

EXHIBIT A

DESCRIPTION OF GOODS AND SERVICES

FORM 816:

Reference is made in ITB documents to FORM 816, which is the State of Connecticut, Department of Transportation's "**Standard Specifications for Roads, Bridges and Incidental Construction**". Work is to be in accordance with FORM 816 including all supplements and other applicable standards. Copies of these Standard Specifications, FORM 816 may be purchased from the Connecticut Department of Transportation, Manager of Contracts, P.O. Box 317546, 2800 Berlin Turnpike, Newington, CT. 06131-7546.

The price is twenty dollars (\$20.00) if the FORM 816 is mailed and sixteen dollars (\$16.00) if the FORM 816 is picked up. Checks are to be made out to: Treasurer - State of Connecticut.

OR

You may go to the following:

<http://www.ct.gov/dot/cwp/view.asp?a=1385&O=319212>

MATERIALS:

Composition and materials for Classes A, C, F and S concrete mixes shall be in accordance with ConnDOT's FORM 816, Section M.03. Requirements for High Early-Strength Class F Concrete shall be as specified above for Class F Concrete; however, the cement shall be TYPE III or TYPE-III A as approved by ConnDOT. Class S requirements shall be as specified in Exhibit A-1 Technical Provisions for Class "S".

PLANT INSPECTION:

Prior to the issuance of purchase orders, Contractor's plant, trucks, and materials shall be inspected and/or tested for conformance in accordance with the current edition of ConnDOT's, FORM 816 Sections 6.01 and M.03. Plants not approved or suspended by ConnDOT are not eligible to deliver material under Contract.

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MIXING AND DELIVERY:

With every delivery of concrete, Contractor is required to furnish a batch ticket indicating the date and time of loading, the batch-mix components by weight, the class of mix, and the additives, if any. Ready-mixed concrete shall be mixed and delivered to the point designated on the purchase order by means of one (1) of the following combinations of operations:

1. Mixed completely in a stationary mixer and the mixed concrete transported to the point of delivery in a truck agitator or in a truck mixer operating at agitator speed or in non-agitating equipment when approved by the Engineer.
2. Mixed completely in a truck mixer at the batching point or while in transit. Transit-mixed concrete shall be in accordance with Section 6.01.03.

Transit-mixed concrete water shall be introduced into the mixing drum while the mixer is at the batch plant. Each truck mixer shall be equipped with a readily visible device that accurately records the number of drum or blade revolutions at mixing speed.

3. Mixed completely in a truck mixer at the point of delivery following the addition of mixing water. Truck-mixed concrete shall be in accordance with Section 6.01.03.

Truck-mixed concrete water shall be introduced into the mixing drum only after arrival at a level area on the site where the concrete is to be placed and under the supervision of ConnDOT personnel. The mixer shall be equipped with an approved device that records the number of drum or blade revolutions during mixing.

The concrete shall be discharged within one and one-half (1 ½) hours from the time the dry aggregates are loaded into the truck mixer.

Mixing revolutions shall not exceed one hundred (100). Mixing beyond one hundred (100) revolutions shall be at agitating speeds of not less than 2 nor more than 6 rpm's. Centrally mixed concrete transported in truck mixers shall be at agitating speed.

Mixing water shall be measured accurately by volume or weight by an approved adjustable measuring device that shall measure the required quantity under all operating conditions within a tolerance of one (1) quart or one (1) percent. The flow of water shall be stopped automatically when the required quantity has been delivered.

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ORDERING:

Questions regarding the quantity and/or type of concrete ordered should be directed to the District's Using Unit as purchase orders shall be based on a "per project basis". The method of measurement used when ordering is an estimate, and the amount received is the amount that is paid. Purchase orders shall be issued for the total project with deliveries to be made on a partial "as needed" basis.

Districts' contacts are as follows:

- | | |
|---------------------|--|
| District I | 1107 Cromwell Avenue, Rocky Hill CT 06067
860-258-4516, Attn: Maintenance Planning Unit |
| District II | 171 Salem Turnpike, Norwich CT 06360
860-823-3217, Attn: Maintenance Planning Unit |
| District III | 140 Pond Lily Avenue, New Haven CT 06515
203-389-3030, Attn: Maintenance Planning Unit |
| District IV | 359 South Main Street, Thomaston CT 06787
860-585-2798, Attn: Maintenance Planning Unit |

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TECHNICAL PROVISIONS

Where Class 'S' Concrete is required, Contractor shall comply with the Standard Specifications Form 816, Section M.03 as *supplemented herewith to provide a super-plasticized concrete.*

1.) General Composition of Concrete Mix (4,000psi required):

<u>TYPE</u>	<u>PROPERTY BY WT. APPROX.</u>	<u>WATER PER BAG MAX</u>	<u>GEM. FACTOR</u>
Class "S"	1 : 2.16 : 2.20	5.7 (Gals.)	7.0 (Bags/C.Y.)

2.) Coarse Aggregate: The required grading shall be obtained by using 100 percent 3/8" coarse aggregate.

3.) Cement: Type I or II Portland Cement shall be used for Class "S" Concrete.

4.) Admixtures: The superplasticizer admixture shall be a high-range water reducer (HRWR) capable of increasing the slump of the mix from approximately 2½ inches to 6½ inches upon the addition of the amount recommended by the respective manufacturer. The HRWR shall conform to ASTM C494 Type F or Type G and shall be approved by ConnDOT Engineer. The use of this material shall be in strict accordance with the respective manufacturer's written instructions and procedures.

5.) Composition: Class "S" concrete shall contain not less than 6.5 percent and not more than 8.5 percent entrained air at the time of placement.

6.) Compressive Strength: The Class "S" concrete shall have a minimum 4,000 psi compressive strength at 28 days.

7.) Consistency: Class "S" concrete shall have a slump range of 2 inches to 4 inches prior to the addition of the HRWR and from 6 inches to 8 inches of slump after the addition of the HRWR. The addition rates of the air-entraining admixture (A.E.A.) and the HRWR shall vary. Frequent field testing of the air content and slump prior to and after addition of the HRWR shall be the determining factor of actual addition rates for each admixture.

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NOTE: Contractor shall also have measuring graduates marked for the proportioning of the A.E.A. and the HRWR. DO NOT mix the A.E.A. and the HRWR together before adding to the mix; the resultant solution shall not work. DO NOT add the A.E.A. and the HRWR at the mixer simultaneously; these admixtures must be added separately in the mixing cycle. All manufactured materials shall be stored, mixed and used in strict accordance with the written recommendations of the respective manufacturers

Construction Methods:

Article 6.01.03 is supplemented by adding the following text. Where this specification deviates from the Standard Specifications for Roads, Bridges, and Incidental Construction, (FORM 816 and Supplemental Specifications, the intent of this text shall govern.

5 - Composition: Add the following:

Class "S" concrete shall conform to the requirements as specified in M.03.01 as amended herein. Class "S" concrete shall contain not less than 5.0 percent or (6.5 percent) and not more than 8.0 percent or (8.5 percent) entrained air at the time of placement.

The Class "S" concrete shall have a minimum 3,000 PSI compressive strength at twenty-eight (28) days.

6 - Consistency - Add the following:

Class "S" concrete shall have a slump range of 2 to 4 inches prior to the addition of the HRWR and a maximum of an 8 inch slump after the addition of the HRWR. The addition rates of the air-entraining admixture (A.E.A) and the HRWR will vary. Frequent field testing of the air content and slump prior to and after addition of the HRWR will be the determining factor of actual addition rates for each admixture.

7 - Mixing Concrete: Add the following:

For hand mixing of Class "S" concrete, Contractor shall provide scale(s) approved by ConnDOT Engineer in which cement and aggregate can be accurately weighed for the required mix proportions.

Contractor shall also have measuring graduates marked in ounces for the proportioning of the A.E.A and the HRWR. Do not mix the A.E.A. and the HRWR together before adding to the mix; the resultant solution will not work. Do not add the A.E.A. and the HRWR at the mixer simultaneously; these admixtures must be added separately in the mixing cycle. All manufactured materials shall be stored, mixed, and used in strict accordance with the written recommendations of the respective manufacturers.

25 - Material Storage: (NEW) Add the following

Contractor shall store and maintain the A.E.A. and the HRWR materials in clean original containers as delivered by the manufacturer.