

DOCUMENT 00 91 13

ADDENDA

ADDENDUM NUMBER 4

DATE: January 22, 2020

PROJECT: Alpine Road Culvert Replacement

CONTRACT NUMBER: SD-2020-04

OWNER: The City of Durham

ENGINEER: Horvath Associates, P.A.

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated December 23, 2019; Addendum No. 1, dated January 13, 2020; Addendum No. 2, dated January 20, 2020; Addendum No. 3, dated January 21, 2020; with amendments and additions noted below.

Acknowledge receipt of this Addendum in the space provided in the Bid form. Failure to do so may disqualify the Bidder.

This Addendum consists of 23 pages.

CHANGES TO THE PROJECT MANUAL (2 pages)

1. Remove cover sheets 1 and 2 and replace with the cover sheets included with this addendum.

DOCUMENT 00 01 10 - TABLE OF CONTENTS (2 pages)

2. Remove document 00 01 10 – TABLE OF CONTENTS, dated January 21, 2020 and replace with document 00 01 10 – TABLE OF CONTENTS, dated January 22, 2020 included with this addendum.

DOCUMENT 00 41 43 – BID FORM – UNIT PRICE (SINGLE PRIME CONTRACT) (1 page)

3. Remove the UNIT PRICE WORK FORM found in document 00 41 43 – BID FORM – UNIT PRICE (SINGLE-PRIME CONTRACT), dated January 13, 2020 and replace with UNIT PRICE WORK FORM, dated January 22, 2020 included with this addendum.

DOCUMENT 00 52 15 – AGREEMENT FORM – EJCDC STIPULATED SUM (SINGLE-PRIME CONTRACT) (1 page, same as no. 3 above)

4. Remove the UNIT PRICE WORK FORM found in document 00 52 15 – AGREEMENT FORM – EJCDC STIPULATED SUM (SINGLE-PRIME CONTRACT), dated January 13, 2020 and replace with UNIT PRICE WORK FORM, dated January 22, 2020 included with this addendum.

DOCUMENT 30 11 00 – PROJECT SPECIAL PROVISIONS (15 pages)

5. Remove document 30 11 00 – PROJECT SPECIAL PROVISIONS, dated December 23, 2019 and replace with document 30 11 00 – PROJECT SPECIAL PROVISIONS, dated January 22, 2020 included with this addendum.

REQUESTS FOR INFORMATION AND CLARIFICATION (1 page)

6. The bid form only includes 1 bend, when there needs to be 4 to make the drop.
 - a. The Unit Price Work Form included item A40, 8-inch 4-Bend (DIP). In order to further clarify that four 8-inch Bends are required, the Unit Price Work Form has been modified and included with this addendum.
7. There are no new valves on the waterline that need to be dropped, so will we be responsible for testing and chlorinating the existing and new line?
 - a. The Contractor shall be responsible for testing and chlorinating the new 8-inch water line. In order to minimize water service disruptions to residents, the Contractor shall utilize two new 8-inch Insertion Valves and a new 8-inch Gate Valve to isolate the replacement section for testing and chlorination. These valves have been added to the Unit Price Work Form as items A40A and A40B. A schematic Drawing indicating how this isolation shall be installed is included with this addendum.
8. Is any temporary water required for residents while we install the new line and wait on test results?
 - a. Temporary water services for residents are required where the existing service may be connected in the water line to be replaced as part of the Work. Unit Price Work item A40C has been added to account for this possibility. No water/sewer service adjustment has been identified at this time on the Drawings. These adjustments are included in the event that the need arises as part of the Work
9. Will the City be responsible for shutting off the valves?
 - a. Yes, Water Management Department staff shall operate all City water valves. The Contractor shall request valve operation via the Resident Project Representative. The Resident Project Representative will review the request and coordinate with the Water Management Department.
10. If it takes excess time to shut down the waterline, will the Contractor be given additional time and compensation while we wait?
 - a. Once valve operation is requested, the Water Management Department will provide a time window for when City staff will be on-site to operate the valves. If City staff is not on-site during the stated time window, the Owner will negotiate with the Contractor for a change order to compensate for lost time.

END OF DOCUMENT

CITY OF DURHAM
PROJECT MANUAL

INCLUDING

**BIDDING DOCUMENTS, CONTRACT DOCUMENTS, AND
TECHNICAL SPECIFICATIONS**

FOR



**CITY OF
DURHAM**



CONTRACT: SD-2020-04
Issued: December 23, 2019
Revised: January 13, 20, 21, and 22, 2020

Project:
Alpine Road Culvert Replacement

Stormwater & GIS Services Division
Public Works Department
101 City Hall Plaza, Durham NC 27701

CONTRACT: SD-2020-04

Issued: December 23, 2019

Revised: January 13, 20, 21, and 22, 2020

PROJECT:

Alpine Road Culvert Replacement

**STORMWATER & GIS SERVICES DIVISION
PUBLIC WORKS DEPARTMENT
CITY OF DURHAM NC**

DOCUMENT 00 01 10

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ALPINE ROAD CULVERT REPLACEMENT (SD-2020-04)
UNIT PRICE WORK FORM

		Standard					
No.	Specification	Drawing	Item Description	Unit	Quantity	Unit Price	Item Value
Abandonment, Demolition, and Removal							
A1	NCDOT 200	N/A	Select Tree Removal (4 to 8-inch diameter)	EA	2		
A2	NCDOT 200	N/A	Select Tree Removal (8.1 to 16-inch diameter)	EA	10		
A3	NCDOT 200	N/A	Select Tree Removal (16.1 to 24-inch diameter)	EA	2		
A4	NCDOT 200	N/A	Select Tree Removal (24.1 to 36-inch diameter)	EA	2		
A5	NCDOT 250	N/A	Removal of Existing Asphalt Pavement	SY	245		
A6	N/A	N/A	Temporary Relocation of Mailbox	EA	2		
Subtotal for Abandonment, Demolition, and Removal							
Earthwork							
A7	NCDOT 240	N/A	Drainage Ditch Excavation	CY	80		
A8	NCDOT 414	N/A	Culvert Excavation	LS	1		
A9	NCDOT 410/1016	N/A	Select Backfill Material (Class II)	CY	660		
Subtotal for Earthwork							
Soil Erosion and Sediment Control							
A10	NCDOT 876	N/A	Rip Rap, Class 1	TN	215		
A11	NCDOT 876/1056	N/A	Geotextile for Drainage (Type 2)	SY	280		
A12	NCDOT 1605	NCDOT 1605.01	Temporary Silt Fence	LF	340		
A13	NCDOT 1606	NCDOT 1606.01	Special Sediment Control Fence	LF	30		
A14	NCDOT 1631	NCDOT 1631.01	Matting for Erosion Control	SY	400		
A15	NCDOT 1660	N/A	Seeding and Mulching	SY	1200		
A16	NCDOT 1630	NCDOT 1630.06	Special Stilling Basin	EA	2		
A17	NCDOT 1632	NCDOT 1632.02	Rock Inlet Sediment Trap Type B	EA	1		
A18	NCDOT 1635	NCDOT 1635.02	Rock Pipe Inlet Sediment Trap Type B	EA	2		
A19	N/A	N/A	Surface Water Diversion/Pump Around	LS	1		
Subtotal for Soil Erosion and Sediment Control							
Traffic Control							
A20	NCDOT 903	N/A	Supports, 3-lb Steel U-Channel	LF	630		
A21	NCDOT 1110	N/A	Work Zone Signs (Stationary)	SF	601		
A22	NCDOT 1110	N/A	Work Zone Signs (Barricade Mounted)	SF	74		
A23	NCDOT 1145	N/A	Barricades (Type III)	LF	64		
Subtotal for Traffic Control							
Paving							
A24	NCDOT 545	N/A	Incidental Stone Base	TN	115		
A25	NCDOT 607	N/A	Milling Asphalt Pavement, 1.5-inch Depth	SY	45		
A26	NCDOT 610	N/A	Asphalt Concrete Surface Course, Type S9.5A	TN	21		
A27	NCDOT 610	N/A	Asphalt Concrete Surface Course, Type S9.5B	TN	25		
A28	NCDOT 848	CoD SSD	6-inch Concrete Driveway City Detail No. ST-9.0 and ST-10.0	SY	95		
Subtotal for Paving							
Storm Drainage							
A29	NCDOT 414	N/A	Foundation Conditioning Material, Box Culvert	TN	80		
A30	NCDOT 840	NCDOT 840.04/840.05	Open Throat Catch Basin (0 to 5-feet)	EA	1		
A31	NCDOT 840	NCDOT 840.54	Manhole Frame and Cover	EA	1		
A32	NCDOT 310	NCDOT 300.01	15-inch R.C. Pipe Culverts, Class III (0 to 5-feet)	LF	62		
A33	NCDOT 310	NCDOT 300.01	18-inch R.C. Pipe Culverts, Class III (0 to 5-feet)	LF	56		
A34	NCDOT 310	N/A	15-inch Pipe End Section	EA	1		
A35	NCDOT 310	N/A	18-inch Pipe End Section	EA	3		
A36	NCDOT 420	N/A	Class A Concrete	CY	33		
A37	NCDOT 425	N/A	Reinforcing Steel	LB	2169		
A38	30 11 23	N/A	Pre-Cast Concrete Box Culvert (12-foot wide by 8-foot high, 62.5-foot CL)	LS	1		
Subtotal for Storm Drainage							
Utilities							
A39	NCDOT 1510	N/A	8-inch Water Line (DIP)	LF	78		
A40	NCDOT 1510	N/A	8-inch Bend (DIP)	EA	4		
A40A	NCDOT 1510	N/A	8-inch Insertion Valve	EA	2		
A40B	NCDOT 1510	N/A	8-inch Gate Valve	EA	1		
A40C	30 11 00	N/A	Water and Sewer Service Adjustments	EA	2		
A41	NCDOT 1520	N/A	10-inch Sanitary Gravity Sewer (PVC)	LF	35		
A42	NCDOT 1520	N/A	10-inch Sanitary Gravity Sewer (DIP)	LF	71		
A43	NCDOT 1525	N/A	4-foot Diameter Utility Manhole (0 to 6-feet)	EA	3		
A44	NCDOT 1525	N/A	4-foot Diameter Utility Manhole Wall	LF	22		
A45	NCDOT 840	N/A	Manhole Frame and Cover	EA	3		
A46	NCDOT 1520	N/A	4-inch Sanitary Gravity Sewer (PVC, Lateral)	LF	15		
A47	NCDOT 1540	N/A	16-inch Encasement Pipe (Steel)	LF	30		
A48	NCDOT 1540	N/A	20-inch Encasement Pipe (Steel)	LF	41		
A49	30 11 00	N/A	Utility Line/Pole Relocation and Coordination Allowances	LS	1	\$10,000.00	\$10,000.00
Subtotal for Utilities							
Miscellaneous							
A50	NCDOT 800	N/A	Mobilization (Single Large Project)	LS	1		
A51	30 11 00	N/A	Testing and Inspecting Allowances	LS	1	\$10,000.00	\$10,000.00
A52	30 11 00	N/A	Construction Surveying and As-Built Survey	LS	1		
Subtotal for Miscellaneous							
Total for SD-2020-04							

SECTION 30 11 00

PROJECT SPECIAL PROVISIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Testing and Inspecting Allowances
 2. Utility Line/Pole Relocation and Coordinate Allowances
 3. Construction and As-Built Surveying
 4. Stabilization Requirements
 5. Nutrient Management Training Requirements
 6. Native Grass Seeding and Mulching
 7. Lawn Type Appearance
 8. Response for Erosion Control
 9. Environmentally Sensitive Areas
 10. Minimize Removal of Vegetation
 11. Stockpile Areas
 12. Access and Haul Roads
 13. Construction Materials Management
 14. Safety Fence and Jurisdictional Flagging
 15. Impervious Dike
 16. Water and Sewer Service Adjustments (Including Fittings)

1.2 TESTING AND INSPECTING ALLOWANCES

- A. Contractor shall be responsible for all testing and inspecting costs associate with the Work.
- B. Contractor shall perform all testing and inspecting as required by the Engineer. Contractor shall submit the qualifications of the testing and inspecting subcontractor to the Engineer for approval.
- C. Contractor shall pay all costs related to testing and inspecting. Contractor will be reimbursed through allowance for this Work. Contractor shall submit invoice from the approved testing firm to Engineer for reimbursement. Contractor is not entitled to any overhead cost for testing and inspecting.
1. Contractor shall submit testing and inspecting company estimates to Engineer for approval prior to commencing any testing and inspecting Work.

1.3 UTILITY LINE/POLE RELOCATION AND COORDINATION ALLOWANCES

- A. Contractor is responsible for all coordination related to temporary and permanent utility line/pole relocation. This includes coordination between the Owner, Engineer, Property Owner (and tenants), and the utility company.

- B. Contractor shall pay all costs related to utility line/pole relocation and coordination. Contractor will be reimbursed through allowance for this Work. Contractor shall submit invoice from the utility company to Engineer for reimbursement. Contractor is not entitled to any overhead cost for utility line/pole relocation and coordination.
- C. Contractor shall submit utility company estimates to Engineer for approval prior to commencing any utility line/pole relocation Work.

1.4 CONSTRUCTION SURVEYING AND AS-BUILT SURVEY

A. Construction Surveying

1. Description

Construction Survey shall be performed in accordance with Section 801 of the NCDOT Standard Specifications for Roads and Structures and shall include but not be limited to the layout of the culvert, stream channel, temporary and permanent easements, right-of-way, and all sensitive areas associated with the implementation of the design as indicated in the Drawings.

Contractor shall maintain a level and rod on-site at all times for use by the Engineer to evaluate culvert and stream grades. This condition shall not alleviate the Contractor's responsibility to make certain that the culvert and stream is constructed in accordance with the Contract Documents.

2. Method

Refer to Section 801 – Construction Stakes, Lines and Grades in the NCDOT Standard Specifications for Roads and Structures. Prior to any clearing activities, the Contractor shall install temporary stakes to mark the limits of disturbance, staging and stockpile areas, and jurisdictional wetlands for approval by the Engineer.

Stakeout of the culvert and stream channel in its entirety shall be performed in such a way that the Engineer can verify the layout of the culvert and stream channel prior to construction activities commencing. Upon completion of the stakeout and prior to beginning construction, the Contractor shall give the Engineer a 48-hour notice in order to approve the culvert and stream alignment. Stakes should be maintained until approved by the Engineer. There will be no additional payment for re-staking.

Staking may not be required if GPS is used for grading activities. If GPS is used, the Engineer shall have the ability to use the Contractor's GPS unit to field verify stream alignment.

3. Measurement and Payment

Construction Survey will be measured and paid for as a lump sum price in accordance with Article 801-3 of the NCDOT Standard Specifications for Roads and Structures. Such price and payment will be full compensation for all work covered by this section, including but not limited to construction layout, boundary surveying, and engineering necessary for the proper construction of the project in accordance with the Construction Documents. Any adjustments to the

culvert and stream alignment shall be considered incidental to the lump sum price for Construction Survey.

Partial payments will be made for this work based on the percentage complete of Construction Survey as approved by the Engineer. The Contractor shall submit a certified statement each month indicating the percentage of Construction Survey work completed.

4. Pay Item
Payment will be made under Construction Survey, Lump Sum (LS).

B. As-Built Survey

1. Description
2. The Contractor shall prepare and submit to the Engineer a certified As-Built Survey of the completed construction that fully illustrates all construction completed within the Limits of Disturbance.

As-Built Survey must be submitted to the Engineer after grading is completed and not later than 30 days after the project is accepted. An electronic CAD file must accompany the hard copy submittal bearing the PLS seal.

3. Method
The As-built Survey is only required within the Limits of Disturbance of the current project and must include the following surveyed features:

Plan View of the project area that should include the following information:

- Limits of grading;
- Alignment based on stream thalweg;
- Left and right top of bank (looking downstream);
- Left and right toe of bank (looking downstream);
- Location of all in-stream structures including bedrock outcroppings;
- Key floodplain break points (e.g., top and toe of terraces, benches and berms);
- Boundaries of surface water features (e.g. vernal pools, ponds, stormwater BMPs);
- Elevation contour lines at one-foot increments within the grading limits;
- Location and size, where appropriate, of all structures and utility lines within the disturbance areas verified prior to construction, including bridges, crossings, buildings, utility poles, pipes (sewer, stormwater outfalls, culverts), and underground utilities (sanitary sewer, storm sewer, fiber optic lines, etc.);
- Surveyed benchmarks (e.g. permanent, TBM, property boundaries);
- Tributary confluences, active drainage/ditches flowing into streams;
- Other features flagged by the consultant construction manager; and
- The cross-section locations required for FEMA Letter of Map Revision (LOMR) preparation shall be identified by the Engineer prior to the start of as-built survey.
- The longitudinal profile and culvert replacement survey shall be conducted upon the entire length of channel constructed within the Limits of

Disturbance as well as all points identified by the Engineer prior to the start of the as-built survey.

4. Measurement and Payment
 All work completed under this section shall be considered incidental to Construction Surveying (Section 1.4.A), therefore no separate pay item for this work is provided.

1.5 STABILIZATION REQUIREMENTS

- A. Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective April 1, 2019 issued by the North Carolina Department of Environmental Quality Division of Water Resources. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

1. Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
2. Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
3. Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

- B. Seeding and Mulching
 1. The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

March 1 - August 31		September 1 - February 28	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

March 1 - August 31		September 1 - February 28	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Serengeti
2 nd Millennium	Essential	Kalahari	Shelby
3 rd Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Sliverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fa	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium SRP	Skyline
Barrington	Fidelity	Monet	Solara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice II
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	Ol' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tanzania
Blade Runner II	Five Point	Pedigree	Trio
Bonsai	Focus	Picasso	Tahoe II
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Tarheel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan ltd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane Rz	Greenkeeper	Raptor II	Traverse SRP
Chipper	Gremlin	Rebel Exeda	Tulsa Time
Cochise IV	Greystone	Rebel Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ

Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	Van Gogh
Desire	Inferno	Reunion	Watchdog
Dominion	Innovator	Riverside	Wolfpack II
Dynamic	Integrity	RNP	Xtremegreen
Dynasty	Jaguar 3	Rocket	
Endeavor	Jamboree	Scorpion	

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

C. Temporary Seeding

1. Fertilizer shall be the same analysis as specified for Seeding and Mulching and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. Sweet Sudan Grass, German Millet or Browntop Millet shall be used in summer months and Rye Grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

D. Fertilizer Topdressing

1. Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.
2. Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

E. Supplemental Seeding

1. The kinds of seed and proportions shall be the same as specified for Seeding and Mulching, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for

incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

- F. Mowing
 - 1. The minimum mowing height on this project shall be 4 inches.

1.6 NUTRIENT MANAGEMENT TRAINING REQUIREMENTS

- A. The person(s) responsible for applying fertilizer or person(s) conducting the application of fertilizer on this project within the Jordan Lake or Falls Lake Watershed shall complete the following web-based training prior to performing this work:

<http://www.jordanlake.org/web/jordanlake/fertilizer-management>

- B. A certificate of completion must be presented by the person(s) responsible for fertilizer application or person(s) conducting the application of fertilizer prior to performing fertilizer application on the project within the limits of the Jordan Lake or Fall Lake Watershed.

1.7 NATIVE GRASS SEEDING AND MULCHING

- A. Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands and riparian areas, and adjacent to Stream Relocation construction within a 50 foot zone on both sides of the stream or depression, measured from top of stream bank or center of depression. The stream bank of the stream relocation shall be seeded by a method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the permanent soil reinforcement mat section of preformed scour holes, and in other areas as directed.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

March 1 - August 31		September 1 - February 28	
18#	Creeping Red Fescue	18#	Creeping Red Fescue
6#	Indiangrass	6#	Indiangrass
8#	Little Bluestem	8#	Little Bluestem
4#	Switchgrass	4#	Switchgrass
25#	Browntop Millet	35#	Rye Grain
500#	Fertilizer	500#	Fertilizer

4000#	Limestone	4000#	Limestone
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Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

B. Measurement and Payment

1. Native Grass Seeding and Mulching will be measured and paid for in accordance with Article 1660-8 of the Standard Specifications.

1.8 LAWN TYPE APPEARANCE

- A. All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones ¾" and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

1.9 RESPONSE FOR EROSION CONTROL

A. Description

1. Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

Section	Erosion Control Item	Unit
1605	Temporary Silt Fence	LF
1606	Special Sediment Control Fence	LF/TON
1615	Temporary Mulching	ACR
1620	Seed - Temporary Seeding	LB
1620	Fertilizer - Temporary Seeding	TN
1631	Matting for Erosion Control	SY
SP	Coir Fiber Mat	SY
1640	Coir Fiber Baffles	LF
SP	Permanent Soil Reinforcement Mat	SY
1660	Seeding and Mulching	ACR
1661	Seed - Repair Seeding	LB

1661	Fertilizer - Repair Seeding	TON
1662	Seed - Supplemental Seeding	LB
1665	Fertilizer Topdressing	TON
SP	Safety/Highly Visible Fencing	LF
SP	Response for Erosion Control	EA

- B. Construction Methods
 - 1. Provide an approved subcontractor who performs an erosion control action as described in the NPDES Inspection Form SPPP30. Each erosion control action may include one or more of the above work items.

- C. Measurement and Payment
 - 1. Response for Erosion Control will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the Standard Specifications will not apply to this item of work.

1.10 ENVIRONMENTALLY SENSITIVE AREAS

- A. Description
 - 1. This project is located in an Environmentally Sensitive Area. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the Environmentally Sensitive Areas identified on the plans and as designated by the Engineer. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.
 - 2. The Environmentally Sensitive Area shall be defined as a 50-foot buffer zone on both sides of the stream or depression measured from top of streambank or center of depression.

- B. Construction Methods
 - 1. Clearing and Grubbing: In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.
 - 2. Grading: Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be

just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications.

3. Temporary Stream Crossings: Any crossing of streams within the limits of this project shall be accomplished in accordance with the requirements of Subarticle 107-12 of the Standard Specifications.
4. Seeding and Mulching: Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

1.11 MINIMIZE REMOVAL OF VEGETATION

- A. The Contractor shall minimize removal of vegetation within project limits to the maximum extent practicable. Vegetation along stream banks and adjacent to other jurisdictional resources outside the construction limits shall only be removed upon approval of Engineer. No additional payment will be made for this minimization work.

1.12 STOCKPILE AREAS

- A. The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed.

1.13 ACCESS AND HAUL ROADS

- A. At the end of each working day, the Contractor shall install or re-establish temporary diversions or earth berms across access/haul roads to direct runoff into sediment devices. Silt fence sections that are temporarily removed shall be reinstalled across access/haul roads at the end of each working day.

1.14 CONSTRUCTION MATERIALS MANAGEMENT

- A. Description
 1. The requirements set forth shall be adhered to in order to meet the applicable materials handling requirements of the NCG010000 permit. Structural controls installed to manage construction materials stored or used on site shall be shown on the E&SC Plan. Requirements for handling materials on construction sites shall be as follows:
- B. Polyacrylamides (PAMS) and Flocculants
 1. Polyacrylamides (PAMS) and flocculants shall be stored in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures designed to protect adjacent surface waters. PAMS or other flocculants used shall be selected from the NC DWR List of Approved PAMS/Flocculants. The concentration of PAMS and other flocculants used shall not exceed those specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions. The NC DWR List of Approved PAMS/Flocculants is available at:

https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/ATU/ApprovedPAMS4_1_2017.pdf

- C. Equipment Fluids
1. Fuels, lubricants, coolants, and hydraulic fluids, and other petroleum products shall be handled and disposed of in a manner so as not to enter surface or ground waters and in accordance with applicable state and federal regulations. Equipment used on the site must be operated and maintained properly to prevent discharge of fluids. Equipment, vehicle, and other wash waters shall not be discharged into E&SC basins or other E&SC devices. Alternative controls should be provided such that there is no discharge of soaps, solvents, or detergents.
- D. Waste Materials
1. Construction materials and land clearing waste shall be disposed of in accordance with North Carolina General Statutes, Chapter 130A, Article 9 - Solid Waste Management, and rules governing the disposal of solid waste (15A NCAC 13B). Areas dedicated for managing construction material and land clearing waste shall be at least 50 feet away from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. Paint and other liquid construction material waste shall not be dumped into storm drains. Paint and other liquid construction waste washouts should be located at least 50 away from storm drain inlets unless there is no alternative. Other options are to install lined washouts or use portable, removable bags or bins. Hazardous or toxic waste shall be managed in accordance with the federal Resource Conservation and Recovery Act (RCRA) and NC Hazardous Waste Rules at 15A NCAC, Subchapter 13A. Litter and sanitary waste shall be managed in a manner to prevent it from entering jurisdictional waters and shall be disposed of offsite.
- E. Herbicide, Pesticide, and Rodenticides
1. Herbicide, pesticide, and rodenticides shall be stored and applied in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act, North Carolina Pesticide Law of 1971 and labeling restrictions.
- F. Concrete Materials
1. Concrete materials onsite, including excess concrete, must be controlled and managed to avoid contact with surface waters, wetlands or buffers. No concrete or cement slurry shall be discharged from the site. (Note that discharges from onsite concrete plants require coverage under a separate NPDES permit – NCG140000.) Concrete wash water shall be managed in accordance with the Concrete Washout Structure provision. Concrete slurry shall be managed and disposed of in accordance with NCDOT DGS and HOS DCAR Distribution of Class A Residuals Statewide (Permit No. WQ0035749). Any hardened concrete residue will be disposed of, or recycled on site, in accordance with state solid waste regulations.
- G. Earthen Material Stock Piles
1. Earthen material stock piles shall be located at least 50 feet away from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available.
- H. Measurement and Payment

1. Conditions set within the Construction Materials Management provision are incidental to the project for which no direct compensation will be made.

1.15 SAFETY FENCE AND JURISDICTIONAL FLAGGING

A. Description

1. Safety Fence shall consist of furnishing materials, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary, or other boundaries located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland, endangered vegetation, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.
2. Interior boundaries for jurisdictional areas noted above shall be delineated by stakes and highly visible flagging.
3. Jurisdictional boundaries at staging areas, waste sites, or borrow pits, whether considered outside or interior boundaries shall be delineated by stakes and highly visible flagging.

B. Materials

1. Safety Fencing
 - a. Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.
 - b. Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb/ft of length.
2. Boundary Flagging
 - a. Wooden stakes shall be 4 feet in length with a minimum nominal 3/4" x 1-3/4" cross section. The flagging shall be at least 1" in width. The flagging material shall be vinyl and shall be orange in color and highly visible.

C. Construction Methods

1. No additional clearing and grubbing is anticipated for the installation of this fence. The fence shall be erected to conform to the general contour of the ground.
2. Safety Fencing
 - a. Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.
 - b. The fence geotextile shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

- c. Place construction stakes to establish the location of the safety fence in accordance with Article 105-9 or Article 801-1 of the Standard Specifications. No direct pay will be made for the staking of the safety fence. All stakeouts for safety fence shall be considered incidental to the work being paid for as "Construction Surveying", except that where there is no pay item for construction surveying, all safety fence stakeout will be performed by state forces.
 - d. The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.
 3. Boundary Flagging
 - a. Boundary flagging delineation of interior boundaries shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Interior boundaries may be staked on a tangent that runs parallel to buffer but must not encroach on the buffer at any location. Interior boundaries of hand clearing shall be identified with a different colored flagging to distinguish it from mechanized clearing.
 - b. Boundary flagging delineation of interior boundaries will be placed in accordance with Article 105-9 or Article 801-1 of the Standard Specifications. No direct pay will be made for delineation of the interior boundaries. This delineation will be considered incidental to the work being paid for as Construction Surveying, except that where there is no pay item or construction surveying the cost of boundary flagging delineation shall be included in the unit prices bid for the various items in the contract. Installation for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Additional flagging may be placed on overhanging vegetation to enhance visibility but does not substitute for installation of stakes.
 - c. Installation of boundary flagging for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall be performed in accordance with Subarticle 230-4(B)(5) or Subarticle 802-2(F) of the Standard Specifications. No direct pay will be made for this delineation, as the cost of same shall be included in the unit prices bid for the various items in the contract.
 - d. The Contractor shall be required to maintain alternative stakes and highly visible flagging in a satisfactory condition for the duration of the project as determined by the Engineer.
- D. Measurement and Payment
 1. Safety Fence will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.
 2. Payment will be made under:

Pay Item	Pay Unit
Safety Fence	Linear Foot

1.16 IMPERVIOUS DIKE

- A. Description
1. This work consists of furnishing, installing, maintaining, and removing an Impervious Dike for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed.
- B. Materials
1. Acceptable materials shall include but not be limited to sheet piles, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious geotextile.
 2. Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.
- C. Measurement and Payment
1. Impervious Dike will be measured and paid as the actual number of linear feet of impervious dike(s) constructed, measured in place from end to end of each separate installation that has been completed and accepted. Such price and payment will be full compensation for all work including but not limited to furnishing materials, construction, maintenance, and removal of the impervious dike.
 2. Payment will be made under:

Pay Item	Pay Unit
Impervious Dike	Linear Foot

1.17 WATER AND SEWER SERVICE ADJUSTMENTS (INCLUDING FITTINGS)

- A. The measurement for payment for all water and sewer service adjustments shall be the actual number of service adjustments located on the Drawings or encountered in the field during excavation.
- B. The unit price bid shall include all materials, labor, tools, equipment, and all work including the preconstruction investigation of the location and routing of the service lines, any temporary service lines required (including temporary jumpers for water services), operating of shut-off valves, replacement of pipes and fittings (including valves and cleanouts in damaged during construction) in accordance with the appropriate sections of the City of Durham Water and Sewer Construction Standards.

CONTRACT: SD-2020-04
PROJECT: Alpine Road Culvert Replacement
DATE: January 22, 2020

STORMWATER & GIS SERVICES DIVISION
PUBLIC WORKS DEPARTMENT
CITY OF DURHAM, NORTH CAROLINA

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

NOTES:

CONTRACTOR SHALL LOCATE WATER SERVICES IN WORK AREA PRIOR TO VALVE INSTALLATION. IF EXISTING WATER SERVICE IS LOCATED IN SECTION OF MAIN TO BE TAKEN OFFLINE, WATER SERVICE TAP SHALL BE RELOCATED TO EXISTING MAIN SECTION THAT WILL REMAIN ACTIVE DURING PROJECT CONSTRUCTION.

CONTRACTOR RESPONSIBLE FOR TEMPORARY THRUST BLOCKING.

DECOCK PROPERTY

BYRD PROPERTY

8" GATE VALVE

8" INSERTION VALVE

NEW 8" DIP

8" INSERTION VALVE

