

1 Amend **Section 601 - Structural Concrete** to read as follows:

2
3 **"SECTION 601 - STRUCTURAL CONCRETE**

4
5 **601.01 Description.** Structural concrete shall consist of portland cement,
6 fine aggregate, coarse aggregate, and water. Proportion and mix the structural
7 concrete according to the contract. Admixtures for entraining air, retarding or
8 accelerating the set, tinting and other purposes as required or permitted may be
9 added.

10
11 **601.02 Materials.** Materials shall conform to the following:

12		
13	Portland Cement	701.01
14		
15	Fine Aggregate for Concrete	703.01
16		
17	Coarse Aggregate for Concrete	703.02
18		
19	Admixtures	711.03
20		
21	Water	712.01
22		

23 Coarse aggregates for lightweight concrete shall conform to ASTM C 330
24 except the contract waives Sections 5, 7, and 9.

25
26 **601.03 Quality Control.** In portland cement concrete production, the
27 Contractor shall be responsible for the quality control of materials during the
28 handling, blending, mixing, curing, and placement operations. The person
29 responsible for concrete production control and sampling and testing for quality
30 control shall be proficient in concrete technology and shall have a sound
31 knowledge of the contract. The person responsible shall be able to adjust
32 concrete mix designs for improving workability and contract compliance.

33
34 Sample, test, and inspect the concrete necessary to assure quality
35 control of the component materials and the concrete. Sampling and testing for
36 quality control shall be according to the standard methods prescribed in this
37 contract. Do the quality control tests for slump, air content, temperature, and
38 unit weight during the production of structural concrete other than concrete for
39 incidental construction. Notify the Engineer of the test results.

40
41 **601.04 Design and Designation of Concrete.** The Contractor shall be
42 responsible for the design of concrete mixture for the concrete work specified.
43 When requested by the Engineer, the Contractor shall submit the mix designs
44 using State Highways Division form DOT 4-151. Work shall not start until the
45 Engineer accepts the mix design. The Engineer will accept the concrete mix
46 design using information given in Table 601-I - Design of Concrete and other
47 pertinent requirements of the contract. This acceptance will not relieve the
48 Contractor from obligations to furnish a workable mixture.

49 Whenever the 28-day compressive strength, f_c , is 4,000 psi or greater,
50 consider the concrete to be designated by compressive strength and shall be the
51 minimum required at 28 days.

52
53 The class of concrete for 28-day compressive strengths, f_c , that are less
54 than 4,000 psi are designated in Table 601-I - Design of Concrete. They are not
55 a requirement for acceptance of concrete.

56
57 Proportion the concrete designated by compressive strength such that the
58 concrete will conform to the strength specified in this contract.

59
60 Concrete deposited in water shall be seal concrete.

61
62 Design concrete placed in bridge decks and pavements exposed to the
63 wearing of traffic with an air content of 3% which includes entrapped and
64 entrained air. Maintain the air content for plastic concrete within a tolerance of
65 $\pm 1\%$ during the work. Unless the contract designates the concrete by
66 compressive strength, the concrete shall be Class BD.

67
68 When placing concrete in bridge decks, incorporate a water-reducing and
69 set-retarding admixture into the concrete. The water-reducing and set-retarding
70 admixture shall have the capability of varying the degree of retardation without
71 adversely affecting the other characteristics of the concrete. Submit a design
72 dosage for the admixture to the Engineer for acceptance.

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74 Unless specified in other parts of the contract, the concrete shall be Class
75 A.

76
77 The design of concrete shall be as required in Table 601-I.

TABLE 601-I - DESIGN OF CONCRETE			
Class of Concrete	28-Day Strength f_c , psi	Minimum Cement Content 100 lbs./c.y. (8.0 Maximum)	Maximum Water-Cement Ratio, lb./lb.
A	3000	5.6	0.55
B	2500	5.0	0.62
C	2000	4.4	0.71
D	1500	4.0	0.80
BD	3750	6.1	0.49
SEAL	3000	6.1	0.55
Designated by Strength f_c or f_r	As Specified	6.1	0.49
f_r = Specified Modulus of Rupture			

Proportion the concrete materials according to the requirements for each concrete designated by class, cement content in pounds per cubic yards, or 28-day compressive strength specified in the contract using the absolute volume method. Use the volumetric proportioning methods as outlined in:

- (1) the American Concrete Institute (ACI) Standard 211.1-89, "Recommended Practices for Selecting Proportions for Normal and Heavyweight Concrete."

The coarse aggregate size for concrete shall be No. 57 (one inch to No. 4) or No. 67 (3/4 inch to No. 4). For concrete placed in the bottom slab and stems of box girders, use the No. 67 size aggregate. When accepted by the Engineer in writing, the Contractor may use smaller size aggregates where encountering limited spacing between forms and reinforcement.

When called for in the contract, lightweight concrete shall have a minimum compressive strength of 3,000 psi at 28 days. The lightweight concrete shall contain not less than 560 pounds of portland cement per cubic yard. Make, cure, and determine the compressive strength of lightweight concrete cylinders according to AASHTO T 22 and T 23. Lightweight concrete shall have a maximum wet plastic unit weight of 135 pcf and a nominal slump of 3.5 inches.

Determination of compliance with the requirements shown in this subsection shall be according to the following standard methods:

STANDARD METHODS	
Sampling Fresh Concrete	AASHTO T 141
Weight Per Cubic Foot Yield And Air Content of Concrete	AASHTO T 121
Slump of Portland Cement Concrete	AASHTO T 119
Air Content of Freshly Mixed Concrete by the Pressure Method	AASHTO T 152
Specific Gravity and Absorption of Fine Aggregate	AASHTO T 84
Specific Gravity and Absorption of Coarse Aggregate	AASHTO T 85
Temperature of Freshly Mixed Concrete	ASTM C 1064

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Test for strength shall be according to the following:

TEST FOR STRENGTH	
Making and Curing Concrete Compressive and Flexural Test Specimens in the Field	AASHTO T 23
Compressive Strength of Molded Concrete Cylinders	AASHTO T 22 (6 inch by 12 inch cylinders only)
Flexural Strength of Molded Beams	AASHTO T 97

When concrete is designated by compressive strength, f'_c , or flexural strength, f'_r , the Engineer will require prequalification of materials and mix proportions proposed for use before placing such concrete. The Engineer will prequalify the concrete on past performance records using statistical computations of the population sizes and (n-1) weighting, or trial batch test reports according to the computed minimum average strength for the material and mix proportions. The Engineer will resolve the minimum average strength on a probability of not more than one in 20 tests falling below the specified strength for the following conditions:

(1) When past performance records are available, the documented performance records shall include:

(a) a minimum of 15 consecutive 28-day strength tests from projects having the same materials and mix proportions or

(b) two groups totaling 30 or more test results representing similar materials in which the mix proportion strengths are within 20% of the specified strength from within the last one year.

The Engineer will analyze the performance records to establish a standard deviation. The Engineer will resolve the minimum average strength on the computed standard deviation.

(2) When no sufficient past performance records are available, the Engineer will assume the current standard deviation to be 500 psi for compressive strength, f'_c , and 50 psi for flexural strength, f'_r .

Unless sufficient performance records are available from other projects at the DOT Materials Testing and Research Branch, submit test performance records or trial test reports for prequalifications of concrete provided:

(1) such data shall be the most recent tests made on concrete of the proposed mix design and

(2) the Contractor has obtained such data within one year of the proposed use.

The test data and trial batch test reports shall include the following information:

- (1) Date of mixing.
- (2) Mixing equipment and procedures used.
- (3) The size of batch in cubic yards and the weight, type, and source of ingredients used.
- (4) Slump of concrete.
- (5) The air content of the concrete when using an air entraining agent.
- (6) The age and strength of concrete cylinders tested.

Trial batch test reports shall show that the concrete equals or exceeds the minimum average strength. The test is the average 28-day test results of five consecutive concrete cylinders or concrete beams taken from a single batch. No cylinder or beam shall have a strength less than 85% of the minimum average strength.

An official of the firm that did the tests shall sign the test data and trial test reports.

The Engineer reserves the right to stop the work when the mix properties are sufficiently out of control and a series of excessively low strength tests are occurring. Do not continue concrete work until after establishing the cause and informing the Engineer the necessary corrective action taken. The corrective action may range from a minor adjustment of proportions to the establishment of a new mix design.

601.05 Batching. Measure and batch the materials according to the following provisions:

(A) Portland Cement. Sacked or bulk cement may be used. Do not use fraction of a sack of cement in a batch of concrete unless the cement is weighed.

Weigh bulk cement on an accepted weighing device. Seal and vent the bulk cement weighing hopper properly to preclude dusting during operation. Do not suspend the discharge chute from the weighing hopper. Also, arrange the discharge chute so that cement will not lodge in the hopper or leak from the hopper.

Accuracy of batching shall be $\pm 1\%$ of the required mass.

177 **(B) Water.** Measure water by volume or by mass. The device for
178 measurement of water shall be readily adjustable and shall have an
179 accuracy within 1% of the quantity of water required for the batch.
180 Arrange the device so that variable pressures in the water supply line
181 does not affect the measurements. Equip the measuring tanks with
182 outside taps and valves or other accepted means to provide for checking
183 their calibration. Water, as measured, shall be within 1% of the required
184 quantity.
185

186 **(C) Aggregates.** Store and stockpile the aggregates so that the
187 Contractor avoids separation of coarse and fine particles within each size
188 and does not intermix the various sizes before proportioning. Protect the
189 stored or stockpiled aggregates from dust or other foreign matter. Do not
190 stockpile the aggregates from different sources and of different gradings
191 together.
192

193 Handle aggregates from stockpiles or other sources to the batching
194 plant by maintaining a uniform grading of the material. Do not use
195 aggregates that have become segregated or mixed with earth or foreign
196 matter. Stockpile or bin the aggregates at least 12 hours for draining
197 before batching the aggregate when producing or handling the aggregates
198 by hydraulic methods and washing the aggregates for draining. When the
199 aggregates contain a high or non-uniform moisture content, the Engineer
200 will require storage or stockpile over 12 hours.
201

202 Proportion the aggregates by weight. The exception is that the
203 aggregates in concrete for minor structures, curbs, and sidewalks may
204 be proportioned by volume or weight. For volume proportioning, use the
205 measuring boxes of known capacity to measure the quantity of each size
206 of aggregate.
207

208 Use the batch weight based on dry materials plus the total weight
209 of moisture (both absorbed and surface) contained in the aggregate.
210 The individual aggregates shall be within $\pm 2\%$ of the required weight.
211 The total mass of the aggregates shall be within $\pm 1\%$ of the required
212 weight.
213

214 **(D) Admixtures.** Store, proportion, and dispense admixtures
215 according to the following provisions:
216

217 **(1) Liquid Admixtures.** Dispense chemical admixtures, air
218 entraining admixtures, and calcium chloride in liquid form.
219 Dispense such liquid admixture by automatic dispensing
220 equipment. Dispensers for liquid admixtures shall have sufficient
221 capacity to measure the prescribed quantity for each batch of
222 concrete. Each dispenser shall include a graduated measuring
223 unit into which liquid admixtures can be measured to within $\pm 5\%$ of

the prescribed quantity for each batch. Locate and maintain the dispenser where the graduations can be read accurately from the point at which proportioning operations are controlled to permit a visual check of batch accuracy before discharging. Mark each measuring unit clearly for the type and quantity of admixture.

Arrange with the supplier to provide safe and suitable facilities for sampling admixtures.

When using more than one liquid admixture for the concrete mix, provide a separate measuring unit for each liquid admixture. Dispense the liquid admixture by injecting so that the admixture is not mixed at high concentrations and not interfere with the effectiveness of each other.

When using liquid admixtures in concrete, the dispensers shall operate automatically with the batching control equipment. Equip such dispensers with an automatic warning system in good operating condition that will provide a visible or audible signal at the point that the proportioning operations are controlled:

(a) when the quantity of admixture measured for each batch of concrete varies from the pre-selected dosage by more than 5% or

(b) when not emptying the entire contents of the measuring unit from the dispenser into each batch of concrete.

Unless liquid admixtures are added to the pre-measured water in the batch, arrange their liquid discharges into the batch of concrete to flow into the stream of water that will disperse the admixture throughout the batch.

Measure and disperse special admixtures as recommended by the admixture manufacturer and as accepted by the Engineer. Special admixtures shall include "high range" water reducers requiring dosages greater than the capacity of conventional dispensing equipment.

(2) Mineral Admixtures. Protect mineral admixtures from exposure to moisture until used. Pile the sacked material to permit access for tally, inspection and identification for each shipment.

Provide adequate facilities to keep the mineral admixtures separated and to assure inserting only the specified mineral

270 admixtures in the work. Provide safe and suitable facilities for
271 sampling mineral admixtures.

272
273 Incorporate the mineral admixtures into concrete using
274 equipment conforming to Subsection 601.05(A) - Portland Cement.

275
276 When completely mixing the concrete in paving or
277 continuous mixers, weigh the mineral admixture in a separate
278 weigh hopper. Introduce the mineral admixture and cement
279 simultaneously into the mixer proportionately with the aggregate.

280
281 When requiring interlocks for cement charging mechanisms
282 and weighing the cement and mineral admixtures cumulatively,
283 interlock their charging mechanisms to prevent the introduction of
284 mineral admixture until the weight of cement in the weigh hopper is
285 within the tolerances specified in Subsection 601.05(A) - Portland
286 Cement.

287
288 In determining the maximum amount of free water that may
289 be used in the concrete, consider the mineral admixture to be
290 cement.

291
292 **(E) Bins and Scales.** The batching plant shall include separate and
293 adequate bins for each size of aggregate. When using cement in bulk,
294 include a separate and adequate bin and weighing hopper for the cement.

295
296 Attach the cement weighing hopper to a separate scale for
297 individual weighing or to the aggregate scale for cumulative weighing.
298 When weighing the cement cumulatively, weigh the cement before the
299 other ingredients.

300
301 Scales for batching shall be of the springless-dial or beam-type.
302 When using beam-type scales, make provisions to show the operator that
303 the required load in the weighing hopper is approaching. The device shall
304 make the indication within the last 200 pounds of load and within 50
305 pounds of overload.

306
307 Scales shall be accurate to 0.5% throughout the range of use.
308 Design poises to lock thus preventing unauthorized change of position.
309 Use scales inspected the State Measurement Standards Branch of the
310 Department of Agriculture to assure their continued accuracy. Provide
311 not less than ten 50 pounds weight for testing scales.

312
313 Batching plants may be equipped with automatic weighing devices
314 of accepted types to proportion aggregates and bulk cement.

(F) **Batching and Hauling.** To check the accuracy of batch mass, resolve the gross and tare mass of batch trucks, truck mixers, and truck agitators when specified by the Engineer. Weigh the equipment on certified scales at no cost to the State.

When mixing is at the work site, transport the aggregates in batch boxes, vehicle bodies, or other containers of adequate capacity and construction. Partitions separating batches shall be adequate and effectively prevent spilling from one compartment to another while in transit or dumping. When using bulk cement, use a suitable method for handling the cement from weighing hopper to transporting container or into the batch itself for transportation to the mixer. Arrange batching and hauling to provide positive assurance of the actual presence in each batch of the entire cement content specified.

Transport bulk cement to the mixer in tight compartments carrying the full quantity of cement required for the batch. When placing cement in contact with the aggregates, the Engineer may reject the batches unless they are mixed and placed within 1.5 hours from contact. The Contractor may transport cement in original shipping packages on top of the aggregates, provided each batch contains the number of sacks required by the job mix.

Deliver the batches to the mixer intact. Dump each batch into the mixer without loss of cement. Also, when carrying more than one batch on the truck, dump the batch into the mixer without spilling the material from one batch compartment into another.

601.06 Mixing. Mix the concrete in mechanically operated mixers. When the Engineer permits, mix batches by hand methods according to the last paragraph of this section.

Mixers may be stationary or truck mixers. The mixer shall produce concrete uniform in color, appearance and distribution of the materials throughout the mass. Variation in the mixed concrete attributable to worn pickup or throw over blades will be just cause for inspection. When such inspection reveals the blades to be worn down more than one inch below the original height of the manufacturer's design, repair or replace the blades. Make a copy of the manufacturer's design, showing dimensions and arrangement of blades upon request.

Charge the batches into central or truck mixers so that part of the mixing water enters ahead of the cement and aggregates. The flow of water shall be uniform. The total water of each batch shall be in the mixer by the end of the first quarter of the mixing period. When using mixers having multiple compartment drums, the Engineer will consider the time required to transfer material between compartments mixing time. The speed at which the drum shall

rotate shall be as designated by the manufacturer. If such mixing does not provide concrete of uniform and smooth texture, perform additional revolutions at the same speed until each batch of concrete is thoroughly mixed. The Engineer will consider the mixing time from the time cement, aggregates, and 60% of the water are in the drum. Concrete mixed in each batch shall not exceed the manufacturer's guaranteed capacity. The Engineer will consider the guaranteed capacity of a mixer to be the manufacturer's rated capacity.

Equip central or truck mixers with an attachment for automatically timing the mixing of each batch of concrete. The timing device includes an automatic arrangement for locking the discharge chute and a device for warning the operator when the materials have been mixed the required length of time. When the timing or locking device becomes broken or fail to operate, immediately place before the mixer operator a clock or watch having a second hand. When failing to make repairs within three days after the timing or locking device becomes unserviceable, shut down and make the proper repairs.

The required mixing time in stationary mixers shall be between 50 seconds and five minutes. The mixing time shall be as necessary to produce concrete that meets the uniformity criteria when tested according to Section 11.3.3 of ASTM C 94. The Contractor may designate the mixing time between 50 seconds and five minutes to do the uniformity tests. The mixed concrete shall meet the uniformity requirements specified before using concrete for pavements or structures. The Engineer may allow the use of test concrete for appropriate incidental construction. Furnish labor, sampling equipment, and materials required for uniformity tests of the concrete mixture. The Engineer will furnish required testing equipment including scales, cubic measure, and air meter. The Engineer will do the test. The Engineer will not make payment for the labor, equipment, materials, or testing. The Engineer will consider them incidental to the concrete. After establishing operational procedures of batching and mixing, the Engineer will not permit changes in procedure without re-establishing procedures by uniformity tests. Repeat the mixer performance tests whenever the appearance of the concrete or the coarse aggregate content of samples is not according to ASTM C 94. For paving mixers, add four seconds to the specified mixing time when timing starts as soon as the skip reaches its maximum raised position.

Mix the truck mixed concrete at the proportioning plant. The mixer shall operate at agitating speed while in transit. The Contractor may mix the truck mixed concrete at the point of delivery provided the cement, or cement and mixing water, is added at that point. Mixing of truck mixed concrete shall begin immediately after the introduction of the mixing water to the cement and aggregates, or introduction of the cement to the aggregates.

A truck mixer includes a water tight revolving drum suitably mounted and fitted with adequate blades, and equipped with electrically or mechanically actuated revolution counters. Truck mixers shall produce a thoroughly mixed and uniform mass of concrete and shall discharge concrete without segregation.

411 Attach a metal manufacturer's standard rating plate to each truck mixer
412 permanently. The rating plate shall state the truck mixer's maximum volume of
413 mixed concrete for the various uses. Also attach a manufacturer's data plate
414 stating the maximum and minimum mixing speeds and other data needed by the
415 manufacturer to each truck mixer. When using the truck mixers for mixing,
416 concrete in each batch shall not exceed the maximum capacity shown on the
417 metal rating plate. When the equipment does not have a rating plate, an
418 attested copy of the manufacturer's rating shall suffice or the batch volume shall
419 not exceed 63% of the gross interior volume.

420
421 Operate truck mixers at the speed of rotation designated by the
422 manufacturer. The mixing speeds for the revolving drum type shall be not less
423 than 6 or more than 18 revolutions per minute.

424
425 Initially mix each batch of truck mixed concrete not less than 70 nor more
426 than 100 revolutions of the drum after all the ingredients including water are in
427 the mixer. When the batch volume is less than 63% of the gross volume of the
428 drum or less than 91% of the rated maximum capacity, the number of
429 revolutions required for mixing shall be not less than 50 or more than 100
430 revolutions per minute.

431
432 Water may be added to the mixture not more than two times after the
433 completion the initial mixing. Each time water is added, turn the drum an
434 additional 30 revolutions or more if necessary at mixing speed until the concrete
435 is uniformly mixed.

436
437 When furnishing shrink-mixed concrete, transfer the concrete that has
438 been partially mixed at a central plant to a truck mixer. Requirements for
439 transit-mixed concrete shall apply. The Engineer will not allow credit in the
440 number of revolutions at mixing speed for partial mixing in a central plant.

441
442 When the Engineer permits hand mixing, use hand mixing in batches not
443 more than 0.33 cubic yard and mix on a watertight, level platform. Measure the
444 proper amount of coarse aggregate in measuring boxes and spread on the
445 platform. Spread the fine aggregate on this layer. The coarse aggregate and
446 fine aggregate layers shall not be more than one foot in total depth. Spread dry
447 cement on this mixture. Turn the whole mass not less than two times dry.
448 Then add and distribute evenly sufficient clean water. Turn the whole mass
449 again not less than three times not including placing in the carriers or forms.

450
451 **601.07 Transporting Mixed Concrete.** The Contractor may transport mixed
452 concrete to the delivery point in:

453
454 (1) Truck agitators, or

455
456 (2) Truck mixers operating at the speed designated by the
457 manufacturer of the equipment as agitating speed, or

458 (3) Non-agitating hauling equipment, provided the:

459
460 (a) Consistency and workability of the mixed concrete upon
461 discharge at the delivery point is suitable for adequate placement
462 and consolidation in place and

463
464 (b) Mixed concrete after hauling to the delivery point conforms
465 to the uniformity criteria when tested as specified in Section 11.5.1
466 of ASTM C 94.
467

468 A truck agitator includes a watertight revolving drum or a watertight
469 container suitably mounted and fitted with adequate revolving blades and a
470 removable cover. Operate truck mixers or truck agitators within the limits of
471 capacity and speed of rotation designated by the manufacturer for agitating.
472 Agitators shall not exceed 80% of gross drum volume. Agitating speed for both
473 the revolving drum mixers and revolving blade type agitators shall be between
474 two and six revolutions per minute of the drum or of the mixing blades. Truck
475 mixers or truck agitators shall have electrically or mechanically actuated
476 counters. Actuate the counters after introducing the cement to aggregates.
477

478 Bodies of non-agitating hauling equipment shall be smooth and watertight
479 metal containers equipped with gates that will permit control of discharge of the
480 concrete. Provide accepted covers for protection against weather. When hauling
481 concrete in non-agitating trucks, complete the discharge within 30 minutes after
482 introducing the mixing water to the cement and aggregates.
483

484 When using a truck mixer or agitator for transporting concrete to the
485 delivery point, complete the discharge:
486

487 (1) Within 1.5 hours or

488
489 (2) Before 250 revolutions of the drum or blades for central mixed
490 concrete, or 300 revolutions of the drum or blades for truck mixed
491 concrete, whichever comes first after introducing the mixing water to the
492 cement and aggregates, or cement to the aggregates.
493

494 In hot weather or under conditions contributing to quick stiffening of the
495 concrete, the Engineer will reduce the time.
496

497 The manufacturer of truck mixed concrete and of central mixed concrete
498 shall furnish the Engineer a delivery ticket with each truck load of concrete
499 before unloading at the jobsite. The delivery ticket shall have the following
500 information, printed, stamped, or written:
501

502 (1) Name of concrete plants,

503
504 (2) Serial number of ticket,

- 505 (3) Date and truck number,
506
507 (4) Name of Contractor,
508
509 (5) Specific project, route, or designation of job (name and location),
510
511 (6) Specific class or designation of concrete according to the contract,
512
513 (7) Quantity of concrete in cubic yards,
514
515 (8) The time the Contractor loads the batch or first mixing of cement
516 and aggregates occurs,
517
518 (9) Name and quantity of admixture, if any,
519
520 (10) Readings of non-resettable revolution counters of truck mixers after
521 the introduction of the cement to aggregates, or the introduction of the
522 mixing water to the cement and aggregates,
523
524 (11) "Central Mixed" or "Premixed" when mixing the concrete completely
525 in a central mixer.
526

527 Furnish additional information designated by the Engineer and required by
528 the job specification upon request.
529

530 **601.08 Consistency.** Regulate the water used in concrete mixes so that the
531 consistency of the concrete as determined according to AASHTO T 119 is within
532 the nominal slump range shown in Table 601-II. When the slump of the concrete
533 is found to exceed the nominal slump, adjust the mixture of subsequent
534 batches.
535

536 The ability of the equipment to properly place the concrete gages the
537 consistency of the concrete. The difficulty in mixing, transporting, or pumping
538 does not gage the consistency of the concrete. The Engineer will reject harsh or
539 unworkable concrete that cannot be placed properly. Remove them at no cost
540 to the State.
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The slump for concrete shall be as specified in Table 601 -II.

TABLE 601-II - SLUMP FOR CONCRETE		
Type of Work	Nominal Slump Inches	Maximum Slump Inches
Concrete Pavements	0 - 3	3-1/2
Reinforced Concrete Structures:		
Sections Over 12 Inches	0 - 4	5
Sections 12 Inches Thick or Less	2 - 5	6
Non-Reinforced Concrete Facilities	1 - 3	4
Concrete Placed Underwater	6 - 8	9
Bridge Decks	0 - 3	3-1/2

When adverse or difficult conditions exist, the Contractor may exceed the above specified slump limitation if permitted by the Engineer in writing and maintains the water-cement ratio before placement. The cost of additional cement and water, or admixture shall be at no cost to the State. The Engineer will not allow additional compensation.

601.09 Forms. Construct forms according to the applicable sections of the contract.

601.10 Placing Concrete. Place concrete according to the applicable sections of the contract.

601.11 Finishing Concrete Surfaces. Finish concrete surfaces according to the applicable sections of the contract.

601.12 Curing Concrete. Cure the concrete according to the applicable sections of the contract.

601.13 Method of Measurement. The Engineer will measure concrete in accordance with applicable sections.

601.14 Basis of Payment. The Engineer will pay for the accepted concrete under the applicable sections."

END OF SECTION 601