# Amendment to Section 1, Excavation, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Water management

The second sentence of the first paragraph of Subsection 1.1, General, shall be replaced in its entirety with the following:

*Excavation shall also include, but not be limited to, maintaining the stability of slopes, fills and existing structures; designing, constructing and maintaining temporary access berms, cofferdams, dikes and channel diversions; the protection and maintenance of excavations; water management including dewatering, storage, transport, disposal, testing, treatment, and/or release; and disposal of excess excavated materials.*

The third paragraph of Subsection 1.1, General, shall be replaced in its entirety with the following:

*The Contractor shall provide acceptable provisions for the control and management of water and/or ice at all times. Water removed from excavations shall be managed in compliance with all environmental regulations by discharging it into settlement tanks or ponds; hauling and disposing offsite; testing, treating and releasing; and/or other methods acceptable to the Consultant. A water management plan for the dewatering, storage, transport, disposal, testing, treatment, and/or release of water shall be included in the Contractor’s ECO Plan.*

The title of Subsection 1.4, Temporary Access Berms, Cofferdams and Dikes, shall be replaced with the following:

*1.4 Temporary Access Berms, Cofferdams, Dikes and Channel Diversions*

Subsection 1.4.1, General, shall be replaced in its entirety with the following:

*1.4.1 General*

*The Contractor shall design, construct, maintain and remove temporary access berms, cofferdams, dikes and channel diversions necessary to complete the Work.*

*The Contractor’s design of temporary access berms, cofferdams, dikes and channel diversions shall include, but is not limited to, access roads, water and/or ice flows, height of temporary access berm, cofferdam and dike elevations, channel diversion dimensions and grade, geometry, materials, and anticipated equipment surcharge.*

*Temporary access berms, cofferdams, dikes and channel diversions shall isolate instream construction activities and eliminate the flow of water through the construction area. The temporary access berms, cofferdams, dikes and channel diversions shall be installed and removed in a controlled manner to minimize the disturbance to the channel and banks.*

*The Contractor shall complete all Work in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction. The Contractor’s water management plan shall include provisions for the installation, maintenance, and removal of temporary access berms, cofferdams, dikes and channel diversions.*

*The Contractor shall establish a weather and stream flow monitoring protocol that can provide advance warning of impending water and/or ice flows.*

*The Contractor shall test all temporary access berm, dike and channel diversion materials to confirm assumed design material properties. The Contractor shall provide material test reports to the Consultant upon request.*

*The Contractor shall submit design notes, drawings, construction sequencing, and water management plan, of proposed temporary access berms, cofferdams, dikes and channel diversions to the Consultant for review and acceptance a minimum of 3 weeks prior to the commencement of the Work. The design notes, drawings and construction sequence will be considered Professional Work Products and shall be authenticated by a Professional Engineer licensed to practice in the Province of Alberta and validated by a Responsible Member, in accordance with APEGA requirements. The water management plan shall be authenticated by a qualified professional in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction.*

*The design notes, drawings, construction sequencing and water management plan will be reviewed by the Consultant solely to ascertain general conformance with Contract requirements. The Consultant’s review and acceptance shall not be considered as relieving the Contractor of the responsibility for completing the Work in accordance with Contract requirements.*

The second paragraph of Subsection 1.4.5, Cofferdam Dewatering, shall be replaced in its entirety with the following:

*Water removed from cofferdams shall be managed in compliance with all environmental regulations by discharging it into settlement tanks or ponds; hauling and disposing offsite; testing, treating and releasing; and/or other methods acceptable to the Consultant. A water management plan for the dewatering, storage, transport, disposal, testing, treatment, and/or release of water shall be included in the Contractor’s ECO Plan. The water management plan shall be authenticated by a qualified professional in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction. The water management plan shall be reviewed and accepted by the Consultant 2 weeks prior to the commencement of the Work.*

Subsection 1.4.7, Removal of Temporary Access Berm, Cofferdams and Dikes, shall be replaced in its entirety with the following:

*1.4.7 Removal of Temporary Access Berms, Cofferdams, Dikes and Channel Diversions*

*Temporary access berms, cofferdams, dikes and channel diversions shall be removed after completion of the Work, and in accordance with the Special Provisions of the Contract. The Contractor shall take care not to disturb or damage the completed work in any way during removal operations. Backfill required around the completed work shall be placed prior to removal of the temporary access berms, cofferdams, dikes and channel diversions.*

Subsection 1.4.8, Site Restoration, shall be replaced in its entirety with the following:

*1.4.8 Site Restoration*

*Upon removal of temporary access berms, cofferdams, dikes and channel diversions, the channel banks, streambed, and any areas disturbed from the construction of access roads shall be restored to the composition and elevation that existed prior to construction and the pre construction channel survey, and in accordance with the Drawings and Special Provisions. Site restoration will be reviewed and accepted by the Consultant based on comparison of pre and post construction channel surveys and any other available information.*

Subsection 1.6.2, Temporary Access Berms, Cofferdams and Dikes, shall be replaced in its entirety with the following:

*1.6.2 Temporary Access Berms, Cofferdams, Dikes and Channel Diversions*

*Payment will be made at the lump sum price bid for “Temporary Access Berms, Cofferdams, Dikes and Channel Diversions”, and will be full compensation for the design; construction; maintenance, including the control and management of water and/or ice; removal; site restoration; and all labour, materials, equipment, tools and incidentals necessary to complete the Work to the satisfaction of the Consultant.*

*All costs associated with pre and post construction channel surveys, and excavation through the depth of berms to access the Work including structural excavation, will be considered incidental to the Work, and no separate or additional payment will be made.*

# Amendment to Section 2, Backfill, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Compacted Non-Granular material

The second paragraph of Subsection 2.2.1, Compacted Non-Granular Material, shall be replaced in its entirety with the following:

*Culvert clay seals shall be high plastic clay (Group Symbol CH) in accordance with ASTM D2487.*

# Amendment to Section 3, Foundation Piles, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Water management

The twelfth bullet of the first paragraph of Subsection 3.3.2, Pile Driving Plan, shall be replaced in its entirety with the following:

* *Water management plan for the dewatering, storage, transport, disposal, testing, treatment, and/or release of water encountered during the driving of open ended pipe piles, included in the Contractor’s ECO Plan.*

Amendment to Section 3, Foundation Piles, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Testing of Steel Piling Splices

The first and second paragraphs of Subsection 3.3.3.4.1, Testing of Steel Piling Splices, shall be replaced in their entirety with the following:

*The Contractor shall have all welded splices visually inspected by an independent welding inspector certified to CSA W178.2 Level II.*

*For each bridge component, the Contractor shall also perform ultrasonic testing for a minimum of 20% of all full penetration welded splices in compression as determined by the Consultant.*

The fourth paragraph of Subsection 3.3.3.4.1, Testing of Steel Piling Splices, shall be replaced in its entirety with the following:

*If visual inspection or ultrasonic testing of a welded splice indicates defects or potential defects, the Contractor shall complete additional ultrasonic testing to that already specified to confirm acceptability of the welded splice, as determined by the Consultant. If a welded splice is determined unacceptable by the Consultant, the Contractor shall repair the welded splice at their expense to the satisfaction of the Consultant and the Department.*

*If the ultrasonic testing of welded splices of a bridge component identifies defects, then ultrasonic testing of additional welded splices for that bridge component, as determined by the Consultant, shall be completed by the Contractor at their expense.*

Amendment to Section 3, Foundation Piles, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Water management

The following paragraph shall be added to Subsection 3.3.3.5, Steel Pipe Piles, after the first paragraph:

*Water removed from open ended pipe piles shall be managed in compliance with all environmental regulations by discharging it into settlement tanks or ponds; hauling and disposing offsite; testing, treating and releasing; and/or other methods acceptable to the Consultant. A water management plan for the dewatering, storage, transport, disposal, testing, treatment, and/or release of water shall be included in the Contractor’s ECO Plan, and submitted with the pile driving plan. The water management plan shall be authenticated by a qualified professional in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction.*

Amendment to Section 3, Foundation Piles, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Water Management

The sixteenth bullet of the second paragraph of Subsection 3.4.2, Pile Drilling Plan, shall be replaced in its entirety with the following:

* *Water management plan for the dewatering, storage, transport, disposal, testing, treatment, and/or release of water encountered, included in the Contractor’s ECO Plan.*

The second paragraph of Subsection 3.4.3, Drilled Pile Installation, shall be replaced in its entirety with the following:

*Water removed from pile holes shall be managed in compliance with all environmental regulations by discharging it into settlement tanks or ponds; hauling and disposing offsite; testing, treating and releasing; and/or other methods acceptable to the Consultant. A water management plan for the dewatering, storage, transport, disposal, testing, treatment, and/or release of water shall be included in the Contractor’s ECO Plan, and submitted with the pile drilling plan. The water management plan shall be authenticated by a qualified professional in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction.*

Amendment to Section 3, Foundation Piles, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Crosshole Sonic Logging

Table 3-1, CSL Condition Ratings, of Subsection 3.4.3.3.3, Crosshole Sonic Logging, shall be replaced in its entirety with the following:

***TABLE 3-1 CSL Condition Ratings***

|  |  |  |
| --- | --- | --- |
| ***Condition Rating*** | ***First Arrival Time (FAT) Increase (%) and***  ***Energy Reduction (db)*** | ***CSL Results*** |
| *Good (G)* | *≤10%; and ≤6db* | *Good quality concrete* |
| *Questionable (Q)* | *>10% & <20%; or  >6db & <9db* | *Minor contamination or intrusion. Questionable quality concrete* |
| *Poor/Flaw (P/F)* | *≥20% & <30%; or*  *≥9db & <12db* | *Flaws exists, possible water/slurry contamination, soil intrusion and/or poor quality concrete.* |
| *Poor/Defect (P/D)* | *≥30%; or ≥12db* | *Defects exists, possible water/slurry contamination, soil intrusion and/or poor quality concrete.* |
| *No Signal (NS)* | *No Signal Received* | *Soil intrusion or other severe defect absorbed the signal.* |

The ninth paragraph of Subsection 3.4.3.3.3, Crosshole Sonic Logging, shall be replaced in its entirety with the following:

*First arrival time (FAT) increase criteria outlined in Table 3-1, CSL Condition Ratings, shall be from the lowest measured value in the comparable zone. Energy reduction criteria outlined in Table 3-1, CSL Condition Ratings, shall be from the highest measured value in the comparable zone.*

# Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Supplementary Cementitious Materials

Subsection 4.2.2, Supplementary Cementing Materials, shall be replaced in its entirety with the following:

*4.2.2 Supplementary Cementitious Materials*

*Material test reports shall indicate the source of the material and identify if the material has been harvested or reclaimed. The total equivalent alkali (NA2Oeq) shall be reported on the material test reports in accordance with CSA A3001-18 Clause 5.4.3.*

*4.2.2.1 Silica Fume*

*Silica fume shall conform to the requirements of CSA A3001-18 for a Type SF supplementary cementitious material, with a minimum SiO2 content of 85%, a maximum loss on ignition of 10%, and a maximum SO3 content of 1%.*

*4.2.2.2 Fly Ash*

*Fly ash shall conform to the requirements of CSA A3001-18 for Type F fly ash with a maximum calcium oxide (CaO) content of 15%.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Hydration Stabilized Concrete

The first paragraph of Subsection 4.4.4.2, Hydration Stabilized Concrete Mixes, shall be replaced in its entirety with the following:

*The design length of hydration stabilization shall be the difference of the project haul time and the specified allowable haul time (not exceeding 90 minutes), or that required by mass concrete or pile concrete placement considerations. The hydration stabilized mix design, including a detailed concrete batching procedure, shall be submitted and reviewed in accordance with Subsection 4.4.3, Concrete Mix Design Submission Requirements. Hydration stabilized concrete mixes demonstrating significant inconsistent plastic concrete properties or excessive increase in time of set, as determined by the Consultant, shall require revision and resubmittal of the concrete mix design review letter, and additional trial batch testing completed to demonstrate acceptability.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Measurement of Materials

The first paragraph of Subsection 4.5, Measurement of Materials, shall be replaced in its entirety with the following:

*Coarse aggregates, fine aggregates, and each cementitious material shall be separated and weighed individually. The accuracy of measuring devices shall be such that successive quantities can be measured within ±0.4%. The batching accuracy shall be in accordance with CSA A23.1 Table 23. Batch records, including mix proportions, shall be made available to the Department upon request.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Reference to CSA A23.1 Clauses

The second sentence of the third paragraph of Subsection 4.6.1, General, shall be replaced in its entirety with the following:

*The Consultant may require that the uniformity of the mixed concrete be tested for conformance with CSA A23.1 Clause 5.2.4.5.*

The third sentence of the first paragraph of Subsection 4.9.3, Test Cylinders, shall be replaced in its entirety with the following:

*The Contractor shall provide adequately designed temperature-controlled storage boxes for test cylinders, as specified in CSA A23.2-3C Subsection 9.3.2.1, for a period of not less than 24 hours, and fully protected from damage at all times.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Dry-Run

The second, third and fourth paragraphs of Subsection 4.16.3, Dry-Run, shall be replaced in their entirety with the following:

*After the installation of deck formwork and prior to the installation of deck reinforcing steel, the Contractor shall pre-load each type, size, and configuration of cantilevered deck formwork system to determine the amount of expected deflection that will occur during concrete placement. The pre-load shall accurately represent all anticipated loading during concrete placement, including reinforcing steel, concrete, and the deck finishing machine. The pre-load shall be applied over the length of cantilevered deck formwork between girder web stiffeners for steel girders or a length of 3 m for concrete girders. After determining the cantilevered deck formwork deflection, the deck edge pour strip, formwork, deck finishing machine, and/or screed guide rails shall be adjusted for the expected formwork deflection.*

*After the deck formwork and reinforcing steel has been acceptably installed over the full length of the bridge, and prior to the placement of any deck concrete, the deck finishing machine shall be dry-run over the full length of the bridge and measurements taken to determine the expected deck thickness and reinforcing steel concrete clear cover at locations corresponding with those detailed on the girder camber diagram(s). Measurements shall also be taken at deck edges, front face of curbs/barriers, deck joints, bulkheads, and any other locations as determined by the Consultant.*

*Adjustment of the deck finishing machine and/or guide rails shall be completed such that the design grades, deck thickness, and reinforcing steel concrete clear cover are achieved. After any adjustments, the dry-run process shall be repeated for a portion of deck acceptable to the Consultant. The deck finishing machine, guide rails, and their supports shall not be adjusted after the dry-run has been completed and the results have been reviewed and accepted by the Consultant. If the deck finishing machine, guide rails, or their supports are adjusted for any reason after acceptance, the dry-run, including all measurements, shall be repeated.*

*After the dry run has been acceptably completed, a 20M deck edge screed finishing reinforcing steel bar shall be securely fastened to the projecting curb/barrier reinforcing steel bars at all intersections using saddle ties or an equivalent acceptable to the Consultant. The deck edge reinforcing steel bar shall be of the same type and grade as the curb/barrier reinforcing steel. The profile of the top of the deck edge screed finishing reinforcing steel bar shall be set directly from the deck finishing machine by projecting the elevation of the trailing end of the drum(s) to the curb/barrier reinforcing steel. The deck edge screed finishing reinforcing steel bar shall remain in the completed structure.*

*The dry-run process shall be completed a minimum of 24 hours prior to the commencement of concrete placement. Concrete placement shall not commence until the Consultant has reviewed and accepted the dry-run.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Tremie Method

The third paragraph of Subsection 4.22.4, Tremie Method, shall be replaced in its entirety with the following:

*Details of the tremie method plan shall comply with the methodology outlined in the Federal Highway Administration (FHWA) NHI-18-024 GEC 10 Subsection 7.3.3.1, the European Federation of Foundation Contractors Guide to Tremie Concrete for Deep Foundation, and this Subsection. In the case of conflicting requirements, the requirements of this Subsection shall govern.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Curing Requirements for HPC and Class HPC with Steel Fibres

The second and third paragraphs of Subsection 4.23.3, Curing Requirements for Class HPC and Class HPC with Steel Fibres, shall be replaced in their entirety with the following:

*After final bull floating and/or surface texturing, as soon as the concrete surface will not be damaged by its application, an evaporation reducer shall be applied to the finished concrete surface by a hand sprayer with a fine misting nozzle at the manufacturer’s recommended concentration and application rate. The evaporation reducer shall be a monomolecular film forming compound intended for application to fresh concrete for temporary protection against moisture loss, such as MasterKure ER 50, or an equivalent acceptable to the Consultant.*

*For concrete mix designs that contain hydration stabilizing admixtures, in addition to the initial application of evaporation reducer, the concrete surfaces shall be continuously misted with water such that they remain continuously wet until the wet curing system is fully installed. The wet curing system shall consist of an initially installed curing fabric which is subsequently replaced by curing blankets. Curing fabric shall be Terrafix 270R, or an equivalent acceptable to the Consultant, and be placed on the concrete surface and kept continuously wet by misting with clean water as soon as the concrete surface will not be marred by its installation. The curing fabric shall be removed and immediately replaced with curing blankets as soon as the concrete surfaces will not be marred by its installation. Curing blankets shall be UltraCure DOT or an equivalent acceptable to the Consultant. The curing blankets and concrete surfaces shall be saturated with water during curing blanket installation. The curing blankets shall be installed in full contact with the concrete surfaces without folds, wrinkles or air pockets. For concrete mix designs that do not contain hydration stabilizing admixtures, the wet curing system will not require the initial installation of curing fabric.*

*Edges of the curing fabric and blankets shall overlap a minimum of 150 mm and be secured in place without marring the surface of the concrete. The wet curing system shall keep the concrete surfaces continuously wet throughout the curing period by means of soaker hoses installed under the curing blankets along the crown or high side of superelevated deck or deck overlay concrete, and within curbs/barriers. Curing blankets shall not be re-used unless reviewed and accepted by the Consultant.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Crack Repairs

The first paragraph of Subsection 4.24.2, Cracks, shall be replaced in its entirety with the following:

*For Class HPC and Class HPC with steel fibres the Contractor and the Consultant shall jointly inspect and identify all cracks after the curing period and before opening to traffic. The Consultant will plot the width in millimeters and length in linear meters of cracks and report the findings to the Department. The Contractor shall complete all required crack repairs prior to opening to traffic. Cracks that develop after opening to traffic will not require repair.*

Amendment to Section 4, Cast-In-Place Concrete, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Reference to CSA A23.1 Clauses

The fifth paragraph of Subsection 4.27.1.2, Coring, shall be replaced in its entirety with the following:

*The average strength of each set of 3 cores will represent a concrete compressive strength test and shall be equal to or greater than the specified 28 day strength. CSA A23.1 Clause 4.4.2.2.2.2 shall not apply. If the average cored concrete strength is greater than the averaged test cylinder concrete strength, the concrete cored strength result will be used as the basis for acceptance and payment. If the averaged cored concrete strength is less than the averaged test cylinder concrete strength, the averaged test cylinder concrete strength will be used as the basis for acceptance and payment.*

# Amendment to Section 5, Reinforcing Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Stainless Reinforcing Steel

The second paragraph of Subsection 5.2.2.4, Stainless Reinforcing Steel, shall be replaced in its entirety with the following:

*Stainless reinforcing steel shall conform to the requirements of ASTM A276/A276M and ASTM A955/A955M (including Annex A1.2 or A1.3). The minimum yield strength shall be 420 MPa.*

**Amendment to Section 5, Reinforcing Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Supports**

The third paragraph of Subsection 5.4.1, Supports, shall be replaced in its entirety with the following:

*Supports for barriers, curbs, and medians shall be Precast Stackable Chair with Single Clip type manufactured by Art Mould, plastic bolster slab Aztec PSBB type with a segment length not exceeding 100 mm, or equivalent acceptable to the Department. Precast Stackable Chair with Single Clip shall be supplied such that the specified concrete cover is achieved with a single unstacked chair.*

*The top mat of deck, roof and approach slab reinforcing steel shall not be supported from the bottom mat using inter-layer plastic supports.*

# Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Qualifications

Subsection 6.2.1, Qualifications, shall be replaced in its entirety with the following:

*6.2.1 Qualifications*

*Structural steel shall be supplied and fabricated by a fabricator certified by the Canadian Welding Bureau (CWB) in accordance with CSA W47.1 as follows:*

*Steel girders, trusses, splice plates, and stiffeners Division 1*

*Steel diaphragms, bracing and connector plates of kinked or curved girders, or bridges with skew exceeding 20 degrees Division 1*

*All other bridge components Division 1 or Division 2*

*Field welding/repairs Division 1 or Division 2*

*Fabricators of steel components where only CWB Division 1 certification is specified shall also be certified by the Canadian Institute of Steel Construction (CISC) in the category of complex steel bridges.*

*Welders, welding operators and tackers shall be CWB approved in the applicable category. Their qualifications shall be current and available for examination by the Consultant upon request.*

*The fabricator and/or their sub-contractor completing metalizing shall be certified by the AAMP/SSPC to QP-6, Thermal Spray (Metalizing) Contractor Certification Program or ISO9001. Metalizing certification requirements will not be required for fabricators or sub-contractors completing repair of galvanized and metallized material in accordance Subsection 6.2.7.3.3, Repair of Galvanized and Metallized Material.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Stud Shear Connectors**

The first paragraph of Subsection 6.2.4.3, Stud Shear Connectors, shall be replaced in its entirety with the following:

*All stud shear connectors shall conform to the chemical requirements of ASTM A108 Grade 1015, 1018 or 1020. In addition, they shall meet the mechanical properties specified in Table 9.1 of* *AASHTO/AWS Bridge Welding Code D1.5M/D1.5 for Type B Studs. Certified mill test reports for the stud material shall be provided.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Welding**

The following paragraph shall be added to Subsection 6.2.5.6, Welding at Stiffener, Gusset Plate and Attachment Ends:

*Welded gusset plates for precast concrete girder diaphragm connections shall be sealed with wrap around welds prior to galvanizing.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Additional Material Splices**

Subsection 6.2.6.6, Additional Material Splices, shall be replaced in its entirety with the following:

*6.2.6.6 Additional Material Splices*

*Proposed splices not shown on the Drawings will require the review and acceptance of the Consultant and the Department. All additional costs incurred by the Department and the Consultant to review, inspect, and test additional splices shall be paid for by the Contractor.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: AASHTO/AWS Bridge Welding Code D1.5M/D1.5 References:**

Reference to “Subsection 3.5 of the AASHTO/AWS Bridge Welding Code D1.5M/D1.5” within the first paragraph of Subsection 6.2.6.11, Dimensional Tolerances, shall be replaced with the following:

*“Subsection 5.5 of the AASHTO/AWS Bridge Welding Code D1.5M/D1.5”*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Flame Straightening and Heat Curving**

Subsection 6.2.6.14, Flame Straightening and Heat Curving, shall be replaced in its entirety with the following:

*6.2.6.14 Heat Straightening and Heat Curving*

*Heat straightening without externally applied force will be permitted to correct weld induced distortion/shrinkage that is within two times the dimensional tolerance specified in Subsection 6.2.6.11, Dimensional Tolerances, and AASHTO/AWS Bridge Welding Code D1.5M/D1.5.*

*Heat straightening that is proposed to be completed with externally applied force or heat curving will only be permitted when reviewed and accepted by the Department and the Consultant.*

*The Contractor shall submit a procedure for heat straightening, with or without externally applied force, and/or heat curving to the Department and the Consultant for review and acceptance a minimum of 2 weeks prior to commencement of the work. The procedure shall include the limits of correction for which the procedure is applicable; details and pattern of proposed heat locations; location and magnitude of applied force, if applicable; target temperatures and cooling rates; and post heat inspection and testing details. The heat straightening or heat curving procedure will be considered a Professional Work Product and shall be authenticated by a Professional Engineer licensed to practice in the Province of Alberta and validated by a Responsible Member, in accordance with APEGA requirements.*

*Post heat inspection and testing shall be completed by a certified independent laboratory in Canada accredited by a Canadian or American accreditation body to ISO/IEC 17025 for the tests required. The accreditation body shall be a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA). Preparation and collection of samples for testing shall be directed and witnessed by or completed by personnel employed by the testing laboratory. A verification letter shall be provided by the testing laboratory that includes accreditation documentation, applicable testing standards, date of verification testing, and declaration of material compliance with Contract requirements. The verification letter shall be signed by an authorized officer of the testing laboratory.*

*Heat straightening or heat curving shall only be completed in the presence of the Consultant.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Metallizing**

Subsection 6.2.7.3.2, Metallizing, shall be replaced in its entirety with the following:

*6.2.7.3.2 Metallizing*

*Metallizing shall be completed in accordance with SSPC-CS 23.00/AWS C2.23M/NACE No. 12 and the following requirements:*

* *Surface preparation shall be SSPC-SP 5 white metal blast cleaning;*
* *The metallizing feedstock material shall be 85/15 Zn/Al alloy. Aluminum will not be permitted;*
* *One metallizing thickness test shall be completed for each metallized component of each deck joint and for each bearing component lot. The metallizing thickness test locations shall be randomly selected by the Contractor and be acceptable to the Consultant;*
* *A job reference standard specimen will not be required; and*
* *One tensile adhesion test shall be completed for each deck joint at each substructure element and for each bearing component lot. Tensile adhesion testing shall be completed to determine that the minimum value specified has been achieved. Testing to determine the value at which adhesion fails beyond the specified minimum is not required.*

*Metalized contact surfaces of bolted connections shall conform to a Class B slip coefficient surface condition. Slip coefficient surface conditions shall meet the requirements of CSA S6 Table 10.8.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Repair of Galvanized and Metallized Material**

The first paragraph of Subsection 6.2.7.3.3, Repair of Galvanized and Metallized Material, shall be replaced in its entirety with the following:

*Repair of galvanized and metallized material shall be completed in accordance ASTM A780/A780M Method A3 – Metallizing, and will only be permitted when the repair areas are small and infrequent as determined by the Consultant. The metallizing feedstock material shall be 85/15 Zn/Al alloy. Aluminum will not be permitted. Repair areas less than 100 mm2 in area may be completed in accordance with ASTM A780/A780M Method A1 – Repair Using Zinc-Based Alloy. The thickness of the coating for both methods shall be 180 μm, and the repair tested for adhesion. Adhesion testing shall be by the stout knife method in accordance with ASTM A123/A123M.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: AASHTO/AWS Bridge Welding Code D1.5M/D1.5 References:**

Reference to “AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 6” within the first paragraph of Subsection 6.2.8.4, Quality Control Inspection and Testing by the Contractor, shall be replaced with the following:

*“AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 8”*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control Inspection and Testing by the Contractor**

The last bullet of the first paragraph of Subsection 6.2.8.4, Quality Control Inspection and Testing by the Contractor, shall be replaced in its entirety with the following:

* *Testing of coatings shall be completed by an independent National Association of Corrosion Engineers (NACE) - Level 2 Certified Coating Inspector or Association for Materials Protection and Performance (AMPP) - Certified Coatings Inspector.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control Inspection and Testing by the Contractor**

The following subsection shall be added to Subsection 6.2.8.4, Quality Control Inspection and Testing by the Contractor:

*6.2.8.4.4 Standard Bridge Steel Substructures*

*Welded steel substructure components of standard SL and SLW precast concrete girder bridges shall be inspected and tested by the Contractor in accordance with the following schedule:*

* *100% of groove welds using radiography;*
* *Each pile to pile cap fillet weld using magnetic particle testing in accordance with the frequency specified in AASHTO/AWS Bridge Welding Code D1.5M/D1.5 Clause 8.7.4.2.1;*
* *Fillet welds 3 m or longer using magnetic particle testing in accordance with the frequency specified in AASHTO/AWS Bridge Welding Code D1.5M/D1.5 Clause 8.7.4.1; and*
* *Fillet welds less than 3 m in length using magnetic particle testing in accordance with the frequency specified in AASHTO/AWS Bridge Welding Code D1.5M/D1.5 Clause 8.7.4.2.1, unless the weld is less than 300 mm in length, then the frequency shall be in accordance with AASHTO/AWS Bridge Welding Code D1.5M/D1.5 Clause 8.7.4.2.2.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Transportation, Handling, and Storage Drawings and Assessment**

The second and third paragraphs of Subsection 6.3.1.1, Transportation, Handling, and Storage Drawings and Assessment, shall be replaced in their entirety with the following:

*If the Contractor proposes to transport, handle, or store the girders with webs in a position other than vertical, in addition to the transportation, handling and storage drawings, the Contractor shall submit a girder transportation, handling and storage assessment to the Consultant for review and acceptance a minimum of 8 weeks prior to shipping from the fabrication facility.*

*The transportation, handling and storage assessment, at minimum, shall include design notes, drawings, rationale for the proposed transport position, and a statement indicating the proposed transportation methodology will not damage the girders. Design notes shall include evaluation of the static and dynamic forces, and associated stresses during handling, transportation and storage using a dynamic load allowance of 100% (stress range equivalent to two times the static dead load stress of the girder). The stresses shall be in accordance with CSA S6 Clause 10.10, Beam and Girders, and the maximum cyclic stress range shall not exceed the constant amplitude fatigue threshold for the appropriate fatigue categories specified in CSA S6 Table 10.4.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Girder Erection Inspection and Test Plan**

The first paragraph of Subsection 6.3.2.1, Girder Erection Inspection and Test Plan, shall be replaced in its entirety with the following:

*The Contractor shall submit a girder erection inspection and test plan (ITP) to the Consultant for review and acceptance a minimum of 6 weeks prior to the commencement of girder erection work. Erection shall not commence until the Contractor’s girder erection ITP has been reviewed and accepted in writing by the Consultant.*

**Amendment to Section 6, Structural Steel, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Girder Erection Procedure**

The following sub-bullet shall be added to the third bullet “Details of temporary works and supporting structures” of the second paragraph of Subsection 6.3.2.2, Girder Erection Procedure:

* *Geotechnical foundation capacity requirements including verification testing (witness point);*

The second sub-bullet of the thirteenth bullet “Bolting” in the second paragraph of Subsection 6.3.2.2, Girder Erection Procedure, shall be replaced in its entirety with the following:

* *Pre-installation verification testing (witness point) and associated testing procedure;*

The fourth sub-bullet of the thirteenth bullet “Bolting” in the second paragraph of Subsection 6.3.2.2, Girder Erection Procedure, shall be replaced in its entirety with the following:

* *Bolt tightening sequence, snug-tightening (witness point), and final tensioning (witness point) including pin removal; and*

# Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Materials

The following paragraph shall be added to Subsection 7.2.4.11, Miscellaneous Steel, Steel Diaphragms and Fasteners:

*The silicon content for structural steel to be galvanized shall be less than 0.04%, or between 0.15% and 0.25%.*

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Materials**

The fourth paragraph of Subsection 7.2.4.13, Voids, Ducts, and Conduit, shall be replaced in its entirety with the following:

*Post-tensioning ducts shall be semi-rigid corrugated steel ducts spirally wound from strip steel. Strip steel shall be supplied with welded or interlocking seams and galvanized in accordance with ASTM A653/A653M having a coating weight of G90.*

*Post-tensioning ducts shall have a minimum wall thickness of 0.45 mm (26-gauge) for ducts with a diameter less than or equal to 65 mm, or 0.6mm (24-gauge) for ducts with a diameter greater than 65 mm.*

*Post-tensioning ducts shall have sufficient rigidity to maintain the required profile between duct supports and be able to withstand the forces of concrete placement without detrimental deformation or leakage. Duct support spacing shall not exceed 1.0 m.*

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Prestressing Strand Tensioning**

The seventh paragraph of Subsection 7.2.5.3, Prestressing Strand, shall be replaced in its entirety with the following:

*At the completion of tensioning, force and elongation shall be measured in accordance with the verification requirements of Subsection 5.2.2, Tensioning of Tendons, of the Precast/Prestressed Concrete Institute (PCI) Quality Control Manual MNL-116. The measured force and elongation of each strand shall be within 5% of the calculated value.*

*For components with harped prestressing strands that are tensioned from one end of the bed (live end), a minimum of two deviated strands in the component shall have their force verified at the opposite end of the bed (dead end). The measured force in each strand at the dead end shall be within 5% of the calculated value.*

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Fabrication**

The second paragraph of Subsection 7.2.5.16, Dimensional Tolerances of Precast Concrete Units, shall be replaced in its entirety with the following:

*Camber and dimensional tolerances for sweep shall be measured and recorded immediately after removal from the form; after clean up and repairs are completed but before placing into storage; and immediately prior to shipping to the project site.*

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Sampling, casting, curing and testing concrete specimens**

The second paragraph including bulleted list of Subsection 7.2.6.3, Quality Control Inspection and Testing by the Contractor, shall be replaced in its entirety with the following:

*Sampling, casting, curing, and testing concrete specimens shall be completed by the Contractor in accordance with the requirements of the following CSA standards:*

* *Sampling - CSA A23.2-1C;*
* *Concrete Test Cylinders - CSA A23.2-3C;*
* *Testing Concrete Cylinders - CSA A23.2-9C;*
* *Air Content - CSA A23.2-4C; and*
* *Density of Concrete - CSA A23.2-6C*.

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Post-Tensioning and Grouting**

The second paragraph of Subsection 7.3.3.5.1, Prestressing Strand, shall be deleted in its entirety.

The following two paragraphs shall be added at the end of Subsection 7.3.3.7, Construction:

*Corrosion inhibitor will be required if the time between stressing strand installation and grouting exceeds 20 days. Corrosion inhibitor, if required, shall be water-soluble and have no deleterious effect on the prestressing strands, grout, concrete, or bond strength of the prestressing strands to concrete/grout.*

*The time between stressing of post tensioning strands and grouting shall not exceed 7 days*.

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Post-Tensioning and Grouting**

The second paragraph of Subsection 7.3.3.7.3, Post-Tensioning, shall be replaced in its entirety with the following:

*Stressing tails of post-tensioned tendons shall not be cut off until the Consultant has reviewed and accepted the stressing records including preliminary and final gauge pressures, and tendon elongations. The review of stressing records shall be a hold point in the post-tensioning inspection and testing plan.*

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Post-Tensioning and Grouting**

The sixth paragraph of Subsection 7.3.3.7.5, Grouting, shall be replaced in its entirety with the following:

*Grout tubes shall be cut flush with the concrete deck surface after grouting has been acceptably completed and prior to surface preparation for the installation of the deck waterproofing system. A 450 x 450 mm piece of membrane reinforcing fabric shall be installed in accordance with Subsection 16.4.5, Waterproofing of Joints and Cracks, centred over the grout tubes.*

**Amendment to Section 7, Precast Concrete Units, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Coring**

Reference to “CSA A23.1 Clause 4.4.6.6.2.2” within the third paragraph of Subsection 7.4.1.1.3, Coring, shall be replaced with the following:

*“CSA A23.1 Clause 4.4.2.2.2.2”*

# Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Design

The second paragraph of Subsection 8.2, Design, shall be replaced in its entirety with the following:

*Bearings shall be designed to meet the requirements specified on the Drawings and Special Provisions of the Contract, in accordance with CSA S6-19, and the associated exceptions in the Alberta Transportation Bridge Structures Design Criteria.*

*Laminated elastomeric bearing pads shall be designed in accordance with CSA S6-14.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Design**

The following paragraph shall be added after the fifth paragraph of Subsection 8.2.2.1, Loadings, Translations and Rotations:

*At the specified ULS rotation, the depth of the pot wall shall be such that a minimum vertical distance of 2.5 mm remains between the top of the pot wall and the closest point of contact of the brass sealing rings.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Design**

The first paragraph of Subsection 8.2.2.2, Sliding Surfaces, shall be replaced in its entirety with the following:

*Sliding surfaces shall allow translation by sliding of a metal surface against a mating PTFE element. For plain surfaces, the metal surface shall be stainless steel. Stainless steel metal surfaces shall be positioned above the PTFE element.*

The sixth paragraph of Subsection 8.2.2.2, Sliding Surfaces, shall be replaced in its entirety with the following:

*The maximum average contact pressure for PTFE elements filled with up to 15% by mass of glass fibers used to face mating surfaces of guides for lateral restraints shall not exceed 45 MPa at the serviceability limit state (SLS) or 55 MPa at the ultimate limit state (ULS).*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Design**

The third bullet of the first paragraph of Subsection 8.2.2.3, Fasteners, Anchorages, and Guides for Lateral Restraint, shall be deleted in its entirety.

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Supply and Fabrication**

The following bullet shall be added to the bulleted list of the second paragraph of Subsection 8.3, Supply and Fabrication:

* *Section 6, Structural Steel;*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Laminated Elastomeric and Pot Bearings**

The bulleted list of the fourth paragraph of Subsection 8.3.2.5.1, Laminated Elastomeric and Pot Bearings, shall be replaced in its entirety with the following:

* *Material properties, material reference standards, and product data sheets for each component;*
* *Weld procedure identification in the tail of weld symbols;*
* *Connection attachments;*
* *Fasteners and accessories;*
* *Bearing identification;*
* *Installation orientation markings;*
* *Load capacity information at serviceability and ultimate limit states as follows:*
  + *Maximum vertical permanent and total load;*
  + *Maximum lateral load and corresponding vertical load; and*
  + *Maximum rotational capacity about any horizontal axis and about the vertical axis at the centre of the bearing.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Plain Elastomeric and Fixed Steel Plate Rocker Bearings**

The bulleted list of the third paragraph of Subsection 8.3.2.5.2, Plain Elastomeric and Fixed Steel Plate Rocker Bearings, shall be replaced in its entirety with the following:

* *Material properties, material reference standards, and product data sheets for each component;*
* *Weld procedure identification in the tail of weld symbols;*
* *Connection attachments;*
* *Fasteners and accessories;*
* *Bearing identification;*
* *Installation orientation markings;*
* *Load capacity information at serviceability and ultimate limit states as follows:*
  + *Maximum vertical permanent and total load;*
  + *Maximum lateral load and corresponding vertical load; and*
  + *Maximum rotational capacity about any horizontal axis and about the vertical axis at the centre of the bearing.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Stainless Steel**

The second paragraph of Subsection 8.3.4.2, Stainless Steel, shall be replaced in its entirety with the following:

*Stainless steel sheets shall have a minimum thickness of 3 mm and finished to a No. 8 mirror (0.2 μm) finish.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Elastomer**

The third paragraph of Subsection 8.3.4.4, Elastomer, shall be replaced in its entirety with the following:

*Cured elastomeric compounds shall also meet the requirements of ASTM D2240 for low temperature crystallinity increase in hardness at an exposure of -25°C for 168 hours. The associated acceptance criteria shall be in accordance with CSA S6-14 Table 11.5.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: PTFE**

Subsection 8.3.4.5, PTFE, shall be replaced in its entirety with the following:

*8.3.4.5 PTFE*

*PTFE sheets shall be unfilled and manufactured from 100% pure Type 2 resin conforming to the requirements of ASTM D4894. Tensile strength and elongation shall be tested in accordance with ASTM D638.*

*PTFE sheets used for mating surface of lateral restraint guides shall be unfilled PTFE or PTFE filled with up to 15% by mass of glass fibres.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control Inspection and Testing by the Contractor**

Reference to “AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 6” within the first paragraph of Subsection 8.3.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced with the following:

*“AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 8”*

The last bullet of the first paragraph of Subsection 8.3.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced in its entirety with the following:

* *Adhesion testing of coatings shall be completed by an independent National Association of Corrosion Engineers (NACE) - Level 2 Certified Coating Inspector or Association for Materials Protection and Performance (AMPP) - Certified Coatings Inspector.*

**Amendment to Section 8, Bearings, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control Inspection and Testing by the Contractor**

The second paragraph of Subsection 8.3.7.3.1, Elastomeric Bearings, shall be replaced in its entirety with the following:

*Laminated elastomeric bearings shall be tested in accordance with Section 8 of AASHTO M251-06 (2016), with the following exceptions:*

* *The properties of cured elastomer shall conform to the specified requirements of Table X1.1;*
* *The testing specified in Subsection 8.9 is not required for laminated bearings;*
* *Shear modulus testing shall be completed;*
* *The increment in compressive deformation of laminated bearings shall not exceed 0.05 of the effective rubber thickness, when the bearing load is increased from an initial pressure of 1.5 MPa to a pressure of 7 MPa when tested in accordance with the requirements of Subsection 9.1; and*
* *The dimensional tolerances for each bearing shall be included in the testing report.*

# No Amendments to Section 9, Drain Troughs, of the 2020 Standard Specifications for Bridge Construction Edition 17

# No Amendments to Section 10, Heavy Rock Riprap, of the 2020 Standard Specifications for Bridge Construction Edition 17

# No Amendments to Section 11, Ducts and Conduits, of the 2020 Standard Specifications for Bridge Construction Edition 17

# Amendment to Section 12, Bridgerail, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control Inspection and Testing by the Contractor

Reference to “AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 6” within the first paragraph of Subsection 12.2.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced with the following:

*“AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 8”*

The last bullet of the first paragraph of Subsection 12.2.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced in its entirety with the following:

* *Adhesion testing of coatings shall be completed by an independent National Association of Corrosion Engineers (NACE) - Level 2 Certified Coating Inspector or Association for Materials Protection and Performance (AMPP) - Certified Coatings Inspector.*

# No Amendments to Section 13, Miscellaneous Iron, of the 2020 Standard Specifications for Bridge Construction Edition 17

# No Amendments to Section 14, Guardrail, of the 2020 Standard Specifications for Bridge Construction Edition 17

# No Amendments to Section 15, Non-Skid Polymer Overlay, of the 2020 Standard Specifications for Bridge Construction Edition 17

# Amendment to Section 16, Waterproofing, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Grout Tubes

Subsection 16.4.3.4, Grout Tubes, shall be replaced in its entirety with the following:

*16.4.3.4 Grout Tubes*

*Grout tubes shall be cut flush with the concrete deck surface after grouting has been acceptably completed and prior to surface preparation. A 450 x 450 mm piece of membrane reinforcing fabric shall be installed in accordance with Subsection 16.4.5, Waterproofing of Joints and Cracks, centred over the grout tubes.*

**Amendment to Section 16, Waterproofing, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Waterproofing of Joints and Cracks**

Subsection 16.4.5, Waterproofing of Joints and Cracks, shall be replaced in its entirety with the following:

*16.4.5 Waterproofing of Joints and Cracks*

*In addition to the requirements of Subsection 4.24.2, Cracks, the Contractor shall reinforce the asphalt membrane over construction joints, cracks, lift hook pockets, grout tubes, and patches with membrane reinforcing fabric as follows:*

* *After asphaltic primer application a 3 to 4 mm thick layer of hot asphalt membrane shall be applied in accordance with Subsection 16.4.6, Application of Asphalt Membrane, wide enough to extend 200 mm on all sides of each construction joint, crack, lift hook pocket, grout tube, and patch;*
* *Membrane reinforcing fabric material wide enough to extend 150 mm on all sides of the construction joint, crack, lift hook pocket, grout tube, and patch shall be applied while the asphalt membrane is still hot and tacky. Membrane reinforcing fabric shall be overlapped a minimum of 100 mm when multiple strips are used; and*
* *The membrane reinforcing fabric shall be covered with an additional layer of hot asphalt membrane 2 to 3 mm thick.*

*For areas along curbs, barrier walls, and deck drains, the asphalt membrane shall be applied to the height of the top of the hot mix ACP surface course and 150 mm onto the deck. Rubber membrane shall be applied into the first layer of asphalt membrane while it is still hot and tacky. The rubber membrane shall extend 50 mm up the vertical face and 100 mm onto the deck surface. Rubber membrane shall be overlapped a minimum of 100 mm where multiple strips are used. A second layer of asphalt membrane shall be applied to fully cover the rubber membrane.*

**Amendment to Section 16, Waterproofing, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Payment**

The fourth paragraph of Subsection 16.5, Measurement and Payment, shall be replaced in its entirety with the following:

*All costs associated with waterproofing of construction joints, cracks, lift hook pockets, grout tubes, patches, and vertical faces of curbs and barriers will be considered incidental to the Work, and no separate or additional payment will be made.*

# Amendment to Section 17, Asphalt Concrete Pavement, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Paving Plan

The bulleted list of the third paragraph of Subsection 17.1, General, shall be replaced in its entirety with the following:

* *Surface removal plan (if applicable);*
* *Source location of ACP;*
* *Asphalt mixing plant certificate of calibration;*
* *Asphalt mix design and job mix formula;*
* *Asphalt mixing plant production rate, haul route and distance, number of haul trucks and load size, paver production capacity, and proposed paving speed;*
* *Placing, spreading and compaction temperature range(s);*
* *Direction of ACP placement (for bridges with waterproofing protection board);*
* *Details of placement and compaction equipment;*
* *Details of quality control plan, including:* 
  + *List of QC personnel and identification of paving superintendent, compaction testing coordinator, and compaction testing technicians;*
  + *Summary of material testing to be completed;*
  + *Control strip methodology;*
    - *Configuration, sequence, and coordination of compaction equipment and compaction testing;*
  + *Plan view drawing(s) for each paving lift, detailing:*
    - *Mat thicknesses;*
    - *Mat widths and location of longitudinal joints;*
    - *The control strip mat;*
    - *Locations of compaction density tests;*
* *Details of environmental protection measures;*
* *Details of bridge component protection measures for barriers/curbs/medians, deck joint concrete blockouts, paving lips, and wick drains;*
* *Details of ACP joint protection measures for exposed edges; and*
* *Schedule.*

# Amendment to Section 18, CSP and SPCSP Structures, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Water management

Subsection 18.3.2, Care of Water, shall be replaced in its entirety with the following:

*18.3.2 Water Management*

*The Contractor shall complete all Work in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction, and all applicable environmental regulations.*

*A water management plan outlining the means and methods that the Contractor will use to control and manage water and/or ice at all times during the Work shall be included in the Contractor’s Environmental Construction Operations Plan (ECO Plan). The water management plan shall be authenticated by a qualified professional in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction. The water management plan shall be submitted to the Consultant for review and acceptance a minimum of 2 weeks prior to the preconstruction meeting.*

*The water management plan will be reviewed by the Consultant solely to ascertain general conformance with environmental regulations, specifications and any applicable Special Provisions of the Contract. The Consultant’s review and acceptance shall not be considered as relieving the Contractor of his full responsibility for the design, construction, monitoring, performance, and maintenance of the water management plan.*

*The Contractor shall design, construct, maintain and remove temporary access berms, cofferdams, dikes and channel diversions in accordance with Subsection 1.4, Temporary Access Berms, Cofferdams, Dikes and Channel Diversions.*

The sixth paragraph of Subsection 18.7, Measurement and Payment, shall be replaced in its entirety with the following:

*All costs associated with water management, including temporary access berms, cofferdams, dikes and channel diversions, will be considered incidental to the Work, and no separate or additional payment will be made.*

# No Amendments to Section 19, Painted Roadway Markings, of the 2020 Standard Specifications for Bridge Construction Edition 17

# No Amendments to Section 20, Deck Overlays and Rehabilitation of Concrete Components, of the 2020 Standard Specifications for Bridge Construction Edition 17

# No Amendments to Section 21, Demolition, Disposal and Salvage of Bridge Structures, of the 2020 Standard Specifications for Bridge Construction Edition 17

# Amendment to Section 22, Painting, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control

The first paragraph of Subsection 22.18, Quality Control, shall be replaced in its entirety with the following:

*To ensure that the work done meets the requirements of this specification, the Contractor shall have an experienced quality control person solely dedicated to actively monitoring and correcting the work of his employees whenever cleaning, surface preparation and coating application is taking place. The Consultant will provide a National Association of Corrosion Engineers (NACE) or an Association for Materials Protection and Performance (AMPP) certified quality assurance inspector to monitor and accept the work. The Contractor shall provide the inspector and all other representatives of the Consultant and the Department, at their request, safe free access to all areas of the work at all stages of completion.*

# No Amendments to Section 23, Structural Lumber and Piling, of the 2020 Standard Specifications for Bridge Construction Edition 17

# Amendment to Section 24, Overhead Sign Structures and Panels, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Prefabrication Submissions

The bulleted list of the first paragraph of Subsection 24.3.2, Prefabrication Submissions, shall be replaced in its entirety with the following:

* *List of fabricators and qualifications;*
* *Fabrication sequence and equipment;*
* *Mill test reports and product data sheets;*
* *Design notes, independent check notes, and shop drawings;*
* *Welding procedures;*
* *Geotechnical investigation report; and*
* *Fabrication schedule.*

**Amendment to Section 24, Overhead Sign Structures and Panels, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Preheat and Interpass Temperatures**

Reference to “Table 12.3 of AASHTO/AWS Bridge Welding Code D1.5M/D1.5” within the first paragraph of Subsection 24.3.5.5, Preheat and Interpass Temperatures, shall be replaced with the following:

*“Table 12.4 of AASHTO/AWS Bridge Welding Code D1.5M/D1.5”*

**Amendment to Section 24, Overhead Sign Structures and Panels, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Flame Straightening and Heat Curving**

Subsection 24.3.6.1.4, Flame Straightening and Heat Curving, shall be replaced in its entirety with the following:

*24.3.6.1.4 Heat Straightening and Heat Curving*

*Heat straightening without externally applied force will be permitted to correct weld induced distortion/shrinkage that is within two times the dimensional tolerance specified in Subsection 24.3.6.1.2, Dimensional Tolerances, and AASHTO/AWS Bridge Welding Code D1.5M/D1.5.*

*Heat straightening that is proposed to be completed with externally applied force or heat curving will only be permitted when reviewed and accepted by the Department and the Consultant.*

*The Contractor shall submit a procedure for heat straightening, with or without externally applied force, and/or heat curving to the Department and the Consultant for review and acceptance a minimum of 2 weeks prior to commencement of the work. The procedure shall include the limits of correction for which the procedure is applicable; details and pattern of proposed heat locations; location and magnitude of applied force, if applicable; target temperatures and cooling rates; and post heat inspection and testing details. The heat straightening or heat curving procedure will be considered a Professional Work Product and shall be authenticated by a Professional Engineer licensed to practice in the Province of Alberta and validated by a Responsible Member, in accordance with APEGA requirements.*

*Post heat inspection and testing shall be completed by a certified independent laboratory in Canada accredited by a Canadian or American accreditation body to ISO/IEC 17025 for the tests required. The accreditation body shall be a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA). Preparation and collection of samples for testing shall be directed and witnessed by or completed by personnel employed by the testing laboratory. A verification letter shall be provided by the testing laboratory that includes accreditation documentation, applicable testing standards, date of verification testing, and declaration of material compliance with Contract requirements. The verification letter shall be signed by an authorized officer of the testing laboratory.*

*Heat straightening or heat curving shall only be completed in the presence of the Consultant.*

Amendment to Section 24, Overhead Sign Structures and Panels, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Quality Control Inspection and Testing by the Contractor

Reference to “AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 6” within the first paragraph of Subsection 24.3.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced with the following:

*“AASHTO/American Welding Society (AWS) Bridge Welding Code D1.5M/D1.5 Clause 8”*

Reference to “AASHTO/AWS Bridge Welding Code D1.5M/D1.5 Subsection 6.26.3 and Table 6” within the first sub bullet of the fourth bullet of the first paragraph of Subsection 24.3.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced with the following:

*“AASHTO/AWS Bridge Welding Code D1.5M/D1.5 Clause 8.26.3 and Table 8.4”*

The last bullet of the first paragraph of Subsection 24.3.7.3, Quality Control Inspection and Testing by the Contractor, shall be replaced in its entirety with the following:

* *Adhesion testing of coatings shall be completed by an independent National Association of Corrosion Engineers (NACE) - Level 2 Certified Coating Inspector or Association for Materials Protection and Performance (AMPP) - Certified Coatings Inspector.*

**Amendment to Section 24, Overhead Sign Structures and Panels, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Witness and Hold Points**

The following bullet shall be added to the bulleted list in the fourth paragraph of Subsection 24.3.7.5, Witness and Hold Points:

* *After plate has been cut but before any welding (witness point);*

# Amendment to Section 25, Mechanically Stabilized Earth Walls, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Cast-In-Place Concrete Wall Coping Cap

The second paragraph of Subsection 25.2.7, Cast-In-Place Concrete Wall Coping Cap, shall be replaced in its entirety with the following:

*The top of the cast-in-place wall coping cap shall be smooth, have no steps or abrupt changes in height, and a 3% wash slope towards the MSE soil mass. Control joints and drip grooves shall be detailed in accordance with Typical Detail Drawing T-1680, Typical Barrier and Wingwall Details. Control joints shall be located at the centerline of the precast concrete fascia panel joints, perpendicular to the wall direction and in no case exceed 4 m spacing. At control joints, longitudinal reinforcing in the cast-in-place wall coping caps shall be discontinuous and have a 50 mm concrete cover measured from the centre of the joint.*

**Amendment to Section 25, Mechanically Stabilized Earth Walls, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Backfill Requirements for Galvanized Steel Soil Reinforcing**

Table 25-2, Backfill Requirements for Galvanized Steel Soil Reinforcing, of Subsection 25.3.7, Backfill, shall be replaced in its entirety with the following:

*Table 25-2 Backfill Requirements for Galvanized Steel Soil Reinforcing*

|  |  |  |  |
| --- | --- | --- | --- |
| ***Backfill Requirement*** | | ***Test Method (ASTM)*** | ***Test Method (AASHTO)*** |
| *Resistivity* | *≥3000 ohm-cm* | *ASTM G57* | *AASHTO T 288* |
| *pH* | *5 - 10* | *ASTM G51* | *AASHTO T 289* |
| *Chlorides* | *≤100 ppm* | *ASTM 512* | *AASHTO T 291* |
| *Magnesium Sulphate Soundness* | *Loss less than 30% after four cycles* | *ASTM C88* | *AASHTO T 104* |
| *Sulphates* | *≤200 ppm* | *ASTM D516* | *AASHTO T 290* |
| *Organic Content* | *≤1.0%* | *ASTM D2974* | *AASHTO T 267* |

The third sentence of the seventh paragraph of Subsection 25.3.7, Backfill, shall be replaced in its entirety with the following:

*PH, chloride, magnesium sulphate soundness, sulphate, and organic content testing shall be completed on 9 samples (3 top, 3 middle, 3 bottom).*

# Amendment to Section 26, RCP and PBC Structures, of the 2020 Standard Specifications for Bridge Construction Edition 17, Re: Water management

Subsection 26.3.1, Care of Water, shall be replaced in its entirety with the following:

*26.3.1 Water Management*

*The Contractor shall complete all Work in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction, and all applicable environmental regulations.*

*A water management plan outlining the means and methods that the Contractor will use to control and manage water and/or ice at all times during the Work shall be included in the Contractor’s Environmental Construction Operations Plan (ECO Plan). The water management plan shall be authenticated by a qualified professional in accordance with Subsection 1.2.16, Environmental Management, of the General Specifications and Specification Amendments for Highway and Bridge Construction. The water management plan shall be submitted to the Consultant for review and acceptance a minimum of 2 weeks prior to the preconstruction meeting.*

*The water management plan will be reviewed by the Consultant solely to ascertain general conformance with environmental regulations, specifications and any applicable Special Provisions of the Contract. The Consultant’s review and acceptance shall not be considered as relieving the Contractor of his full responsibility for the design, construction, monitoring, performance, and maintenance of the water management plan.*

*The Contractor shall design, construct, maintain and remove temporary access berms, cofferdams, dikes and channel diversions in accordance with Subsection 1.4, Temporary Access Berms, Cofferdams, Dikes and Channel Diversions.*

The sixth paragraph of Subsection 26.4, Measurement and Payment, shall be replaced in its entirety with the following:

*All costs associated with water management, including temporary access berms, cofferdams, dikes and channel diversions, will be considered incidental to the Work, and no separate or additional payment will be made.*

End