

ADDENDUM No. 1

TO: Prospective Bidders

FROM: **Sadia Khan, Contracts Administrator**

DATE: **December 21, 2017**

PROJECT: **Beam Road at Shopton Road (SR 1155) Roundabout**
 Project Number: 512-13-010
 TIP Number: C-5533
 Bid Number: HC2017-1042

The following items are being issued herein for modification and clarification to the Bid Requirements for the project referenced above. All Bidders shall acknowledge this Addendum within their submittal.

MODIFICATIONS

PROJECT MANUAL

- 1) Under Section 00 40 00 "ITEMIZED BID", following items have been *modified* and *added*:

Item #	Section #	Description	Qty	Unit	Unit Price (\$)	Amount Bid (\$) (Qty x Unit Price)
15	610	Asphalt Concrete Base Course, Type B 25.0B Type B 25.0 C	1,610	TN		
16	610	Asphalt Concrete Intermediate Course, Type I 19.0B Type I 19.0 C	1,070	TN		
17	610	Asphalt Concrete Surface Course, Type S 9.5B Type S 9.5 C	1,250	TN		
62	SP-16	Planting Mix	230	CY		

The Electronic Itemized Bid Form available at the City's website has been revised to reflect the above changes.

- 2) On page 00 70 00 – 42, *delete* the sub-article **1.24 SP10 R25, Geosynthetics** in its entirety and replace with the following:

1.24 SP10 R25, 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 ^A	Type 4	Type 5 ^B	
<i>Typical Application</i>	<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 ^D , Class 3	Table 1 ^D , Class 1	100 lb ^C	Table 1 ^D , Class 3	-	ASTM D4632
Tear Strength (MD & CD)			-			ASTM D4533
Puncture Strength			-			ASTM D6241
Ultimate Tensile Strength (MD & CD)	-	-	-	-	2,400 lb/ft ^C (unless required otherwise in the contract)	ASTM D4595
Permittivity	Table 2 ^D , 15% to 50% <i>in Situ</i> Soil Passing 0.075 mm	Table 6 ^D , 15% to 50% <i>in Situ</i> Soil Passing 0.075mm	Table 7 ^D	Table 5 ^D	0.20 sec ^{-1,C}	ASTM D4491
Apparent Opening Size					0.60 mm ^E	ASTM D4751
UV Stability (Retained Strength)					70% ^C (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.

TABLE 1056-2 GEOCOMPOSITE DRAIN REQUIREMENTS				
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 ^A (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 ^B @ 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.

TABLE 1056-3 DRAINAGE CORE REQUIREMENTS			
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	≥ 50%	ASTM D4632
Grab Strength	Table 1 ^A , Class 3	ASTM D4632
Tear Strength		ASTM D4533
Puncture Strength		ASTM D6241
Permittivity	0.7 sec ^{-1,B}	ASTM D4491
Apparent Opening Size (AOS)	Table 2 ^A ,	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.

TABLE 1056-5 GEOCELL REQUIREMENTS		
Property	Minimum Requirement	Test Method
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 ^A	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 ^C Technical Report GL- 86-19, Appendix A
Long-Term Seam (Hang) Strength ^B (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.

3) On page 00 75 00 – 20, *insert* the following **SP-16, PLANTING MIX:**

SP-16, PLANTING MIX

1.0 DESCRIPTION

Work covered in this section includes the excavation of soil within the medians as shown on the plans to a depth of 18 inches and furnishing and placing 18 inches of Planting Mix so that the median bed is well mounded to allow for settling. This work shall consist of furnishing, salvaging, stockpiling, spreading, shaping, mixing and installing planting mix as directed by the Engineer.

2.0 MATERIALS

The Planting Mix will be placed, as shown on the plans, in the project manual or as specified by the Engineer.

Planting Mix may be developed by amending the existing topsoil or removing the existing topsoil and replacing with new Planting Mix. It shall be uniform composition throughout, with a mixture of subsoil. It shall be free of stones, lumps, live plants and their roots, weed seeds, sticks and other extraneous material. Planting Mix shall not be used while in a frozen or muddy condition.

Unless otherwise specified, the Planting Mix shall contain the following specified percentages of constituents:

CLAY	Minimum 10% - Maximum 40%
SAND	Minimum 20% - Maximum 50%
SILT	Minimum 20% - Maximum 50%
ORGANIC MATERIAL	Minimum 5% - Maximum 10%

Organic Material is defined as compost/humus such as sawdust or leaf mold that has completed the decomposition process. Percentage of

organic matter shall be determined by loss on ignition of moisture free samples dried at 65 degrees.

ELEMENTS

The Planting Mix shall have the following nutrients at the specified percent base saturation, to be determined by soil test conducted by the City of Charlotte.

Calcium	55% to 80%
Magnesium	10% to 30%
Potassium	5% to 8%

Planting Mix shall have an acidity range of pH 5.5 to pH 7.0.

Test results and source of the planting mix to be used shall be submitted to the City prior to installation. Any variations must have prior approval of the City.

3.0 METHODS

Storage areas for planting mix shall be on well-drained land, away from streams. Prior to placing piles, install silt fence around the perimeter of the stockpile area and maintain the silt fence until the stockpile is removed. Compost shall be kept in neat and separate piles from other excavated material.

Planting mix piles shall NOT be seeded or mulched.

Excess planting mix shall become the responsibility of the Contractor and shall be completely removed from the project site prior to final site inspection and approval of the project at no additional cost.

Installing Planting Mix:

Verify that all existing utilities have been field located prior to commencement of work. All proposed utilities shall be installed prior to installation of soil mix.

Verify that all required soil tests have been submitted and accepted by the Engineer.

Do not handle planting mix or subsoil if it is wet or frozen.

Completely prepare and finish the surface of all areas to be amended with soil mix as specified in the Contract Documents.

Immediately prior to being covered with the planting mix, the prepared sub grade shall be amended with fertilizer and lime based on soil test results, loosened to a depth of three inches and be free from rocks or other foreign material three inches or greater, or as directed by the Engineer in the field. Rocks and other foreign material larger than three inches shall be removed and disposed of by the Contractor.

Prior to the start of placing planting mix, all grass, weeds, brush, stumps, and other objectionable material shall be removed from the surface of stockpiles.

Planting mix shall be placed, spread, and maintained over the areas designated to a depth that after settlement, the completed work shall be in conformance with the thickness, lines, grades, and elevations specified in the Contract Documents.

Slopes 1V:4H to 1V:2H shall be tracked with cleated tract type equipment operated parallel to the slope.



Seeding of soil mix and planting of plant material should be carried out simultaneously to prevent excessive traffic over soil, creating undesirable soil compaction.

Planting Mix shall be roto-tilled or mixed with on-site soil using mechanical methods to insure good incorporation of material with native (existing) soil.

Place barricades as required to prevent any unnecessary compaction of soil from vehicles, equipment, or personnel.

4.0 MEASUREMENT

Planting Mix shall be measured and paid for at the contract unit price per cubic yard (CY) of material installed. The quantity of material installed will be measured horizontally along the area of installation.

5.0 PAYMENT

Payment will be full compensation for all work covered in this special provision, including, but not limited to, salvaging, stockpiling, mixing, mechanically working planting mix, installation and for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

PLANTING MIXCY

END OF ADDENDUM NO. 1

ITEMIZED BID

Project #: 512-13-010

Project Name: Beam Road at Shopton Road (SR 1155) Roundabout

SECTION 1: BID

ADDENDUM # 1

Item #	Section #	Description	Qty	Unit	Unit Price (\$)	Amount Bid (\$) (Qty x Unit Price)
1	800	Mobilization	1	LS		
2	226	Grading	1	LS		
3	SP-01	Supplemental Grading	1	LS		
4	SP-03	Select Material	300	TN		
5	226	Undercut Excavation	550	CY		
6	300	Foundation Conditioning Material, Minor Structures	100	TN		
7	310	15" R.C. Pipe Culverts, Class III	919	LF		
8	310	15" R.C. Pipe Culverts, Class IV	232	LF		
9	310	18" R.C. Pipe Culverts, Class III	256	LF		
10	310	18" R.C. Pipe Culverts, Class IV	144	LF		
11	340	Pipe Removal	380	LF		
12	SP-04	Wall, Precast Modular Block Retaining	280	SF		
13	545	Incidental Stone Base	100	TN		
14	607	Milling Asphalt Pavement, 0.0" to 3.0"	7,300	SY		
15	610	Asphalt Concrete Base Course, Type B 25.0 C	1,610	TN		
16	610	Asphalt Concrete Intermediate Course, Type I 19.0 C	1,070	TN		

ADDENDUM # 1

Item #	Section #	Description	Qty	Unit	Unit Price (\$)	Amount Bid (\$) (Qty x Unit Price)
17	610	Asphalt Concrete Surface Course, Type S 9.5 C	1,250	TN		
18	620	Asphalt Binder for Plant Mix	235	TN		
19	840	Masonry Drainage Structures	16	EA		
20	840	Masonry Drainage Structures, Extra Depth	10	LF		
21	858	Adjustment of Manholes	2	EA		
22	840	Frame with Grate (all types)	15	EA		
23	840	Manhole Frame and Cover, NCDOT Std 840.54	1	EA		
24	840	Pipe Collars	3	CY		
25	840	Pipe Plugs	1	CY		
26	846	6" x 12" Concrete Curb	130	LF		
27	SP-15	1' 6" Concrete Curb and Gutter with Black Tint, Class AA Concrete	695	LF		
28	846	2' 6" Concrete Curb and Gutter	2,635	LF		
29	848	4 " Concrete Sidewalk	1,755	SY		
30	SP-05	Truck Mountable Island	610	SY		
31	SP-06	Pedestrian Ramps at Truck Aprons	30	SY		
32	SP-07	Ramps, Wheelchair concrete	260	SY		
33	852	Monolithic Concrete Islands, 5"	520	SY		
34	867	Metal Fence Reset	540	LF		
35	SP-10	4" Perforated Subdrain Pipe w/Stone & Filter Fabric (CLDS 40.08A, B, C)	160	LF		
36	SP-11	4" Schedule 80 PVC	55	LF		

ADDENDUM # 1

Item #	Section #	Description	Qty	Unit	Unit Price (\$)	Amount Bid (\$) (Qty x Unit Price)
37	SP-12	CDOT 2.0" PVC Conduit, Schedule 80	200	LF		
38	901	Contractor Furnished, Type D Sign	1,165	SF		
39	903	Supports, 3-lb Steel U-Channel	215	LF		
40	904	Sign Erection, Type D	37	EA		
41	SP-08	Reflective Paddles	4	EA		
42	SP-09	Traffic Control	1	LS		
43	1205	Thermoplastic Pavement Marking Lines, 4", 90 mils	821	LF		
44	1205	Thermoplastic Pavement Marking Lines, 4", 120 mils	5,373	LF		
45	1205	Thermoplastic Pavement Marking Lines, 6", 90 mils	3,739	LF		
46	1205	Thermoplastic Pavement Marking Lines, 6", 120 mils	178	LF		
47	1205	Thermoplastic Pavement Marking Lines, 8", 90 mils	522	LF		
48	1205	Thermoplastic Pavement Marking Lines, 8", 120 mils	716	LF		
49	1205	Thermoplastic Pavement Marking Lines, 12", 90 mils	62	LF		
50	1205	Thermoplastic Pavement Marking Lines, 12", 120 mils	60	LF		
51	1205	Thermoplastic Pavement Marking Symbols	38	EA		
52	1251	Permanent Raised Pavement Markers	75	EA		
53	1605	Temporary Silt Fence	1,655	LF		
54	1610	Sediment Control Stone	170	TN		
55	1610	Stone for Erosion Control, Class B	50	TN		
56	1632	¼" Hardware Cloth	260	LF		

ADDENDUM # 1

Item #	Section #	Description	Qty	Unit	Unit Price (\$)	Amount Bid (\$) (Qty x Unit Price)
57	SP-13	Catch Basin Inlet Protection	17	EA		
58	1660	Seeding and Mulching	2	AC		
59	SP-14	Temporary Tree Protection Fence	60	LF		
60	SPU-01	Adjust Water Valve	1	EA		
61	SPU-02	Relocate Fire Hydrant	1	EA		
62	SP-16	Planting Mix	230	CY		
Total Amount Bid						

Do not include any North Carolina Sales and Use Tax that qualifies as Eligible Taxes per Section 00 70 00, Subsection 2.17 "Sales and Use Tax".