling bands in accordance with AASHTO M 36 (excluding projection bands under 9.1.3) and the following:

- 1. When pipe is cut and to be rejoined, matchmark cut pipe ends and rejoin the matching ends during installation.
- 2. When using corrugated locking bands, re-roll the pipe ends forming at least two annular corrugations to facilitate field jointing, and repair any coating damage caused by re-rolling. Unraveling of lock seams due to re-rolling pipe ends is a defect and the pipe will be rejected. Complete the work and repairs in accordance with AASHTO M 36.

Repair zinc or aluminized pipe coating damaged by re-rolling using a zinc rich paint. Apply the paint to provide a minimum 0.005 inch thickness.

If flanges are provided on the pipe ends, the coupling may be made by interlocking the flanges with a preformed channel band or other band incorporating a locking channel in accordance with AASHTO M 36. These bands may be used only on pipes with diameters up to and including 36 inches.

The coupling bands or devices other than those specified in AASHTO M 36 require the Project Manager's approval before use.

B. Syphon and Irrigation Pipe. Meet the following additional requirements for syphon and irrigation pipe installations:

709.05 PRE-COATED, GALVANIZED STEEL CULVERTS AND UNDERDRAINS

Meet AASHTO M 245, M 246, and Subsection 709.02 for irrigation and syphon pipe installations.

Provide a minimum 0.010-inch coating for both inside and outside surfaces in accordance with AASHTO M 246. Section 7.

Furnish steel pipe formed from polymer-precoated steel sheet after zinc-coating in accordance with AASHTO M 246 that is lock seam helically corrugated pipe or continuously welded seam corrugated pipe.

Provide a minimum 0.010-inch polymer coating for both inside and outside surfaces in accordance with AASHTO M 246, Subsection 7.

Furnish polymer-precoated, corrugated steel pipe and steel arches and coupling bands in accordance with AASHTO M 245 (excluding polymer repair under Subsection 11.5). Repair damaged polymer coating in accordance with ASTM 762 Subsection 11. Meet the modifications to AASHTO M 36 specified in Subsection 709.02.

709.12 TYPE II ALUMINIZED CORRUGATED STEEL PIPE

Furnish pipe and coupling bands fabricated from material in accordance with AASHTO M 274. Ensure the prefabricated pipe and coupling bands are in accordance with Subsection 709.02.

Furnish steel pipe formed from aluminum-coated (type II) steel sheet in accordance with AASHTO M 274 that is lock seam helically corrugated pipe or continuously welded seam corrugated pipe.

Furnish corrugated steel pipe and coupling bands in accordance with AASHTO M 36 (excluding projection bands under 9.1.3) and the modifications to AASHTO M 36 in Subsection 709.02.

Reason: cleanup. Clarify repair work.

713.06 Weed Control Mat

Table 713-5 Weed Control Mat

Property	Value
Grab tensile strength	Warp-Machine Direction: 80 lbs minimum Fill-Cross Machine Direction: 50 lbs minimum

713.10 Mulch

713.10.2 Hydraulic Mulch and Hydraulic Soil Amendments

A. Wood Fiber. Wood fiber hydraulic mulch is specially prepared wood fibers free of growth or germination inhibiting materials that forms a homogeneous slurry when combined with water, tackifiers, fertilizer, and other specified additives and remains uniformly suspended under agitation. The mulch may be colored with a water-soluble, nontoxic dye to aide visual metering during application. Apply the mulch to produce a uniform mat-like cover on the seeded ground.

At least 30% of the mulch fibers must average 0.15 inches or longer with 50% or more retained on a Clark Fiber Classifier 24-mesh screen.

- **B.** Straw Fiber. Straw fiber hydraulic mulch is specially manufactured and prepared straw stems that are packaged and commercially sold specifically as hydraulic mulch. Straw hydraulic mulch can be formulated as 100% straw or combined with other types of mulch and tackifer products during the manufacturing process. The contract will specify the rate, type, and formulation of straw fiber hydraulic mulch to be used.
- C. Multi-Fiber. Multi-fiber hydraulic mulches are composed of various types and percentages of natural fibers and tackifiers. The contract will specify the type of multi-fiber mulches allowed.

The contract will specify the rate, type and formulation of hydraulically applied materials to be used. All hydraulic mulch and soil amendments are to be pre-packaged by the manufacturer. All materials must be 100% biodegradable, plastic-free, non-toxic and weed seed free. The products may be colored with a water-soluble, nontoxic dye to aid visual metering during application. Malachite green is not permitted as a dye in hydraulic mulch and soil amendments.

Hydraulic mulch forms a homogeneous slurry when combined with water, tackifiers, fertilizer, and other specified additives and remains uniformly suspended under agitation. Mulch is applied to produce a uniform mat-like cover on the seeded ground, forming a protective layer which controls erosion and allows for plant growth. Large-scale, third-party testing of products is required for acceptance on the QPL.

A. Fiber Mulch. Hydraulic mulch is specially manufactured and prepared fibers, usually consisting of wood or straw, with a functional longevity of at least 3 months.

- B. High Performance Mulch.
 - 1. Bonded Fiber Matrix. Bonded fiber matrix consists of a continuous layer of elongated fiber strands held together by a water-resistant bonding agent containing fiber, natural binder and activators. The product is applied using hydraulic seeding equipment and meets the requirements of Table 713-1.

- 2. Fiber Reinforced Matrix. Fiber reinforced matrix consists of thermally processed fiber, cross-linked hydrocolloidal polymer tackifiers, and activators. The product is applied using hydraulic seeding equipment and meets the requirements of Table 713-1.
- C. Engineered Soil Amendments. Hydraulically applied soil amendments are pre-packaged blends of natural fibers and other biologic materials designed to improve or replace poor or depleted soils. Soil building components may include biopolymers, biochar, seaweed, peat moss, humic acid and beneficial bacteria and meet the requirements of Table 713-2.

TABLE 713-1 PERFORMANCE REQUIREMENTS FOR BONDED FIBER MATRIX AND FIBER REINFORCED MATRIX HIGH PERFORMANCE MULCH

	REQ		
PROPERTY	BONDED	FIBER REINFORCED	METHOD
	FIBER MATRIX	MATRIX	
Water Holding Capacity	≥ 800%	≥ 800%	ASTM D7367
Functional longevity	≥ 6 months	≥12 months	Observed
Cure Time	≤ 48 hours	≤ 2 hours	Observed
Vegetation Establishment	Pass	Pass	ASTM D7322

TABLE 713-2
PERFORMANCE REQUIREMENTS FOR ENGINEERED SOIL AMENDMENTS

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PROPERTY	REQUIREMENT	METHOD		
Vegetation Establishment	Pass	ASTM D7322		
Organic material	≥ 95%	ASTM D586		
Acute Toxicity	Non-toxic	ASTM 7101 & EPA		
Acute Toxicity	NOTI-LOXIC	Method 2021.0		
pH	6 ± 1	ASTM D1293		
C:N ratio	30:1 to 100:1	ASTM E1508		
Water Holding Capacity	≥ 800%	ASTM D7367		

Reason: Update requirements

Final Draft: Publish as shown except for:

The contract will specify the rate, type and formulation of hydraulically applied materials to be used. All hydraulic mulch and soil amendments are to be pre-packaged by the manufacturer. All materials must be 100% biodegradable, plastic-free, non-toxic and weed seed free. The products may be colored with a water-soluble, nontoxic dye to aid visual metering during application. Malachite green is not permitted as a dye in hydraulic mulch and soil amendments.

717.03 Rapid Setting Patch Material

TABLE 717-2
PROPERTIES OF RAPID SETTING CONCRETE PATCH MATERIAL

Patch Material Type				
Test Method	Procedure	Cementitious	Polymer	Polymer Modified
AASHTO T161	Freeze thaw Procedure A	>90@300 cycles		>90@300 cycles
ASTM C882 ¹	Bond strength slant shear (min.)		1 day: 1000 psi 7 day: 1500 psi	
ASTM C1583	Bond strength direct tension (min.)	225 psi	1 day: 110 psi 7 day: 200 psi 28 day: 275 psi	
AASHTO T358	Surface Resistivity (min.)	25-20 kΩ-cm		25 20 kΩ-cm
ASTM C579	Compressive strength	Refer to ASTM C928 (R1, R2, or R3)	7 day: >5000 psi	Refer to ASTM C928 (R1, R2, or R3)
ASTM C884	Thermal compatibility		Pass	Pass

Note 1. As modified by ASTM C928

Reason:.update

Detailed Drawings

There were 23 Drawings proposed for revision.

To view these proposed revisions, please open the following link:

<u>Detailed Drawings Proposed Revisions</u>

Specifications Revision Process

Submit proposed changes in writing to the Specifications Engineer. Include the following:

- 1. The title and Section or Subsection to be revised. Use the most current version of the Spec Book.
- 2. A description of the change needed. It is recommended that proposed language be included but is not required.
- 3. List any specifications, Detailed Drawings or manual sections that may be affected due to the proposed revision.
- 4. A brief explanation to support the need and reason for the change. The Specifications Engineer may request additional supporting data and analysis after receipt of the proposed specification revision.
- **5.** A brief statement explaining if the revision requires an implementation plan and if so, statewho may be impacted by the change. Will the change require advance notice prior to implementation to ensure lead time to allow coordination and compliance with the change?
- **6.** A list of those consulted and involved with the recommended change.

Submit the proposed change in one of the following ways:

- 1. MDT employees may e-mail to MDT Construction Specifications
- 2. External submissions emailed to mdtspecifications@mt.gov

The complete revision process is available here:

https://www.mdt.mt.gov/other/webdata/external/const/proposed_spec_changes/SPEC_REVISION_PROCESS.PDF