



PAT McCRORY  
Governor

NICHOLAS J. TENNYSON  
Secretary

October 6, 2016

**Addendum No. 1**

RE: Contract # C203667  
WBS # 42271.3.2  
STATE FUNDED  
**Macon County (B-5125)**  
Bridge #22 Over Little Tennessee River On US-441 Business

**October 18, 2016 Letting**

To Whom It May Concern:

Reference is made to the proposal form furnished to you on this project.

The following revisions have been made to the proposal:

<b>Page No.</b>	<b>Revisions</b>
Proposal Cover	Note added that reads "Includes Addendum No. 1 Dated 10-06-2016"
R-16	In the original proposal Page R-16 contained a large blank area. The blank area has been removed and the subsequent pages renumbered.
Renumbered R-43 thru R-45	Added the project special provision entitled "Field Office (Lump Sum)"

Please void the Proposal Cover and the above listed pages in your proposal and replace with the revised pages.

On the item sheets the following pay item has been added:

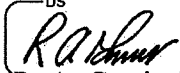
<b><u>Item</u></b>	<b><u>Description</u></b>	<b><u>Old Quantity</u></b>	<b><u>New Quantity</u></b>
205-0000700000-N-SP	Field Office	<b>NEW ITEM</b>	LUMP SUM

The Expedite File has been updated to reflect this revision. Please download the Expedite Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the addendum has been applied.



The contract will be prepared accordingly.

Sincerely,

  
R. A. Garris, PE  
Contract Officer

RAG/jag

cc: Mr. Lamar Sylvester, PE  
Mr. E.A. Green, PE  
Mr. Rodger Rochelle, PE  
Mr. R.E. Davenport, PE  
Mr. Ken Kennedy, PE  
Ms. Jaci Kincaid  
Project File (2)

Mr. Ray Arnold, PE  
Ms. Theresa Canales, PE  
Ms. Marsha Sample  
Mr. Mike Gwyn  
Ms. Penny Higgins  
Ms. Lori Strickland  
Mr. Mitchell Dixon

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH, N.C.

PROPOSAL

**INCLUDES ADDENDUM No. 1 DATED 10-06-16**

DATE AND TIME OF BID OPENING: **OCTOBER 18, 2016 AT 2:00 PM**

CONTRACT ID      C203667  
WBS                42271.3.2

FEDERAL-AID NO. STATE FUNDED

COUNTY            MACON

T.I.P. NO.        B-5125

MILES             0.127

ROUTE NO.        US 441

LOCATION           BRIDGE #22 OVER LITTLE TENNESSEE RIVER ON US-441 BUS.

TYPE OF WORK    GRADING, DRAINAGE, PAVING, SIGNAL AND STRUCTURE.

**NOTICE:**

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

**BIDS WILL BE RECEIVED AS SHOWN BELOW:**

**THIS IS A ROADWAY & STRUCTURE PROPOSAL**

**5% BID BOND OR BID DEPOSIT REQUIRED**

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Item	Section
Galvanizing	1076
Reflective sheeting	1088-3

Guardrail materials shall meet the requirements of Section 1046 of the *2012 Standard Specifications* except that guardrail materials shall not be water quenched or treated with chromate conversion coatings.

For painted Guardrail Anchor Units, Type 350, the Contractor may at his option, furnish any one of the following guardrail anchor units or approved equal.

Guardrail anchor unit (ET-Plus) as manufactured by:

Trinity Industries, Inc.  
2525 N. Stemmons Freeway  
Dallas, Texas 75207  
Telephone: 800-644-7976

The guardrail anchor unit (SKT 350) as manufactured by:

Road Systems, Inc.  
3616 Old Howard County Airport  
Big Spring, Texas 79720  
Telephone: 915-263-2435

Prior to installation the Contractor shall submit the following to the Engineer:

- (A) FHWA acceptance letter for each guardrail anchor unit certifying it meets the requirements of NCHRP Report 350, Test Level 3, in accordance with Article 106-2 of the *2012 Standard Specifications*.
- (B) Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Article 105-2 of the *2012 Standard Specifications*.

No modifications shall be made to the guardrail anchor unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans, and details and assembling instructions furnished by the manufacturer.

Painting shall be performed in accordance with Section 1080 and Section 442 of the *2012 Standard Specifications* using System 4 as modified herein.

**System 4 (Modified)**  
**Acrylic Primer and Top Coats**

Coat	Material	Mils Dry/Wet Film	Mils Dry/Wet Film
		Thickness	Thickness
		Minimum	Maximum
Primer	1080-12 White	3.0 DFT	5.0 DFT
Stripe	1080-12 Brown	4.0 WFT	7.0 WFT
Topcoat	1080-12 Brown	2.0 DFT	4.0 DFT
<b>Total</b>		5.0 DFT	9.0 DFT

**Construction Methods**

- (A) *Preparation of galvanized beams and hardware for painting:* Perform surface smoothing by removing or cleaning all zinc high spots, such as metal drip line, by hand or power tools in accordance with SSPC SP 2 or 3. Level zinc material flush with the surrounding plane without removing the base coating.

Abrasive sweep blasting shall be performed in accordance with Section 5.4.1 of ASTM D6386. This section also provides a description of the abrasive blast material to be used. The material and technique used will provide a stripping action to remove corrosion products and to provide a rough surface profile while leaving base zinc layers intact.

All surfaces of the blasted beams and hardware shall be blown down with clean compressed air to provide a clean, dry surface for additional coating to be applied.

All surfaces shall be free of visible zinc oxides or zinc hydroxides.

- (B) (1) *Certification:* Only SSPC QP-3 certified contractor shall shop paint guardrail material.
- (2) *Shop Paint:* Galvanized guardrail beams, both front and back, posts, anchor units and hardware shall be shop painted within 8 hours after surface preparation except paint bolt heads after installation.
- (C) *Repair of Damaged Coating:* Repair damage occurring to the galvanized portion of the coating during shipment or installation in accordance with Articles 1076-7 and 1080-9 of the 2012 *Standard Specifications*. Repair damage occurring to the painted portion of the coating during shipment or installation by applying 4.0 to 7.0 wet mils of topcoat with a brush or roller and feather or taper this to be level with the surrounding areas.
- (D) *Guardrail Installation:* Install guardrail in accordance with Section 862, details in the plans, and details and assembling instructions furnished by the manufacturer. Guardrail end delineation shall be applied to the entire end section of all approach and trailing end sections.

- (E) Guardrail end delineation is required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation consists of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Article 1088-3 of the *2012 Standard Specifications* and is incidental to the cost of the guardrail anchor unit.

### Measurement and Payment

*Painted Guardrail Anchor Units, Type 350* will be measured and paid for in accordance with the applicable requirements of Article 862-6 of the *2012 Standard Specifications*.

Such price and payment includes, but is not limited to furnishing and erecting posts, offset blocks, rail, miscellaneous hardware, and all other materials, backfilling; fabrication; welding; painting, galvanizing; furnishing and installing guardrail delineators and end delineation.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Painted Guardrail Anchor Units, Type 350	Each

### **PAINTED PEDESTRIAN SAFETY RAIL:**

#### **Description**

Furnish and install painted pedestrian safety rail at the locations shown in the plans, in accordance with the detail in the plans and as directed by the Engineer.

#### **Materials**

Refer to Division 10 of the *2012 Standard Specifications*.

<b>Item</b>	<b>Section</b>
Galvanizing	1076

Painting shall be performed in accordance with Section 1080 and Section 442 of the *2012 Standard Specifications* using System 4 as modified herein.

#### **System 4 (Modified) Acrylic Primer and Top Coats**

Coat	Material	Mils Dry/Wet Film	Mils Dry/Wet Film
		Thickness	Thickness
		Minimum	Maximum
Primer	1080-12 White	3.0 DFT	5.0 DFT
Stripe	1080-12 Brown	4.0 WFT	7.0 WFT
Topcoat	1080-12 Brown	2.0 DFT	4.0 DFT
<b>Total</b>		5.0 DFT	9.0 DFT

### Construction Methods

- (A) *Preparation of galvanized rails for painting:* Perform surface smoothing by removing or cleaning all zinc high spots, such as metal drip line, by hand or power tools in accordance with SSPC SP 2 or 3. Level zinc material flush with the surrounding plane without removing the base coating.

Abrasive sweep blasting shall be performed in accordance with Section 5.4.1 of ASTM D6386. This section also provides a description of the abrasive blast material to be used. The material and technique used will provide a stripping action to remove corrosion products and to provide a rough surface profile while leaving base zinc layers intact.

All surfaces of the blasted rails shall be blown down with clean compressed air to provide a clean, dry surface for additional coating to be applied.

All surfaces shall be free of visible zinc oxides or zinc hydroxides.

- (B) (1) *Certification:* Only SSPC QP-3 certified contractor shall shop paint rail material.
- (2) *Shop Paint:* Galvanized rail shall be shop painted within 8 hours after surface preparation.
- (C) *Repair of Damaged Coating:* Repair damage occurring to the galvanized portion of the coating during shipment or installation in accordance with Articles 1076-7 and 1080-9 of the *2012 Standard Specifications*. Repair damage occurring to the painted portion of the coating during shipment or installation by applying 4.0 to 7.0 wet mils of topcoat with a brush or roller and feather or taper this to be level with the surrounding areas.
- (D) *Rail Installation:* Install rail in accordance with the details in the plans and assembling instructions that may be furnished by the manufacturer.

### Measurement and Payment

*Painted Pedestrian Safety Rail* will be measured and paid for as the actual number of linear feet of safety rail measured along the top of the rail to the nearest 0.1 of a foot. Such price and payment shall be full compensation for fabricating, furnishing, installing, painting and all incidentals necessary to satisfactorily install the safety rail.

Payment will be made under:

**Pay Item**

Painted Pedestrian Safety Rail

**Pay Unit**

Linear Foot

**STREET SIGNS AND MARKERS AND ROUTE MARKERS:**

(7-1-95)

900

SP9 R02

Move any existing street signs, markers, and route markers out of the construction limits of the project and install the street signs and markers and route markers so that they will be visible to the traveling public if there is sufficient right of way for these signs and markers outside of the construction limits.

Near the completion of the project and when so directed by the Engineer, move the signs and markers and install them in their proper location in regard to the finished pavement of the project.

Stockpile any signs or markers that cannot be relocated due to lack of right of way, or any signs and markers that will no longer be applicable after the construction of the project, at locations directed by the Engineer for removal by others.

The Contractor shall be responsible to the owners for any damage to any street signs and markers or route markers during the above described operations.

No direct payment will be made for relocating, reinstalling, and/or stockpiling the street signs and markers and route markers as such work shall be considered incidental to other work being paid for by the various items in the contract.



**MATERIALS:**

(2-21-12) (Rev. 3-15-16)

1000, 1002, 1005, 1016, 1018, 1024, 1050, 1074, 1078, 1080, 1081, 1086, 1084, 1087, 1092

SP10 R01

Revise the *2012 Standard Specifications* as follows:

**Page 10-1, Article 1000-1, DESCRIPTION, lines 9-10,** replace the last sentence of the first paragraph with the following:

Type II, IP, IS or IT blended cement may be used instead of Portland cement.

**Page 10-1, Article 1000-1, DESCRIPTION, line 14,** add the following:

If any change is made to the mix design, submit a new mix design (with the exception of an approved pozzolan source change).

If any major change is made to the mix design, also submit new test results showing the mix design conforms to the criteria. Define a major change to the mix design as:

- (1) A source change in coarse aggregate, fine aggregate or cement.
- (2) A pozzolan class or type change (e.g. Class F fly ash to Class C fly ash).
- (3) A quantitative change in coarse aggregate (applies to an increase or decrease greater than 5%), fine aggregate (applies to an increase or decrease greater than 5%), water (applies to an increase only), cement (applies to a decrease only), or pozzolan (applies to an increase or decrease greater than 5%).

Use materials which do not produce a mottled appearance through rusting or other staining of the finished concrete surface.

**Page 10-1, Article 1000-2, MATERIALS, line 16; Page 10-8, Subarticle 1000-7(A), Materials, line 8; and Page 10-18, Article 1002-2, MATERIALS, line 9,** add the following to the table of item references:

<b>Item</b>	<b>Section</b>
Type II Blended Cement	1024-1

**Page 10-1, Subarticle 1000-3(A), Composition and Design, lines 25-27,** replace the second paragraph with the following:

Fly ash may be substituted for cement in the mix design up to 30% at a rate of 1.0 lb of fly ash to each pound of cement replaced.

**Page 10-2, Subarticle 1000-3(A), Composition and Design, lines 12-21,** delete the third paragraph through the sixth paragraph beginning with "If any change is made to the mix design, submit..." through "... (applies to a decrease only)."

Page 10-5, Table 1000-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1000-1 REQUIREMENTS FOR CONCRETE											
Class of Concrete	Min. Comp. Strength at 28 days	Maximum Water-Cement Ratio				Consistency Max. Slump		Cement Content			
		Air-Entrained Concrete		Non Air-Entrained Concrete		Vibrated	Non-Vibrated	Vibrated		Non-Vibrated	
		Rounded Aggregate	Angular Aggregate	Rounded Aggregate	Angular Aggregate			Min.	Max.	Min.	Max.
Units	psi					inch	inch	lb/cy	lb/cy	lb/cy	lb/cy
AA	4,500	0.381	0.426	-	-	3.5	-	639	715	-	-
AA Slip Form	4,500	0.381	0.426	-	-	1.5	-	639	715	-	-
Drilled Pier	4,500	-	-	0.450	0.450	-	5-7 dry 7-9 wet	-	-	640	800
A	3,000	0.488	0.532	0.550	0.594	3.5	4	564	-	602	-
B	2,500	0.488	0.567	0.559	0.630	1.5 machine-placed 2.5 hand-placed	4	508	-	545	-
Sand Light-weight	4,500	-	0.420	-	-	4	-	715	-	-	-
Latex Modified	3,000 7 day	0.400	0.400	-	-	6	-	658	-	-	-
Flowable Fill excavatable	150 max. at 56 days	as needed	as needed	as needed	as needed	-	Flowable	-	-	40	100
Flowable Fill non-excavatable	125	as needed	as needed	as needed	as needed	-	Flowable	-	-	100	as needed
Pavement	4,500 design, field 650 flexural, design only	0.559	0.559	-	-	1.5 slip form 3.0 hand place	-	526	-	-	-
Precast	See Table 1077-1	as needed	as needed	-	-	6	as needed	as needed	as needed	as needed	as needed
Prestress	per contract	See Table 1078-1	See Table 1078-1	-	-	8	-	564	as needed	-	-

Page 10-6, Subarticle 1000-4(I), Use of Fly Ash, lines 36-2, replace the first paragraph with the following:

Fly ash may be substituted for cement in the mix design up to 30% at a rate of 1.0 lb of fly ash to each pound of cement replaced. Use Table 1000-1 to determine the maximum allowable water-cementitious material (cement + fly ash) ratio for the classes of concrete listed.

Page 10-7, Table 1000-3, MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO, delete the table.

**Page 10-7, Article 1000-5, HIGH EARLY STRENGTH PORTLAND CEMENT CONCRETE, lines 30-31, delete the second sentence of the third paragraph.**

**Page 10-19, Article 1002-3, SHOTCRETE FOR TEMPORARY SUPPORT OF EXCAVATIONS, line 30, add the following at the end of Section 1002:**

**(H) Handling and Storing Test Panels**

Notify the Area Materials Engineer when preconstruction or production test panels are made within 24 hours of shooting the panels. Field cure and protect test panels from damage in accordance with ASTM C1140 until the Department transports panels to the Materials and Tests Regional Laboratory for coring.

Page 10-23, Table 1005-1, AGGREGATE GRADATION-COARSE AGGREGATE, replace with the following:

TABLE 1005-1 AGGREGATE GRADATION - COARSE AGGREGATE													
Percentage of Total by Weight Passing													
Std. Size #	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#10	#16	#40	#200	Remarks
4	100	90-100	20-55	0-15	-	0-5	-	-	-	-	-	A	Asphalt Plant Mix
467M	100	95-100	-	35-70	-	0-30	0-5	-	-	-	-	A	Asphalt Plant Mix
5	-	100	90-100	20-55	0-10	0-5	-	-	-	-	-	A	AST, Sediment Control Stone
57	-	100	95-100	-	25-60	-	0-10	0-5	-	-	-	A	AST, Str. Concrete, Shoulder Drain, Sediment Control Stone
57M	-	100	95-100	-	25-45	-	0-10	0-5	-	-	-	A	AST, Concrete Pavement
6M	-	-	100	90-100	20-55	0-20	0-8	-	-	-	-	A	AST
67	-	-	100	90-100	-	20-55	0-10	0-5	-	-	-	A	AST, Str. Concrete, Asphalt Plant Mix
78M	-	-	-	100	98-100	75-100	20-45	0-15	-	-	-	A	Asphalt Plant Mix, AST, Str. Conc. Weep Hole Drains
14M	-	-	-	-	-	100	35-70	5-20	-	0-8	-	A	Asphalt Plant Mix, AST, Weep Hole Drains
9	-	-	-	-	-	100	85-100	10-40	-	0-10	-	A	AST
ABC	-	100	75-97	-	55-80	-	35-55	-	25-45	-	14-30	4-12B	Aggregate Base Course, Aggregate Stabilization
ABC (M)	-	100	75-100	-	45-79	-	20-40	-	0-25	-	-	0-12B	Maintenance Stabilization
Light-C	-	-	-	-	100	80-100	5-40	0-20	-	0-10	-	0-2.5	AST

- A. See Subarticle 1005-4(A).
- B. See Subarticle 1005-4(B).
- C. For Lightweight Aggregate used in Structural Concrete, see Subarticle 1014-2(E)(6).

**Page 10-39, Article 1016-3, CLASSIFICATIONS, lines 27-32, replace with the following:**

Select material is clean, unweathered durable, blasted rock material obtained from an approved source. While no specific gradation is required, the below criteria will be used to evaluate the materials for visual acceptance by the Engineer:

- (A) At least 50% of the rock has a diameter of from 1.5 ft to 3 ft,
- (B) 30% of the rock ranges in size from 2" to 1.5 ft in diameter, and
- (C) Not more than 20% of the rock is less than 2" in diameter. No rippable rock will be permitted.

**Page 10-40, Tables 1018-1 and 1018-2, PIEDMONT, WESTERN AND COASTAL AREA CRITERIA FOR ACCEPTANCE OF BORROW MATERIAL, under second column in both tables, replace second row with the following:**

Acceptable, but not to be used in the top 3 ft of embankment or backfill

**Page 10-46, Article 1024-1, PORTLAND CEMENT, line 33, add the following as the ninth paragraph:**

Use Type IL blended cement that meets AASHTO M 240, except that the limestone content is limited to between 5 and 12% by weight and the constituents shall be interground. Class F fly ash can replace a portion of Type IL blended cement and shall be replaced as outlined in Subarticle 1000-4(I) for Portland cement. For mixes that contain cement with alkali content between 0.6% and 1.0% and for mixes that contain a reactive aggregate documented by the Department, use a pozzolan in the amount shown in Table 1024-1.

**Page 10-46, Table 1024-1, POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE, replace with the following:**

<b>TABLE 1024-1 POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE</b>	
<b>Pozzolan</b>	<b>Rate</b>
Class F Fly Ash	20% - 30% by weight of required cement content with 1.0 lb Class F fly ash per lb of cement replaced
Ground Granulated Blast Furnace Slag	35%-50% by weight of required cement content with 1.0 lb slag per lb of cement replaced
Microsilica	4%-8% by weight of required cement content with 1.0 lb microsilica per lb of cement replaced

**Page 10-47, Subarticle 1024-3(B), Approved Sources, lines 16-18, replace the second sentence of the second paragraph with the following:**

Tests shall be performed by AASHTO's designated National Transportation Product Evaluation Program (NTPEP) laboratory for concrete admixture testing.

**Page 10-65, Article 1050-1, GENERAL, line 41,** replace the first sentence with the following:

All fencing material and accessories shall meet Section 106.

**Page 10-115, Subarticle 1074-7(B), Gray Iron Castings, lines 10-11,** replace the first two sentences with the following:

Supply gray iron castings meeting all facets of AASHTO M 306 excluding proof load. Proof load testing will only be required for new casting designs during the design process, and conformance to M306 loading (40,000 lb.) will be required only when noted on the design documents.

**Page 10-126, Table 1078-1, REQUIREMENTS FOR CONCRETE,** replace with the following:

Property	28 Day Design Compressive Strength 6,000 psi or less	28 Day Design Compressive Strength greater than 6,000 psi
Maximum Water/Cementitious Material Ratio	0.45	0.40
Maximum Slump without HRWR	3.5"	3.5"
Maximum Slump with HRWR	8"	8"
Air Content (upon discharge into forms)	5 + 2%	5 + 2%

**Page 10-151, Article 1080-4, INSPECTION AND SAMPLING, lines 18-22,** replace (B), (C) and (D) with the following:

- (B) At least 3 panels prepared as specified in 5.5.10 of AASHTO M 300, Bullet Hole Immersion Test.
- (C) At least 3 panels of 4"x6"x1/4" for the Elcometer Adhesion Pull Off Test, ASTM D4541.
- (D) A certified test report from an approved independent testing laboratory for the Salt Fog Resistance Test, Cyclic Weathering Resistance Test, and Bullet Hole Immersion Test as specified in AASHTO M 300.
- (E) A certified test report from an approved independent testing laboratory that the product has been tested for slip coefficient and meets AASHTO M253, Class B.

**Page 10-161, Subarticle 1081-1(A), Classifications, lines 29-33,** delete first 3 sentences of the description for Type 2 and replace with the following:

**Type 2** - A low-modulus, general-purpose adhesive used in epoxy mortar repairs. It may be used to patch spalled, cracked or broken concrete where vibration, shock or expansion and contraction are expected.

**Page 10-162, Subarticle 1081-1(A), Classifications, lines 4-7,** delete the second and third sentences of the description for Type 3A. **Lines 16-22,** delete Types 6A, 6B and 6C.

**Page 10-162, Subarticle 1081-1(B), Requirements, lines 26-30,** replace the second paragraph with the following:

For epoxy resin systems used for embedding dowel bars, threaded rods, rebar, anchor bolts and other fixtures in hardened concrete, the manufacturer shall submit test results showing that the bonding system will obtain 125% of the specified required yield strength of the fixture. Furnish certification that, for the particular bolt grade, diameter and embedment depth required, the anchor system will not fail by adhesive failure and that there is no movement of the anchor bolt. For certification and anchorage, use 3,000 psi as the minimum Portland cement concrete compressive strength used in this test. Use adhesives that meet Section 1081.

List the properties of the adhesive on the container and include density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength and compressive strength.

Page 10-163, Table 1081-1, PROPERTIES OF MIXED EPOXY RESIN SYSTEMS, replace with the following:

Property	Type 1	Type 2	Type 3	Type 3A	Type 4A	Type 4B	Type 5
Viscosity-Poises at 77°F ± 2°F	Gel	10-30	25-75	Gel	40-150	40-150	1-6
Spindle No.	-	3	4	--	4	4	2
Speed (RPM)	-	20	20	--	10	10	50
Pot Life (Minutes)	20-50	30-60	20-50	5-50	40-80	40-80	20-60
Minimum Tensile Strength at 7 days (psi)	1,500	2,000	4,000	4,000	1,500	1,500	4,000
Tensile Elongation at 7 days (%)	30 min.	30 min.	2-5	2-5	5-15	5-15	2-5
Min. Compressive Strength of 2" mortar cubes at 24 hours	3,000 (Neat)	4,000-	6,000-	6,000 (Neat)	3,000	3,000	6,000
Min. Compressive Strength of 2" mortar cubes at 7 days	5,000 (Neat)	-	-	-	-	5,000	-
Maximum Water Absorption (%)	1.5	1.0	1.0	1.5	1.0	1.0	1.0
Min. Bond Strength Slant Shear Test at 14 days (psi)	1,500	1,500	2,000	2,000	1,500	1,500	1,500

Page 10-164, Subarticle 1081-1(E), Prequalification, lines 31-33, replace the second sentence of the first paragraph with the following:

Manufacturers choosing to supply material for Department jobs must submit an application through the Value Management Unit with the following information for each type and brand name:



**Page 10-164, Subarticle 1081-1(E)(3), line 37**, replace with the following:

(3) Type of the material in accordance with Articles 1081-1 and 1081-4,

**Page 10-165, Subarticle 1081-1(E)(6), line 1**, in the first sentence of the first paragraph replace “AASHTO M 237” with “the specifications”.

**Page 10-165, Subarticle 1081-1(E), Prequalification, line 9-10**, delete the second sentence of the last paragraph.

**Page 10-165, Subarticle 1081-1(F), Acceptance, line 14**, in the first sentence of the first paragraph replace “Type 1” with “Type 3”.

**Page 10-169, Subarticle 1081-3(G), Anchor Bolt Adhesives**, delete this subarticle.

**Page 10-170, Article 1081-3, HOT BITUMEN, line 9**, add the following at the end of Section 1081:

#### **1081-4 EPOXY RESIN ADHESIVE FOR BONDING TRAFFIC MARKINGS**

##### **(A) General**

This section covers epoxy resin adhesive for bonding traffic markers to pavement surfaces.

##### **(B) Classification**

The types of epoxies and their uses are as shown below:

**Type I** – Rapid Setting, High Viscosity, Epoxy Adhesive. This type of adhesive provides rapid adherence to traffic markers to the surface of pavement.

**Type II** – Standard Setting, High Viscosity, Epoxy Adhesive. This type of adhesive is recommended for adherence of traffic markers to pavement surfaces when rapid set is not required.

**Type III** – Rapid Setting, Low Viscosity, Water Resistant, Epoxy Adhesive. This type of rapid setting adhesive, due to its low viscosity, is appropriate only for use with embedded traffic markers.

**Type IV** – Standard Set Epoxy for Blade Deflecting-Type Plowable Markers.

##### **(C) Requirements**

Epoxies shall conform to the requirements set forth in AASHTO M 237.

##### **(D) Prequalification**

Refer to Subarticle 1081-1(E).

##### **(E) Acceptance**

Refer to Subarticle 1081-1(F).

**Page 10-173, Article 1084-2, STEEL SHEET PILES, lines 37-38**, replace first paragraph with the following:

Steel sheet piles detailed for permanent applications shall be hot rolled and meet ASTM A572 or ASTM A690 unless otherwise required by the plans. Steel sheet piles shall be coated as required

by the plans. Galvanized sheet piles shall be coated in accordance with Section 1076. Metallized sheet piles shall be metallized in accordance to the Project Special Provision "Thermal Sprayed Coatings (Metallization)" with an 8 mil, 99.9% aluminum alloy coating and a 0.5 mil seal coating. Any portion of the metallized sheet piling encased in concrete shall receive a barrier coat. The barrier coat shall be an approved waterborne coating with a low-viscosity which readily absorbs into the pores of the aluminum thermal sprayed coating. The waterborne coating shall be applied at a spreading rate that results in a theoretical 1.5 mil dry film thickness. The manufacturer shall issue a letter of certification that the resin chemistry of the waterborne coating is compatible with the 99.9% aluminum thermal sprayed alloy and suitable for tidal water applications.

**Page 10-174, Subarticle 1086-1(B)(1), Epoxy, lines 18-24,** replace with the following:

The epoxy shall meet Article 1081-4.

The 2 types of epoxy adhesive which may be used are Type I, Rapid Setting, and Type II, Standard Setting. Use Type II when the pavement temperature is above 60°F or per the manufacturer's recommendations whichever is more stringent. Use Type I when the pavement temperature is between 50°F and 60°F or per the manufacturer's recommendations whichever is more stringent. Epoxy adhesive Type I, Cold Set, may be used to attach temporary pavement markers to the pavement surface when the pavement temperature is between 32°F and 50°F or per the manufacturer's recommendations whichever is more stringent.

**Page 10-175, Subarticle 1086-2(E), Epoxy Adhesives, line 27,** replace "Section 1081" with "Article 1081-4".

**Page 10-177, Subarticle 1086-3(E), Epoxy Adhesives, line 22,** replace "Section 1081" with "Article 1081-4".

**Page 10-179, Subarticle 1087-4(A), Composition, lines 39-41,** replace the third paragraph with the following:

All intermixed and drop-on glass beads shall not contain more than 75 ppm arsenic or 200 ppm lead.

**Page 10-180, Subarticle 1087-4(B), Physical Characteristics, line 8,** replace the second paragraph with the following:

All intermixed and drop-on glass beads shall comply with NCGS § 136-30.2 and 23 USC § 109(r).

**Page 10-181, Subarticle 1087-7(A), Intermixed and Drop-on Glass Beads, line 24,** add the following after the first paragraph:

Use X-ray Fluorescence for the normal sampling procedure for intermixed and drop-on beads, without crushing, to check for any levels of arsenic and lead. If any arsenic or lead is detected, the sample shall be crushed and repeat the test using X-ray Fluorescence. If the X-ray Fluorescence test shows more than a LOD of 5 ppm, test the beads using United States Environmental Protection Agency Method 6010B, 6010C or 3052 for no more than 75 ppm arsenic or 200 ppm lead.

**HIGH STRENGTH CONCRETE FOR DRIVEWAYS:**

(11-21-00) (Rev. 1-17-12)

848

SP10 R02

Use high early strength concrete for all driveways shown in the plans and as directed by the Engineer. Provide high early strength concrete that meets the requirements of Article 1000-5 of the *2012 Standard Specifications*.

Measurement and payment will be in accordance with Section 848 of the *2012 Standard Specifications*.

**SELECT MATERIAL, CLASS III, TYPE 3:**

(1-17-12)

1016, 1044

SP10 R05

Revise the *2012 Standard Specifications* as follows:

**Page 10-39, Article 1016-3, CLASS III**, add the following after line 14:

**Type 3 Select Material**

Type 3 select material is a natural or manufactured fine aggregate material meeting the following gradation requirements and as described in Sections 1005 and 1006:

Percentage of Total by Weight Passing							
3/8"	#4	#8	#16	#30	#50	#100	#200
100	95-100	65-100	35-95	15-75	5-35	0-25	0-8

**Page 10-39, Article 1016-3, CLASS III, line 15**, replace "either type" with "Type 1, Type 2 or Type 3".

**Page 10-62, Article 1044-1, line 36**, delete the sentence and replace with the following:

Subdrain fine aggregate shall meet Class III select material, Type 1 or Type 3.

**Page 10-63, Article 1044-2, line 2**, delete the sentence and replace with the following:

Subdrain coarse aggregate shall meet Class V select material.

**SHOULDER AND SLOPE BORROW:**

(3-19-13)

1019

SP10 R10

Use soil in accordance with Section 1019 of the *2012 Standard Specifications*. Use soil consisting of loose, friable, sandy material with a PI greater than 6 and less than 25 and a pH ranging from 5.5 to 7.0.

Soil with a pH ranging from 4.0 to 5.5 will be accepted without further testing if additional limestone is provided in accordance with the application rates shown in Table 1019-1A. Soil type is identified during the soil analysis. Soils with a pH above 7.0 require acidic amendments to be

added. Submit proposed acidic amendments to the Engineer for review and approval. Soils with a pH below 4.0 or that do not meet the PI requirements shall not be used.

<b>pH TEST RESULT</b>	<b>Sandy Soils Additional Rate (lbs. / Acre)</b>	<b>Silt Loam Soils Additional Rate (lbs. / Acre)</b>	<b>Clay Loam Soils Additional Rate (lbs. / Acre)</b>
4.0 - 4.4	1,000	4,000	6,000
4.5 - 4.9	500	3,000	5,000
5.0 - 5.4	NA	2,000	4,000

Note: Limestone application rates shown in this table are in addition to the standard rate of 4000 lbs. / acre required for seeding and mulching.

No direct payment will be made for providing additional lime or acidic amendments for Ph adjustment.

**GROUT PRODUCTION AND DELIVERY:**

(3-17-15)

1003

SP10 R20

Revise the *2012 Standard Specifications* as follows:

Replace Section 1003 with the following:

**SECTION 1003  
GROUT PRODUCTION AND DELIVERY**

**1003-1 DESCRIPTION**

This section addresses cement grout to be used for structures, foundations, retaining walls, concrete barriers, embankments, pavements and other applications in accordance with the contract. Produce non-metallic grout composed of Portland cement and water and at the Contractor's option or as required, aggregate and pozzolans. Include chemical admixtures as required or needed. Provide sand cement or neat cement grout as required. Define "sand cement grout" as grout with only fine aggregate and "neat cement grout" as grout without aggregate.

The types of grout with their typical uses are as shown below:

**Type 1** – A cement grout with only a 3-day strength requirement and a fluid consistency that is typically used for filling subsurface voids.

**Type 2** – A nonshrink grout with strength, height change and flow conforming to ASTM C1107 that is typically used for foundations, ground anchors and soil nails.

**Type 3** – A nonshrink grout with high early strength and freeze-thaw durability requirements that is typically used in pile blockouts, grout pockets, shear keys, dowel holes and recesses for concrete barriers and structures.

**Type 4** – A neat cement grout with low strength, a fluid consistency and high fly ash content that is typically used for slab jacking.

**Type 5** – A low slump, low mobility sand cement grout with minimal strength that is typically used for compaction grouting.

### **1003-2 MATERIALS**

Refer to Division 10.

<b>Item</b>	<b>Section</b>
Chemical Admixtures	1024-3
Fine Aggregate	1014-1
Fly Ash	1024-5
Ground Granulated Blast Furnace Slag	1024-6
Portland Cement	1024-1
Silica Fume	1024-7
Water	1024-4

Do not use grout that contains soluble chlorides or more than 1% soluble sulfate. At the Contractor's option, use an approved packaged grout instead of the materials above except for water. Use packaged grouts that are on the NCDOT Approved Products List.

Use admixtures for grout that are on the NCDOT Approved Products List or other admixtures in accordance with Subarticle 1024-3(E) except do not use concrete additives or unclassified or other admixtures in Type 4 or 5 grout. Use Class F fly ash for Type 4 grout and Type II Portland cement for Type 5 grout.

Use well graded rounded aggregate with a gradation, liquid limit (LL) and plasticity index (PI) that meet Table 1003-1 for Type 5 grout. Fly ash may be substituted for a portion of the fines in the aggregate. Do not use any other pozzolans in Type 5 grout.

<b>Gradation</b>		<b>Maximum Liquid Limit</b>	<b>Maximum Plasticity Index</b>
<b>Sieve Designation per AASHTO M 92</b>	<b>Percentage Passing (% by weight)</b>		
3/8"	100	N/A	N/A
No. 4	70 – 95		
No. 8	50 – 90		
No. 16	30 – 80		
No. 30	25 – 70		
No. 50	20 – 50		
No. 100	15 – 40		
No. 200	10 – 30	25	10

### 1003-3 COMPOSITION AND DESIGN

When using an approved packaged grout, a grout mix design submittal is not required. Otherwise, submit proposed grout mix designs for each grout mix to be used in the work. Mixes for all grout shall be designed by a Certified Concrete Mix Design Technician or an Engineer licensed by the State of North Carolina. Mix proportions shall be determined by a testing laboratory approved by the Department. Base grout mix designs on laboratory trial batches that meet Table 1003-2 and this section. With permission, the Contractor may use a quantity of chemical admixture within the range shown on the current list of approved admixtures maintained by the Materials and Tests Unit.

Submit grout mix designs in terms of saturated surface dry weights on Materials and Tests Form 312U at least 35 days before proposed use. Adjust batch proportions to compensate for surface moisture contained in the aggregates at the time of batching. Changes in the saturated surface dry mix proportions will not be permitted unless revised grout mix designs have been submitted to the Engineer and approved.

Accompany Materials and Tests Form 312U with a listing of laboratory test results of compressive strength, density and flow or slump and if applicable, aggregate gradation, durability and height change. List the compressive strength of at least three 2" cubes at the age of 3 and 28 days.

The Engineer will review the grout mix design for compliance with the contract and notify the Contractor as to its acceptability. Do not use a grout mix until written notice has been received. Acceptance of the grout mix design or use of approved packaged grouts does not relieve the Contractor of his responsibility to furnish a product that meets the contract. Upon written request from the Contractor, a grout mix design accepted and used satisfactorily on any Department project may be accepted for use on other projects.

Perform laboratory tests in accordance with the following test procedures:

<b>Property</b>	<b>Test Method</b>
Aggregate Gradation <sup>A</sup>	AASHTO T 27
Compressive Strength	AASHTO T 106
Density (Unit Weight)	AASHTO T 121, AASHTO T 133 <sup>B</sup> , ANSI/API RP <sup>C</sup> 13B-1 <sup>B</sup> (Section 4, Mud Balance)
Durability	AASHTO T 161 <sup>D</sup>
Flow	ASTM C939 (Flow Cone)
Height Change	ASTM C1090 <sup>E</sup>
Slump	AASHTO T 119

- A.** Applicable to grout with aggregate.
- B.** Applicable to Neat Cement Grout.
- C.** American National Standards Institute/American Petroleum Institute Recommended Practice.
- D.** Procedure A (Rapid Freezing and Thawing in Water) required.
- E.** Moist room storage required.

#### **1003-4 GROUT REQUIREMENTS**

Provide grout types in accordance with the contract. Use grouts with properties that meet Table 1003-2. The compressive strength of the grout will be considered the average compressive strength test results of three 2" cubes at each age. Make cubes that meet AASHTO T 106 from the grout delivered for the work or mixed on-site. Make cubes at such frequencies as the Engineer may determine and cure them in accordance with AASHTO T 106.

Type of Grout	Minimum Compressive Strength at		Height Change at 28 days	Flow <sup>A</sup> /Slump <sup>B</sup>	Minimum Durability Factor
	3 days	28 days			
1	3,000 psi	—	—	10 – 30 sec	—
2	Table 1 <sup>C</sup>			Fluid Consistency <sup>C</sup>	—
3	5,000 psi	—	0 – 0.2%	Per Accepted Grout Mix Design/ Approved Packaged Grout	80
4 <sup>D</sup>	600 psi	1,500 psi	—	10 – 26 sec	—
5	—	500 psi	—	1 – 3"	—

A. Applicable to Type 1 through 4 grouts.

B. Applicable to Type 5 grout.

C. ASTM C1107.

D. Use Type 4 grout with proportions by volume of 1 part cement and 3 parts fly ash.

### 1003-5 TEMPERATURE REQUIREMENTS

When using an approved packaged grout, follow the manufacturer's instructions for grout and air temperature at the time of placement. Otherwise, the grout temperature at the time of placement shall be not less than 50°F nor more than 90°F. Do not place grout when the air temperature measured at the location of the grouting operation in the shade away from artificial heat is below 40°F.

### 1003-6 ELAPSED TIME FOR PLACING GROUT

Agitate grout continuously before placement. Regulate the delivery so the maximum interval between the placing of batches at the work site does not exceed 20 minutes. Place grout before exceeding the times in Table 1003-3. Measure the elapsed time as the time between adding the mixing water to the grout mix and placing the grout.

Air or Grout Temperature, Whichever is Higher	Maximum Elapsed Time	
	No Retarding Admixture Used	Retarding Admixture Used
90°F or above	30 minutes	1 hr. 15 minutes
80°F through 89°F	45 minutes	1 hr. 30 minutes
79°F or below	60 minutes	1 hr. 45 minutes



**1003-7 MIXING AND DELIVERY**

Use grout free of any lumps and undispersed cement. When using an approved packaged grout, mix grout in accordance with the manufacturer's instructions. Otherwise, comply with Articles 1000-8 through 1000-12 to the extent applicable for grout instead of concrete.

**GEOSYNTHETICS:**

(2-16-16)

1056

SP10 R25

Revise the *2012 Standard Specifications* as follows:

Replace Section 1056 with the following:

**SECTION 1056  
GEOSYNTHETICS****1056-1 DESCRIPTION**

Provide geosynthetics for subsurface drainage, separation, stabilization, reinforcement, erosion control, filtration and other applications in accordance with the contract. Use geotextiles, geocomposite drains and geocells that are on the NCDOT Approved Products List. Prefabricated geocomposite drains include sheet, strip and vertical drains (PVDs), i.e., "wick drains" consisting of a geotextile attached to and/or encapsulating a plastic drainage core. Geocells are comprised of ultrasonically welded polymer strips that when expanded form a 3D honeycomb grid that is typically filled with material to support vegetation.

If necessary or required, hold geotextiles and sheet drains in place with new wire staples, i.e., "sod staples" that meet Subarticle 1060-8(D) or new anchor pins. Use steel anchor pins with a diameter of at least 3/16" and a length of at least 18" and with a point at one end and a head at the other end that will retain a steel washer with an outside diameter of at least 1.5".

**1056-2 HANDLING AND STORING**

Load, transport, unload and store geosynthetics so geosynthetics are kept clean and free of damage. Label, ship and store geosynthetics in accordance with Section 7 of AASHTO M 288. Geosynthetics with defects, flaws, deterioration or damage will be rejected. Do not unwrap geosynthetics until just before installation. Do not leave geosynthetics exposed for more than 7 days before covering except for geosynthetics for temporary wall faces and erosion control.

**1056-3 CERTIFICATIONS**

Provide Type 1, Type 2 or Type 4 material certifications in accordance with Article 106-3 for geosynthetics. Define "minimum average roll value" (MARV) in accordance with ASTM D4439. Provide certifications with MARV for geosynthetic properties as required. Test geosynthetics using laboratories accredited by the Geosynthetic Accreditation Institute (GAI) to perform the required test methods. Sample geosynthetics in accordance with ASTM D4354.

**1056-4 GEOTEXTILES**

When required, sew geotextiles together in accordance with Article X1.1.4 of AASHTO M 288. Provide sewn seams with seam strengths meeting the required strengths for the geotextile type and class specified.

Provide geotextile types and classes in accordance with the contract. Geotextiles will be identified by the product name printed directly on the geotextile. When geotextiles are not marked with a product name or marked with only a manufacturing plant identification code, geotextiles will be identified by product labels attached to the geotextile wrapping. When identification is based on labels instead of markings, unwrap geotextiles just before use in the presence of the Engineer to confirm that the product labels on both ends of the outside of the geotextile outer wrapping match the labels affixed to both ends of the inside of the geotextile roll core. Partial geotextile rolls without the product name printed on the geotextile or product labels affixed to the geotextile roll core may not be used.

Use woven or nonwoven geotextiles with properties that meet Table 1056-1. Define “machine direction” (MD) and “cross-machine direction” (CD) in accordance with ASTM D4439.

TABLE 1056-1 GEOTEXTILE REQUIREMENTS						
Property	Requirement					Test Method
	Type 1	Type 2	Type 3 <sup>A</sup>	Type 4	Type 5 <sup>B</sup>	
Typical Application	<i>Shoulder Drains</i>	<i>Under Rip Rap</i>	<i>Silt Fence Fabric</i>	<i>Soil Stabilization</i>	<i>Temporary Walls</i>	
Elongation (MD & CD)	≥ 50%	≥ 50%	≤ 25%	< 50%	< 50%	ASTM D4632
Grab Strength (MD & CD)	Table 1 <sup>D</sup> , Class 3	Table 1 <sup>D</sup> , Class 1	100 lb <sup>C</sup>	Table 1 <sup>D</sup> , Class 3	-	ASTM D4632
Tear Strength (MD & CD)			-			ASTM D4533
Puncture Strength			-			ASTM D6241
Ultimate Tensile Strength (MD & CD)	-	-	-	-	2,400 lb/ft <sup>C</sup> (unless required otherwise in the contract)	ASTM D4595
Permittivity	Table 2 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil	Table 6 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil	Table 7 <sup>D</sup>	Table 5 <sup>D</sup>	0.20 sec <sup>-1,C</sup>	ASTM D4491
Apparent Opening Size					0.60 mm <sup>E</sup>	ASTM D4751
UV Stability (Retained Strength)					70% <sup>C</sup> (after 500 hr of exposure)	ASTM D4355

- A. Minimum roll width of 36" required.  
 B. Minimum roll width of 13 ft required.  
 C. MARV per Article 1056-3.  
 D. AASHTO M 288.  
 E. Maximum average roll value.

### 1056-5 GEOCOMPOSITE DRAINS

Provide geocomposite drain types in accordance with the contract and with properties that meet Table 1056-2.

Property	Requirement			Test Method
	Sheet Drain	Strip Drain	Wick Drain	
Width	≥ 12" (unless required otherwise in the contract)	12" ±1/4"	4" ±1/4"	N/A
In-Plane Flow Rate <sup>A</sup> (with gradient of 1.0 and 24-hour seating period)	6 gpm/ft @ applied normal compressive stress of 10 psi	15 gpm/ft @ applied normal compressive stress of 7.26 psi	1.5 gpm <sup>B</sup> @ applied normal compressive stress of 40 psi	ASTM D4716

A. MARV per Article 1056-3.

B. Per 4" drain width.

For sheet and strip drains, use accessories (e.g., pipe outlets, connectors, fittings, etc.) recommended by the Drain Manufacturer. Provide sheet and strip drains with Type 1 geotextiles heat bonded or glued to HDPE, polypropylene or high impact polystyrene drainage cores that meet Table 1056-3.

Property	Requirement (MARV)		Test Method
	Sheet Drain	Strip Drain	
Thickness	1/4"	1"	ASTM D1777 or D5199
Compressive Strength	40 psi	30 psi	ASTM D6364

For wick drains with a geotextile wrapped around a corrugated drainage core and seamed to itself, use drainage cores with an ultimate tensile strength of at least 225 lb per 4" width in accordance with ASTM D4595 and geotextiles with properties that meet Table 1056-4.

TABLE 1056-4 WICK DRAIN GEOTEXTILE REQUIREMENTS		
Property	Requirement	Test Method
Elongation	$\geq 50\%$	ASTM D4632
Grab Strength	Table 1 <sup>A</sup> , Class 3	ASTM D4632
Tear Strength		ASTM D4533
Puncture Strength		ASTM D6241
Permittivity	$0.7 \text{ sec}^{-1}$ <sup>B</sup>	ASTM D4491
Apparent Opening Size (AOS)	Table 2 <sup>A</sup> ,	ASTM D4751
UV Stability (Retained Strength)	$> 50\%$ <i>in Situ</i> Soil Passing 0.075 mm	ASTM D4355

A. AASHTO M 288.

B. MARV per Article 1056-3.

For wick drains with a geotextile fused to both faces of a corrugated drainage core along the peaks of the corrugations, use wick drains with an ultimate tensile strength of at least 1,650 lb/ft in accordance with ASTM D4595 and geotextiles with a permittivity, AOS and UV stability that meet Table 1056-4.

### 1056-6 GEOCELLS

Geocells will be identified by product labels attached to the geocell wrapping. Unwrap geocells just before use in the presence of the Engineer. Previously opened geocell products will be rejected.

Manufacture geocells from virgin polyethylene resin with no more than 10% rework, also called "regrind", materials. Use geocells made from textured and perforated HDPE strips with an open area of 10% to 20% and properties that meet Table 1056-5.

<b>TABLE 1056-5 GEOCELL REQUIREMENTS</b>		
<b>Property</b>	<b>Minimum Requirement</b>	<b>Test Method</b>
Cell Depth	4"	N/A
Sheet Thickness	50 mil -5%, +10%	ASTM D5199
Density	58.4 lb/cf	ASTM D1505
Carbon Black Content	1.5%	ASTM D1603 or D4218
ESCR <sup>A</sup>	5000 hr	ASTM D1693
Coefficient of Direct Sliding (with material that meets AASHTO M 145 for soil classification A-2)	0.85	ASTM D5321
Short-Term Seam (Peel) Strength (for 4" seam)	320 lb	USACE <sup>C</sup> Technical Report GL-86-19, Appendix A
Long-Term Seam (Hang) Strength <sup>B</sup> (for 4" seam)	160 lb	

- A. Environmental Stress Crack Resistance.
- B. Minimum test period of 168 hr with a temperature change from 74°F to 130°F in 1-hour cycles.
- C. US Army Corps of Engineers.

Provide geocell accessories (e.g., stakes, pins, clips, staples, rings, tendons, anchors, deadmen, etc.) recommended by the Geocell Manufacturer.

**TRUCK MOUNTED CHANGEABLE MESSAGE SIGNS:**

(8-21-12)

1101.02

SP11 R10

Revise the *2012 Roadway Standard Drawings* as follows:

**Drawing No. 1101.02, Sheet 12, TEMPORARY LANE CLOSURES**, replace General Note #11 with the following:

11- TRUCK MOUNTED CHANGEABLE MESSAGE SIGNS (TMCMS) USED ON SHADOW VEHICLES FOR "IN LANE" ACTIVITIES SHALL BE A MINIMUM OF 43" X 73". THE DISPLAY PANEL SHALL HAVE FULL MATRIX CAPABILITY WITH THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

12- TMCMS USED FOR ADVANCED WARNING ON VEHICLES LOCATED ON THE SHOULDER MAY BE SMALLER THAN 43" X 73". THE DISPLAY PANEL SHALL HAVE THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

**Drawing No. 1101.02, Sheet 13, TEMPORARY LANE CLOSURES**, replace General Note #12 with the following:

12- TRUCK MOUNTED CHANGEABLE MESSAGE SIGNS (TMCMS) USED ON SHADOW VEHICLES FOR "IN LANE" ACTIVITIES SHALL BE A MINIMUM OF 43" X 73". THE DISPLAY PANEL SHALL HAVE FULL MATRIX CAPABILITY WITH THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

13- TMCMS USED FOR ADVANCED WARNING ON VEHICLES LOCATED ON THE SHOULDER MAY BE SMALLER THAN 43" X 73". THE DISPLAY PANEL SHALL HAVE THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

**GROUT REFERENCES FOR UTILITY MANHOLES:**

(8-18-15)

1525

SP15 R40

Revise the *2012 Standard Specifications* as follows:

**Page 15-13, Article 1525-2, Materials**, line 9, in the materials table, add the following:

<b>Item</b>	<b>Section</b>
Grout, Type 2	1003

**Page 15-13, Article 1525-2, Materials**, lines 20-21, replace the third paragraph after the materials table with the following:

Use Type 2 grout with properties that meet Table 1003-2 in the *Grout Production and Delivery* provision except provide grout with a plastic consistency in accordance with ASTM C1107.

**Page 15-14, Subarticle 1525-3(B), Installation of Precast Units**, line 22, in the second sentence of the first paragraph, replace "non-shrink grout." with "grout."

**FIELD OFFICE (Lump Sum):**

(6-1-07)

SPI 8-1 Rev.

**Description**

The Department owns an abandoned dwelling located on Parcel 8 (from Sta. 13+51.55 Right to Sta. 15+81.77 Right).

This work consists of equipping and maintaining this dwelling to be used as a field office for the exclusive use of Department Engineers and Inspectors. Remodel the abandoned dwelling to comply with the current ADA Design and Accessibility Standards, the National Electric Code, local, state, and federal regulations, and the following requirements. The dwelling has been certified as asbestos free.

**Procedures**

The field office and equipment will remain the property of the Department. Failure to have the field office functional within 60 calendar days after the Date of Availability will result in withholding payment of the Contractor's monthly progress estimate. The field office and equipment shall be operational throughout the duration of the project.

Equip the field office with the following:

<u>Number</u>	<u>Item</u>
1	Double-pedestal desk (approximately 60 by 34 inches, at least 2,000 square inches).
1	Plan and drafting table (approximately 30 by 96 inches) with adjustable stool.
1	Computer table at least 48 by 30 by 29 inches.
1	Plan rack for 24 by 36 inch drawings with 6 plan clamps.
1	Printing calculator.
2	2-drawer fire protection file, 15 inch drawer width, minimum UL rating of Class 350.
6	Office chairs with at least two chairs having casters.
2	Wastebaskets.
1	Pencil sharpener.
1	Copy machine (8 inch x 11 inch copies)
1	Telephone.
1	Fax Machine.
1	Answering machine.
1	Internet Connection Service.

**Windows and Doors**

Repair existing windows and doors so that they function properly and exterior doors are able to be secured with locks furnished by the Contractor. Keys shall be furnished to the Engineer.

**Steps**

Provide accessibility in compliance with the current ADA Design and Accessibility Standards, and the State Building Code and maintain them free from obstructions.

**Lighting, Heating, and Air Conditioning**

The field office shall have satisfactory lighting, electrical outlets, heating equipment, an exhaust fan, and an air conditioner connected to an operational power source. Provide at least one of the light fixtures that is a fluorescent light situated over the plan and drafting table. Furnish electrical current and fuel for heating equipment.



**Fire Extinguishers**

Furnish and maintain one fire extinguisher for each required exterior passage door. Fire extinguisher may be chemical or dry powder. UL Classification 10-B:C (minimum), suitable for Type A:B:C: fires. Mount and maintain fire extinguishers in accordance with OSHA Safety and Health Standards.

**Toilets**

Provide a toilet conforming to the requirements of the state and local boards of health or other bodies or courts having jurisdiction in the area. When separate facilities for men and women are not available, place a sign with the words "Rest Room" (with letters at least 1 inch in height) over the doorway, and provide an adequate positive locking system on the inside of the doorway. Maintain responsibility for the water and sewer connections or the installation and connection of a water well and septic tank and drain field. These facilities shall conform to all local and state permits.

**Utilities**

Except for telephone service, make necessary utility and internet connections, maintain utilities and internet connections, pay internet and utility service fees and bills, and handle final disconnection of internet and utilities. Furnish a telephone in each field office and permit the work necessary to install it.

**Miscellaneous Items**

The field office shall also include the following:

1. A broom, dust pan, mop and bucket, and general cleaning supplies.
2. Provide and maintain an all-weather parking area for six vehicles, including graveled access to the paved surface.

**Measurement and Payment**

Payment at the contract lump sum bid price for *Field Office* will be full compensation for all work covered by this provision including but not limited remodeling and maintaining the field office as outlined in this provision.

Installation and service fees for the telephone and power will be paid for by the Department.

Payment will be made under:

**Pay Item**  
Field Office

**Pay Unit**  
Lump Sum

County : Macon

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
<b>ROADWAY ITEMS</b>						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0029000000-N	SP	REINFORCED BRIDGE APPROACH FILL, STATION ***** (13+25.89 -L-)	Lump Sum	L.S.	
0004	0036000000-E	225	UNDERCUT EXCAVATION	100 CY		
0005	0043000000-N	226	GRADING	Lump Sum	L.S.	
0006	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUB- BING	1 ACR		
0007	0134000000-E	240	DRAINAGE DITCH EXCAVATION	45 CY		
0008	0195000000-E	265	SELECT GRANULAR MATERIAL	100 CY		
0009	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZA- TION	250 SY		
0010	0255000000-E	SP	GENERIC GRADING ITEM HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	100 TON		
0011	0318000000-E	300	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	145 TON		
0012	0320000000-E	300	FOUNDATION CONDITIONING GEO- TEXTILE	444 SY		
0013	0335500000-E	305	30" DRAINAGE PIPE	36 LF		
0014	0335800000-E	305	48" DRAINAGE PIPE	40 LF		
0015	0372000000-E	310	18" RC PIPE CULVERTS, CLASS III	52 LF		
0016	0378000000-E	310	24" RC PIPE CULVERTS, CLASS III	48 LF		
0017	0384000000-E	310	30" RC PIPE CULVERTS, CLASS III	76 LF		
0018	0402000000-E	310	48" RC PIPE CULVERTS, CLASS III	224 LF		

County: Macon

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	80 LF		
0020	0448400000-E	310	24" RC PIPE CULVERTS, CLASS IV	56 LF		
0021	0995000000-E	340	PIPE REMOVAL	356 LF		
0022	1099500000-E	505	SHALLOW UNDERCUT	100 CY		
0023	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	190 TON		
0024	1121000000-E	520	AGGREGATE BASE COURSE	160 TON		
0025	1220000000-E	545	INCIDENTAL STONE BASE	120 TON		
0026	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2")	2,810 SY		
0027	1330000000-E	607	INCIDENTAL MILLING	800 SY		
0028	1489000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0B	270 TON		
0029	1498000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	240 TON		
0030	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	600 TON		
0031	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	60 TON		
0032	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	50 TON		
0033	2022000000-E	815	SUBDRAIN EXCAVATION	33.6 CY		
0034	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	150 SY		
0035	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	25.2 CY		
0036	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	150 LF		
0037	2070000000-N	815	SUBDRAIN PIPE OUTLET	1 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0038	2077000000-E	815	6" OUTLET PIPE	6 LF		
0039	2209000000-E	838	ENDWALLS	2.3 CY		
0040	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	13 EA		
0041	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	33 LF		
0042	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	1 EA		
0043	2366000000-N	840	FRAME WITH TWO GRATES, STD 840.24	2 EA		
0044	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	3 EA		
0045	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	1 EA		
0046	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	2 EA		
0047	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	1 EA		
0048	2396000000-N	840	FRAME WITH COVER, STD 840.54	3 EA		
0049	2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	1 EA		
0050	2535000000-E	846	***X *** CONCRETE CURB (8" X 12")	15 LF		
0051	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	570 LF		
0052	2591000000-E	848	4" CONCRETE SIDEWALK	115 SY		
0053	2612000000-E	848	6" CONCRETE DRIVEWAY	50 SY		
0054	2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	70 SY		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0055	2845000000-N	858	ADJUSTMENT OF METER BOXES OR VALVE BOXES	1 EA		
0056	3360000000-E	863	REMOVE EXISTING GUARDRAIL	34 LF		
0057	3420000000-E	SP	GENERIC GUARDRAIL ITEM WEATHERING STEEL BM GUARDRAIL WITH PAINTED LAPS	50 LF		
0058	3420000000-E	SP	GENERIC GUARDRAIL ITEM WEATHERING STEEL BM GUARDRAIL WITH PAINTED LAPS, SHOP CURVED	25 LF		
0059	3435000000-N	SP	GENERIC GUARDRAIL ITEM PAINTED GUARDRAIL ANCHOR UNITS, TYPE 350	1 EA		
0060	3435000000-N	SP	GENERIC GUARDRAIL ITEM PAINTED IMPACT ATTENUATOR UNIT, TYPE 350	1 EA		
0061	3435000000-N	SP	GENERIC GUARDRAIL ITEM WEATHERING STEEL ADDITIONAL GUARDRAIL POSTS	5 EA		
0062	3435000000-N	SP	GENERIC GUARDRAIL ITEM WEATHERING STEEL BM GUARDRAIL ANCHOR UNIT, TYPE AT-1, PAINT-ED LAPS	1 EA		
0063	3435000000-N	SP	GENERIC GUARDRAIL ITEM WEATHERING STEEL BM GUARDRAIL ANCHOR UNITS, TYPE III, PAINT-ED LAPS	2 EA		
0064	3575000000-E	SP	GENERIC FENCING ITEM PAINTED PEDESTRIAN SAFETY RAIL	28 LF		
0065	3628000000-E	876	RIP RAP, CLASS I	11 TON		
0066	3635000000-E	876	RIP RAP, CLASS II	22 TON		
0067	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	1,742 SY		
0068	4025000000-E	901	CONTRACTOR FURNISHED, TYPE *** SIGN (D)	50 SF		
0069	4025000000-E	901	CONTRACTOR FURNISHED, TYPE *** SIGN (E)	105 SF		

County: Macon

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0070	4025000000-E	901	CONTRACTOR FURNISHED, TYPE *** SIGN (F)	32	SF	
0071	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	455	LF	
0072	4096000000-N	904	SIGN ERECTION, TYPE D	4	EA	
0073	4102000000-N	904	SIGN ERECTION, TYPE E	18	EA	
0074	4108000000-N	904	SIGN ERECTION, TYPE F	2	EA	
0075	4116100000-N	904	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)	2	EA	
0076	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	15	EA	
0077	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	802	SF	
0078	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	352	SF	
0079	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	52	SF	
0080	4415000000-N	1115	FLASHING ARROW BOARD	2	EA	
0081	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	4	EA	
0082	4422000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN (SHORT TERM)	60	DAY	
0083	4430000000-N	1130	DRUMS	40	EA	
0084	4435000000-N	1135	CONES	40	EA	
0085	4445000000-E	1145	BARRICADES (TYPE III)	144	LF	
0086	4455000000-N	1150	FLAGGER	100	DAY	
0087	4480000000-N	1165	TMA	2	EA	
0088	4507000000-E	1170	WATER FILLED BARRIER	75	LF	

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0089	4510000000-N	SP	LAW ENFORCEMENT	40 HR		
0090	4516000000-N	1180	SKINNY DRUM	10 EA		
0091	4650000000-N	1251	TEMPORARY RAISED PAVEMENT MARKERS	101 EA		
0092	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	81 LF		
0093	4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	138 LF		
0094	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	16 EA		
0095	4770000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)	225 LF		
0096	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	5,325 LF		
0097	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	2,222 LF		
0098	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	134 LF		
0099	4840000000-N	1205	PAINT PAVEMENT MARKING CHARACTER	24 EA		
0100	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	30 EA		
0101	4847000000-E	1205	POLYUREA PAVEMENT MARKING LINES (4", *****) (HIGHLY REFLECTIVE ELEMENTS)	3,121 LF		
0102	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	938 LF		
0103	4870000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (24")	105 LF		
0104	4875000000-N	1205	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	13 EA		

County : Macon

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0105	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	3 EA		
0106	4905000000-N	1253	SNOWPLOWABLE PAVEMENT MARKERS	14 EA		
0107	5325800000-E	1510	8" WATER LINE	123 LF		
0108	5326200000-E	1510	12" WATER LINE	383 LF		
0109	5546000000-E	1515	8" VALVE	2 EA		
0110	5558000000-E	1515	12" VALVE	1 EA		
0111	5648000000-N	1515	RELOCATE WATER METER	2 EA		
0112	5691300000-E	1520	8" SANITARY GRAVITY SEWER	60 LF		
0113	5691900000-E	1520	24" SANITARY GRAVITY SEWER	128 LF		
0114	5775000000-E	1525	4' DIA UTILITY MANHOLE	5 EA		
0115	5781000000-E	1525	UTILITY MANHOLE WALL, 4' DIA	11 LF		
0116	5801000000-E	1530	ABANDON 8" UTILITY PIPE	463 LF		
0117	5804000000-E	1530	ABANDON 12" UTILITY PIPE	120 LF		
0118	5813000000-E	1530	ABANDON 24" UTILITY PIPE	129 LF		
0119	5828000000-N	1530	REMOVE UTILITY MANHOLE	2 EA		
0120	5912000000-N	SP	GENERIC UTILITY ITEM 12" WATER LINE BRIDGE ATTACH- MENT	Lump Sum	L.S.	
0121	6000000000-E	1605	TEMPORARY SILT FENCE	1,285 LF		
0122	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	150 TON		
0123	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	25 TON		



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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0124	6012000000-E	1610	SEDIMENT CONTROL STONE	505 TON		
0125	6015000000-E	1615	TEMPORARY MULCHING	0.2 ACR		
0126	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	100 LB		
0127	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	0.5 TON		
0128	6024000000-E	1622	TEMPORARY SLOPE DRAINS	200 LF		
0129	6029000000-E	SP	SAFETY FENCE	200 LF		
0130	6030000000-E	1630	SILT EXCAVATION	20 CY		
0131	6036000000-E	1631	MATTING FOR EROSION CONTROL	450 SY		
0132	6037000000-E	SP	COIR FIBER MAT	380 SY		
0133	6038000000-E	SP	PERMANENT SOIL REINFORCEMENT MAT	200 SY		
0134	6042000000-E	1632	1/4" HARDWARE CLOTH	475 LF		
0135	6048000000-E	SP	FLOATING TURBIDITY CURTAIN	160 SY		
0136	6070000000-N	1639	SPECIAL STILLING BASINS	18 EA		
0137	6071010000-E	SP	WATTLE	30 LF		
0138	6071020000-E	SP	POLYACRYLAMIDE (PAM)	15 LB		
0139	6084000000-E	1660	SEEDING & MULCHING	0.2 ACR		
0140	6087000000-E	1660	MOWING	0.1 ACR		
0141	6090000000-E	1661	SEED FOR REPAIR SEEDING	50 LB		
0142	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25 TON		
0143	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50 LB		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0144	6108000000-E	1665	FERTILIZER TOPDRESSING	0.25	TON	
0145	6114500000-N	1667	SPECIALIZED HAND MOWING	10	MHR	
0146	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	15	EA	
0147	6132000000-N	SP	GENERIC EROSION CONTROL ITEM CONCRETE WASHOUT STRUCTURE	3	EA	
0148	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE CLEANOUT	45	EA	
0149	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE	15	EA	
0150	7060000000-E	1705	SIGNAL CABLE	100	LF	
0151	7120000000-E	1705	VEHICLE SIGNAL HEAD (12", 3 SECTION)	3	EA	
0152	7144000000-E	1705	VEHICLE SIGNAL HEAD (12", 5 SECTION)	1	EA	
0153	7252000000-E	1710	MESSENGER CABLE (1/4")	1,070	LF	
0154	7264000000-E	1710	MESSENGER CABLE (3/8")	85	LF	
0155	7279000000-E	1715	TRACER WIRE	230	LF	
0156	7288000000-E	1715	PAVED TRENCHING (***** (1, 2")	15	LF	
0157	7300000000-E	1715	UNPAVED TRENCHING (***** (1, 2")	210	LF	
0158	7300100000-E	1715	UNPAVED TRENCHING FOR TEMP- ORARY LEAD-IN	120	LF	
0159	7301000000-E	1715	DIRECTIONAL DRILL (***** (1, 2")	130	LF	
0160	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	9	EA	
0161	7360000000-N	1720	WOOD POLE	4	EA	

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0162	7372000000-N	1721	GUY ASSEMBLY	4 EA		
0163	7420000000-E	1722	2" RISER WITH WEATHERHEAD	4 EA		
0164	7432000000-E	1722	2" RISER WITH HEAT SHRINK TUBING	1 EA		
0165	7444000000-E	1725	INDUCTIVE LOOP SAWCUT	885 LF		
0166	7456000000-E	1726	LEAD-IN CABLE (*****) (14-2)	1,750 LF		
0167	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (12)	1,200 LF		
0168	7540000000-N	1731	SPLICE ENCLOSURE	1 EA		
0169	7552000000-N	1731	INTERCONNECT CENTER	1 EA		
0170	7648000000-N	1746	RELOCATE EXISTING SIGN	2 EA		
0171	7980000000-N	SP	GENERIC SIGNAL ITEM REMOVE 900 MHZ RADIO	2 EA		
0205	0000700000-N	SP	FIELD OFFICE	Lump Sum	L.S.	

**STRUCTURE ITEMS**

0172	8017000000-N	SP	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP ACCESS AT STA ***** (13+25.89 -L-)	Lump Sum	L.S.	
0173	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (13+25.89 -L-)	Lump Sum	L.S.	
0174	8105540000-E	411	3'-6" DIA DRILLED PIERS IN SOIL	302.83 LF		
0175	8105640000-E	411	3'-6" DIA DRILLED PIERS NOT IN SOIL	92 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0176	8111400000-E	411	PERMANENT STEEL CASING FOR 3'-6" DIA DRILLED PIER	243.67 LF		
0177	8112730000-N	450	PDA TESTING	1 EA		
0178	8113000000-N	411	SID INSPECTIONS	1 EA		
0179	8114000000-N	411	SPT TESTING	1 EA		
0180	8115000000-N	411	CSL TESTING	1 EA		
0181	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVA- TION AT STATION ***** (13+25.89 -L-)	Lump Sum	L.S.	
0182	8156000000-E	SP	CONCRETE WEARING SURFACE	11,017 SF		
0183	8161000000-E	420	GROOVING BRIDGE FLOORS	10,515 SF		
0184	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	145.9 CY		
0185	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (13+25.89 -L-)	Lump Sum	L.S.	
0186	8217000000-E	425	REINFORCING STEEL (BRIDGE)	49,630 LB		
0187	8238000000-E	425	SPIRAL COLUMN REINFORCING STEEL (BRIDGE)	9,586 LB		
0188	8364000000-E	450	HP12X53 STEEL PILES	640 LF		
0189	8391000000-N	450	STEEL PILE POINTS	8 EA		
0190	8505000000-E	460	VERTICAL CONCRETE BARRIER RAIL	265.38 LF		
0191	8517000000-E	460	1'****X ***** CONCRETE PARA- PET (1'-4" X 2'-11 1/2")	250.38 LF		
0192	8517000000-E	460	1'****X ***** CONCRETE PARA- PET (1'-4" X 3'-3 1/2")	250.38 LF		
0193	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	365 TON		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0194	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	405 SY		
0195	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0196	8727000000-N	SP	ELECTRICAL CONDUIT SYSTEM FOR SIGNALS AT STA ***** (13+25.89 -L-)	Lump Sum	L.S.	
0197	8762000000-E	430	3'-0" X 1'-9" PRESTRESSED CONC CORED SLABS	640 LF		
0198	8763000000-E	430	3'-0" X 2'-0" PRESTRESSED CONC CORED SLABS	3,360 LF		
0199	8860000000-N	SP	GENERIC STRUCTURE ITEM APPLICATION OF BRIDGE COATING	Lump Sum	L.S.	
0200	8860000000-N	SP	GENERIC STRUCTURE ITEM ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0201	8867000000-E	SP	GENERIC STRUCTURE ITEM ANODIZED TWO BAR METAL RAIL	472.75 LF		
0202	8867000000-E	SP	GENERIC STRUCTURE ITEM DUCT BANK - TYPE 6-WAY, 4"	280.37 LF		
0203	8892000000-E	SP	GENERIC STRUCTURE ITEM ARCHITECTURAL CONCRETE SURFACE TREATMENT	4,870 SF		
0204	8897000000-N	SP	GENERIC STRUCTURE ITEM REPLACEMENT OF POST-TENSIONING TENDONS	8 EA		
			<b>1046/Oct06/Q130644.26/D987736640000/E205</b>			
			<b>Total Amount Of Bid For Entire Project :</b>			