



**CITY OF HARRISONBURG
DEPARTMENT OF FINANCE
AND PURCHASING
409 SOUTH MAIN STREET,
THIRD FLOOR
HARRISONBURG, VA 22801**

INVITATION TO BID (ITB) COVER PAGE

ISSUE DATE: December 14, 2015	INVITATION TO BID NUMBER: 2016022-PW-B	FOR: Reservoir Street Project U000-115-R30
DEPARTMENT: Public Works	DATE/TIME OF CLOSING: January 26, 2016 at 3:00pm local time	CONTRACT ADMINISTRATOR: Kim Cameron
DATE/TIME LAST DAY FOR QUESTIONS: January 19, 2016 at 12:00pm (noon) local time	DATE/TIME PRE-BID MEETING: January 12, 2016 at 2:00pm local time	PRE-BID MEETING MANDATORY: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

Bids - In accordance with the following and in compliance with all terms and conditions, unless otherwise noted, the undersigned offers and agrees, if the bid is accepted, to furnish items or services for which prices are quoted, delivered or furnished to designated points within the time specified. It is understood and agreed that this entire ITB and any addenda shall constitute a contract.

Sealed bids, subject to terms and conditions of this Invitation to Bid will be received by the City of Harrisonburg Purchasing Office, 409 South Main Street, Third Floor, Harrisonburg, Virginia 22801 until the date/ time specified above for furnishing items or services delivered or furnished to specified destinations within the time specified or stipulated by the vendor(s).

The City does not discriminate against small and minority businesses or faith-based organizations.

VENDOR INFORMATION

Name of Vendor: _____ Telephone #: _____

Address: _____ Federal Employer Identification #: _____

_____ State Corporation Commission #: _____

Contact Name: _____ Contact Email Address: _____

By signing this bid, Vendor(s) certifies, acknowledges, understands and agrees to be bound by the conditions set forth in this ITB.

_____	_____
VENDOR'S LEGALLY AUTHORIZED SIGNATURE	DATE
_____	_____
PRINT NAME	TITLE

Please take a moment to let us know how you found out about this Invitation to Bid (ITB) – Check one:

City of Harrisonburg Website eVA Website Bid Room (Please List) _____

The Daily News Record Newspaper Notified by City Directly Posted on Municipal Building bulletin board

Other (Please List) _____

****This document must be completed & returned with bid submission.***

PROJECT MANUAL
FOR
CITY OF HARRISONBURG, VIRGINIA

Reservoir Street Improvement Project

PROJECT:
U000-115-R30, C501

CITY OF HARRISONBURG, VIRGINIA
DEPARTMENT OF PUBLIC WORKS

December 14, 2015

Prepared by

Department of Public Works
City of Harrisonburg
320 East Mosby Road
Harrisonburg, Virginia 22801

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SECTION 0001
INVITATION TO BIDDERS

1. PROJECT

Reservoir Street Improvement Project for the City of Harrisonburg, VA

2. DESCRIPTION OF WORK

Widen approximately 1.5 center lane miles of Reservoir Street from University Boulevard to city limits to include: sidewalk, curb & gutter, CG-12 detectible warning surface, entrances, retaining walls, traffic signals, pedestrian signal work, together with all appurtenances, public water and sewer relocations and incidental items required to complete the work. The anticipated Notice to Award date will be February 22, 2016, and the anticipated Notice to Proceed date will be March 14, 2016. The entire project must be completed by December 15, 2017.

3. DOCUMENTS

Bid documents are available for viewing on the internet at www.harrisonburgva.gov/bids-proposals and also on the eVA website at www.eva.virginia.gov. Bid documents are available for purchase at DTS Reprographics 4803 South Valley Pike, Harrisonburg VA, 22801, (540) 433-8373.

4. PRE-BID CONFERENCE (OPTIONAL)

Tuesday, January 12, 2016 at 2:00 PM EST at the City of Harrisonburg City Hall Building, 409 South Main Street, Room #011 and #012 (lower level). Attendance is optional, however, bidders are highly encouraged to attend. Questions will be received up until Tuesday, January 19, 2016 at 12:00 PM EST and posted on the City's website at www.harrisonburgva.gov/bids-proposals as well as on the eVA website at www.eva.virginia.gov.

5. BID BOND

Bids shall be accompanied by a 5% bid security. Bid bond must be in the form of a cashier's check, certified check or a bid bond issued by a surety.

6. BIDS DUE

Tuesday, January 26, 2016 at 3:00 PM EST at the City of Harrisonburg, Department of Purchasing, 409 South Main Street, Third floor, Harrisonburg, VA, 22801.

7. BID OPENING

Bids will be opened and read publicly at City Hall, 409 South Main Street, in Room #011 and #012 (lower level).

8. OWNER

City of Harrisonburg, 409 South Main Street, Harrisonburg, VA, 22801

9. CONTRACT ADMINISTRATOR

Kim Cameron, PE, 320 East Mosby Road, Harrisonburg, VA 22801. Telephone: 540-434-5928. Email: Kimberly.Cameron@harrisonburgva.gov

SECTION 0100
INSTRUCTIONS TO BIDDERS

1. SECURING DOCUMENTS

Bid documents are available for viewing at the following Harrisonburg locations: Department of Public Works, 320 East Mosby Road, and DTS Reprographics, 4803 South Valley Pike, Harrisonburg VA, 22801, (540) 433-8373.

Bid documents are available for viewing on the internet at www.harrisonburgva.gov/bids-proposals and also on the eVA website at www.eva.virginia.gov.

Bid documents are available for purchase at DTS Reprographics 4803 South Valley Pike, Harrisonburg VA, 22801, (540) 433-8373.

2. BIDDER ELIGIBILITY

A. Bids

Bids will only be accepted from Contractors who are experienced in and actively engaged in the type of construction of the item(s) called for in the bid. No bid will be accepted from or contract awarded to any person, firm, or corporation that is in arrears or is in default to the City upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said City or had failed to perform faithfully any previous contract with the City. Where an installation or assembly is to be performed by a subcontractor, the bidder must name the subcontractor, and the City reserves the right to determine whether the named subcontractor is fit and capable to perform the required work. Bidders must be prequalified with VDOT to be considered responsive bidders on this project. A copy of the bidder's VDOT Certificate of Qualifications must be submitted with the bid documents. All subcontractors shall be prequalified with VDOT for all prequalifiable trades.

B. Bidders are required under Chapter 11, Title 54, Code of Virginia, to show evidence of certificate of registration before bid may be received and considered.

C. Bidders must certify in the bid form that they are not currently barred from bidding on contracts by any agency of the Commonwealth of Virginia or any federal agency.

3. BID FORM AND SUBMISSION

In order to receive consideration, submit bids in accordance with the following:

A. Make bids upon the forms provided herewith, properly signed and with all items filled out. Do not change the wording of the bid form, and do not add words to the bid form. Unauthorized conditions, limitations, or provisions attached to the bid will be cause for rejection of the bid.

B. Address bids to the Owner, and deliver to the address specified in the invitation to bid on or before the day and hour set for opening the bids. Enclose each bid in a sealed

envelope bearing the title of the Work, the project number(s), the name of the bidder, Virginia contractor registration number and the date and hour of the bid opening, Submit only the original signed copy of the bid. The City of Harrisonburg is not responsible for delays in the delivery of the mail by the U.S. Postal Service, private couriers, or the inter-office mail system. It is the sole responsibility of the bidder to see that his bid is received on time. No faxed or emailed bid will be considered. No bids received after the time fixed for receiving them will be considered. Late or incomplete bids may be returned to the bidder. All expenses for making bids to the City shall be borne by the bidder.

- C. Indicate receipt of issued Addenda. All Bidders are cautioned to check at www.harrisonburgva.gov/bids-proposals or at www.eva.virginia.gov to assure that all Addenda have been received and that the cost consequences thereof have been included in the bid.
- D. Although the bid is based upon unit prices, many items are to be priced under lump sum designations. It is the bidder's responsibility to verify the exact scope of work for all items in order to establish a bid price.
- E. The following documents fully completed and signed where appropriate are required for a responsive bid:
 - i) Signed Cover Sheet
 - ii) Bid Form (0300)
 - iii) Bid Security (0301)
 - iv) Contractor Eligibility and Registration (0302)
 - v) State Corporation Commission Registration (0303)
 - vi) Non-Collusion Affidavit (0304)
 - vii) VDOT Form C-48 (City Revision) (0305)
 - viii) Copy of VDOT Certification of Qualifications
 - ix) Insurance Requirements for the City of Harrisonburg
 - x) Signed Addenda, if applicable

4. BONDS

- A. Bid security in the amount stated in the Invitation to Bid must accompany each bid. The successful bidder's security will not be returned until he has signed the Contract and has furnished the required Certificates of Insurance.
- B. The Owner reserves the right to retain the security of all bidders until the successful bidder enters into the Contract or until 90 days after bid opening, whichever is sooner. Other bid security will be returned as soon as practicable. If any bidder refuses to enter into a Contract, the Owner may retain his bid security as liquidated damages but not as a penalty.
- C. Prior to signing the Contract, the Owner will require the successful bidder to secure and post a Labor and Materials Payment Bond and a Performance Bond, each in the amount of 100% of the Contract Sum. Such Bonds shall be issued by a Surety acceptable to the Owner.

5. EXAMINATION OF DOCUMENTS AND SITE OF WORK

Before submitting a bid, each bidder shall examine the Drawings carefully, shall read the Project Manual and all other proposed Contract Documents, and shall visit the site of the Work. Each bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the Work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the Work as set forth in the proposed Contract Documents. No allowance will be made to a bidder because of lack of such examination and knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

6. MODIFICATION AND WITHDRAWAL OF BIDS

- A. Bidder may modify or withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening of bids.
- B. A bidder may modify or withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids. After bid opening, Code of Virginia 2.2-4330 B. 1. shall apply: “The bidder shall give notice in writing of his claim of right to withdraw his bid within two business days after the conclusion of the bid opening procedure and shall submit original work papers with such notice.”

7. INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

If any person contemplating submitting a bid for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies on or omissions from any part of the proposed Contract Documents, he shall submit a written request to Ms. Pat Hilliard, Procurement Manager, by email to Purchasing@harrisonburgva.gov or by fax to 540-432-7778. Oral questions will not be permitted. All questions must be received no later than Tuesday, January 19, 2016 at 12:00 PM EST. The person submitting the request shall be responsible for any other interpretations of the proposed Contract Documents. Questions will be answered in Addendum format and posted as outlined in the invitation to bid, at www.harrisonburgva.gov/bids-proposals and at www.eva.virginia.gov. It is the responsibility of all bidders to ensure that they have received all addenda and to include signed copies of any and all addenda with their bid submission.

8. AWARD OF CONTRACT

The Contract, if awarded, will be awarded to the lowest responsive and responsible bidder, meeting all specifications, subject to the Owner's right to reject any or all bids and to waive informality and irregularity in the bids and in the bidding. If the bid from the lowest responsible bidder exceeds available funds, the purchasing agent, or designee, may negotiate with the apparent low bidder to obtain a contract price within available funds.

9. EXECUTION OF AGREEMENT

- A. The form of the Agreement which the successful bidder will be required to execute is included in the Project Manual.
- B. The bidder to whom the Contract is awarded shall, within ten (10) calendar days after notice of award and receipt of Agreement forms from the Owner, sign and deliver required copies to the Owner.
- C. At or prior to delivery of the signed Agreement, the bidder to whom the Contract is awarded shall deliver to the Owner those Certificates of Insurance and Endorsement required by the Contract Documents and such Labor and Materials Payment Bonds and Performance Bond and City Business License, as are required by the Owner.
- D. Bonds and Certificates of Insurance shall be approved by the Owner before the successful bidder may proceed with the Work. Failure or refusal to provide Bonds or Certificates of Insurance and Endorsement in a form satisfactory to the Owner shall subject the successful bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

11. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

- A. The Agreement includes a stipulation that all Work be completed by a specified date (see section 0501). Liquidated damages will be applied as specified in the current VDOT Road and Bridge Specifications. The contractor is not to begin work until the receipt of the Owner's Notice to Proceed which will be effective upon receipt.

12. INSURANCE REQUIREMENTS

This form must be signed and returned with your bid submission.

By signing and submitting a bid or proposal the contractor/vendor certifies that if awarded the contract, they will have the following insurance coverages at the time the contract is awarded.

1.) The contractor will maintain a general liability policy with \$5,000,000 combined single limits. These limits can be attained through one primary liability policy or a combination of primary and excess policies. Coverage is to be on an occurrence basis with an insurer licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better. **The insurer must list the City of Harrisonburg as an additional insured. The endorsement must be issued by the insurance company. A notation on the certificate of insurance is not sufficient.**

2.) The contractor will maintain workers' compensation coverage in compliance with the laws of the Commonwealth of Virginia. The coverage must have statutory limits and be with an insurer licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better. As an alternative, it is acceptable for the contractor to be insured by a group self insurance association that is licensed by the Virginia Bureau of Insurance. The contractor will also carry employers liability insurance with a limit of at least \$100,000 bodily injury by accident/\$500,000 bodily injury by disease policy limit/\$100,000 bodily injury by disease each employee.

3.) The contractor will maintain automobile liability insurance with limits of at least \$1,000,000. The coverage is to be written with a symbol "1". The insurer must be licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better.

With all policies listed above, the insurer or agent of the insurer must issue a certificate of insurance to show evidence of coverage.

BIDDER STATEMENT

We understand the Insurance Requirements of these specifications and will comply in full if awarded this contract.

Signature: _____ Date: _____

Name: _____ Title: _____
(Print)

Name of Firm: _____

13. CITY BUSINESS LICENSE

- A. City of Harrisonburg Business License is required for successful award of this project. At or prior to delivery of the signed Agreement/Contract, the bidder to whom the Contract is awarded shall deliver to the Owner a copy of their City Business License. The bidder shall ensure that the Business License indicates a basis amount equal to or greater than the awarded Contract value. For information on City Business Licenses contact the Harrisonburg Commissioner of Revenue office at 540-432-7781.

14. STATE CORPORATION COMMISSION IDENTIFICATION NUMBER

Refer to 0303 for State Corporation Commission requirements. **Form must be signed and returned with your bid submission.**

Pursuant to Code of VA 2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized. Link to the SCC site is <http://www.scc.virginia.gov>.

15. STANDARD SPECIFICATIONS AND STANDARDS

Work in this project shall conform to the latest editions of the Virginia Department of Transportation (VDOT) Road and Bridge specifications, the VDOT Road and Bridge Standards, the Virginia Erosion and Sediment Control handbook, the Virginia Erosion and Sediment Control regulations, Virginia Stormwater Management Regulations and the City of Harrisonburg Design and Construction Standards Manual. In the event of conflict between any of these standards, specifications or plans, the VDOT specification 105.12 will apply, and shows the hierarchy of documents and which shall govern.

16. CONSIDERATION OF PROJECT COMPLEXITIES

- A. In preparing this bid, Contractor shall understand and account in his costs for the complexities involved in administrating the construction required by this Contract. Contractor shall be aware that the project area receives heavy vehicular and pedestrian traffic. Contractor shall accommodate such traffic through and around the work area in a safe and well-marked manner.
- B. Submission of a bid shall be an affirmation that the Contractor understands these complexities and difficulties associated with this project, that he has included in his bid a sufficient dollar amount to compensate for the additional time and effort these complexities and difficulties will require on his part, and that he understands that the Owner will not accept any claim for time extension or additional costs associated with them.

END INSTRUCTIONS TO BIDDERS

0300 BID FORM



Mr. James Baker
Director
Department of Public Works
320 East Mosby Road
Harrisonburg, Virginia 22801

Dear Sir:

The undersigned, having visited and examined the site and having carefully studied the drawings and project manual for the City of Harrisonburg, Reservoir Street Improvement Project, hereby proposes to furnish all plant, labor, equipment, materials, and services and to perform all operations necessary to execute and complete the work required for the project in strict accordance with the drawings dated December 14, 2015 and the project manual dated December 14, 2015, together with addenda numbered _____, issued during bidding period and hereby acknowledged subject to the terms and conditions of the Agreement for the following sums of money:

BASE BID PROPOSAL

All labor, material, services and equipment necessary for the completion of the work shown on the Drawings and in the Project Manual and in the Addenda (if issued).

_____ (\$_____)

This bid submitted by (name of firm): _____

It is understood and agreed that the Owner, in protecting his best interests, reserves the right to:

Reject any and all bids, or waive any defects in favor of the City

Or

Accept any bid at the bid price, whereupon the contractor shall furnish equipment and materials as specified.

Contractors shall indicate a unit price for each item listed in the Pay Items Summary which follows. The listed pay items are to contain all necessary costs required for completion of the work. It is understood that all quantities listed below are estimated quantities and the Owner reserves the right to raise, lower or eliminate any quantity or item. Unit prices shall be used in determining partial and full payment.

RESERVOIR STREET IMPROVEMENTS PROJECT UPC#101209

BID TAB

LINE #	ITEM #	DESCRIPTION	UNIT	EST. QUANTITY	Unit Price (\$)	Amount (\$)
1	100	MOBILIZATION	LS	1		
2	101	CONSTRUCTION SURVEYING (CONSTR.)	LS	1		
3	110	CLEARING AND GRUBBING	LS	1		
4	120	REGULAR EXCAVATION	CY	17459		
5	525	CONCRETE CLASS A3 MISC.	CY	69.3		
6	560	STRUCTURAL STEEL JB-1	LB	5422		
7	588	UNDERDRAIN UD-4	LF	13851		
8	590	COMB. UNDERDRAIN CD-1	LF	194		
9	591	COMB. UNDERDRAIN CD-2	LF	81		
10	595	OUTLET PIPE	LF	20		
11	1150	15" CONCRETE PIPE	LF	6		
12	1156	STORM SEWER PIPE 15"	LF	2744		
13	1186	STORM SEWER PIPE 18"	LF	2273		
14	1246	STORM SEWER PIPE 24"	LF	1500		
15	1306	STORM SEWER PIPE 30"	LF	733		
16	1361	JACKED & BORED 36" PIPE	LF	134		
17	1606	STORM SEWER PIPE 60"	LF	46		
18	2140	23" X 14" ELLIPTICAL PIPE	LF	12		
19	6300	30" END SECTION ES-1 OR 2	EA	1		
20	6360	36" END SECTION ES-1 OR 2	EA	1		
21	6491	60" END SECTION ES-1	EA	1		
22	6740	DROP INLET DI-1	EA	7		
23	6751	DROP INLET DI-2B,L=12'	EA	5		
24	6815	DROP INLET DI-3A	EA	1		
25	6818	DROP INLET DI-3B,L=6'	EA	2		
26	6819	DROP INLET DI-3B,L=8'	EA	1		
27	6821	DROP INLET DI-3B,L=12'	EA	44		
28	6830	DROP INLET DI-3BB,L=12'	EA	1		
29	6835	DROP INLET DI-3C,L=6'	EA	7		
30	6838	DROP INLET DI-3C,L=12'	EA	6		
31	9056	MANHOLE MH-1 OR 2	LF	95.7		
32	9057	FRAME & COVER MH-1	EA	20		
33	9066	NS FRAME AND COVER (SHALLOW)	EA	1		
34	9150	EROS.CONTR.STONE CL. I, EC-1	TON	255		
35	10121	AGGR.BASE MAT.TY. I NO.21A OR 21B	TON	24561		
36	10598	NS ASPHALT CONCRETE (SM-9.5AL)	TON	650		
37	10628	FLEXIBLE PAVE.PLANING 0"-2"	SY	23717		
38	12020	STD. CURB CG-2	LF	4268		
39	12600	STD. COMB. CURB & GUTTER CG-6	LF	16551		
40	10642	ASPHALT CONCRETE TY. BM-25.0A	TON	10124		
41	12920	ENTRANCE GUTTER CG-9B	SY	77		
42	12940	ENTRANCE GUTTER CG-9D	SY	511		
43	13108	CG-12 DETECTABLE WARNING SURFACE	SY	209		
44	13114	ENTRANCE GUTTER CG-13	SY	43		
45	13215	MAILBOX POST, SINGLE	EA	64		
46	13220	HYDR. CEMENT CONC. SIDEWALK 4"	SY	6801		

47	13222	HYDR. CEMENT CONC. SIDEWALK 7"	SY	1673		
48	13520	RETAINING WALL RW-2	CY	12		
49	13565	RETAINING WALL EXCAVATION	CY	1674		
50	13570	NS RETAINING WALL "E" MSE WALL PANELS	SF	3554		
51	14502	MOMENT SLAB REINFORCING STEEL	LB	14866		
52	16355	ASPHALT CONCRETE TY. SM-12.5D	TON	5060		
53	50430	SIGN POST STP-1	EA	45		
54	21110	MEDIAN STRIP MS-1A	SY	709		
55	21215	MEDIAN STRIP MS-2	LF	1702		
56	23600	NS SPLIT RAIL FENCE	LF	302		
57	24100	ALLAYING DUST	HR	1200		
58	24152	TYPE III BARRICADE 8'	EA	6		
59	24160	CONSTRUCTION SIGNS	SF	293		
60	24260	CR. RUN AGGR. NO. 25 OR 26	TON	1000		
61	24278	GROUP 2 CHANNELIZING DEVICES	DAY	127600		
62	24279	PORT.CHANGEABLE MESS. SIGN	HR	17520		
63	24281	ELECTRONIC ARROW	HR	5000		
64	24282	FLAGGER SERVICE	HR	640		
65	24297	TRAF.BARR.SER.CONC.DOUBLE FACE	LF	475		
66	24410	DEMOLITION OF PAVEMENT	SY	16093		
67	24640	NS ADJUST EX. MH	LF	8.2		
68	24802	REMOVE EX. MH	LF	11.5		
69	24832	ABANDON EX. MH	LF	60.7		
70	25003	HANDRAIL HR-1 TYPE II	LF	735		
71	27012	TOPSOIL CLASS B 2"	ACRE	4.0		
72	27102	REGULAR SEED	LB	800		
73	27103	OVERSEEDING	LB	800		
74	27210	FERTILIZER(10-20-10)	TON	0.60		
75	27250	LIME	TON	8		
76	27340	TEMP.DIVE.CHANNEL EXCAVATION	CY	2880		
77	27430	SILTATION CONTROL EXCAVATION	CY	5500		
78	27451	INLET PROTECTION , TYPE A	EA	80		
79	274561	INLET PROTECTION , TYPE B	EA	103		
80	27500	GEOTEXTILE FABRIC	SY	950		
81	27505	TEMP. SILT FENCE	LF	8600		
82	27506	TEMP. FILTER BARRIER	LF	1500		
83	27543	NS SWM LOW PERMEABILITY LINER	SY	2200		
84	27544	NS SWM TOPSOIL LINER (CL. A, 12" DEPTH)	CY	733		
85	27545	STORM WATER MAN. BASIN EXCAV.	CY	5100		
86	27550	STORM WATER MAN.DRAIN.STR.SWM	LF	8		
87	28805	BED PREPARATION	UNIT	5.5		
88	28810	MULCHING	UNIT	5.5		
89	28811	REMULCHING	CY	51		
90	28820	WATERING	UNIT	5		
91	28864	VEGETATION CONTROL	UNIT	5		
92	38900	SWEET PEPPER BUSH	EA	36		
93	38900	RED TWIG DOGWOOD	EA	33		
94	38900	SWITCH GRASS	EA	95		
95	38900	TUSSOCK SEDGE	EA	111		
96	40002	3/4" WATER SERVICE LINE	LF	87		

97	40003	1" WATER SERVICE LINE	LF	730		
98	40005	1 1/2" WATER SERVICE LINE	LF	10		
99	40061	6" DI WATER MAIN	LF	262		
100	40081	8" DI WATER MAIN	LF	672		
101	40121	12" DI WATER MAIN	LF	1824		
102	40380	REMOVE EX.FH	EA	5		
103	40380	REMOVE EX. 6" WATER MAIN	LF	66		
104	40380	REMOVE EX. 12" WATER MAIN	LF	30		
105	40380	REMOVE EX. WM & BOX	EA	2		
106	40380	REMOVE EX. VALVE & BOX	EA	16		
107	40380	RECONNECT MAIN	EA	12		
108	41006	6" GATE VALVE & BOX	EA	6		
109	41008	8" GATE VALVE & BOX	EA	9		
110	41012	12" GATE VALVE & BOX	EA	12		
111	41101	RELOCATE EX. DUAL WM & MH	EA	4		
112	41101	RECONNECT SERVICE	EA	50		
113	41104	ADJUST EXIST. VALVE BOX	EA	28		
114	41398	8" X 6" TAP.SLEEVE VALVE & BOX	EA	1		
115	41400	12"X6" TAPPING SLEEVE VALVE & BOX	EA	1		
116	41405	12"X8" TAPPING SLEEVE VALVE & BOX	EA	1		
117	41413	12"X12" TAPPING SLEEVE VALVE & BOX	EA	3		
118	41820	FIRE HYDRANT	EA	7		
119	41825	RELOCATE EXIST. FIRE HYDRANT	EA	9		
120	41976	RELOC. EXIST. WATER METER & BOX	EA	41		
121	41982	NS WATER FITTINGS	LS	1		
122	42000	16" STEEL ENCASE. PIPE	LF	12		
123	42040	4" SAN. SEWER PIPE	LF	21		
124	42044	4" SANITARY SERVICE LATERAL CONNECTION	LF	59		
125	42080	8" SAN. SEWER PIPE SDR 35 PVC	LF	416		
126	42080	8" SAN. SEWER PIPE SDR 26 PVC	LF	960		
127	42082	8" DI SANITARY SEWER PIPE	LF	79		
128	42708	8" SANITARY DROP CONNECTION	LF	12.5		
129	42755	SANITARY SEWER MANHOLE (STD.)	LF	113.8		
130	42755	SANITARY SEWER MANHOLE (DOGHOUSE)	LF	19.0		
131	42764	MANHOLE FRAME & COVER F&C-1	EA	18		
132	42765	ADJUST EXIST FRAME & COVER	EA	6		
133	42771	RECONSTRUCT EXISTING SANITARY MANHOLE	LF	5		
134	42840	SEWER CLEANOUT	EA	3		
135	44301	RECONNECT EX. LATERAL	EA	20		
136	44301	RECONNECT EX. MAIN	EA	1		
137	45552	12" STEEL ENCASE. PIPE	LF	26		
138	49012	CORE DRILL EX. MH	EA	5		
139	50108	SIGN PANEL	SF	282.5		
140	50108	SIGN PANEL - FURNISH AND INSTALL	SF	357.5		
141	50490	NS PERMANENT SIGN ANCHOR	EA	45		
142	50600	REMOVE TY.I SIGNS	EA	12		
143	50610	RELOC.EXIST.SIGN STRUCT.TY. I	EA	28		
144	50902	LED LIGHTED STREET NAME SIGNS	EA	15		
145	51184	SIGNAL HEAD SECTION 12" LED RED	EA	43		

146	51184	SIGNAL HEAD SECTION 12" LED RED ARROW	EA	1		
147	51184	SIGNAL HEAD SECTION 12" LED GREEN	EA	43		
148	51184	SIGNAL HEAD SECTION 12" LED GREEN ARROW	EA	16		
149	51184	SIGNAL HEAD SECTION 12" LED YELLOW	EA	43		
150	51184	SIGNAL HEAD SECTION 12" LED YELLOW ARROW	EA	16		
151	51198	ACCESSIBLE PEDESTRIAN ACTUATION PA-2 WITH ACCESSIBLE PED BUTTON	EA	28		
152	51208	PEDESTAL POLE PF-2 8'	EA	14		
153	51238	CONC. FOUND. SIGNAL POLE PF-8	CY	140		
154	51240	CONC. FOUNDATION PF-2	EA	14		
155	51245	CONCRETE FOUND. CF-1	EA	4		
156	51317	SIG. POLE MP-1 20' ONE ARM 30'	EA	1		
157	51327	SIG. POLE MP-1 20' ONE ARM 40'	EA	1		
158	51337	SIG. POLE MP-1 20' ONE ARM 50'	EA	6		
159	51347	SIG. POLE MP-1 20' ONE ARM 60'	EA	2		
160	51426	SIG. POLE MP-1 20' ONE ARM 65'	EA	3		
161	51426	SIG. POLE MP-1 20' TWO ARM 30' & 50'	EA	1		
162	51602	14/4 CONDUCTOR CABLE	LF	25212		
163	51614	#8 BONDED GROUND	LF	1882		
164	51614	8/1 CONDUCTOR CABLE	LF	1239		
165	51614	EMERGENCY VEHICLE PREEMPTION DETECTOR CABLE	LF	2764		
166	51614	CAT 5 OUTDOOR CABLE	LF	111		
167	51700	14/2 CONDUCTOR CABLE SHIELDED	LF	2764		
168	51830	HANGER ASSEMBLY SM-3, ONE WAY	EA	44		
169	51836	HANGER ASSM.SMB-1 OR 2 ONE WAY	EA	15		
170	51839	HANGER ASSM.SMB-3, TWO WAY	EA	13		
171	51840	OVERHEAD SIGN HANGER ASSEMBLY SMD-2	EA	50		
172	51910	SAW CUT FULL DEPTH	LF	10332		
173	51960	CONTROLLER WITH CABINET	EA	4		
174	51962	RELOCATE EXISTING SIGNAL EQUIPMENT	LS	1		
175	51963	REMOVE EXISTING SIGNAL EQUIPMENT	LS	1		
176	51980	TEMPORARY SIGNILIZATION	LS	1		
177	52002	UNITERRUPTIBLE POWER SUPPLY	EA	4		
178	52002	UNITERRUPTIBLE POWER SUPPLY BATTERY	EA	24		
179	52002	UNITERRUPTIBLE POWER SUPPLY CABINET	EA	4		
180	52002	EMERGENCY PREEMPTION 3-WAY	EA	1		
181	52002	EMERGENCY PREEMPTION 4-WAY	EA	2		
182	52403	PEDESTRIAN SIGNAL HEAD SP-8	EA	28		
183	52425	ELECTRICAL SERVICE SE-3 TYPE B	EA	4		
184	54020	TY. A PAVEMENT LINE MARKING 4"	LF	17672		
185	54020	TY. A PAVEMENT LINE MARKING 4" (PARKING LOT)	LF	250		

186	54022	TY. A PAVEMENT LINE MARKING 6"	LF	9022		
187	54042	TY.B CL.I PAVE. LINE MARK. 24"	LF	2400		
188	54105	ERAD. OF EXIST.PAVE.MARKING	LF	36500		
189	54106	ERAD. OF EXIST.NONLINEAR PAV.MARK	SF	1628		
190	54250	PAVEMENT MESSAGE MARK. BICYCLE ARROW	EA	31		
191	54254	PAVEMENT MESSAGE MARK. BICYCLE LANE SYM.	EA	31		
192	54300	PAVE.MESS.MARK.ELONG.ARROW SINGLE	EA	67		
193	54310	PAVE.MESS.MARK.ELONG.ARROW DOUBLE	EA	6		
194	54510	CONSTR.PAVE.MARK.(TY.D,CL.D)4"	LF	9125		
195	54550	CONSTR.PAVE.MARK.(TY.F,CL.D)4"	LF	27375		
196	55586	JUNCTION BOX JB-S1	EA	10		
197	55587	JUNCTION BOX JB-S2	EA	11		
198	55588	JUNCTION BOX JB-S3	EA	9		
199	56014	ELECT. SER. GRD. ELECTRODE(10')	EA	8		
200	56021	1" PVC CONDUIT	LF	396		
201	56042	BORED CONDUIT 1"	LF	1138		
202	56050	BORED CONDUIT 2"	LF	3240		
203	56051	BORED CONDUIT 3"	LF	1377		
204	56053	2" PVC CONDUIT	LF	6820		
205	56054	3" PVC CONDUIT	LF	269		
206	56200	TRENCH EXCAVATION ECI-1	LF	3403		
207	56205	TEST BORE	EA	14		
208	59050	FIBER SWITCHES & MEDIA CONVERTER UNIT	EA	3		
209	59050	4-WAY VIDEO DETECTION SYSTEM WITH VIEWCOM	EA	3		
210	59050	3-WAY VIDEO DETECTION SYSTEM WITH VIEWCOM	EA	1		
211	59071	VIDEO DETECTOR CABLE (5 CONDUCTOR SIAMESE CABLE)	LF	2823		
212	59071	24 STRAND FIBER OPTIC CABLE	LF	3177		
213	60403	CONCRETE CLASS A3 (LEVELING PAD)	CY	20		
214	60404	CONCRETE CLASS A4 (MOMENT SLAB AND BARRIER)\	CY	116		
215	62045	RAILING, BR27D 2 RAILS	LF	271		
216	69007	FLOWABLE FILL	CY	20		
217	70000	NS D18 - SIGN FOUNDATION	LS	1		
218	70000	NS D900 - SIGN	LS	1		
219	70000	NS D500 - UNDERGROUND TANK	LS	1		
220	70000	NS D501 - UNDERGROUND TANK	LS	1		
221	70000	NS D904 - SIGN	LS	1		
222	70000	NS D19 - BUS SHELTER	LS	1		
223	70000	NS D901 - LIGHT	LS	1		
224	70000	NS D902 - LIGHT	LS	1		
225	70000	NS D903 - LIGHT	LS	1		
226	70000	NS D20 - SIGN	LS	1		
227	70000	NS D21 - SIGN	LS	1		
228	70000	NS D22 - SIGN	LS	1		

229	70000	NS D910 - LIGHT	LS	1		
230	70000	NS D23 SIGN	LS	1		
231	70000	NS D906 - SIGN/LIGHT	LS	1		
232	70000	NS D905 - SIGN	LS	1		
233	70000	NS D100 (CHURCH WALL)	EA	1		
234	85005	NS RETAINING WALL "E" SELECT GRANULAR BACKFILL	TON	2581		
235	85006	UNDERCUT EXCAVATION	CY	400		
236	85011	NS BUS STOP HARDWARE	LS	3		
237	85012	STREET CENTERLINE MONUMENT	EA	23		
238	85012	NS PARKING BLOCKS	EA	13		
239	85021	NS RETAINING WALL "H" ARCHITECTURAL FINISH	SY	22		
240	85103	TEMPORARY SEEDING	LB	400		
241	13570	NS PRECAST MODULAR BLOCK WALL "A" - STA. 33+50 TO 34+28	SF	348		
242	13570	NS PRECAST MODULAR BLOCK WALL "B" - STA. 34+61 TO 37+07	SF	1179		
243	13570	NS PRECAST MODULAR BLOCK WALL "C" - STA. 39+45 TO 41+91	SF	1515		
244	13570	NS PRECAST MODULAR BLOCK WALL "D" - AESTHETIC PORTION - STA. 47+64 TO 10+70	SF	565		
245	13570	NS PRECAST MODULAR BLOCK WALL "D" - STA. 47+64 TO 10+70	SF	555		
246	13570	NS PRECAST MODULAR BLOCK WALL "F" - STA. 59+75 TO 61+75	SF	912		
247	13570	NS PRECAST MODULAR BLOCK WALL "G" - STA. 11+00 TO 12+26	SF	516		

Total Bid _____

0301 BID SECURITY

We are properly equipped to execute work of the character and extent indicated by the bidding documents and so covered by this bid and will enter into agreement for the execution and completion of the work in accordance with the drawings and project manual and this bid; and we further agree that if awarded the contract, we will commence the work on the date stated in the "Notice to Proceed" document and prosecute the work and all obligations by the specified completion dates.

Enclosed herewith is the following security, offered as evidence that the undersigned will enter into agreement for the execution and completion of the work in accordance with the drawings and project manual.

Certified check or Cashier's check for the sum of

\$ _____

Name of Bank

Bidder's Bond in the amount of

\$ _____

Bond issued by

The undersigned further agrees that in case of failure on his part to execute the said agreement within the ten consecutive calendar days after written notice being given on the award of the contract, the monies payable by the security accompanying this bid shall be paid to the City of Harrisonburg, Virginia as liquidated damages for such failure, otherwise, the security accompanying this bid shall be returned to the undersigned.

This bid is subject to acceptance within a period of 30 days from this date.

Respectfully submitted,

Company Name

By _____
Signature of Authorized

Printed Name _____

Date _____

0302 CONTRACTOR ELIGIBILITY AND REGISTRATION

This is to certify that I (we) are not currently barred from bidding on contracts by any agency of The Commonwealth of Virginia, nor am I (we) a part of any firm/corporation that is currently barred from bidding on contracts by any agency of The Commonwealth of Virginia.

Check one:

_____ I am currently registered as a contractor in the Commonwealth of Virginia.

_____ My registration number is _____

_____ I am currently not required to register as a contractor in the Commonwealth of Virginia per Chapter 11, Title 54 of the Code of Virginia.

Contractor

[SEAL]

Address

Attest

By: _____
Signature

Title

Date

0303 State Corporation Commission Form

Virginia State Corporation Commission (“SCC”) registration information:

The undersigned Offeror:

is a corporation or other business entity with the following SCC identification number:
_____ **-OR-**

is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust **-OR-**

is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder’s out-of-state location) **-OR-**

is an out-of-state business entity that is including with this bid an opinion of legal counsel which accurately and completely discloses the undersigned Offeror’s current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia. **Attach opinion of legal counsel to this form.**

****NOTE**** >> Check the following box if you have not completed any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for proposals (the Commonwealth reserves the right to determine in its sole discretion whether to allow such waiver):

Signature: _____ **Date:** _____

Name: _____
Print

Title: _____

Name of Firm: _____

0304 NON-COLLUSION AFFIDAVIT

Under oath, I hereby affirm under penalty of perjury:

- (1) That I am the bidder or a partner of the bidder, or an officer or employee of the bidding corporation with authority to sign on its behalf;
- (2) That the attached bid or bids have been arrived at by the bidder and have been arrived at and submitted without collusion or any design to limit bidding or competition;
- (3) That the contents of the bid or bids have not been communicated to any person not an employee or agent of the bidder on any bid furnished with the bid or bids, and will not be communicated to any such person prior to the official opening of the bid or bids; and
- (4) That I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Signed _____

Title _____

Firm Name _____

CITY / COUNTY OF _____
COMMONWEALTH OF VIRGINIA, to wit:

I, _____, a Notary Public, do certify that
_____ whose name is signed to the foregoing has
this date acknowledged the same before me in my City foresaid.

Given under my hand this _____ day of _____, 20__.

My Commission expires _____.

Notary Public

**0400 GENERAL TERMS AND CONDITIONS FOR THE CITY OF
HARRISONBURG, VA**

PURCHASING AND CONTRACTING MANUAL: This solicitation is subject to the provisions of The Purchasing and Contracting Policy Manual for the City of Harrisonburg (City) and any revisions thereto, which are hereby incorporated into this contract in their entirety. A copy of the manual is available for review at www.Harrisonburgva.gov/bids.

APPLICABLE LAWS AND COURTS: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The contractor shall comply with all applicable federal, state and local laws, rules and regulations.

ANTI-DISCRIMINATION: By submitting their (bids/proposals), (bidders/offerors) certify to the City that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and 2.2-4311 of the *Virginia Public Procurement Act*.

In every contract over \$10,000 the provisions below apply:

1. During the performance of this contract, the contractor agrees as follows:
 - a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

The contractor will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

2. The City does not discriminate against small and minority businesses or faith based organizations.

ETHICS IN PUBLIC CONTRACTING: By submitting their (bids/proposals), (bidders/offerors) certify that their (bids/proposals) are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other (bidder/offeror), supplier, manufacturer or subcontractor in connection with their (bid/proposal), and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

IMMIGRATION REFORM AND CONTROL ACT OF 1986: By submitting their (bids/proposals), (bidders/offerors) certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

DEBARMENT STATUS: By submitting their (bids/proposals), (bidders/offerors) certify that they are not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

ANTITRUST: By entering into a contract, the contractor conveys, sells, assigns, and transfers to the City all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the City under said contract.

MANDATORY USE OF CITY FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs

1. **(For Invitation For Bids(ITB):)** Failure to submit a bid on the form provided, (if provided) shall be a cause for rejection of the bid. Modification of or additions to any portion of the Invitation for Bids may be cause for rejection of the bid; however, the City reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a bid as nonresponsive. As a precondition to its acceptance, the City may, in its sole discretion, request that the bidder withdraw or modify nonresponsive portions of a bid which do not affect quality, quantity, price, or delivery. No modification of or addition to the provisions of the contract shall be effective unless reduced to writing and signed by the parties.
2. **(For Request For Proposals(RFP):)** Failure to submit a proposal on the form provided, (if provided) shall be a cause for rejection of the bid. Modification of or additions to the General Terms and Conditions of the solicitation may be cause for rejection of the proposal; however, the City reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

REVISIONS TO THE OFFICIAL ITB/RFP: No offeror shall modify, revise, edit or make any unauthorized change(s) to the original Official Invitation to Bid (ITB) or Official Request for Proposal (RFP). The Official solicitation document and the Addenda(s) are the

documents posted on the City of Harrisonburg's web site and/or authorized by the City of Harrisonburg's Purchasing Agent. Any such violation as stated above may result in rejection of the ITB/RFP response. In addition, violations may result in the debarment of the offeror by the City of Harrisonburg.

CLARIFICATION OF TERMS: If any prospective (bidder/offeror) has questions about the specifications or other solicitation documents, the prospective (bidder/offeror) should contact the person whose name appears on the face of the solicitation no later than five working days before the due date. Any revisions to the solicitation will be made only by addendum issued by the buyer.

PAYMENT:

1. To Prime Contractor:

- a. Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).
- b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.
- c. All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price.
- d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.
- e. Individual contractors shall provide their social security numbers, and proprietors, partnerships, and corporations shall provide the City with a federal employer identification number, prior to receiving any payment from the City.
- f. **Unreasonable Charges.** Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced as to those

charges which it considers unreasonable and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve the City of its prompt payment obligations with respect to those charges which are not in dispute (*Code of Virginia, 2.2.4363*).

2. To Subcontractors:

a. A contractor awarded a contract under this solicitation is hereby obligated:

(1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the City for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

(2) To notify the City and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.

b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the City, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the City.

PRECEDENCE OF TERMS: General Terms and Conditions shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.

QUALIFICATIONS OF (BIDDERS/OFFERORS): The City may make such reasonable investigations as deemed proper and necessary to determine the ability of the (bidder/offeror) to perform the services/furnish the goods and the (bidder/offeror) shall furnish to the City all such information and data for this purpose as may be requested. The City reserves the right to inspect (bidder's/offeror's) physical facilities prior to award to satisfy questions regarding the (bidder's/offeror's) capabilities. The City further reserves the right to reject any (bid/ proposal) if the evidence submitted by, or investigations of, such (bidder/offeror) fails to satisfy the City that such (bidder/offeror) is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

TESTING AND INSPECTION: The City reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

ASSIGNMENT OF CONTRACT: A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.

CHANGES TO THE CONTRACT: Changes can be made to the contract in any of the following ways:

1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.
2. The Purchasing Agent or City delegated agent may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give the City a credit for any savings.

DEFAULT: In case of failure to deliver goods or services in accordance with the contract terms and conditions, the City, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies, which the City may have.

CANCELLATION OF THE CONTRACT: The City may terminate any agreement resulting from this solicitation at any time, for any reason or for no reason, upon thirty days advance written notice to the Contractor. In the event of such termination the Contractor shall be compensated for services and work performed prior to termination.

TAXES: Sales to the City of Harrisonburg are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.

(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)

USE OF BRAND NAMES: Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict (bidders/offerors) to the specific brand, make or manufacturer named, but conveys the general style, type, character, and quality of the article desired. Any article which the public body, in its sole discretion, determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. The (bidder/offeror) is responsible to clearly and specifically identify the product being offered and to provide sufficient descriptive literature, catalog cuts and technical detail to enable the City to determine if the product offered meets the requirements of the solicitation. This is required even if offering the exact brand, make or manufacturer specified. Normally in competitive sealed bidding only the information furnished with the bid will be considered in the evaluation. Failure to furnish adequate data for evaluation purposes may result in declaring a bid nonresponsive. Unless the (bidder/offeror) clearly indicates in its (bid/proposal) that the product offered is an

“equal” product, such (bid/proposal) will be considered to offer the brand name product referenced in the solicitation.**(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

TRANSPORTATION AND PACKAGING: By submitting their (bids/proposals), all (bidders/offerors) certify and warrant that the price offered for FOB destination includes only the actual freight rate costs at the lowest and best rate and is based upon the actual weight of the goods to be shipped. Except as otherwise specified herein, standard commercial packaging, packing and shipping containers shall be used. All shipping containers shall be legibly marked or labeled on the outside with purchase order number, commodity description, and quantity.**(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

INSURANCE: By signing and submitting a bid or proposal under this solicitation, the bidder or offeror certifies that if awarded the contract, it will have insurance coverages per the solicitation document at the time the contract is awarded. For construction contracts, if any subcontractors are involved, the subcontractor will have workers’ compensation insurance in accordance with 2.2-4332 and 65.2-800 et seq. of the *Code of Virginia*. The bidder or offeror further certifies that the contractor and any subcontractors will maintain these insurance coverages during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission. **(NOT NORMALLY REQUIRED FOR GOODS CONTRACTS. INSURANCE IS REQUIRED WHEN WORK IS TO BE PERFORMED ON CITY OWNED OR LEASED FACILITIES OR PROPERTY.)**

AVAILABILITY OF FUNDS: Agreements are made subject to the appropriation of funds by the Harrisonburg City Council and are null and void in the event of non-appropriation by the City Council. Non-appropriation of funds shall not be deemed a cancellation and shall terminate this agreement without recourse and with no liability on the part of the City.

SELECTION PROCESS/AWARD: Upon the award or the announcement of the decision to award a contract as a result of this solicitation, the department will publicly post such notice for a minimum of ten (10) days, or will notify all responsive bidders/offerors.

BID/PROPOSAL ACCEPTANCE PERIOD: Any bid/proposal resulting from this solicitation shall be valid for (30) days. At the end of the (30) days the bid/proposal may be withdrawn at the written request of the Bidder/Offeror. If the bid or proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.

EXCUSABLE DELAY: The City shall not be in default of any failure in performance of this agreement in accordance with its terms if such failure arises out of causes beyond its reasonable control and without the fault of or negligence of the City. Such causes may include, but are not restricted to acts of God or the public enemy, fires, flood, epidemics, quarantine restrictions, strikes, freight embargoes, and usually severe weather, but in every case the failure to perform must be beyond the reasonable control and without the fault or negligence of the City.

DRUG-FREE WORKPLACE: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

SAFETY and OSHA STANDARDS: All parties performing services for the City shall comply with all Occupational Safety and Health Administration (OSHA), State Occupational Health Standards, and any other applicable rules and regulations. All parties shall be held responsible for the training, supervision, and safety of their employees. Any unsafe acts or hazardous conditions that may cause injury or damage to any persons or property within and around the work site areas under this contract shall be remedied per the regulatory agency's guidelines.

PERMITS AND FEES: All proposals submitted shall have included in price the cost of any business or professional licenses, permits or fees required by the City of Harrisonburg or the Commonwealth of Virginia. The offeror must have all necessary licenses to perform the services in Virginia and, if practicing as a corporation, be authorized to do business in the Commonwealth of VA.

COOPERATIVE PROCUREMENT: This procurement is being conducted on behalf of other public bodies, in accordance with 2.2-4304 (A) of the Code of VA. The successful bidder has the option to provide these same items (services), except architectural and engineering services, at the same prices, awarded as a result of this solicitation to any public body within the Commonwealth of Virginia. If any other Public body decides to use the final contract, the contractor(s) must deal directly with that public body concerning the placement of orders, issuance of the purchase orders, contractual disputes, invoicing and payment. Failure to extend a contract to any public body will have no effect on consideration of your bid.

LIABILITY AND LITIGATION: The City shall not indemnify or hold harmless any Contractor or other third party. The City does not waive any right or release any party from liability, whether on its own behalf or on behalf of any boards, employees or agents. The City does not waive the right to trial by jury for any cause of action arising from the Contract and shall not submit any Contract claim to binding arbitration or mediation. The City shall not be liable to Contractor for any special, punitive or exemplary damages arising from the performance of the contract, including, but not limited to, incidental damages, and lost profit and lost wages, even if such special damages are reasonably foreseeable. Any provision(s) in the Contract contrary to these statements is/are hereby deleted and rendered void.

STATE CORPORATION COMMISSION IDENTIFICATION NUMBER: Pursuant to Code of VA 2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact

business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized. Link to the SCC site is <http://www.scc.virginia.gov>.

0401 ESCROW ACCOUNT ELECTION

ELECTION OF ESCROW ACCOUNT PROCEDURE FOR RETAINAGE

If determined to be the successful low bidder(s), the below signed elects to use the Escrow Account Procedure for retainage.

Write "Yes" or "No" on above line

If the successful bidder elects to use the Escrow Account Procedure for Retainage, an "Escrow Agreement" form will be provided by the City and shall be executed and submitted to the City within fifteen (15) calendar days after notification. If the "Escrow Agreement" form is not submitted within the fifteen (15) day period, the Contractor shall forfeit his rights to the use of the Escrow Account Procedure.

Company_____

Authorized Signature_____

0401 ESCROW AGREEMENT
CITY OF HARRISONBURG, VIRGINIA

THIS AGREEMENT ("Agreement"), made and entered into this _____ day of _____, 20____ by, between and among the City of Harrisonburg, Virginia ("City" or Owner"), _____ ("Contractor"), _____ (Name of Escrow Agent) _____ (Address of Escrow Agent) a trust company, bank, or savings and loan institution (hereinafter referred to collectively as "Escrow Agent") with its principal office located in the Commonwealth of Virginia ("Commonwealth") and _____ ("Surety") provides:

I.

The City and the Contractor have entered into a contract dated _____ with respect to City of Harrisonburg ITB No. _____, for _____ ("Contract"). This Agreement is pursuant to, but in no way amends or modifies, the Contract. Payments made hereunder or the release of funds from escrow shall not be deemed approval or acceptance of performance by the Contractor. Payments should be made to _____ and mailed to _____ (Name and Address of Escrow Agent).

II.

In order to assure full and satisfactory performance by the Contractor of its obligations under the Contract, the City is required thereby to retain certain amounts otherwise due the Contractor. The Contractor has, with the approval of the City, elected to have these retained amounts held in escrow by the Escrow Agent. This agreement sets forth the terms of the escrow. The Escrow Agent shall not be deemed a party to, bound by, or required to inquire into the terms of the Contract or any other instrument or agreement between the City and the Contractor.

III.

The City shall from time to time pursuant to the Contract pay to the Escrow Agent amounts retained by it under the Contract. Except as to amounts actually withdrawn from escrow by the City, the Contractor shall look solely to the Escrow Agent for the payment of funds retained under the Contract and paid by the City to the Escrow Agent.

The risk of loss by diminution of the principal of any funds invested under the terms of the Contract shall be solely upon the Contractor.

Funds and securities held by the Escrow Agent pursuant to this Escrow Agreement shall not be subject to levy, garnishment, attachment, lien, or other process whatsoever. Contractor agrees not to assign, pledge, discount, sell or otherwise transfer or dispose of his interest in the escrow account or any part thereof, except to the Surety.

IV.

Upon receipt of checks drawn by the City and made payable to the Escrow Agent under this agreement, the Escrow Agent shall promptly notify the Contractor, negotiate the same and deposit or invest and reinvest the proceeds in approved securities in accordance with the written instructions of the Contractor. In no event shall the Escrow Agent invest the escrowed funds in any security not approved, as set forth in Section V. below.

V.

The following securities, and none other, are approved securities for all purposes of this Agreement:

- (1) United States Treasury Bonds, United States Treasury Notes, United States Treasury Certificates of Indebtedness or United States Treasury Bills,
- (2) Bonds, notes and other evidences of indebtedness unconditionally guaranteed as to the payment of principal and interest by the United States,
- (3) Bonds or notes of the Commonwealth of Virginia,
- (4) Bonds of any political subdivision of the Commonwealth of Virginia, if such bonds carried, at the time of purchase by the Escrow Agent or deposit by the Contractor, a Standard and Poor's or Moody's Investor Service rating of at least "A", and
- (5) Certificates of deposit issued by commercial Banks located within the Commonwealth of Virginia, including, but not limited to, those insured by the Escrow Agent and its affiliates.
- (6) Any bonds, notes, or other evidences of indebtedness listed in Sections (1) through (3) may be purchased pursuant to a repurchase agreement with a bank, within or without the Commonwealth of Virginia having a combined capital, surplus and undivided profit of not less than \$25,000,000, provided the obligation of the bank to repurchase is within the time limitations established for investments as set forth herein. The repurchase agreement shall be considered a purchase of such securities even if title, and/or possession of such securities is not transferred to the Escrow Agent, so long as the repurchase obligation of the bank is collateralized by the securities themselves, and the securities have on the date of the repurchase agreement a fair market value equal to at least 100% of the amount of the repurchase obligation of the bank, and the securities are held by a third party, and segregated from other securities owned by the bank.

No security is approved hereunder which matures more than five (5) years after the date of its purchase by the Escrow Agent or deposit by the Contractor.

VI.

The Contractor may from time to time withdraw the whole or any portion of the escrowed funds by depositing with the Escrow Agent approved securities as set forth in Section V. above in an amount equal to, or in excess of, the amount so withdrawn. Any securities so deposited or withdrawn shall be valued at such time of deposit or withdrawal at the lower of par or market value, the latter as determined by the Escrow Agent. Any securities so deposited shall thereupon become a part of the escrowed fund.

Upon receipt of a direction signed by the City of Harrisonburg Director of Finance or designee, the Escrow Agent shall pay the principal of the fund, or any specified amount thereof, to the City or the Contractor as the City may direct. If payment is to be made to the Harrisonburg City Treasurer, it shall be made in cash or cash equivalent. However, if payment has been authorized to be made to the Contractor, the Contractor may specify to the Escrow Agent if payment is to be made in cash or in kind. Any such payment and delivery required hereunder shall be made as soon as is practicable after receipt of the direction.

VII.

For its services hereunder, the Escrow Agent shall be entitled to a reasonable fee in accordance with its published schedule of fees or as may be agreed upon by the Escrow Agent and the Contractor. Such fee and any other costs of administration of this Agreement shall be paid from the income earned upon the escrowed fund and, if such income is not sufficient to pay the same, by the Contractor.

VIII.

The net income earned and received upon the principal of the escrowed fund shall be paid over to the Contractor in quarterly or more frequent installments. Until so paid or applied to pay the Escrow Agent's fee or any other costs of administration, such income shall be deemed a part of the principal of the fund.

IX.

The Surety undertakes no obligation hereby but joins in this Agreement for the sole purpose of acknowledging that its obligations as surety for the Contractor's performance of the contract are not affected hereby.

X.

This Escrow Agreement shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue and any actions for any litigation, suits, and claims arising from or connected with this Escrow Agreement and/or Contract referred to herein shall only be proper in the Rockingham County Circuit Court, or in the Rockingham County General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to this Escrow Agreement and/or such Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the parties hereto have signed this Escrow Agreement by their authorized representatives.

Attest: (if corporation)
Witness: (if individual)

Typed Name of Contractor

President/Vice-President;
Partner or Owner (Seal

Attest:

Bank Officer

Typed Name of Escrow Agent

Vice President

Witness:

Typed Name of Surety Company

By: _____
Attorney-In-Fact

Attest:

City of Harrisonburg, Virginia

City Clerk

City Manager/Assistant City Manager

Approved as to form:

City Attorney

Approved as to execution:

City Attorney

0501 AGREEMENT

This AGREEMENT is dated as of the ___ day of _____ in the year 20__ between the City of Harrisonburg, Virginia (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR). OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents for the project titled City of Harrisonburg, Virginia, Reservoir Street Improvement Project. The Work is generally described as follows:

Widen approximately 1.5 center lane miles of Reservoir Street from University Boulevard to city limits to include: sidewalk, curb & gutter, CG-12 detectible warning surface, entrances, retaining walls, traffic signals, pedestrian signal work, together with all appurtenances, public water and sewer relocations and incidental items required to complete the work.

ARTICLE 2. CONTRACT ADMINSTRATOR

This Project has been designed by the City of Harrisonburg and administered by the Department of Public Works. The Director of Public Works of Harrisonburg, Virginia, or their designee, is hereinafter called CONTRACT ADMINSTRATOR, will assume all duties and responsibilities and will have the rights and authority assigned to CONTRACT ADMINSTRATOR in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

3.1 Contract Time shall be Fixed Completion Dates for the various phases of work as follows:

All work shall be completed by December 15, 2017.

3.2 Consideration for time extensions attributable to weather will not be given except as provided for in Section 108.04 of the VDOT Standard Specifications.

3.3 Liquidated Damages shall be in accordance with Section 108 of the VDOT Road and Bridge Specifications.

ARTICLE 4. CONTRACT PRICE

4.1 OWNER shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents such amounts as required by the Contract Documents.

ARTICLE 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Virginia Department of Transportation's Road & Bridge Specifications. Applications for Payment will be processed by CONTRACT ADMINISTRATOR as provided in the Virginia Department of Transportation's Road & Bridge Specifications.

5.1 Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by CONTRACT ADMINISTRATOR, on or about the 1st day of each month during construction as provided below. All Progress Payments will be on the basis of the progress of the Work measured by the schedule of values established in Virginia Department of Transportation's Road & Bridge Specifications.

5.1.1 Prior to completion Progress Payments will be made in an amount equal to:

95% of the Work completed, and

95% of the materials and equipment not incorporated in the Work but delivered and suitably stored less in each case the aggregate of payment previously made.

5.1.2 Upon substantial completion, OWNER shall pay amount sufficient to increase total payments to CONTRACTOR to 98% of the Contract Price, less such amount as CONTRACT ADMINISTRATOR shall determine in accordance with Virginia Department of Transportation's Road & Bridge Specifications.

5.2. Final Payment. Upon final completion and acceptance of the Work in accordance with the Virginia Department of Transportation's Road & Bridge Specifications, OWNER shall pay the remainder of the Contract Price, less 1% for seeding per Supplementary Specification 1002, as recommended by CONTRACT ADMINISTRATOR as provided in said Virginia Department of Transportation's Road & Bridge Specifications.

ARTICLE 6. INTEREST

All monies not paid when due hereunder shall bear interest at maximum rate allowed by law at the place of the Project.

ARTICLE 7. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

7.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

7.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by CONTRACT ADMINISTRATOR in the preparation of the Drawings and Specifications and which have been identified in the Supplementary Conditions.

7.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in Paragraph 7.2. as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examination, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

7.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

7.5 CONTRACTOR has given CONTRACT ADMINISTRATOR written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by CONTRACT ADMINISTRATOR is acceptable to CONTRACTOR.

ARTICLE 8. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached by reference to this Agreement, made a part hereof and consist of the following:

- 8.1 This Agreement (pages 1 to 5, inclusive)
- 8.2 Performance and Payment bonds
- 8.3 Certificate of Insurance and Endorsement
- 8.4 Notice of Award
- 8.5 Notice to Proceed
- 8.6 State Requirements
- 8.7 Project Manual entitled "Reservoir Street Improvement Project"
- 8.8 Drawings dated December 14, 2015 consisting of Roadway Plans, Cross Sections and Water & Sewer Plans; and all approved changes to the drawings
- 8.9 Signed Addenda
- 8.10 Contractor's Bid

- 8.11 City of Harrisonburg Standard General Terms and Conditions
- 8.12 Escrow Election Form and Agreement if needed
- 8.13 Documentation submitted by Contractor prior to Notice of Award.
- 8.14 Any modifications or change orders, duly delivered after execution of Agreement.

All contract documents must be listed in this article. Contract documents may be altered, amended or repealed only as allowed by the Virginia Department of Transportation's Road & Bridge Specifications.

ARTICLE 9. MISCELLANEOUS

9.1 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are now due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.2 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

ARTICLE 10. OTHER PROVISIONS

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and CONTRACT ADMINISTRATOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by CONTRACT ADMINISTRATOR on their behalf.

This Agreement is effective: _____
Date

OWNER: City of Harrisonburg

CONTRACTOR: _____

Signature _____

Signature _____

Name & Title: Kurt Hodgen, City Manager

Name & Title: _____

Attest _____

Attest _____

Address for giving notices:

Address for giving notices:

License No. _____

END OF AGREEMENT

0502 NOTICE TO PROCEED

DATE: _____

TO: _____

Re: City of Harrisonburg

PROJECT TITLE: _____

PROJECT NO: _____

In accordance with the Contract between the City of Harrisonburg and Contractor you are notified that the Time for Completion under the above Agreement will commence to run on _____, 20 _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Contract between Owner and Contractor, the Work shall be substantially completed within _____ calendar days from and after the said date, which is _____, 20_____.

Before you may start any Work at the site, the City of Harrisonburg requires that you deliver to the City the Certificates of Insurance which the Contractor is required to purchase and maintain in accordance with the Contract Documents.

By _____
Owner Authorized Signature

Name & Title (Print)

0800 APPLICATION FOR PAYMENT

1. Applications for progress payment shall be made on forms identical to those shown on pages 0800-2 and 0800-3. The following application for payment is an excel spreadsheet and will be made available for the contractor's use.
2. A draft of the application for progress payment shall be emailed to the Project Manager and Project Coordinator for review. After review and approval by the City, the contractor shall mail two signed applications for progress payment to: 320 East Mosby Road, Harrisonburg, VA 22801.
3. It shall be the responsibility of the Contractor to supply daily quantities to the Project Manager and Project Coordinator for comparison to the Inspector's quantities. The format shall be agreed upon during the pre-construction meeting.

0800 APPLICATION AND CERTIFICATE FOR PAYMENT

To Owner: City of Harrisonburg
320 E. Mosby Rd.
Harrisonburg, VA 22801

Project: Reservoir St. Impr. Proj.

Application No.:

Period To:

From Contractor:

Contract Date:

1. Original Contract Sum	\$	CHANGE ORDER SUMMARY	Additions	Deductions
2. Net Change by Change Order	\$	Total Changes Approved Previously		
3. Contract Sum To Date (line 1 + line 2)	\$	Total Approved this Month		
4. Total Completed and Stored To Date (column G)	\$	Totals		
5. Retainage:		Net Changes by Change Order		
a. ___% of Completed Work (column D + column E)	\$			
b. ___% of Stored Materials (column F)	\$			
6. Total Earned Less Retainage (line 4 less line 5)	\$			
7. Less Previous Applications for Payment	\$			
8. Current Payment Due	\$ 			
9. Balance to Finish, Plus Retainage	\$			

The undersigned contractor hereby swears and under penalty of perjury that (1) all previous progress payments received from the owner on account of work performed under the contract referred to above have been applied by the undersigned to discharge in full all obligations of the undersigned incurred in connection with work covered by prior applications for payment under said contract, being Applications for Payment 1 through ___ inclusive; and (2) all materials and equipment incorporated in said project or otherwise listed in or covered by this application for payment are free and clear of all liens, claims, security and encumbrances.

Signature _____ Date _____
Printed Name _____ Title _____

State of _____ County of _____

Before me this ___ day of _____, 20__ personally appeared _____ known to me, who being duly sworn, did depose and say that he/she is the _____ of the contractor above mentioned, that he/she executed the above application for payment on behalf of said contractor and that all of the statements contained herein are true, correct and complete.

Notary Public _____ Registration No. _____
My Commission Expires _____

APPLICATION NO.:

PERIOD TO:

PROJECT: Reservoir St. Improvement Proj.

A LINE NO.	B WORK DESCRIPTION	C SCHEDULED VALUE				D COMPLETED WORK PREVIOUS PERIOD		E COMPLETED WORK THIS PERIOD		F STORED MATERIAL (not in D or E)	G TOTAL WORK COMPLETED TO DATE		% (G/C)	H BALANCE TO COMPLETION (C-G)
		Unit	Qty.	Unit Price	Amount	Qty.	Total	Qty.	Total		Qty	Total		
1	MOBILIZATION	LS	1	\$200.00	\$200.00	0.50	\$100.00	0.50	\$100.00		1.00	\$200.00	100%	\$0.00
2					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
3					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
4					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
5					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
6					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
7					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
8					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
9					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
10					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
11					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
12					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
13					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
14					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
15					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
16					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
17					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
18					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
19					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
20					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
21					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
22					\$0.00				\$0.00		0.00	\$0.00	#DIV/0!	\$0.00
TOTALS		\$200.00					\$100.00		\$100.00	\$0.00		\$200.00		\$0.00

SECTION 0900
STATE REQUIREMENTS
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(c100II2-0112) VDOT SUPPLEMENTAL SPECIFICATIONS (SSs), SPECIAL PROVISIONS (SPs) AND SPECIAL PROVISION COPIED NOTES (SPCNs)

Where Virginia Department of Transportation (VDOT) Supplemental Specifications, Special Provisions and Special Provision Copied Notes are used in this contract, the references therein to “the Specifications” shall refer to the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2007 for both imperial and metric unit projects. References to the “Road and Bridge Standard(s)” shall refer to the *Virginia Department of Transportation Road and Bridge Standards*, dated 2008 for both imperial and metric unit projects. References to the “Virginia Work Area Protection Manual” shall refer to the 2011 edition of the *Virginia Work Area Protection Manual* for imperial and metric unit projects. References to the “MUTCD” shall refer to the 2009 edition of the *MUTCD* and the current *Virginia Supplement to the MUTCD* for imperial and metric unit projects. Where the terms “Department”, “Engineer” and “Contract Engineer” appear in VDOT Supplemental Specifications, Special Provisions and Special Provision Copied Notes used in this contract and the VDOT publication(s) that each references, the authority identified shall be in accordance with the definitions in Section 101.02 of the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2007. Authority identified otherwise for this particular project will be stated elsewhere in this contract. VDOT Supplemental Specifications, Special Provisions and Special Provision Copied Notes used in this contract and the VDOT publication(s) that each reference are intended to be complementary to the each other. In case of a discrepancy, the order of priority stated in Section 105.12 of the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2007 shall apply. VDOT Special Provision Copied Notes in this contract are designated with “(SPCN)” after the date of each document. VDOT Supplemental Specifications and Special Provision Copied Notes in this contract are designated as such above the title of each document.

The information enclosed in parenthesis “()” at the left of each VDOT Special Provision Copied Note in this contract is file reference information for VDOT use only. The information in the upper left corner above the title of each VDOT Supplemental Specification and VDOT Special Provision in this contract is file reference information for VDOT use only. The system of measurement to be used in this project is stated elsewhere in this contract. VDOT Supplemental Specifications, Special Provisions and Special Provision Copied Notes containing imperial units of measure with accompanying expressions in metric units shall be referred to hereinafter as “dual unit measurement” documents. Such a “dual unit measurement” is typically expressed first in the imperial unit followed immediately to the right by the metric unit in parenthesis “()” or brackets “[]” where parenthesis is used in the sentence to convey other information. Where a “dual unit measurement” appears in VDOT documents, the unit that applies shall be in accordance with the system of measurement as stated elsewhere in this contract. The unit shown that is not of the declared unit of measurement is not to be considered interchangeable and mathematically convertible to the declared unit and shall not be used as an alternate or conflicting measurement. Where VDOT Specifications are used for metric unit projects and only imperial units of measurement appear the document, the provision(s) in this contract for imperial unit to metric unit conversion shall apply.

SECTION 105.10 - PLANS AND WORKING DRAWINGS is replaced with the following (City Modified):

(a) Description

The City will furnish plans consisting of general drawings and showing such details as are necessary to give a comprehensive understanding of the work specified. Except as otherwise shown on the plans, dimensions shown on the plans are measured in the respective horizontal or vertical planes. Dimensions that are affected by gradients or vertical curvatures shall be adjusted as necessary to accommodate actual field conditions and shall be specifically denoted on the Submittal items. Failure on the part of the Contractor to so denote field adjustments shall not relieve the Contractor of the responsibility to accommodate and incorporate such existing conditions into the finished work.

(b) Definitions

1. **Preliminary Submittal Package ("PSP") List** - A draft of the Submittal Package list that reflects the list of Submittal Items to be reviewed within the first 6 months of the Contract.
2. **Submittal Package** - Related submittal items that are grouped by the appropriate section number and reviewer for better organization during the review process.
3. **Submittal Package List** - Accepted PSP List.
4. **Submittal Package Title** - A title that clearly and uniquely identifies the subject matter of the submittal package.
5. **Submittal Item** - Any item identified in the Contract Documents that requires review and acceptance by the Department, including but not limited to, working drawings, source of component materials, calculations, and test reports.
6. **Re-Submittal Item** - Any Submittal Item that was not returned to the Contractor as "Accepted" or "Accepted as Noted".
7. **CPM Schedule** - Critical Path Method Schedule.
8. **Section Number** - The section of work identified in the Road and Bridge Specifications ("Specifications") that references the Submittal Items that require review and approval.
9. **Submittal Item Number** - to start with 01 (Submittal 01).
10. **Review/Revision Number** - to be denoted with Submittal Item Number with R1 etc. for revision number (Submittal 01R1).
11. **Submittal Item Type** - The type of submittal such as drawings, material cut sheets, and Calculations.
12. **Primary Reviewer** - The entity that performs the first review of a Submittal Item. The Primary Reviewer may include City, the SDC, and the PCC SDC Manager.
13. **Item Title** - The title of the Submittal Item that clearly and uniquely identifies the subject matter.

14. **Posted Date** - The date on which the Contractor sends a Submittal Item for review.
15. **Received Date** - Date on which the review period commences.
16. **Lead Time Requirements for Submittal Items** - The Contractor-identified calendar days associated with Submittal Item preparation, Submittal Item review period, Re- Submittal item preparation, Re-Submittal Item review period, and other applicable periods, including, but not limited to release to the manufacturer, fabrication, and delivery. The Contractor shall allow 30 calendar days for the review and acceptance of approvable Submittal items requiring such action; and an additional 30 calendar days review time, exclusive of Contractor's Re-Submittal preparation time, for Re-Submittal Items. Work shall not be performed or materials ordered prior to review acceptance of Submittal Items. If Submittal Items are not returned by the time specified, no additional compensation will be allowed except that an extension of time in accordance with the requirements of Section 108.09 will be considered.
17. **Submittal Start Date** - The latest date that the submittal preparation MUST start in order to be completed in time for the successor activity to commence as outlined in the CPM schedule.
18. **Submittal Finish Date** - The date that the submittal approval process (excluding re- submittals and approval(s) up to and including Submittal Item delivery to the Contractor) must be completed in order for the successor activity to commence, as outlined in the CPM schedule.
19. **Requests for Information (RFI)** - When the Contractor requests that the City supply information to better understand or clarify a certain aspect of work.
20. **Request for Explanation (RFE)** - When the City requests that the Contractor supply information to better understand or clarify a certain aspect of work. The Contractor shall formally respond to RFE's in Contract Manager within fourteen (14) calendar days.
21. **Quality Notification (QN)** - Formal notification from the City to the Contractor or from the Contractor to the City, that work in progress does not meet the requirements of the contract documents. The Contractor shall formally respond to owner generated QN's in Contract Manager within fourteen (14) calendar days.
22. **Contract Change Directive (CCD)** - When the City instructs the Contractor to perform work beyond that envisioned in the contract.

(c) Contractor's Submittal Coordinator

The Contractor shall designate a representative to coordinate Contractor's submittals, ("Contractor's Submittal Coordinator") including submittals prepared by Contractor, subcontractors, suppliers, and vendors. The Contractor's Submittal Coordinator shall be responsible for the coordination and assembling of complete submittal packages. All submittals shall be sent electronically as much as possible.

(d) Schedule

Upon receipt of Notice of Award, the Contractor shall immediately begin preparation of the Preliminary Submittal Package (PSP) List. The Contractor shall submit the name of its Submittal Coordinator no later than 14 calendar days after Execution of Contract. Within the subsequent 7 calendar days, or 21 days after execution of the Contract, the Contractor and the Project Manager shall meet to review the PSP list.

As a condition precedent to the Project Manager's acceptance of the PSP List, the Contractor shall include the following data for the Submittal Items required to support the Preliminary CPM:

1. Submittal Package Number
2. Submittal Item Number
3. Submittal Item Type
4. Submittal Package Title
5. Item Title
6. Successor Activity Early Start Date
7. Lead Time Requirements

Naming of the Contractor's Submittal Coordinator(s) and submittal of the PSP List is a condition precedent to payment of the second Mobilization payment. Within 7 calendar days after meeting with the Project Manager to review the PSP List, the Contractor shall incorporate the agreed changes and resubmit the PSP List. If required, the Contractor and Project Manager shall continue to meet and amend the PSP List until the Project Manager accepts it. Acceptance of the PSP List is a condition precedent to the payment of the second Mobilization payment. Such acceptance will not be unreasonably withheld.

Any delay in starting the submittal process caused by the time required for Project Manager acceptance of the PSP List will not be considered a basis for any adjustment in the Contract amount or time.

The Contractor shall send a Submittal Item for review no more than 30 days in advance of the Submittal Approval Start Date as listed in the PSP list. The Project Manager and Contractor may agree to adjust this requirement if an item is mutually accepted for early review. As part of the Contractor's Submittal Package List submittal, the Contractor shall identify items that he requests for early review. The Project Manager's decision to perform or not perform early reviews shall be final.

(e) Submittal Package List

The Contractor shall develop a Submittal Package List that is grouped by Section Number, for review and acceptance by the Project Manager. The Submittal Package List shall also include the approximate number of Submittal Items for each Section Number, grouped by major work element. For example, the Submittal Package List shall include the approximate number of structural steel drawings per bridge unit, excavation support drawings per footing unit or retaining wall number, and traffic structure drawings per location. Prior to issuing a Submittal Item for review, the Contractor shall update the Submittal Package List, if applicable, and ensure that each Submittal Package record contains the following information:

1. Submittal Package Number
2. Submittal Item Number
3. Review/Revision Number
4. Submittal Item Type
5. Submittal Package Title
6. Item Title
7. Successor Activity
8. Lead Time Requirements
9. Posted date

A Submittal Package cannot be sent for review until all information in (1) through (9) above has been filled out completely. The Contractor shall not enter the posted date until the date that the Submittal Package is actually sent to the Engineer for review.

The Contractor shall use a transmittal sheet as the official cover sheet. Submittals shall be submitted electronically except for working drawings that will require an engineer's stamp. Any delay in starting the review of a Submittal caused by the submittal being incomplete or by the Contractor's incomplete data entry will not be considered a basis for any adjustment in the Contract amount or time.

The Contractor may authorize the fabricator in writing to act for him in matters relating to Submittals. Such authorization shall have the effect of any other representation of the Contractor's organization. This authorization shall identify the procedure the Contractor shall use to maintain control of each submission and communications thereof between the fabricator and City. The establishment of that procedure shall be subject to review and acceptance by the City to avoid possible misunderstandings as to the processing of Submittals.

(f) Submittal Process

The Contractor shall furnish Working Drawings as may be required. Working Drawings shall not incorporate any changes or alterations from the requirements of the contract unless the changes are specifically denoted, together with justification, and have been approved in writing by the Engineer.

The Contractor shall inscribe the Item Title and the Submittal Item Number in the title block of each Submittal Item so that it can be clearly associated with the Submittal Item in the database. The Contractor shall identify all Submittal Items with the following information:

- Name of Contractor (or subcontractor if applicable)
- Address of Contractor (or subcontractor if applicable)
- Project and job description number
- Structure/Retaining wall/Location number
- Crossing
- For (City of Harrisonburg, VA)
- By (Indicate name of Contractor's officer or engineer, or other parties authorized to sign official documents.)

In addition, component/source materials shall include the specific contract item number and specification reference in the Contract.

The City recommends that the Contractor leave a 5 inch by 5 inch "blank" area above the title block of the working drawings for the approval stamp.

Submittal Items for steel structures, including metal handrails, shall consist of shop detail, erection, and other working drawings showing details, dimensions, sizes of units, and other information necessary for the fabrication and erection of metal work. Such drawings shall be signed and sealed by a Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia. A Professional Engineer, holding a valid license to practice engineering in the Commonwealth of Virginia, shall certify submittal Items for falsework supporting a bridge superstructure. Cantilevered overhangs supporting unhardened concrete and work platforms in excess of 3 feet shall be considered as falsework and will be subject to this provision.

Submittal Items for concrete structures and pre-stressed concrete members shall provide such details as required for the successful prosecution of the work and which are not included in the plans furnished by the Department. Drawings shall include plans for items such as pre-stressing strand details and elongation calculations, falsework, bracing, centering, form work, masonry, layout diagrams, transportation layouts, erections pickup points, and bending diagrams for reinforcing steel when necessary or when requested.

The Contractor or his authorized agent is required to review each Submittal Item for completeness, accuracy, and compliance with the contract documents, and to stamp and sign each page of each Submittal Item (with the exception of calculations) with the words "Reviewed by [Contractor]" before forwarding to the Project Manager. For calculations, the Contractor may stamp and sign the cover page only in lieu of each page of calculations. Submittals lacking the required Contractor stamp and signature or lacking the Item Title or Submittal Item Number in the title block will be returned without review.

Prior to fabrication or construction, the Contractor shall submit Submittal Items for review with calculations and a Professional Engineer's certification of such design when so required by the specifications. Items for which calculations and a Professional Engineer's certification are required include lighting, signal and pedestal poles, overhead and bridge mounted sign structures, breakaway support systems, anchor bolts, framing units, panels, and foundations. All sheets of these submittals shall include the Professional Engineer's stamp or seal. Certification for foundations will be required only when the Contractor furnishes the designs. The designs shall be in accordance with the specific editions of the AASHTO'S Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals as required in Section 700 of the Specifications. The certification shall be made by a Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia.

When specified and prior to manufacture of reinforced concrete pipe, the Contractor shall furnish to the City a certification of the acceptability of the design of such pipe, as determined from a review which shall be made for the Contractor by a Professional Engineer holding a valid license in the Commonwealth of Virginia. Such certification shall cover all design data, supporting calculations and materials. Pipe designs previously certified or approved by the City will not require recertification.

The City's review of the Contractor's working drawings will relate to conformance to the requirements of the Contract. The review will not be considered as authorization for any deviation from the requirements of the Contract unless the deviation, including explicit supporting justification, is specifically described. The review will not relieve the Contractor from responsibility for errors in the working drawings. If working drawings detailing a change(s) initiated by the Contractor require more than two resubmissions or revisions, the cost of additional reviews by the City or its designated representative(s) will be assessed to the Contractor.

Unless otherwise noted, the Contractor shall send to the Project Manager via hand delivery or overnight mail with signature receipt confirmation, twelve (12) prints (number to be verified at the Pre- Construction meeting) of all Submittal Items, under transmittal, that require acceptance by the City.

Primary Reviewers and Secondary Reviewers (if applicable) will update the status of each Submittal Item via a transmittal sheet. Submittal Items shall not incorporate any changes from the requirements of the Contract unless the changes are specifically denoted, together with the justification, and accepted in writing by the Project Manager.

(g) Distribution

The Project Coordinator will forward Submittal Items to the appropriate Primary Reviewer. When the outcome of the primary review is "accepted" or "accepted as noted", each Submittal Item will be forwarded to the City's Project Manager, electronically, for review on behalf of the City. The City's Project Manager, or designee, will review, stamp, and forward to the Project Coordinator for distribution the of all Submittal Items. In addition, the Project Coordinator will document the final review status of each Submittal Item and the dates of distribution to the Contractor and other appropriate parties.

Submittal Items will not be considered accepted until they bear City or their representative's "Accepted" or "Accepted as Noted" stamp. Three copies of the accepted Working Drawings, or other Submittal Item will be forwarded to the Contractor for his use.

(h) Request For Information (RFI) and Request For Explanation (RFE)

The Contractor shall send all RFI's via email to the Project Manager. Any attachments to the RFI shall be noted within the body of the question text. A reference for all attachments shall include, but not be limited to, the file name of the attachment, the drawing/sketch number, drawing title and the number of sheets. The Contractor shall provide a signed copy of all requests to the Project Manager for the project records.

The City will send all Request For Clarification (RFC)/RFI responses via email. The Contractor may request a response from the City by a specific date for an RFC/RFI if the request is both reasonable and of urgent nature.

The City will consider these requests and may take reasonable steps to expedite response times at its discretion. Any attachments to the RFC/RFI response will be noted within the body of the proposed answer text. A reference for all attachments will include, but not be limited to, the file name of the attachment, the drawing/sketch number, drawing title and the number of sheets. The City will provide a signed copy of all responses to the Contractor for the project records.

The Contractor shall send all RFE responses within fourteen (14) calendar days of receipt of the original notification. Any attachments to the RFE response shall be noted within the body of the proposed answer text. A reference for all attachments shall include, but not be limited to, the file name of the attachment, the drawing/sketch number, drawing title and the number of sheets. The Contractor shall provide a signed copy of all responses to the Project Manager for the project records.

If the Contractor elects to attach scanned images electronically, he shall first verify that all parties can view attachments electronically. Should all parties be unable to view the attachments electronically, the Contractor shall provide the Engineer with a paper copy of attachments. Upon receipt of the paper copy, the Project Manager will scan and post the attachments under the applicable item.

(i) Measurement and Payment

The cost for the preparing, submitting and responding to all Submittals and RFI's shall be included in the bid price for mobilization. The cost of working drawings furnished by the Contractor shall be included in the cost of appropriate contract items.

105.12 – Coordination of Plans, Standard Drawings, Specifications, Supplemental Specifications, Special Provisions, and Special Provisions Copied Notes has been amended to add the following:

The contract documents Section 0001 through 0900 shall be considered Special Provisions and Section 1000 shall be considered Supplementary Specifications.

12-1-11 (SPCN)

PERSONNEL REQUIREMENTS FOR WORK ZONE TRAFFIC CONTROL

Section 105 and 512 of the Specifications are amended as follows:

Section 105.14—Maintenance During Construction is amended to add the following:

The Contractor shall provide at least one person on the project site during all work operations who is currently verified either by the Department in Intermediate Work Zone Traffic Control, or by the American Traffic Safety Services Association (ATSSA) as a Traffic Control Supervisor (TCS). This person must have the verification card with them while on the project site. This person shall be responsible for the oversight of work zone traffic control within the project limits in compliance with the contract requirements involving the plans, specifications, the VWAPM, and the MUTCD. This person's duties shall include the supervision of the installation, adjustment (if necessary), inspection, maintenance and removal when no longer required of all traffic control devices on the project.

If none of the Contractor's on-site personnel responsible for the supervision of such work has the required verification with them or if they have an outdated verification card showing they are not currently verified either by the Department in Intermediate Work Zone Traffic Control, or by the American Traffic Safety Services Association (ATSSA) as a Traffic Control Supervisor (TCS) all work on the project will be suspended by the Engineer. The Contractor shall provide at least one person on site who is, at a minimum, verified by the Department in Basic Work Zone Traffic Control for each construction and/or maintenance operation that involves installing, maintaining, or removing work zone traffic control devices. This person shall be responsible for the placement, maintenance and removal of work zone traffic control devices.

In the event none of the Contractor's on-site personnel of any construction/maintenance operation has, at a minimum, the required verification by the Department in Basic Work Zone Traffic Control, that construction/maintenance operation will be suspended by the Engineer until that operation is appropriately staffed in accordance with the requirements herein.

Section 512.03 Procedures is amended to add (r) **Work Zone Traffic Control** as the following:
(r) **Work Zone Traffic Control:** The Contractor shall provide individuals trained in Work Zone Traffic Control in accordance with the requirements of Section 105.14 of the Specifications

Section 512.04 Measurement and Payment is amended to add the following:

Basic Work Zone Traffic Control – Separate payment will not be made for providing a person to meet the requirements of Section 105.14 of the Specifications. The cost thereof shall be included in the price of other appropriate pay items.

Intermediate Work Zone Traffic Control - Separate payment will not be made for providing a person to meet the requirements of Section 105.14 of the Specifications. The cost thereof shall be included in the price of other appropriate pay items.

6-11-09a (SPCN)

105.19 - Submission and Disposition of Claims (City Revision 1-21-15)

Early or prior knowledge by the City of Harrisonburg of an existing or impending claim for damages could alter the plans, scheduling, or other action of the City of Harrisonburg or result in mitigation or elimination of the effect of the act objected to by the Contractor. Therefore, a written statement describing the act of omission or commission by the City of Harrisonburg or its agents that allegedly caused damage to the Contractor and the nature of the claimed damage shall be submitted to the Project Manager at the time of each and every occurrence, but in no event later than 30 days, that the Contractor feels gives it the right to make a claim or prior to the beginning of the work upon which a claim and any subsequent action will be based. The written statement shall clearly inform the City of Harrisonburg that it is a “notice of intent to file a claim.” If such damage is deemed certain in the opinion of the Contractor to result from his acting on an order from the Project Manager, he shall immediately, take written exception to the order. In the event that the City does not take action on a claim within 30 days, the claim shall be deemed denied. Submission of a notice of intent to file a claim as specified shall be mandatory. Failure to submit such notice of intent shall be a conclusive waiver to such claim for damages by the Contractor. An oral notice or statement will not be sufficient nor will a notice or statement after the event.

In addition, at the time of each and every occurrence that the Contractor feels gives it the right to make a claim or prior to beginning the work upon which a claim and any subsequent action will be based, the Contractor shall furnish the Project Manager an itemized list of materials, equipment, and labor for which additional compensation will be claimed. Only actual cost for materials, labor and equipment will be considered. The Contractor shall afford the Project Manager every facility for keeping an actual cost record of the work. The Contractor and the Project Manager shall compare records and bring them into agreement at the end of each day. Failure on the part of the Contractor to afford the Project Manager proper facilities for keeping a record of actual costs will constitute a waiver of a claim for such extra compensation except to the extent that it is substantiated by the City of Harrisonburg’s records. The filing of such notice of intent by the Contractor and the keeping of cost records by the Project Manager shall in no way establish the validity of a claim.

Upon completion of the Contract, the Contractor may, within 60 days after the final payment date established by the City of Harrisonburg pursuant to Virginia Code, §2.2-4363, deliver to the City of Harrisonburg a written claim, which must be a signed original claim document along with three legible copies of the claim document, for the amount he deems he is entitled to under the Contract. For the purpose of this Section, the final payment date shall be that date set forth in a letter from the City of Harrisonburg to the Contractor sent by certified mail and shall be considered as the date of notification of the City of Harrisonburg’s final payment. Regardless of the manner of delivery of the claim, the City of Harrisonburg must receive and have physical possession of the Contractor’s written claim within the 60 day period that commences with the final estimate date. Submittals received by the City of Harrisonburg either before the final payment date or after the 60 day period shall not have standing as a claim. The claim shall set forth the facts upon which the claim is based. The Contractor shall include all pertinent data and correspondence that may substantiate the claim. Only actual cost for materials, labor and equipment will be considered. If the Contractor makes a claim, the City of Harrisonburg shall have the right, at its expense, to review and copy all of the Contractor’s project files and documents, both electronic and paper, for use in analyzing the claim. Within 90 days from the receipt of the claim, the City of Harrisonburg will make an investigation and notify the Contractor by certified mail of its decision. However, by mutual agreement, the City of Harrisonburg and Contractor may extend the 90-day period for another 30 days.

If the Contractor is dissatisfied with the decision, he shall notify the City Manager in writing within 30 days from receipt of the City of Harrisonburg’s decision that he desires to appear before him, whether in person or through counsel, and present additional facts and arguments in support of his claim. The City Manager will schedule and meet with the Contractor within 30 days after receiving the request. However, the City Manager and Contractor, by mutual agreement, may schedule the meeting to be held after 30 days but before the 60th day from the receipt of the Contractor’s written request. Within 45 days from the date of the meeting, the City Manager will investigate the claim, including the additional facts presented, and notify the Contractor in writing of his decision. However, the City Manager and Contractor, by mutual agreement, may extend the 45-day period for another 30 days. If the City Manager deems that all or any portion of a claim is valid, he shall have the authority to negotiate a settlement with the Contractor subject to any approvals required by the *Code of Virginia* and Harrisonburg City Code. Any monies that become payable as the result of claim settlement after payment of the final estimate will not be subject to payment of interest unless such payment is specified as a condition of the claim settlement.

The Contractor shall submit a certification with any claim using the following format:

Pursuant to *Code of Virginia*, I hereby certify that this contract claim submission for City of Harrisonburg Project in County, Virginia is a true and accurate representation of additional costs and/or delays incurred by (name of Contractor) in the performance of the required contract work. Any statements made, and known to be false, shall be considered a violation of the Virginia Governmental Frauds Act §18.2-498.1 to 18.2-498.5, punishable as allowed by the Virginia Code for a Class 6 Felony.
(Company)

By:

As officer or duly appointed agent of (Company)

Title:

Date:

State Of:

City/County of, To-Wit:

I, the undersigned, a Notary Public in and for the City/ County and State aforesaid, do hereby certify that , whose name is signed to the foregoing instrument, bearing date of the day of , 20 , has this day acknowledged the same before me in my City/ County and State aforesaid.

Given under my hand this day of , 20 .

Notary Public:

My commission expires:

Claims submitted during the statutory period for submitting contract claims and submitted without the certification described above shall not have standing as a claim and shall not be considered by the City of Harrisonburg.

SECTION 108.03 – PROGRESS SCHEDULE of the Specifications is deleted and replaced by this provision.

For definitions of scheduling terms not defined herein and for guidelines on preparing and maintaining the Progress Schedule, refer to the *VDOT Post-Award Scheduling Guide*.

I. GENERAL REQUIREMENTS

The Contractor shall plan the Work and shall prepare and submit a Progress Schedule, in accordance with this provision, for the Engineer's review and acceptance. The Progress Schedule shall represent the Contractor's proposed plan to accomplish the Work in accordance with the requirements of the Contract. The Contractor shall maintain the Progress Schedule monthly to ensure that it continues to represent the current status of the project and the Contractor's current work plan to complete the project. The Progress Schedule shall be used by all involved parties, as the basis for planning all work required to complete the project. It shall also be used by the Department to monitor the project and to assess progress of the Work.

The Progress Schedule shall depict the sequence in which the Contractor proposes to perform the Work and the dates on which the Contractor contemplates starting and completing all schedule activities required to complete the project. The Progress Schedule shall also show when all work to be performed by the Department and other involved parties must be completed. The Progress Schedule shall reflect a practicable work plan and logical progress of the Work in accordance with standard construction practices and as specified in the contract documents. It shall also reflect the proposed phasing and sequencing as indicated in the contract documents or as approved by the Engineer. When preparing the schedule, the Contractor shall consider all known or specified constraints or restrictions such as: holidays, seasonal, normal weather, traffic or local events that may impact traffic, utility, railroad, right-of-way, environmental, permits, or other limitations to the Work.

a) At least seven (7) calendar days prior to beginning the Work, the Contractor shall attend a Scheduling Conference with the Engineer to discuss the Contractor's overall plan to complete the project and key issues necessary for the development of the Baseline Progress Schedule. Such key issues may involve project specific requirements relative to the contract plans and specifications and any known constraints or foreseeable issues that may impact the schedule. Such project specific requirements shall include, but are not limited to: scheduling, phasing, sequencing, milestone(s), work to be performed by the Department or other involved parties; or any known or likely constructability issues relative to the contract plans and specifications. Other key issues shall include as applicable: key submittals, permits, construction access, right of way, environmental, utility, traffic or local events that may impact traffic, or other limitations to the Work. During the Scheduling Conference, the Contractor shall discuss his overall plan of operations concerning the Maintenance of Traffic (MOT)/Sequence of Construction or any proposed deviations from the phasing, staging, or sequence of construction as indicated on the contract plans or as approved by the Engineer. The Contractor shall also discuss his overall plan of operations, including, but are not limited to where the Work will begin and how it will progress; the proposed working calendar(s), work to be accomplished each construction season, resource utilization plan, and proposed means and methods for major operations. The Contractor shall also provide his Preliminary Progress Schedule, which shall depict in sufficient details his planned or contemplated operations for the first ninety (90) calendar days of Work. The Scheduling Conference may be held in conjunction with the Pre-Construction Conference or at a separate meeting as mutually agreed to by the Contractor and the Engineer.

II. OVERVIEW OF THE VARIOUS REQUIRED PROGRESS SCHEDULE SUBMISSIONS

A. Preliminary Progress Schedule – At least seven (7) calendar days prior to beginning the Work, or as approved by the Engineer, the Contractor shall submit to the Engineer for review and acceptance a Preliminary Progress Schedule. At the Contractor's discretion, a complete detailed Baseline Progress Schedule for the entire project may be submitted in lieu of the Preliminary Progress Schedule. The Preliminary Progress Schedule submission shall consist of the following:

1. Preliminary Progress Schedule: The Preliminary Progress Schedule shall depict, at a detailed level,

the Contractor's proposed start/finish dates for all activities scheduled for the first ninety (90) calendar days of work. It shall also include, as applicable, any milestones or work to be performed by sub-contractors, the Department, or other third parties during the first ninety (90) calendar days of work. The Preliminary Progress Schedule shall also depict at a summary level the proposed overall plan to complete the remainder of the project. The summary level activities shall depict, as applicable, the overall sequence and approximate timing to complete each phase, stage, and/or feature of Work. The Preliminary Progress Schedule shall depict the anticipated project critical path. The Preliminary Progress Schedule shall be prepared in accordance with Section IV (A), with the exception of cost-loading.

2. Preliminary Progress Schedule Narrative: The Preliminary Progress Schedule Narrative shall describe the Contractor's detailed work plan for the first ninety (90) calendar days of work. It shall also describe in general terms the overall work plan to complete the remainder of the Work. The Preliminary Progress Schedule Narrative shall describe the Contractor's proposed sequence of construction, resource utilization plan, working calendar(s), methodology, scheduling assumptions, and considerations for applicable project constraints as reflected in the Preliminary Project Schedule. The Preliminary Progress Schedule Narrative shall be prepared in accordance with Section IV (B).

Until the Baseline Progress Schedule is accepted by the Engineer, the Contractor shall submit an update of the Preliminary Progress Schedule monthly, within five (5) working days after the current data date or as approved by the Engineer. For the purposes of this provision the data date is defined as the current status date of the Progress Schedule. The updated Preliminary Progress Schedule shall show the actual progress of work completed to date and the current detailed schedule for accomplishing the work planned for the following ninety (90) calendar days of Work, as of the data date. It shall also show the summary level activities required to complete the entire project.

B. Baseline Progress Schedule – Within forty-five (45) calendar days after the Notice to Proceed date or as approved by the Engineer, the Contractor shall submit in its entirety, his Baseline Progress Schedule, to the Engineer for review and acceptance. The Baseline Progress Schedule submittal shall consist of the following:

1. Baseline Progress Schedule: The Baseline Progress Schedule shall represent the Contractor's initial detailed plan to accomplish the entire scope of Work in accordance with the Contract. The Baseline Progress Schedule shall depict in a time-scaled network logic diagram, the sequence in which the Contractor proposes to perform the work, the project critical path, and the dates on which the Contractor contemplates starting and completing the individual schedule activities required to complete the project. The Baseline Progress Schedule shall also depict the current status of the project and the Contractor's current plan to complete the remaining work, as of the Baseline Progress Schedule submittal date. The Baseline Progress Schedule shall be prepared in accordance with Section IV (A).
2. Baseline Progress Schedule Narrative: The Baseline Progress Schedule Narrative shall describe the Contractor's overall work plan to complete the entire project as reflected in the Baseline Progress Schedule. The narrative shall describe the Contractor's proposed sequence of construction, resource utilization plan, working calendar(s), methodology, scheduling assumptions, and considerations made to accommodate applicable project constraints. The Baseline Progress Schedule Narrative shall be prepared in accordance with Section IV (B).
3. Baseline Progress Earnings Schedule: The Baseline Progress Earnings Schedule shall indicate the Contractor's anticipated cumulative progress each month as of the Contractor's progress estimate date as defined in Section 109.08(a) of the Specifications. The anticipated cumulative progress shall be expressed as "Percent Complete" based on the anticipated total earnings to date relative to the total contract value. The Baseline Progress Earnings Schedule shall be based on the Baseline Progress Schedule and shall be prepared on the VDOT Form C-13CPM in accordance with Section IV (C).

Upon acceptance by the Engineer, the Baseline Progress Schedule shall replace the Preliminary Progress Schedule. The accepted Baseline Progress Schedule shall henceforth become the project Schedule of Record (SOR). The SOR shall be defined as the currently accepted Baseline or a subsequent Revised Progress Schedule, against which all subsequent Progress Schedule Updates and progress will be compared. The SOR shall be used by the Engineer to assess the Contractor's schedule based performance on the project.

C. Progress Schedule Update – The Contractor shall on a monthly basis submit for the Engineer's review and acceptance the Contractor's Progress Schedule Update within five (5) working days after the Contractor's progress estimate date or as approved by the Engineer. The Progress Schedule Update shall consist of the following:

1. Progress Schedule Update: The Progress Schedule Update shall depict the actual status of the completed or on-going activities and the Contractor's current plan to complete the remaining work as of the data date. The Progress Schedule Update shall be prepared in accordance with Section IV (A).
2. Progress Schedule Update Narrative: The Progress Schedule Update Narrative shall describe the work performed since the previous update and the Contractor's current plan for accomplishing the remaining work. It shall describe the current status of the project and any deviations from scheduled performance relative to the SOR. It shall also describe any progress deficiencies/schedule slippages or any time-related issues encountered; as well as any actions taken or proposed to avoid or mitigate the effects of the progress deficiencies/schedule slippages or time-related issues. The Progress Schedule Update Narrative shall be prepared in accordance with Section IV (B).
3. Progress Earnings Schedule Update: The Progress Earnings Schedule Update shall depict the current status of the project based on percentage of total earnings to date relative to the total contract value. The Progress Earnings Schedule Update shall be prepared on the VDOT Form C-13CPM in accordance with Section IV (C) and as follows:
 - a. The actual monthly and cumulative earnings for each payment period for work completed to date based on the Contractor's current progress payment estimate.
 - b. The projected monthly and cumulative earnings for each remaining payment period shall be based on the projected earnings for the remaining work as reflected on the current Progress Schedule Update.
 - c. The Progress Earnings Schedule Update shall show a plot of the actual and projected cumulative earnings progress curve against the SOR planned earnings progress curve.

Upon acceptance by the Engineer, the Progress Schedule Update shall replace any previous Progress Schedule Updates as the current update of the SOR; however, it shall not replace the SOR. The currently accepted Progress Schedule Update shall henceforth become the contemporaneous schedule with which to report the current status of the project, plan the remaining Work, and evaluate the effects of any time-related changes or impacts on the remaining Work.

D. Revised Progress Schedule – When required by Engineer, the Contractor shall submit to the Engineer for review and acceptance a Revised Progress Schedule. The Revised Progress Schedule shall be submitted in lieu of a subsequent Progress Schedule Update or as specified in the Engineer's written request. The Engineer will require a Revised Progress Schedule when the current Progress Schedule Update or work plan differs or deviates significantly from the current SOR. Differs or deviates significantly will be construed to mean deviations from the SOR for major changes in the on-going or proposed work plan or changes to the Work that alters the project critical path, contract interim milestone(s), or project completion. A Revised Progress Schedule will be required when:

1. The Engineer approves a Schedule Impact Analysis (SIA) for authorized changes to the Work that will impact the schedule, in accordance with Section III of this provision. Such changes may include

additions or deletions to the Work or other changes that are directed or authorized in writing by the Engineer, in accordance with the applicable portions of Sections 104 and 109.05 of the Specifications.

2. The Engineer approves a SIA for unanticipated changes to the Work that will impact or has impacted the schedule, in accordance with Section III of this provision. Unanticipated changes involve changes to the Work that are deemed by the Engineer to be beyond control and without the fault of the Contractor, which may include unknown or unforeseen differing site conditions, new or unanticipated requirements, or impacts caused by third party entities, such as railroads, utility companies, permitting agencies, environmental, etc.
3. The Contractor proposes to revise his overall sequence or work plan or the Engineer determines that the Contractor's current work plan differs or deviates significantly from the SOR. Such major deviations may include but are not limited to changes in the Contractor's proposed phasing, general sequence, or means and methods. The Contractor may revise his Progress Schedule at any time, at his discretion; however, the Engineer will only consider accepting a Revised Progress Schedule for major changes that deviates significantly from the SOR.
4. The Engineer determines that progress of the Work is trending towards unsatisfactory, in accordance with Section VIII (C), and in the opinion of the Engineer, it is apparent that a Revised Progress Schedule rather than a Recovery Plan is required to correct the progress deficiency. In such cases, the Engineer will request a meeting with the Contractor to discuss progress of the Work relative to the SOR and to determine the appropriate corrective action required.

The Revised Progress Schedule submission shall be prepared and submitted in the form of a Baseline Progress Schedule as described in Section II (B). However, it shall reflect the current status of the project as of the submittal date, any impact as a result of the change(s), and the proposed plan for completing the remaining work. The Revised Progress Schedule will be reviewed by the Engineer for acceptance in accordance with Section VII. Upon acceptance by the Engineer, the Revised Progress Schedule shall henceforth replace the accepted Baseline Progress Schedule or any previously accepted Revised Progress Schedule as the SOR for the remainder of the project.

- E. Final As-Built Progress Schedule** – Within thirty (30) calendar days after final acceptance, the Contractor shall submit to the Engineer his Final As-built Progress Schedule. The Final As-built Progress Schedule shall show the actual start and finish dates for each activity in the schedule. The Contractor shall certify in writing that the Final As-built Progress Schedule accurately reflects the actual start and finish dates for all activities contained in the Progress Schedule. The Final As-built Progress Schedule shall be submitted in the form of a monthly Progress Schedule Update and shall represent the last Progress Schedule Update submission.

III. SCHEDULE IMPACT ANALYSIS (SIA) FOR PROPOSED AND UNANTICIPATED CHANGES

- A. Proposed Changes and Schedule Impacts** – When changes in the scope of Work are proposed by either the Engineer or the Contractor; or when the Project Schedule will be or has been impacted by other unanticipated changes, the Contractor shall submit, as requested by the Engineer, a Schedule Impact Analysis (SIA) for the Engineer's review and approval. The Contractor will be required to submit a SIA in accordance with the following:

1. Directed or Authorized Changes: When changes in the scope of Work that will impact the project schedule are ordered or authorized by the Engineer in writing, in accordance with the applicable portions of Sections 104 and 109.05 of the Specifications, the Contractor will be required, as determined by the Engineer, to submit a prospective SIA for the Engineer's review and approval. The SIA shall be submitted within the timeframe specified in the Engineer's request. If the Engineer and the Contractor mutually agree that the ordered or authorized changes will not impact the project schedule, the Engineer will not require a SIA be submitted, but will require the Contractor to certify in writing that such changes will not

or did not impact the project schedule.

2. **Unanticipated Changes:** When the Contractor discovers any previously unknown or unanticipated issues that he believes will delay completion of the project beyond the contract specified interim milestone date(s) or contract fixed completion date, the Contractor shall notify the Engineer in writing, within two (2) working days of such determination, of intent to file a claim in accordance with Section 105.19. At the discretion of the Engineer, the Contractor may be required to submit a request for adjustment of the contract time limit(s) prior to performing the work. In which case, the Contractor shall submit with his request, for the Engineer's review and approval, a prospective SIA and supporting data to substantiate the request for an extension of the contract time limit. The SIA shall be submitted within the timeline specified in the Engineer's request.

When the Contractor believes additional time is due for impacts that are attributable to Force Account Work, Bilateral Work Orders, unanticipated events, or unforeseen changed conditions that are deemed to be beyond the control and without the fault of the Contractor, the Contractor shall promptly notify the Engineer in writing, of intent to file a claim in accordance with Section 105.19. The Contractor shall submit for the Engineer's review and approval, a request for adjustment of the contract time and a retrospective SIA with supporting data to substantiate the request for an extension of the contract time limit. The SIA shall be submitted within fourteen (14) calendar days after the cessation date of the delaying event, or as directed by the Engineer.

B. Schedule Impact Analysis (SIA) – The SIA shall be prepared based on the Contemporaneous Period Analysis (CPA) method. For purposes of this provision, the CPA method is defined herein, as a schedule analysis technique that is based on a comparative analysis, performed at the time a change or impact is encountered, to determine the status of the contemporaneous schedule before and after the impact. The SIA shall depict the schedule impact by comparing the impacted Progress Schedule Update to the most recent accepted Progress Schedule Update with a data date closest to and prior to the date of the notification of the change or impact. The SIA shall consist of the following:

1. A written SIA statement to:
 - a) Describe the type, cause, and scope of the change/impact.
 - b) Identify by Activity ID and Name the activities that are or will be directly impacted.
 - c) Describe any known or potential effect on other related activities, total float, the critical path, interim milestone(s), or contract completion date(s).
 - d) Identify any actions taken or needed to avoid or mitigate the effects of the change/impact.
2. A SIA schedule which shall:
 - a) Include a fragnet (fragmentary network) of activities representing the changed work. The fragnet activities shall be logically linked to the effected activities.
 - b) Depict the effect of the change/impact on the impacted activities as of the date upon which the change was proposed. In the case of Force Account Work or other unanticipated changes, whereby the effect of the impact cannot be determined until after the impacting event has concluded, the SIA shall depict the effect on the impacted activities as of the cessation date of the impact.
 - c) Depict the effects, if any, on the critical path, interim milestone(s), and contract completion date(s).
 - d) Depict a comparison of the impacted Progress Schedule to the most recent accepted Progress Schedule.

Upon approval by the Engineer, the Contractor shall incorporate the SIA into the Progress Schedule. If appropriate, the approved SIA shall be used to substantiate any request for time extension or time related compensations, in accordance with the applicable portions of Sections 104, 108.04, and 109.05 of the Specifications. The SIA does not constitute a request for time extension or a "notice of intent to file a

claim” and does not replace the need for the Contractor to submit a request for time extension in accordance with Section 108.04; or submit a “notice of intent to file a claim” as specified in Section 105.19 of the Specifications.

IV. DETAILED REQUIREMENTS FOR PROGRESS SCHEDULE SUBMISSIONS

A. Progress Schedule – The Progress Schedule shall conform to the following requirements:

1. Software Compatibility Requirements: The Contractor shall prepare and maintain the Progress Schedule using scheduling software that is capable of meeting all requirements of this provision. The Contractor’s scheduling software shall be wholly compatible with the Department’s scheduling software system and shall have the capability to import and export project data in the Primavera proprietary exchange format (XER). The Department’s scheduling software system is the latest version of Primavera’s Project Management software (currently P6 version 6.2). Compatible shall mean that the Contractor-provided electronic file versions of the schedule can be imported into the Department’s scheduling software system with no modifications, preparation or adjustments. At the Contractor’s request, secured access via the internet may be granted to allow the Contractor to develop and maintain his Progress Schedule in the Department’s scheduling software system. The Progress Schedule shall be submitted in accordance with Section V.
2. Software Settings: If Primavera (P6) or equivalent scheduling software with similar features is used to prepare the Progress Schedule, the Contractor shall define the project attributes and schedule calculation options in accordance with the following software settings:
 - a) When creating the Progress Schedule, define Project ID as the Contract ID number.
 - b) When creating the Progress Schedule, define the project “Must Finish By” date to equal the Contract Fixed Completion date
 - c) When creating the Progress Schedule, define the baseline for Earned Value calculations as the “Project Baseline”.
 - d) When calculating the Progress Schedule, use “Retained Logic” when scheduling progressed activities. Software features such as “Progress Override” that severs ties between predecessor and successor activities for out-of-sequence progress shall not be used when calculating the schedule. Out-of-sequence logic for on-going and remaining activities shall be corrected on a monthly basis to reflect the current sequence of work.
 - e) When creating and calculating the Progress Schedule, define the critical activities as “Longest Path”.
 - f) When calculating the Progress Schedule, define schedule calculation option to compute total float as “Finish Float = Late Finish – Early Finish”.
 - g) When calculating the Progress Schedule, define calendar for scheduling relationship lags as “Predecessor Activity Calendar”.
 - h) When preparing a schedule report with summarized dates and durations, the default calendar shall be set to a 7-day workweek, without holidays, global calendar that is based on an 8-hour work-day.
3. Work Breakdown Structure (WBS): The Contractor shall define a project WBS to allow for a hierarchical organization and summarization of the Progress Schedule. As applicable, the WBS shall allow for multiple levels of summarization of the Progress Schedule based on the project scope of Work. The WBS shall allow for a hierarchical organization of the Progress Schedule in accordance with the phasing/sequence of construction and traffic control plans, as specified in the Contract, or as directed by the Engineer. The Contractor shall apply the WBS as applicable to breakdown the Work into easily definable and measurable work packages.
4. Activity Codes: The Contractor shall define activity codes to facilitate review, analysis, and use of the Progress Schedule. The Contractor shall define and assign as applicable, activity codes to allow for filtering, grouping, and sorting of activities by Responsibility (party responsible for performing the work), Phase (phase in which the activity occurs), Feature of Work (major component of Work), Area

(segment of the project in which the activity occurs), Work Type (type of operation), Crew (crew type and number of crews), and Contract Modification (approved or pending Work Order/Force Account). All activity codes shall be defined at the project level as project-specific codes. Use of global activity codes shall not be allowed and shall be grounds for rejecting the Progress Schedule submission.

5. Calendars: The Contractor shall define and assign an appropriate calendar to each activity to indicate when the activity can be performed. All calendars shall be defined at the project level as project-specific calendars. Project-specific calendars shall be exclusive to the project and shall bear a unique calendar name prefixed by the Contract ID number (e.g. C00012345B601_5-Day Workweek w/Holidays). Use of global calendars shall not be allowed and shall be grounds for rejecting the Progress Schedule submission. The project-specific calendars shall be defined as follows:
 - a) Define a standard working calendar for activities that will be performed during the Contractor's normal working schedule. The Contractor's standard working calendar shall indicate the standard working days per-week and non-work days including, but are not limited to week-ends and holidays.
 - b) Define a 7-day project-specific calendar without holidays or other non-work days for activities that are not constrained by week-ends, holidays, weather or other non-work day restrictions or for activities that may be assigned 7-day calendar when the contract specifies calendar day durations. Such activities may include Department review, procurement, and delivery activities; or curing, piling load test, or settlement or surcharge period activities, etc.
 - c) Define special project-specific calendars, as applicable, for weather sensitive activities or activities that are constrained by temperature, seasonal, or environmental restrictions that do not permit work during specific periods of the year or conditions. Such calendars may be based on the Contractor's standard working calendar, but modified to include the additional non-work periods.
 - d) Define other working calendars, as applicable, to indicate the standard working days per-week and non-work days for subcontractors, utilities, or other involved parties, if different from the Contractor's standard working calendar. Such calendars may be based on the Contractor's standard working calendar, but modified accordingly to include any additional work or non-work days.
6. Level of Detail: The Contractor shall develop the Progress Schedule to an appropriate level of detail that allows for the formation of a reasonable critical path. The Work shall be sub-divided into easily definable and measurable tasks to allow for progress of on-going activities to be easily determined. The Work shall be sub-divided to such a level that the activity durations for on-site work (excluding fabrication and delivery of materials) are twenty (20) workdays or less, unless longer durations are approved by the Engineer. The Progress Schedule shall show as applicable, key milestones for significant project events, discrete work activities to indicate the type of operation and location of work, and other time-based tasks required for completion of the project. The Progress Schedule shall show as applicable:
 - a) Contract milestone activities including Bid Letting, Contract Award/Execution, Contract Notice to Proceed (NTP), Contract Fixed Completion (finish milestone activity to indicate the completion of the project); and other contract specified interim completion milestone(s) such as substantial completion, incentive/disincentive, etc.
 - b) Other key milestones required for coordination of the Work and for monitoring progress of the project, such as: start and finish of a phase, stage, or feature of work, major traffic switches, major closures, delivery of major equipment or material, start/finish dates for work to be performed by the Department or other third parties, substantial completion, pre-final acceptance inspection, final acceptance, etc.
 - c) Administrative activities such as preparation, review and approval of permits, shop drawing, or working drawing submittals.

- d) Procurement activities such as procurement, fabrication, and delivery of long lead materials such as sign structures, signs, lighting facilities, traffic signals, precast items, structural members, specialty items, etc.
- e) Construction start-up activities such as mobilization, staging area setup, construction survey, construction access, installation of erosion control systems, etc.
- f) Maintenance of Traffic (MOT) activities such as installation of temporary signs, traffic control setup, installation of detour and traffic switches.
- g) Roadway construction activities such as clearing and grubbing, install drainage structures, regular excavation, borrow excavation, embankment, grading, place subbase, place aggregate base, place asphalt concrete, place portland cement concrete pavement, etc.
- h) Activities for incidental roadway construction work such as underdrains, curb and gutter, median barriers, guardrail and steel median barriers, sidewalk, retaining walls; sound barrier walls, etc.
- i) Activities for traffic control items such as sign structures, lighting structures, signal structures, traffic signals, traffic signs and delineators, pavement markings and markers, roadway lighting, etc
- j) Activities for roadside development work such as seeding, sodding, landscaping, etc.
- k) Bridges and structures construction activities such as Drive Piles Pier 1, FRP Pier 1 Foundation, FRP Pier 1 Stem, Erect Girders Span A, FRP Abut A Wall, etc.
- l) Other applicable activities that are required for completion of the project such as:
 - i) Installation and removal of temporary systems or structures such as causeways, shoring, sheet piling, cofferdams, etc.;
 - ii) Utility notification and relocation;
 - iii) Pile load test;
 - iv) Sampling and testing periods;
 - v) Settlement or surcharge periods;
 - vi) Curing periods;
 - vii) Acceptance testing;
 - viii) Punch list and clean-up;
 - ix) Traffic control tear-down;
 - x) Demobilization and move-out.

The Contractor's failure to include any element of the Work in the Progress Schedule shall not relieve the Contractor from completing all work required in accordance with the Contract.

7. Activity Attributes: If Primavera (P6) or equivalent scheduling software with similar features is used to prepare the Progress Schedule, the Contractor shall define the following attributes for each activity in the Progress Schedule in accordance with the following:

- a) Activity ID assignments shall be in increments of at least 10.
- b) Activity Name shall be unique and recognizable and shall identify the type of operation and location of the work.
- c) Activity Type shall be defined as "Task Dependent" when the activity is not assigned a resource or the activity duration is not dependent on the calendar of an assigned resource.
- d) Activity Type shall be defined as "Start Milestone" or "Finish Milestone" for milestone activities.
- e) Activity Type shall be defined as "Level of Effort" for activities whose durations are dependent on the start/finish dates of their predecessors and successors.
- f) Activity Duration Type shall be defined as "Fixed Duration & Units".
- g) Activity Percent Complete Type shall be defined as "Physical" if the remaining duration of the activity is dependent on the amount of time required to complete the remaining work rather than the activity progress percent complete. When the Activity Percent Complete Type is defined as "Physical", the Contractor shall update the remaining duration for each progressed activity to reflect the amount of time required to complete the remaining work as of the data date.

- h) Activity Percent Complete Type shall be defined as “Duration” if the remaining duration of the activity is directly related to and/or dependent on the activity progress percent complete.
- 8. Activity Duration: Activity duration shall be reasonable to allow for an accurate determination of progress of ongoing activities between update periods. Activity durations shall be assigned as follows:
 - a) Activity durations shall be defined in number of workdays required to complete the work. Activity duration for activities that are assigned a 7-day calendar shall be defined in calendar days.
 - b) Activity durations for on-site work activities shall not exceed twenty (20) workdays or thirty (30) calendar days, unless approved by the Engineer. Activity durations in excess of twenty (20) workdays or thirty (30) calendar days will be allowed for the summary level activities in the Preliminary Progress Schedule; or for procurement activities such as submittal preparation, review, procurement, fabrication, and delivery of long lead materials; or for other non-procurement activities such as settlement or surcharge periods, concrete curing, etc.
 - c) Department activities for submittal review and/or approval shall have durations of thirty (30) calendar days, except as otherwise defined herein or elsewhere by specific contract language.
 - d) Activity durations for on-site work activities shall not include any intermittent period of inactivity of more than ten (10) working days. In such cases the activity shall be split to show discrete period(s) of work, unless approved by the Engineer.
- 9. Network Logic: The Progress Schedule shall show the order and inter-dependence of the activities and the sequence in which the Contractor proposes to accomplish the Work. The Contractor shall apply the Critical Path Method (CPM) of network calculation to generate the Progress Schedule. The project critical path shall be based on the longest network path through the project. The Progress Schedule network logic shall be developed in accordance with the following:
 - a) The network logic shall be based on the Precedence Diagram Method (PDM).
 - b) Each activity except the first activity (Bid Letting) and last activity (Contract Fixed Completion) shall be logically constrained by a minimum of one predecessor and one successor activity.
 - c) Start-to-finish (SF) relationships shall not be used.
 - d) Start-to-start (SS) or finish-to-finish (FF) relationships with negative lags or positive lags in excess of ten (10) workdays shall not be used.
 - e) The network logic shall allow for the formation of a discrete network path for each contract interim milestone.
- 10. Schedule Constraints: The Contractor’s use of schedule constraints with the exception of the specific requirements listed below is discouraged and will be approved on a case-by-case basis by the Engineer. The use of schedule constraints such as “Start On” or “Finish On” for the purpose of manipulating float and the use of schedule constraints that violate network logic such “Mandatory Start” or “Mandatory Finish” will not be allowed.
 - a) The first activity (Bid Letting) will represent the start of the project and shall be constrained with a “Start On or After” (Early Start) date equal to the Bid Letting date.
 - b) All contract specified interim completion milestone activities shall be constrained with a “Finish On or Before” (Late Finish) date equal to the contract specified date. For contracts that include an incentive/disincentive provision, with an incentive to finish earlier than the specified interim milestone date, the incentive/disincentive interim milestone activity shall be constrained with a “Finish On or Before” date equal to the later of the Contractor’s proposed early completion interim milestone date, if earlier than the Contract specified interim

milestone date; or the Contract specified interim milestone date less the maximum number of compensable incentive days specified in the Contract.

- c) The last activity in the Progress Schedule (Complete Project) shall represent the completion of the project and shall be constrained with a “Finish On or Before” (Late Finish) date equal to the Contract Fixed Completion date.
- d) When a schedule constraint is used, other than the schedule constraints specified herein, the Contractor shall define a notebook topic for schedule constraints and shall indicate in the activity notebook, the reason for using such constraint.

11. Data Date: The data date is defined herein, as the current status date of the Progress Schedule. All Progress Schedule submissions shall be calculated using an appropriate data date to indicate the status of the project at the time the Progress Schedule is submitted.

- a) For the Preliminary, Baseline, or subsequent Revised Progress Schedule submission, the data date shall be the submittal date.
- b) For the monthly Progress Schedule Update submissions the data date shall be the first working day of the new progress payment estimate period (the day after the current payment estimate cut-off date). The Contractor’s monthly progress estimate periods shall be as defined in Section 109.08(a) of the Specifications.

12. Total Float: Total float is defined herein, as the number of workdays that an activity or a network of activities can be delayed without delaying completion of either a contract interim milestone or the project completion milestone beyond the Contract specified date(s), as applicable. For the purposes of this provision, total float shall be calculated relative to a related contract interim milestone date or the Contract fixed completion date, as applicable.

For contracts that include an incentive/disincentive provision with an incentive to finish earlier than a specified interim milestone date, total float shall be calculated relative to either the Contractor’s proposed early completion interim milestone date, if earlier than the Contract specified interim milestone date; or the Contract specified interim milestone date less the maximum number of compensable incentive days specified in the Contract, whichever is later. In which case, the Contractor shall declare in writing his intended early completion date(s) for the applicable interim contract milestone and/or contract fixed completion, as reflected on the Baseline Progress Schedule.

With the exception of A+B based contracts, any float available in the Progress Schedule, at any time, shall be considered project float and is not for the exclusive use or benefit of either the Department or the Contractor. It shall be understood by the Contractor and the Department that float is a shared commodity and either party has the right to full use of any available float. Until such time that all available float is depleted, the project float shall be used in the best interest of the project and in a manner that best serves the timely completion of either a contract interim milestone or the project completion milestone by the Contract specified date(s).

For A+B based contracts for which the Contractor bids the contract time, interim milestone(s), and/or the Contract fixed completion date, any float on a critical activity or activities on the path activity shall belong to the Contractor and any float on non-critical activities or activities not on the critical path shall belong to the project and shall be considered available to either the Department or the Contractor.

All requests for contract time extension will be evaluated, in accordance with Section 108.04, to determine if a critical delay has occurred and if the critical delay has caused a delay to a contract interim milestone date or the Contract fixed completion date based on available project float. Negative float conditions will not be allowed in the Preliminary, Baseline, or Revised Progress Schedule.

13. Cost Loading: The Contractor shall cost load each activity in the Progress Schedule for which the Contractor expects to receive payment. The Progress Schedule shall be reasonably cost loaded to allow for an accurate determination of progress of the activity based on earnings. The Progress Schedule shall be cost loaded in accordance with the following:

- a) If the “Resource” feature is used to cost-load the Progress Schedule, the Contractor shall define and assign to the applicable activities, a project-specific material resource for each contract bid item based on the Contract Schedule of Items. The Resource ID shall be unique and shall be based on the associated bid item number and prefixed by the Contract ID number. (e.g. C00012345B601.00100\$).
- b) Activities shall be cost-loaded to allow for summarization of the budgeted quantity and budgeted costs by Cost Account ID. Cost Account ID numbers shall be assigned to all applicable activities based on the associated bid item number as shown in the Contract Schedule of Items.
- c) The aggregate sum of the budgeted quantity and budgeted costs for all activities coded to a Cost Account shall equal the total contract amount for the associated bid item as shown in the Contract Schedule of Items.
- d) The aggregate sum of the budgeted costs for all activities shall equal the total contract value. Total contract value will be considered to mean the current contract value including the original amount of the contract and any authorized adjustments for changes to the work in accordance with, but not limited to, the provisions of Sections 109.04 and 109.05 of the Specifications.
- e) Anticipated payments for Material on Hand in accordance with Section 109.09 of the Specifications or for other adjustments such as asphalt, fuel, retainage, incentives, disincentives, etc., will not be considered in the Progress Schedule, unless specifically directed otherwise by the Engineer.

14. Progress Schedule Update: The Progress Schedule Update shall be prepared in accordance with the following:

- a) The Progress Schedule Update shall be based on the most recently accepted Progress Schedule.
- b) All activities that are completed prior to the current data date shall show actual start and finish dates. All on-going activities shall show an actual start date and remaining duration to indicate the amount of time required to complete the remaining work as of the current data date.
- c) Activity percent complete for on-going activities shall be based on amount of work completed as of the current data date relative to the total amount of work planned.
- d) Activity relationships for the remaining activities shall be modified as necessary to correct out-of-sequence progress for on-going and remaining activities to reflect the Contractor’s current plan for completing the remaining work.
- e) The Progress Schedule shall be calculated using the current data date.

B. Progress Schedule Narrative – As specified in Section II of this provision, a Baseline Progress Schedule Narrative shall be submitted with the Baseline Progress Schedule submission and a Progress Schedule Update Narrative shall be submitted with the Progress Schedule Update submission. The Progress Schedule Narrative shall be prepared in accordance with the following:

1. Baseline Progress Schedule Narrative: The Baseline Progress Schedule Narrative shall include the following written information:

- a) The Contractor’s overall plan describing:
 - i) The proposed overall sequence of construction, including where the work will begin and how the work will progress;
 - ii) The general procedures for completing each feature of Work or major operation;
 - iii) The resource usage plan in terms of the proposed number and types of crews and major equipment; as well as a description of how the crews will be utilized through-out the project;
 - iv) Anticipated daily production rates for each major operation.
- b) A description of the project critical path.

- c) A description of any near critical float path(s) (secondary float paths with total float value within twenty (20) days of the critical path total float).
- d) A listing of the major milestone dates, including as applicable, contract interim milestone(s), major traffic switches, start/finish milestones for each phase or stage of work, or related work to be performed by the Department or other third parties.
- e) A log identifying the schedule constraints used and explanation of the reasons why and the purpose for using each constraint.
- f) A description of the proposed working calendar(s) to indicate the Calendar ID, number of work days per week, number of shifts per day, and number of hours per day as well as the anticipated number of non-working days per month for each calendar with considerations, as applicable, for holidays, normal weather conditions; as well as for seasonal or other known or specified constraints and restrictions (i.e. traffic, local events, environmental, permits, utility, etc.).
- g) A log of the applicable DBE participation activities in the Progress Schedule for which the Contractor intends to claim credit for attaining the DBE goal required in the Contract. The list shall indicate the proposed start/finish dates and durations of the DBE participation activities.
- h) A description of any known problems or anticipated issues that may impact the schedule; and any actions taken, proposed, or needed to correct the problems.

2. Progress Schedule Update Narrative: The Progress Schedule Update Narrative shall include the following written information:

- a) A description of the current status of the project in terms of the current actual percent complete by total earnings relative to the SOR planned percent complete; as well as the scheduled completion dates of the interim milestone(s) and project completion.
- b) A description of any deviations from scheduled performance in terms of the scheduled completion dates of the interim milestone(s) and project completion since the previous schedule submission, including a statement explaining why any of the schedule milestone date(s) is forecast to occur after the specified date(s).
- c) A description of the work performed since the previous Progress Schedule submission and any deviations from the work scheduled.
- d) A description of any changes in the Contractor's work plan in terms of sequence of construction, shifts, manpower, equipment, or materials.
- e) A description of any deviations in project critical path since the previous schedule submission.
- f) A description of problems encountered or anticipated since the previous schedule submission, including an explanation of any corrective actions taken or required to be taken.
- g) A description of work planned for the next update period and actions to be taken by the Department or other involved third parties.

C. Progress Earnings Schedule – The Progress Earnings Schedule shall be based on the cost-loaded Progress Schedule and shall consist of the following:

- 1. Activity Cost-loading Report (ACR): An Activity Cost-loading Report (ACR) to provide a listing of the budgeted costs for each cost-loaded activity. The ACR shall show the budgeted cost by activity grouped by Cost Account ID and sorted by Activity ID. The ACR shall also show the aggregate sum of the budgeted costs for each Cost Account and an overall summary of the budgeted costs for the project. The ACR shall show for each activity the Activity ID, Activity Name, Price/Unit, Budgeted Unit (Quantity), and Budgeted Cost.
- 2. Progress Earnings Schedule S-Curve: The Progress Earnings Schedule S-Curve shall be submitted in an electronic format on the VDOT Form C-13CPM. The Progress Earnings Schedule S-Curve shall depict the Contractor's anticipated cumulative progress each month as of the data date. The Progress Earnings Schedule S-Curve shall show a plot of the SOR anticipated monthly cumulative earnings by percent complete based on early dates. The Progress Earnings Schedule shall be updated each month to

show a plot of the current actual percent complete based on the total earnings to date as shown in the Contractor's current progress payment estimate. It shall also depict a plot of the projected monthly earnings percent complete as of the current data date for the remaining work based on the current Progress Schedule Update.

V. REPORTING AND SUBMITTAL REQUIREMENTS FOR PROGRESS SCHEDULE SUBMISSIONS

Unless otherwise directed by the Engineer, the Contractor shall submit for each Progress Schedule submission the following submittal items. Each electronic file submittal shall have a unique file name prefixed by the Contract ID to identify the Contract, submission type, and order of submission (e.g. C00012345B601-B1, C00012345B601-U1, etc.). The Progress Schedule submittals shall include:

1. A transmittal letter to the Engineer, identifying the date of submittal and which Progress Schedule is being submitted for review.
2. Two (2) sets of data compact disks (CD) containing the electronic working file of the Progress Schedule in an "XER" file format. Each CD shall be labeled to indicate the Contract ID, type of submission, filename, and data date.
3. Two (2) sets of paper copies of the following schedule reports:
 - a) Schedule calculation log.
 - b) A legible time-scaled bar-chart plot of the Progress Schedule to show for each activity: the Activity ID, Activity Name, Original Duration, Remaining Duration, Start and Finish dates, Activity Percent Complete, and Total Float. The bar-chart plot shall identify the project critical path (longest path).
 - c) A legible network logic diagram plot of the Progress Schedule depicting the order, interdependence of activities, and sequence in which the work will be accomplished.
 - d) A tabular Predecessor/Successor report sorted in ascending order by Activity ID to show the following:
 - i) Activity ID;
 - ii) Activity Name;
 - iii) Original Duration;
 - iv) Remaining Duration;
 - v) Early Start;
 - vi) Early Finish;
 - vii) Late Start;
 - viii) Late Finish;
 - ix) Total Float;
 - x) Critical (Yes or No);
 - xi) Predecessor Activity ID, Activity Name, Early Start, Early Finish, Relationship Type, Lag, Driving (Yes or No), Constraint, and Constraint Date;
 - xii) Successor Activity ID, Activity Name, Early Start, Early Finish, Relationship Type, Lag, Driving (Yes or No), Constraint, and Constraint Date.
4. One (1) set of electronic file copies by email of the following:
 - a) A working file of the Progress Schedule in an "XER" file format.
 - b) Electronic "PDF" copy of the Progress Schedule Narrative.
 - c) Electronic "PDF" copy of the Activity Cost-loading (ACR) report.
 - d) Electronic "PDF" copy of the Progress Earnings Schedule S-Curve.
 - e) A working file of the Progress Earnings Schedule (VDOT Form C-13CPM).

VI. FAILURE TO SUBMIT PROGRESS SCHEDULES

The Engineer will take necessary actions in accordance with the following for failure on the part of the Contractor to submit the required Progress Schedules

1. Work shall not commence until after seven (7) calendar days from the date the Contractor submits his complete Preliminary Progress Schedule, unless otherwise approved in writing by the Engineer.
2. If the Contractor fails to submit his complete Baseline Progress Schedule within forty-five (45) calendar days after the Notice to Proceed (NTP) date, the Engineer will delay approval for payment of the Contractor's monthly progress estimate until such time as the Contractor has satisfied the submittal requirements.
3. If the Progress Schedule submission is deemed unacceptable by the Engineer; and the Contractor fails to submit an acceptable Progress Schedule within fourteen (14) calendar days after the Engineer's request, the Engineer will delay approval for payment of the Contractor's monthly progress estimate until such time as the Contractor has satisfied the submittal requirements.
4. If the Contractor fails to provide a Progress Schedule Update or if a Revised Progress Schedule is required as specified herein and the Contractor fails to provide such a Progress Schedule, the Engineer will delay approval for payment of the Contractor's monthly progress estimate until such time as the Contractor has satisfied the submittal requirements.
5. If the Contractor fails to provide an acceptable Final As-built Progress Schedule as specified, the Engineer will delay approval for payment of the Contractor's final progress estimate until such time as the Contractor has satisfied the submittal requirements.

Please note: Delays resulting from the Contractor's failure to provide the Progress Schedule in accordance with the requirements set forth herein will not be considered just cause for extension of the contract time limit or for additional compensation.

VII. REVIEW AND ACCEPTANCE

The Engineer will review all Progress Schedule submissions within fourteen (14) calendar days of receipt of the Contractor's complete submittal. The Engineer's review for acceptance will not commence until all required submittal items and schedule information as defined herein are provided. Acceptance by the Engineer will be based on completeness and conformance with the requirements of the Contract.

If the Contractor's Progress Schedule submission is deemed to be acceptable, the Engineer will respond with a written notice of acceptance. The Engineer's response may include comments or concerns on the schedule or a request for clarification. When the Engineer's response include any comments, concerns, or request for clarification, the Contractor shall respond accordingly within seven (7) calendar days of receipt of the Engineer's response.

If the Contractor's Progress Schedule submission is deemed to be unacceptable, the Engineer will issue a written notification of non-conformance or incompleteness with a request for resubmission. The Engineer's response will include comments describing the deficiencies prompting the Engineer's decision. At the Engineer's discretion, the Contractor may be required to attend a schedule review meeting to discuss the issues or to facilitate review and acceptance of the Progress Schedule submission.

When the Progress Schedule submission is deemed to be unacceptable, the Contractor shall revise and re-submit the Progress Schedule submission accordingly, within seven (7) calendar days of receipt of the Engineer's response. Failure on the part of the Contractor to respond may adversely affect the Engineer's ability to completely evaluate the Contractor's schedule for acceptance.

Review and acceptance by the Engineer will not constitute a waiver of any contract requirements and will in no way assign responsibilities of the work plan, scheduling assumptions, and validity of the schedule to the Department. Failure of the Contractor to include in the Progress Schedule any element of work required by the Contract for timely completion of the project will not excuse the Contractor from completing the entire scope of Work within the Contract specified completion milestone(s).

VIII. MONITORING THE WORK AND ASSESSING PROGRESS

- A. Monitoring The Work** – The Engineer will monitor the Work regularly to identify any deviations from the Contractor’s scheduled performance relative to the SOR. The Contractor shall notify the Engineer at least two (2) working days in advance of any changes in the Contractor’s planned operations or critical stage work requiring Department oversight or inspection. The Contractor shall attend a monthly progress schedule meeting with the Engineer on a day agreed to by the Contractor and the Engineer, to discuss the Contractor’s progress and planned operations for the following thirty (30) calendar days. The Contractor shall furnish and shall be prepared to discuss his detailed 30-day look-ahead schedule at the progress meeting. The 30-day look-ahead schedule shall be based on the Contractor’s current monthly Progress Schedule Update.
- B. Progress Evaluation** – Progress will be evaluated by the Engineer at the time of the monthly progress estimate relative to the SOR. The Contractor’s actual progress will be considered unsatisfactory if any of the following conditions occurs:
1. The actual total earnings to date percentage for work completed, based on the Contractor’s progress payment estimate is more than ten (10) percentage points behind the planned cumulative earnings percentage for work scheduled based on early dates.
 2. Any interim milestone completion date is later than the contract specified completion date by more than twenty-one (21) calendar days.
 3. The calculated project completion date is later than the contract fixed completion date by more than forty-five (45) calendar days.
- C. Progress Deficiency and Schedule Slippage** – When the Contractor’s actual progress is trending toward unsatisfactory status, the Engineer will request a meeting with the Contractor to specifically and substantially discuss reversing this trend and any actions taken or needed to be taken by the Contractor to recover satisfactory progress. Such “good faith” efforts shall be provided in sufficient detail to allow the Engineer to fully evaluate the Contractor’s plans for recovery.

When the Contractor’s actual progress is deemed to be unsatisfactory as defined by any of the conditions listed under **Progress Evaluation** of this provision, the Engineer will issue a written notice of unsatisfactory performance to advise the Contractor that five (5) percent retainage of the monthly progress estimate is being withheld and will continue to be withheld as described in Section 109.08(c), for each month the Contractor’s actual progress is determined to be unsatisfactory. When the Contractor fails to respond with good faith efforts as described herein to restore satisfactory progress, the Engineer will issue a notice to indicate that he may recommend the Contractor be temporarily disqualified from bidding on contracts with the Department as described in Section 102.08 of the Specifications, if progress remains unsatisfactory at the time of preparation of the next monthly progress estimate following the Engineer’s notice. Prior to recommendation for removal from the list of pre-qualified bidders, the Engineer will allow the Contractor fourteen (14) calendar days from the date of the unsatisfactory performance notice to respond. As an example of good faith efforts, the Contractor may submit to the Engineer, a proposed recovery plan in the form of a Progress Schedule Update and a written statement to describe the Contractor’s proposed actions and timeframe to correct the progress deficiency or schedule slippage. The Contractor may also submit to the Engineer a written explanation and supporting documentation to establish that such delinquency was attributable to conditions beyond his control. Any schedule adjustments resulting from a recovery plan will be reviewed in accordance with Section VII, but the modified Progress Schedule Update shall not replace the current SOR.

When the Engineer determines the Contractor’s progress is again satisfactory the five (5) percent retainage previously withheld will be released to the Contractor in accordance with the provisions of Section 109.08 (c) of the Specifications.

If the Contractor is temporarily disqualified from bidding on contracts with the Department, the Contractor will not be reinstated until either the Engineer deems that his progress has improved to the extent that the Work can be completed within the contract time limit or the project has received final acceptance in

accordance with the provisions of Section 108.09.

IX. MEASUREMENT AND PAYMENT

No separate payment will be made for Baseline Progress Schedule on required Progress Schedule Updates. Costs shall be included in price bid for mobilization or incidental to other items. Payment of initial portion of Mobilization item will not be made until Engineer has accepted Baseline Progress Schedule. No monthly estimate payments will be made until Engineer has accepted Progress/Schedule updates.

109.09—Payment for Material on Hand (City Revision)

When requested in writing by the Contractor, payment allowances may be made for material secured for use on the project. This is subject to the approval of the Project Manager. Such material payments will be for only those actual quantities identified in the contract, approved work orders, or otherwise documented as required to complete the project and shall be in accordance with the following terms and conditions:

- (a) **Structural Units:** An allowance of 100 percent of the cost to the Contractor for structural steel materials for fabrication not to exceed 60 percent of the contract price may be made when such material is delivered to the fabricator and has been adequately identified for exclusive use on the project. An allowance of 100 percent of the cost to the Contractor for superstructure units, not to exceed 90 percent of the contract price, may be made when they have been fabricated. Prior to the granting of such allowances, the structural steel materials and fabricated units shall have been tested or certified and found acceptable to the City of Harrisonburg and shall have been stored in accordance with the requirements specified herein. Allowances will be based on invoices or bills, as approved by the Project Manager and will be subject to the retainage requirements of Section 109.08.
 - (b) **Other Materials:** For reinforcing steel, aggregate, pipe, guardrail, signs and sign assemblies, and other nonperishable material, an allowance of 100 percent of the cost to the Contractor for materials, not to exceed 90 percent of the contract price, may be made when such material is delivered and stockpiled or stored in accordance with the requirements specified herein. Prior to the granting of such allowances, the material shall have been tested and found acceptable to the City of Harrisonburg. Allowances will be based on invoices or bills, as approved by the Project Engineer and will be subject to the retainage provisions of Section 109.08.
 - (c) **Excluded Items:** No allowance will be made for cement, seed, plants, fertilizer, and other perishable material. and fuels, form lumber, falsework, temporary structures, or other work that will not become an integral part of the finished construction.
 - (d) **Storage:** Material for which payment allowance is requested shall be stored in an approved manner in areas where damage is not likely to occur. If any of the stored materials are lost or become damaged, the Contractor shall repair or replace them. If payment allowance has been made prior to such damage or loss, the amount so allowed or a proportionate part thereof will be deducted from the next progress estimate payment and withheld until satisfactory repairs or replacement has been made.
- When it is determined to be impractical to store materials within the limits of the project, the Project Manager may approve storage on private property or, for structural units, on the manufacturer or fabricator's yard. Requests for payment allowance for such material shall be accompanied by a release from the owner or tenant of such property or yard agreeing to permit the removal of the materials from the property without cost to the City of Harrisonburg.
- (e) **Materials Inventory:** If the Contractor requests a payment allowance for properly stored material, he shall submit a certified and itemized inventory statement to the Project Manger no earlier than five days and no later than two days prior to the progress estimate date. The statement shall be submitted on Form C-22, Itemized Inventory Statement of Stored Materials, and shall be accompanied by invoices or other documents that will verify the material's cost, as well as a signed Affidavit for Payment of Stored Material. Following the initial submission, the Contractor shall submit to the Project Manager a monthly-certified update of the itemized inventory statement (Form C-22) within the same time frame. The updated inventory statement shall show additional materials received and stored with invoices or other documents and shall list materials removed from storage since the last certified inventory statement, with appropriate cost data reflecting the change in the inventory. If the Contractor fails to submit the monthly-certified update within the specified time frame, the Project Manager will deduct the full amount of the previous statement from the progress estimate. Additionally, the Form C-22 must be accurate

and complete before payment of the monthly pay application can be made. All stored materials will be the responsibility of the Contractor.

At the conclusion of the project, the cost of material remaining in storage for which payment allowance has been made, but not installed, will be deducted from the progress estimate.

AFFIDAVIT FOR PAYMENT OF STORED MATERIALS

Contract/Project No.: _____

Pay Application No.: _____

Project:

State of Virginia

County/City of _____

_____, being duly sworn, deposes and says that he/she is the
(name)

_____ of _____
(owner/partner/officer –indicate title) (Company Name)

The contractor for the above identified contract; and that he/she certifies and affirms under penalty of perjury, that the materials for which payment is requisitioned and which are described on the C-22 Form have been stored and secured for eventual incorporation into the work of the project and are presently available for inspection.

The materials are suitably stored at the following specific location(s):

(if off site provide Company Name, address, City, State, and phone number of custodian)

He/She acknowledges that the contractor has full and continuing responsibility to insure and protect such materials and to maintain them in proper condition to fulfill the contract requirements when installed. All previous progress payments received on account of the work have been applied on account to discharge contractor’s legitimate obligations associated with prior applications of payment.

The undersigned states that he/she has clear, marketable title to the materials, which are described on the C-22 Form.

The materials have been purchased and manufactured for the specific purpose of being used in the construction of this contract, and conform to the contract documents.

He/She certifies that he/she is authorized to make this affidavit on behalf of the contractor; that the facts contained herein are true of his/her own personal knowledge; and that this affidavit has been made to induce the State to make payment for materials not yet incorporated in the work of the contract.

Subscribed and sworn before me this ____ day of _____, 20__.

Signature of Affiant

Title

Notary Public

My Commission Expires

Attached: C-22 Form Stored Materials Inventory

S109F00-0708
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
OPTIONAL ADJUSTMENT FOR FUEL
December 20, 2005c
Reissued July 2008c

The Department will adjust monthly progress payments up or down as appropriate for cost changes in fuel used on specific items of work identified in this provision. The Department will provide a master listing of standard bid items eligible for fuel adjustment on its website.

Included with this proposal is a listing of standard bid items the Department has identified as eligible for fuel adjustment on this project(s) as well as the respective fuel factors per pay unit for those items. Only items on this listing will be eligible for adjustment. The fuel usage factor for each item is considered inclusive of all fuel usage. Generally, non-standard pay items are not eligible for fuel adjustment. The listing of eligible items applicable to this particular project is shown on Form C-21B "Bid Items Eligible for Fuel Adjustment" included with the bidding documents. The Bidder may choose to have fuel adjustment applied to any or all eligible items on this project's listing by designating the items for which the fuel adjustment will apply. The Bidder's selection of items for fuel adjustment may not be changed once he has submitted Form C-21B to the Department.

In order to be eligible for fuel adjustment under this provision, the apparent lowest responsive and responsible Bidder shall clearly identify on Form C-21B those pay items he chooses to have fuel adjustment applied on. Within **21 days after the receipt of bids** the apparent successful Bidder shall submit his designated items on Form C-21B to the Contract Engineer. Items the successful Bidder chooses for fuel adjustment must be designated by writing the word "Yes" in the column titled "Option" by each bid item chosen for fuel adjustment. The successful Bidder's designations on Form C-21B must be written in ink or typed, and signed by this Bidder to be considered complete. Items not properly designated or left blank on the Bidder's C-21B "Bid Items Eligible for Fuel Adjustment" form will automatically not be considered for adjustment. If the apparent successful Bidder fails to return his Form C-21B within the timeframe specified, items will not be eligible for fuel adjustment on this project. The monthly index price to be used in the administration of this provision will be calculated by the Department from the Diesel fuel prices published by the U. S. Department of Energy, Energy Information Administration on highway diesel prices, for the Lower Atlantic region. The monthly index price will be the price for diesel fuel calculated by averaging each of the weekly posted prices for that particular month. For the purposes of this provision, the base index price will be calculated using the data from the month preceding the receipt of bids. The base index price will be posted by the Department at the beginning of the month for all bids received during that month.

The current index price will be posted by the Department and will be calculated using the data from the month preceding the particular estimate being vouchered for payment. The current monthly quantity for eligible items of work selected by the Contractor for fuel adjustment will be multiplied by the appropriate fuel factor to determine the gallons of fuel to be cost adjusted. The amount of adjustment per gallon will be the net difference between the current index price and the base index price. Computation for adjustment will be made as follows:

$$S = (E - B) QF$$

Where; S = Monetary amount of the adjustment (plus or minus)

B = Base index price

E = Current index price

Q = Quantity of individual units of work

F = Appropriate fuel factor

Adjustments will not be made for work performed beyond the original contract time limit unless the original time limit has been changed by an executed Work Order.

If new pay items are added to this contract by Work Order and they are listed on Department's master listing of eligible items, the Work Order must indicate which of these individual items will be fuel adjusted; otherwise, those items will not be fuel adjusted. If applicable, designating which new pay items will be added for fuel adjustment must be determined during development of the Work Order and clearly shown on Form C-10 Work Order. The Base Index price on any new eligible pay items added by Work Order will be the Base Index price posted for the month in which bids were received for that particular project. The Current Index price for any new eligible pay items added by Work Order will be the Index price posted for the month preceding the estimate on which the Work Order is paid.

When quantities differ between the last monthly estimate prepared upon final acceptance and the final estimate, adjustment will be made using the appropriate current index for the period in which that specific item of work was last performed.

In the event any of the base fuel prices in this contract increase more than 100 percent (i.e. fuel prices double), the Engineer will review each affected item of work and give the Contractor written notice if work is to stop on any affected item of work. The Department reserves the right to reduce, eliminate or renegotiate the unit price for remaining portions of affected items of work.

Any amounts resulting from fuel adjustment will not be included in the total cost of work for determination of progress or for extension of contract time.

BID ITEMS ELIGIBLE FOR FUEL ADJUSTMENT - FORM C21B (CITY MODIFIED)

Instructions: This form shall be completed in accordance with the Special Provision for Optional Adjustment for Fuel. If you choose to have Fuel Adjustment applied to any of the items listed below, write the word "Yes" in the "OPTION" column beside the item. The form must be signed, dated, and submitted to the City with the Bid Proposal at the specific time of Bid Receipt.

BID NUMBER	ITEM NUMBER	ITEM DESCRIPTION	FUEL FACTOR Gal/unit	OPTION
	00120	REGULAR EXCAVATION	0.290	
	00525	CONCRETE CLASS A3 MISC.	1.892	
	09150	EROSION CONTROL STONE CLASS I EC-1	0.600	
	10121	AGGR. BASE MATL. TY. I NO. 21B	0.600	
	10598	ASPHALT CONCRETE TY. SM-9.5AL	3.500	
	10628	FLEXIBLE PAVEMENT PLANING	0.071	
	10642	ASPHALT CONCRETE BASE COURSE TY. BM-25.0A	3.500	
	13565	RETAINING WALL EXCAVATION	0.290	
	16355	ASPHALT CONCRETE TY. SM-12.5D	3.500	
	24260	CRUSHER RUN AGGR. NO. 25 OR 26	0.400	
	24410	DEMOLITION OF PAVEMENT	0.200	
	27430	SILTATION CONTROL EXCAVATION	0.290	
	27545	STORMWATER MANAGEMENT BASIN EXCAVATION	0.290	
	60403	CONCRETE CLASS A3	1.892	
	60404	CONCRETE CLASS A4	1.892	

DATE: _____

SIGNATURE: _____

(Firm or Corporation)

(Vendor No.)

S109G05-1214
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
ASPHALT MATERIAL PRICE ADJUSTMENT
December 2, 2014

All asphalt material contained in the attached master listing of eligible bid items and designated by pay items in the contract will be price adjusted in accordance with the provisions as set forth herein. Other items will not be adjusted, except as otherwise specified in the contract. If new pay items which contain asphalt material are established by Work Order, they will not be subject to Price Adjustment unless specifically designated in the Work Order to be subject to Price Adjustment.

Each month, the Department will publish an average state-wide PG 64S-22 f.o.b. price per ton developed from the average terminal prices provided to the Department from suppliers of asphalt cement to contractors doing work in Virginia. The Department will collect terminal prices from approximately 12 terminals each month. These prices will be received once each month from suppliers on or about the last weekday of the month. The high and low prices will be eliminated and the remaining values averaged to establish the average statewide price for the following month. That monthly state-wide average price will be posted on the Scheduling and Contract Division website on or about the first weekday of the following month.

This monthly statewide average price will be the Base Index for all contracts on which bids are received during the calendar month of its posting and will be the Current Index for all asphalt placed during the calendar month of its posting. In the event an index changes radically from the apparent trend, as determined by the Engineer, the Department may establish an index which it determines to best reflect the trend.

The amount of adjustment applied will be based on the difference between the contract Base Index and the Current Index for the applicable calendar month during which the work is performed. Adjustment of any asphalt material item designated as a price adjustment item which does not contain PG 64S-22, except PG 64E-22, will be based on the indexes for PG 64S-22. The quantity of asphalt cement for asphalt concrete pavement to which adjustment will be applied will be the quantity based on the percent of asphalt cement shown on the appropriate approved job mix formula.

The quantity of asphalt emulsion for surface treatments to which adjustment will be applied will be the quantity based on 65 percent residual asphalt.

Price adjustment will be shown as a separate entry on the monthly progress estimate; however, such adjustment will not be included in the total cost of the work for progress determination or for extension of contract time.

Any apparent attempt to unbalance bids in favor of items subject to price adjustment or failure to submit required cost and price data as noted hereinbefore may result in rejection of the bid proposal.

VIRGINIA DEPARTMENT OF TRANSPORTATION
MASTER LISTING OF
ASPHALT MATERIAL ITEMS ELIGIBLE FOR PRICE ADJUSTMENT
(12-2-14)

ITEM DESCRIPTION UNITS SPECIFICATION

10062 Asphalt-Stab. Open-Graded Material Ton 313
10416 Liquid Asphalt Gal 311 312
10420 Blotted Seal Coat Ty. B SY ATTD
10422 Blotted Seal Coat Ty. C SY ATTD
10423 Blotted Seal Coat Ty. C-1 SY ATTD
10424 Blotted Seal Coat Ty. D SY ATTD
10598 Ns Asphalt Concrete Ton 315

10606 Asphalt Concrete Ty. SM-9.5 Ton 315
 10607 Asphalt Concrete Ty. SM-12.5A Ton 315
 10608 Asphalt Concrete Ty. SM-12.5D Ton 315
 10609 Asphalt Concrete Ty. SM-12.5E (64E-22) Ton 315
 10610 Asphalt Concrete Ty. IM-19.0A Ton 315
 10611 Asphalt Concrete Ty. IM-19.0D Ton 315
 10612 Asphalt Conc. Base Cr. Ty. BM-25.0 Ton 315
 10613 Asphalt Concrete Ty. BM-37.5 Ton 315
 10635 Asphalt Concrete Ty. SM-9.5A Ton 315
 10636 Asphalt Concrete Ty. SM-9.5D Ton 315
 10637 Asphalt Concrete Ty. SM-9.5E (64E-22) Ton 315
 10639 Asphalt Concrete Ty. SM-19.0 Ton 315
 10642 Asphalt Concrete Ty. BM-25.0A Ton 315
 10643 Asphalt Concrete Ty. BM-25.0D Ton 315
 10650 Stone Matrix Asphalt SMA-9.5(64H-22) Ton 317
 10651 Stone Matrix Asphalt SMA-9.5(64E-22) Ton 317
 10652 Stone Matrix Asphalt SMA-12.5(64H-22) Ton 317
 10653 Stone Matrix Asphalt SMA-12.5(64E-22) Ton 317
 10654 Stone Matrix Asphalt SMA-19.0(64H-22) Ton 317
 10655 Stone Matrix Asphalt SMA-19.0(64E-22) Ton 317
 10701 Liquid Asphalt Coating SY ATTD
 12505 Asphalt Concrete Curb Backup Material Ton 315
 13240 Asphalt Concrete Sidewalk Ton 504
 16110 Emul. Asph. Slurry Seal Type A SY ATTD
 16120 Emul. Asph. Slurry Seal Type B SY ATTD
 16130 Emul. Asph. Slurry Seal Type C SY ATTD
 16144 Latex Mod. Emul. Treat. Type B Ton ATTD
 16145 Latex Mod. Emul. Treat. Type C Ton ATTD
 16146 Latex Mod. Emul. Treat. Rutfilling Ton ATTD
 16161 Modified Single Seal SY ATTD
 16162 Modified Double Seal SY ATTD
 16249 Nontracking Tack Coat Gal. ATTD
 16250 Liquid Asphalt Matl. CMS-2 (Mod) Gal ATTD
 16251 Liquid Asphalt Matl. CMS-2 Gal ATTD
 16252 Liquid Asphalt Matl. CRS-2 Gal ATTD
 16253 Liquid Asphalt Matl. CRS-2H Gal. ATTD.
 16254 Liquid Asphalt Matl. RC-250 Gal ATTD
 16256 Liquid Asphalt Matl. RC-800 Gal ATTD
 16257 Ns Liquid Asphalt Matl. Gal ATTD
 16260 Liquid Asphalt Matl. CRS-2L Gal ATTD
 16325 NS Asphalt Concrete Ton N/A
 16330 Asphalt Concrete Ty. SM-9.0A Ton 315
 16335 Asphalt Concrete Ty. SM-9.5A Ton 315
 16337 Asph. Conc. Ty. SM-9.5ASL (Spot Level) Ton 315
 16340 Asphalt Concrete Ty. SM-9.5D Ton 315
 16342 Asph. Conc. Ty. SM-9.5DSL (Spot Level) Ton 315
 16345 Asphalt Concrete Ty. SM-9.5E (64E-22) Ton 315
 16350 Asphalt Concrete Ty. SM-12.5A Ton 315
 16352 Asph. Con. Ty. SM-12.5ASL (Spot Level) Ton 315
 16355 Asphalt Concrete Ty. SM-12.5D Ton 315
 16357 Asph. Con. Ty. SM-12.5DSL (Spot Level) Ton 315
 16360 Asphalt Concrete Ty. SM-12.5E (64E-22) Ton 315
 16362 Asphalt Concrete Ty. SM-19.0A Ton 315
 16365 Asphalt Concrete Ty. IM-19.0A Ton 315
 16370 Asphalt Concrete Ty. IM-19.0D Ton 315
 16373 Asphalt Concrete Ty. IM-19.0A (T) Ton 315

16374 Asphalt Concrete Ty. IM-19.0D (T) Ton 315
16377 Asphalt Concrete Ty. BM-37.5 Ton 315
16379 Asphalt Concrete Ty. IM-19.0T Ton 315
16390 Asphalt Concrete Ty. BM-25.0A Ton 315
16392 Asphalt Concrete Ty. BM-25.0D Ton 315
16395 Asphalt Concrete Ty. BM-25.0A (T) Ton 315
16397 Asphalt Concrete Ty. BM-25.0D (T) Ton 315
16400 Stone Matrix Asphalt SMA-9.5(64H-22) Ton ATTD
16401 Stone Matrix Asphalt SMA-9.5(64E-22) Ton ATTD
16402 Stone Matrix Asphalt SMA-12.5(64H-22) Ton ATTD
16403 Stone Matrix Asphalt SMA-12.5(64E-22) Ton ATTD
16404 Stone Matrix Asphalt SMA-19.0(64H-22) Ton ATTD
16405 Stone Matrix Asphalt SMA-19.0(64E-22) Ton ATTD
16490 Hot Mix Asphalt Treatment Ton ATTD
16500 Surf.Preparation & Restoration Type I Ton ATTD
16502 Surf.Preparation & Restoration Type II Ton ATTD
16504 Surf.Preparation & Restoration Type III Ton ATTD
67201 NS Asphalt Concrete Overlay Ton 315
67210 NS Asphalt Concrete Ton 315
68240 NS Asphalt Concrete Ton 315

END STATE REQUIREMENTS

SECTION 1000

SUPPLEMENTARY PROVISIONS

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1000 – Low Permeability Liners For Stormwater Management Facilities

The contractor shall place a low permeability liner for Stormwater Management (SWM) Facilities at the locations designated on the plans and details. SWM liner soil shall be classified as CL, CH or MH in accordance with ASTM D 2487 and shall have a maximum coefficient of permeability of 1×10^{-5} cm/sec in accordance with ASTM D 5084, after compaction. The maximum particle size shall be three inches in its largest dimension. Natural soils, which do not meet these specifications, may be blended with bentonite to provide the specified permeability characteristics.

Geosynthetic Clay Liner shall have a maximum coefficient of permeability of 1×10^{-8} cm/sec in accordance with ASTM D 5887.

The contractor shall submit the following to the Engineer for each type of liner material for review and approval prior to use:

- (a) Soil classification tests and permeability tests (ASTM D 5084) results of unmodified soils proposed for use as SWM liners.
- (b) A mix design supported by laboratory testing for soils modified with bentonite
- (c) A Source of Material and Manufacturer's Certification for geosynthetic liners.

It shall be the Contractor's option as to the type of impervious liner to be used, i.e. natural clay, blended soil or geosynthetic material, unless otherwise noted on the plans. All areas to receive the impervious liner shall be free of organic, frozen, wet, or soft or loose soils, fractured rock, or other deleterious materials. These areas shall be evaluated prior to placement of the liner material.

Natural clay liners shall have a final compacted thickness of no less than 12 inches. All lining material shall be placed in loose lifts with a maximum depth of 8 inches prior to compaction and shall be compacted to a minimum 90 percent of the maximum dry density (VTM-1) at, or up to 30 percent above, the optimum moisture content. Remove all stone larger than 7 inches in its maximum dimension from the liner subgrade or low permeability soil liner material.

Ensure adequate moisture or compaction requirements shall be reworked, re-compacted and retested until the required moisture content and density are achieved. The Contractor, at no additional cost to the Department, shall complete Construction Quality Control field density and moisture tests at the rate of one test for every 500 square yards of material placed for low permeability liner construction. Complete a minimum of one compaction test for every lift of fill placed per day.

During construction, the Contractor shall protect the liner material from excessive drying. Place a minimum of 12 inches layer of topsoil or other approved material over the liner.

Measurement and payment for low permeability liner will be square yards, complete-in-place. Payment shall include the cost of excavation, subgrade preparation, soil conditioning, blending, compaction, grading and moisture conditioning and all other items incidental to the work. Liner cover material shall be Class A Topsoil to the depth specified (12" minimum) and will be measured and paid for in cubic yards. Such price shall include furnishing, loading, transporting, and applying topsoil to the depth specified, finishing areas and restoring damaged areas prior to final acceptance.

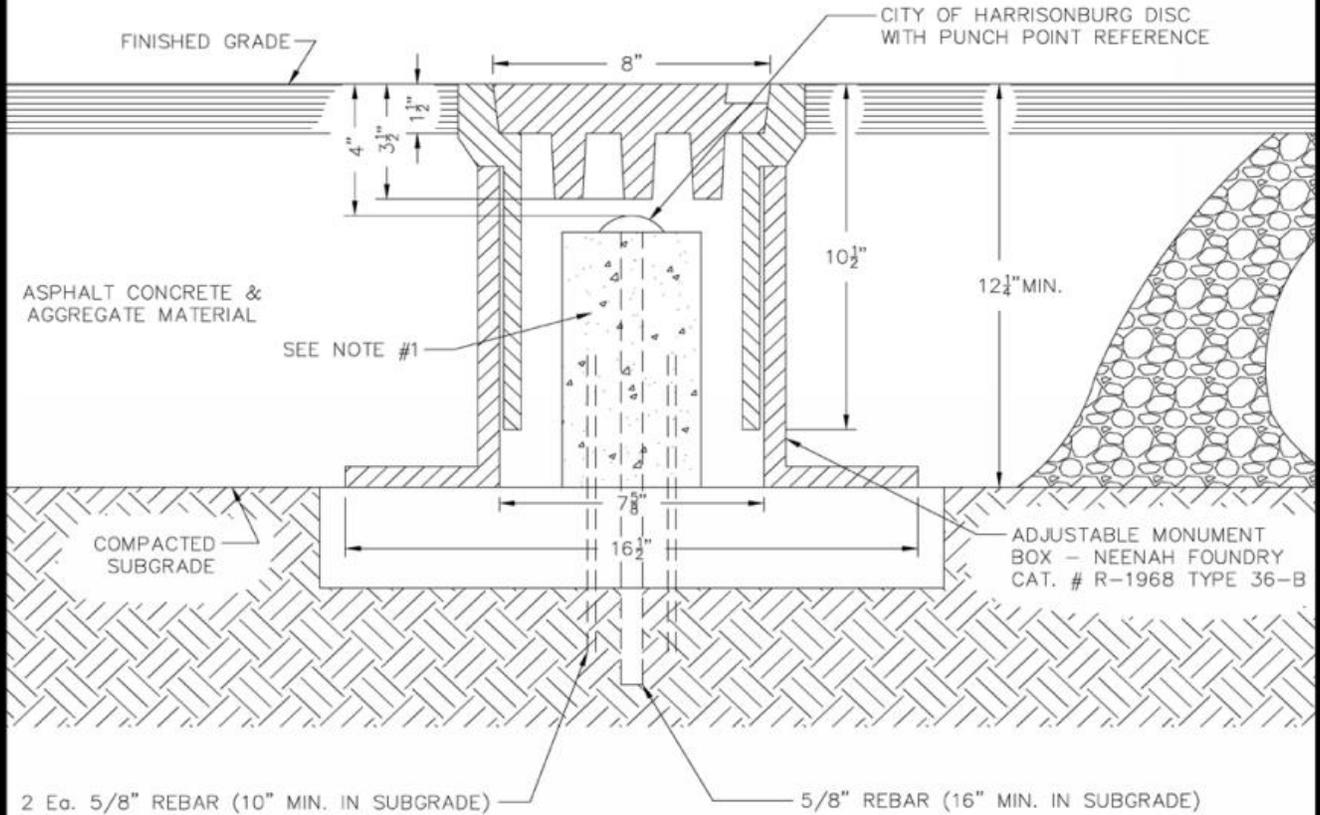
No payment will be made for geosynthetic clay liners that become ineffective, or are damaged due to improper storage, or for bentonite used in blended soils.

1001 – Street Centerline Monuments

The Contractor shall install the City's Standard Street Center Line Monuments in accordance with City Drawing Number 6.5.2 (See Attachment). The City will furnish the street centerline monuments to the Contractor which include a three-piece adjustable box and the City of Harrisonburg aluminum disk. The Contractor will furnish three pieces of 5/8" rebar, a piece of 4" PVC pipe and concrete for the street centerline monument body.

Measurement and payment for City Standard Street Center Line Monuments will be per each, complete-in-place. Payment shall include the cost of excavation, and furnishing and installing all materials (except as noted above).

The City Surveyor shall provide all stake-out for the street centerline monuments.



NOTES:

1. 5/8" REBAR SET IN CONCRETE (4" DIA.) LENGTH OF REBAR TO BE DETERMINED BY THICKNESS OF PROPOSED ROADWAY.
2. MONUMENT DISC AND ADJUSTABLE MONUMENT BOX TO BE PROVIDED BY THE CITY OF HARRISONBURG.
3. MONUMENT SHALL BE INSTALLED PRIOR TO SURFACE PAVING ON ALL NEW STREETS. ALL WORK IS CONTRACTOR'S RESPONSIBILITY.
4. ON EXISTING CITY STREETS, CITY FORCES WILL APPLY ASPHALT BACKFILL AROUND MONUMENT, THIS WORK WILL BE COORDINATED THROUGH THE CHIEF CITY INSPECTOR.

NOT TO SCALE

REVISIONS

NO.	DATE	DESCRIPTION	INIT.
	10/04	DCSM UPDATE	

**STANDARD STREET
CENTER LINE
MONUMENT**

DWG. NO.

6.5.2

PAGE

1002 – Seed Specification

The Contractor shall use the following seed mixture on all areas to be seeded.

Rockingham Sun and Shade Lawn Mixture

% Seed	Variety
38.3	Home Run Perennial Ryegrass – Turf Type
19.4	Creeping Red Fescue
14.7	Kentucky Bluegrass
14.7	Cardinal Creeping Red Fescue
9.7	Navigator Creeping Red Fescue
3.2	Annual Rye Seed – VNS

Seeding Rate:

New Lawn – 4 lbs per 1,000 SF

Overseeding – 2 lbs per 1,000 SF (only as directed by Engineer/Project Manager)

Lime and Fertilizer shall be applied per VDOT Specification 603

Fertilizer – 300 lbs per Acre

Lime – 2 tons per Acre

The seeded areas shall be maintained by the Contractor until project close-out. Maintenance shall consist of providing protection against traffic, re-seeding, weeding, re-fertilizing, watering and mowing as necessary to produce a uniform and vigorous stand of grass. At the beginning of the next planting season after that in which permanent crop is sown, the seeded areas will be inspected. Any section not showing vigorous growth at that time shall be promptly re-seeded by the Contractor at his own expense. One (1%) percent of retainage will be held, after the final completion date, until all seeded areas have been inspected and approved by the City. The work under this area will be accepted only after a uniform stand of grass has been established, regardless of final completion date. Grass establishment is the Contractor's responsibility. Therefore, supplemental seeding and mulching will not be paid for.

1003 – Quality Control, Quality Assurance & Independent Assurance Testing

The contractor shall be responsible for the quality of construction and materials incorporated into the Project. The Contractor's Quality Control measures shall ensure that operational techniques and activities provide material of acceptable quality. Contractor sampling and testing shall be performed to control the processes and determine the degree of materials compliance with the Contract.

CONSTRUCTION QUALITY CONTROL PLAN

The Contractor shall submit for review and approval a Construction Quality Control (QC) Plan and it must address the following:

1. Describe the Contractor's Quality Control organization, including the number of full-time equivalent employees or Sub-Contractors with specific Quality Control responsibilities, including an organizational chart showing lines of authority and reporting responsibilities.
2. List by discipline the name, qualifications, duties, responsibilities and authorities for all persons proposed to be responsible for Construction Quality Control.
3. Provide Quality Control sampling, testing and analysis plan with methods that include a description of how random locations for testing and sampling are determined.
4. Identify the laboratory(s) to be used for each type of testing.
5. Specify documentation for QC activities.
6. Provide procedures to meet contract requirements for corrective action when QC criteria are not met.

The Contractor's QC Plan shall utilize industry standard inspection procedures as well as those outlined in VDOT's Construction Manual, Materials Manual of Instruction, Road and Bridge Specifications and the minimum requirements outlined in the following tables. All materials utilized on the project shall be from VDOT approved sources and all mix designs shall be VDOT approved.

CONTRACTOR RESPONSIBILITIES

The Contractor shall prepare test reports meeting the requirements of AASHTO R18 or may use the current appropriate VDOT forms. The Contractor shall also prepare, maintain and submit completed test records and final materials certification in accordance with the requirements of VDOT's Construction Manual, Materials Manual of Instruction and this Section.

Contractor shall furnish copies of all test results to the Project Manager or other authorized City representative within 24 hours of completing the test of the acquired sample or the next day of business.

ACCEPTANCE

All plant manufactured materials shall be tested at the plant and accepted by VDOT in accordance with VDOT's QA/QC Programs as described in the Materials Manual of Instruction. Field testing for density shall be the responsibility of the Contractor for QC.

A cooperative effort by the Contractor and the City to identify the cause of any non-specification material or any discrepancy in the test results will include the following actions:

- A check of test data, calculation and results;
- Observation of the Contractor's sampling and testing by the City;
- Check of test equipment by the City.

When the source of test result discrepancies between the Contractor and the City/VDOT cannot be resolved, a referee split sample shall be obtained and tested; this work shall be performed by the City/VDOT. The testing of the sample shall be performed in duplicate by the laboratory without knowledge of the specific project conditions such as the identity of the Contractor, the test results of the City/VDOT and Contractor of the specification targets. The results of these tests shall be binding on both the Contractor and the City. The Contractor or its representative may witness the testing if requested.

Costs incurred for referee testing shall be paid by the party found in error.

SMALL QUANTITIES

The City may elect to accept small quantities of material without normal sampling and testing frequencies. The determination to accept materials using this provision rests solely with the City. Structural Concrete shall not be considered under the small quantity definition.

Factors that the City shall consider prior to use of small quantity acceptance are:

- Has the material been previously approved?
- Is the material certified?
- Is there a current mix design or reference design?
- Has it been recently tested with satisfactory results?
- Is the material structurally significant?

Small quantity acceptance may be accomplished by visual, certification or other methods. Acceptance of small quantities of materials by these methods must be fully documented. Documentation of materials under these methods must be provided by the City. For visual documentation, an entry shall be noted on field records, with a statement as to the basis of acceptance of the material and the approximate quantity involved.

PAYMENT

The costs of all material, labor, personnel, equipment, sampling, testing, documentation and report preparation for QC sampling and testing of material under the above Construction Quality Control Plan shall be incidental to the contract bid price of the respective material. No additional compensation shall be provided for these items.

QUALITY ASSURANCE

Quality Assurance (QA) testing will be the responsibility of the City of Harrisonburg and shall be performed in accordance with the following tables.

INDEPENDENT ASSURANCE

Independent Assurance (IA) testing will be the responsibility of the Virginia Department of Transportation (VDOT) and shall be performed in accordance with the following tables.

Acceptance/VST/IA Frequency - Soil & Aggregate

Material Type	Spec Section	Test Reference	Acceptance Testing	VST	IA
Backfill	Contract Special Provisions				
Moisture Density Relations- Standard Proctor, Atterberg Limits & Grain Size Analysis (All Backfill Types)		VTM-1, VTM-7, & VTM-25	Done during project development	NA	Non required if performed in VDOT or AMRL accredited laboratory
One Point Proctor Check Compare to Nuclear Gauge		VTM 012	As needed.	NA	Run split sample when needed. 1 test per project to check procedure and equipment.
In Place Density Tests:					
Box Culverts, Pipes & other Drainage Structures	302,303	VTM-10	A minimum of one (1) test shall be performed per lift on alternating sides of the structure for each 300 linear ft. or portion thereof in structure length. This test pattern shall begin after the first 4-in. compacted layer above the structure's bedding and shall continue to one (1) foot above the top of the structure.	NA	One IA shall be conducted on each compaction technician once per project regardless of the structure or material type (box culvert, pipe, Abutment, retaining wall or embankment). IA shall consist of a split density test in situ, observing technician technique, checking equipment calibrations and calculations.

<u>Material Type</u>	<u>Spec Section</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
<u>BACKFILL</u>			<p>A minimum of two (2) tests every other lift up to 100 linear ft. shall be performed. Testing shall be performed behind these structures at a distance from the heel no farther than a length equal to the height of the structure plus 10 ft.</p> <p>For MSE Walls, Less than 100 linear ft. a minimum of one (1) test every other lift shall be performed. The testing shall be performed a minimum distance of 8 ft. away from the face of the wall, to within three feet of the back edge of the zone of the reinforced fill area. Test sites shall be staggered throughout the length of the wall to obtain uniform coverage. Testing shall begin after the first two (2) lifts of reinforced fill have been placed and compacted.</p> <p>Walls more than 100 linear ft., a minimum of two (2) tests every other lift not to exceed 200 linear ft. shall be performed.</p>		
Abutments, Retaining Walls and MSE Walls	Sections 303,401	VTM-10		NA	One IA shall be conducted on each compaction technician once per project regardless of the structure or material type (box culvert, pipe, Abutment, retaining wall or embankment). IA shall consist of a split density test in situ, observing technician technique, checking equipment calibrations and calculations.
SOILS/ EMBANKMENT					

Material Type

Spec Sect

Test Ref.

Acceptance Testing

VST

IA

SOILS/EMBANKMENT

Moisture Density Relations-Standard Proctor, Atterberg Limits & Grain Size Analysis (Soils/Embankment)		VTM-1, VTM-7, & VTM-25	Done during project development	NA	1 test per year during production; minimally perform one (1) in first five (5) tests taken for QA
One Point Proctor Check Compare to Nuclear Gauge (Soils/Embankment)		VTM 012	As needed.	NA	1 test per year during production; minimally perform one (1) in first five (5) tests taken for QA
Embankment in Place Density (Soils/Embankment)	Sect. 303	VTM-10	The minimum number of field density tests required shall be one for each 2500 yd ³ or less of fill material placed, with the following additional requirements: (a) For fill areas less than 500 ft. in length, a minimum of one (1) field density test for every other 6-in. compacted layer from the bottom to the top of fill starting with the second lift. (b) For fills 500 to 2000 ft. in length, a minimum of two (2) field density tests for each 6-in. compacted layer within the top five (5) ft. of fill. (c) For fills greater than 2000 ft. in length, break into equal sections not to exceed 2000 ft. and test each section in accordance with (b) above.	NA	One IA shall be conducted on each compaction technician once per project regardless of the structure or material type (box culvert, pipe, Abutment, retaining wall or embankment). IA shall consist of a split density test in situ, observing technician technique, checking equipment calibrations and calculations
Subgrade	Sec. 305	VTM-10	In the finished subgrade in both cut and fill sections, a minimum of one (1) test represented by the average of five nuclear density	NA	One IA shall be conducted on each compaction technician once per project regardless of the structure or material type (box culvert, pipe, Abutment,

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
<u>subgrade cont.</u>			readings shall be performed for each 2000 linear ft. of subgrade for each roadway (full width).		retaining wall or embankment). IA shall consist of a split density test in situ, observing technician technique, checking equipment calibrations and calculations
Aggregate Base and Subbase Material	VDOT Sections 306, 307, & 309				
Depth Checks		VTM-38	<p>For Method VTM-38A, one (1) depth test shall be conducted for each one-half (1/2) mile of stabilization per paver (mixer) application width. In other words, each separately applied width of stabilization, regardless of roadway width, shall require a series of tests.</p> <p>For method VTM-38B, the project shall be divided into lots, with each lot stratified, and the location of each test within the stratified section determined randomly. A lot of material is defined as the quantity being tested for</p>	NA	Minimum of one per project, unless quantity of individual material(Base, sub-base, etc.) is less than 500 tons per project, in which case no IA test required for that material

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
<u>AGGREGATE BASE/ SUBBASE</u> <u>Depth Checks Cont.</u>			acceptance, except the maximum lot size shall be two (2) miles for each paver application width. The randomization procedure used shall be at the direction of the Engineer. (See VTM-38 for example.) Samples shall be taken from the lot at the following rate: Lot Size No. of Samples Required 0 - 1 Mile 2 1 - 1 1/2 Miles 3 1 1/2 - 2 Miles 4		
In Place Density		VTM-10	When the subgrade, consisting of material-in-place or imported material other than aggregate base, subbase, or select material, is stabilized with cement or lime, one density test (average of 5 readings) shall be conducted for each one-half (1/2) mile of stabilization per paver (mixer) application width. In other words, each separately applied width of stabilization, regardless of roadway width, shall require a separate series of tests.	NA	One test per project, consisting of the average of 5 readings. Minimum of 5 readings per project, unless total quantity of individual material(Base, sub-base, etc.) is less than 500 tons per project, in which case no IA test

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
Treated Subgrade/Subbase, Aggregate Base Material, and Cement Treated Aggregate Base Material	VDOT Sections 306, 307, & 309				
Depth Checks		VTM-38	<p>For Method VTM-38A, one (1) depth test shall be conducted for each one-half (1/2) mile of stabilization per paver (mixer) application width. In other words, each separately applied width of stabilization, regardless of roadway width, shall require a series of tests.</p> <p>For method VTM-38B, the project shall be divided into lots, with each lot stratified, and the location of each test within the stratified section determined randomly. A lot of material is defined as the quantity being tested for acceptance, except the maximum lot size shall be two (2) miles for each paver application width. The randomization procedure used shall be at the direction of the Engineer.</p>	NA	Minimum of one per project, unless quantity of individual material(Base, sub-base, etc.) is less than 500 tons per project, in which case no IA test required for that material

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
<u>TREATED SUBGRADE/ SUBBASE, AGGREGATE BASE & CEMENT TREATED AGGREGATE BASE MATERIAL</u> <u>Depth Checks Cont.</u>			(See VTM-38 for example.) Samples shall be taken from the lot at the following rate: Lot Size No. of Samples Required 0 - 1 Mile 2 1 - 1 1/2 Miles 3 1 1/2 - 2 Miles 4		
In Place Density		VTM-10	When the subgrade, consisting of material-in- place or imported material other than aggregate base, subbase, or select material, is stabilized with cement or lime, one density test (average of 5 readings) shall be conducted for each one-half (1/2) mile of stabilization per paver (mixer) application width. In other words, each separately applied width of stabilization, regardless of roadway width, shall require a separate series of tests.	NA	One test per project, consisting of the average of 5 readings. Minimum of 5 readings per project, unless total quantity of individual material(Base, sub-base, etc.) is less than 500 tons per project, in which case no IA test
Clearing and Grubbing	VDOT Section 301				
Ensure activities are confined to limits and seeded within 30 days of disturbance		N/A	Daily		Weekly

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
Erosion and Siltation Control	VDOT Section 303.03 & Current Virginia DCR Specifications				
Monitor for correct installation and Maintenance		N/A	Daily		After rain event
Undercut	VDOT Section 303.04				
Review area to determine need for undercut		N/A	Prior to start of work at each location	All reports reviewed by Locality Project Manager to verify qualified inspector and correct equipment	One (1) report reviewed per month during production to verify qualified inspector and qualified personnel
Measure undercut area		N/A	Prior to backfill at each location	All calculations/reports checked/reviewed by Locality Project Manager to verify qualified inspector and correct equipment	One (1) calculation/report checked/reviewed to verify qualified inspector and correct equipment
Overlay Sands					
Grade D Silica Sand	Special Provision		One bag per project tested in AMRL lab.	NA	NA

Acceptance/VST/IA Frequency - Hydraulic Cement Concrete

Material Type	Spec Section	Test Reference	Acceptance Testing	VST	IA
Cast-In-Place Structures and Bridge Concrete	VDOT Section 217				
Concrete Entrained Air Content (CIP Concrete)	217.08	ASTM C231 or C173	Test every load, except for bridge decks, in which case one test per truck-load for the first 3 trucks and then one test for every third truckload thereafter, provided results remain within 1.0% of median of design range. Test also required when making compressive specimens	NA	One test shall be made on the same batches of concrete from which cylinders are taken
Slump of Hydraulic Cement Concrete (CIP Concrete)	217.08	ASTM 143	Test every load and when making compressive specimens	NA	One test shall be made on the same batches of concrete from which cylinders are taken
Temperature of Concrete (CIP Concrete)	217.10	ASTM C1064	Test every load and when making compressive specimens	NA	One test shall be made on the same batches of concrete from which cylinders are taken

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
<u>CAST-IN-PLACE STRUCTURE & BRIDGE CONCRETE</u>					
Compressive Strength of Concrete Cylinders (CIP Concrete)	217.08	ASTM C31 & C39	One set of three cylinders per every 100 CY and at least two sets of cylinders per structure per class of concrete.	NA	Minimum of one set per 1000 cubic yards of structural concrete. Not required for projects having less than 300 cubic yards. Cylinders should be from the same load as acceptance samples.
Chloride Permeability Concrete Cylinders (CIP Concrete)	Check Plan sheets	VTM-112	One set of two cylinders per every 100 CY and at least two sets of cylinders per structure per class of concrete.	NA	Non required if performed in VDOT or AMRL accredited laboratory
Concrete Reinforcing Steel (CIP Concrete) elongation, yield strength and ultimate strength	223	ASTM A615	Accepted based on certification provided by the fabricator. Verify manufacturer's certificates for every shipment for acceptance prior to placement.	One sample per project per manufacturer per most common size bar.	Non required if performed in VDOT or AMRL accredited laboratory
Pavement	VDOT Section 217				
Concrete Entrained Air Content (Pavement)	217.08	ASTM C231 or C173	One test per hour & when casting flexural specimens	NA	One test per four roadway miles or fraction thereof, with a minimum of one per project

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
PAVEMENT					
Slump of Hydraulic Cement Concrete (Pavement)	217.08	ASTM 143	Two tests daily & when making flexural specimens	NA	One test shall be made on the same batches of concrete from which cylinders taken
Temperature of Concrete (Pavement)	217.10	ASTM C1064	One test per hour & when casting flexural specimens	NA	One test shall be made on the same batches of concrete from which cylinders taken.
Compressive Strength of Concrete Cylinders (Pavement)	217.08	ASTM C31 & C39	If pavement is accepted based on cylinder strength. One (1) set of three (3) cylinders cast for every 100 cy and at least one for each days concreting operation	NA	Minimum one set per 1000 cubic yards of structural concrete, except that IA will not be required for projects having less than 300 cubic yards.
Flexural Strength Beams	316.04	ASTM C293	If pavement is to be used as haul road or prior to 14 days then, At least one beam cast for each days concreting operation.	NA	NA
Concrete Reinforcing Steel (pavement) elongation, yield strength and ultimate strength	223	ASTM A615	Accepted based on certification provided by the fabricator. Verify manufacturer's certificates for every shipment for acceptance prior to placement.	One sample of two pieces 24 inches long from the most prevalent bar size per structure, with no two samples being the same size	Non required if performed in VDOT or AMRL accredited laboratory
Miscellaneous Concrete	VDOT Section 217				
Concrete Entrained Air Content (Miscellaneous Concrete)	217.08	ASTM C231 & C173	One test per day and when making compressive specimens	NA	NA

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
MISC CONCRETE					
Slump of Hydraulic Cement Concrete (Miscellaneous Concrete)	217.08	ASTM C143	One test per day and when making compressive specimens	NA	NA
Temperature of Concrete (Miscellaneous Concrete)	217.10	ASTM C1064	One test per day and when making compressive specimens	NA	NA
Compressive Strength of Concrete Cylinders (Miscellaneous Concrete)	217.08	ASTM C31 & C 39	One (1) set of three (3) cylinders per every 250 CY and at least one set per day	NA	One (1) set of three (3) cylinders per every 25,000 CY (cumulative) minimum 1 per project.
Concrete Reinforcing Steel (Miscellaneous Concrete)	223	ASTM A615	Accepted based on certification provided by the fabricator. Verify manufacturer's certificates for every shipment for acceptance prior to placement.	One sample of two pieces 24 inches long from the most prevalent bar size per structure, with no two samples being the same size	Non required if performed in VDOT or AMRL accredited laboratory
Concrete Curing Materials	VDOT Section 220				
Burlap		AASHTO M182, class 3	Verification of LM # and lot numbers if from QA supplier Approved list 44, if not test one sample per lot number	NA	Non required if performed in VDOT or AMRL accredited laboratory
White liquid membrane Curing Compound		VTM - 2	Verification of LM # and batch numbers if from QA supplier Approved list 44, if not test one sample per batch number	NA	Non required if performed in VDOT or AMRL accredited laboratory
Fugitive Dye Liquid Membrane Curing Compound		VTM - 2	Verification of LM # and batch numbers if from QA supplier Approved list 44, if not test one sample per batch number	NA	Non required if performed in VDOT or AMRL accredited laboratory

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Acceptance Testing</u>	<u>VST</u>	<u>IA</u>
<u>CONCRETE CURING MATERIALS</u>					
Polyethylene Film		AASHTO M171	Verification of LM # and lot numbers if from QA supplier Approved list 44, if not test one sample per lot number	NA	Non required if performed in VDOT or AMRL accredited laboratory

QC/VST/IA Frequency - Asphalt

Material Type	Spec Section	Test Reference	Contractor QC Testing	VST	IA
Asphalt Concrete Pavement	VDOT Section 315				
Pavement Density by Nuclear Method with In Place Pavement Density (Asphalt Pavement)		VTM-76, VTM-6	Establish Roller pattern, control strips and test sections, 10 stratified random density test sites per test section (5,000 ft.)	VST is performed on Twenty (20) percent of QC lots. Obtain two cores in one randomly selected QC lot out of five lots to verify in place density. Minimum one VST sample per project.	IA=10%*QC Readings Locality representative observe and witness QC testing to assure gauge is calibrated and accurate. Observe and verify test sites are random and match selected sites. Verify that QC tests are done using proper procedures. Observe one control strip per density technician and obtain all cores from control strip for reweighing in laboratory (randomly select a minimum 10% of cores) to confirm field density testing.

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Contractor QC Test</u>	<u>VST</u>	<u>IA</u>
<u>ASPHALT CONCRETE PAVEMENT</u>					Obtain cores taken for density. Reweigh at least 10% of these cores in laboratory to confirm density. Observe one (1) density determination per ten (10) locations performed by QC technician. Minimum 1 per project.
In Place Pavement Density (for all asphalt except Stone Matrix Asphalt (SMA))		VTM-006; VTM-32	Density - min. 1 core per location not long enough to establish roller pattern/control strip	Density - One (1) random core per 10 QC locations. Independent of contractor cores.	
Depth Checks		VTM-32	Depth checks of surface and intermediate material required only if specific plan depths are called for, not when plans specify rate of application. One (1) per 1/2 mile per lane width, minimum one (1) test per roadway, maximum lot size 2 mile (4 tests)	NA	Select one (1) QC core per five (5) lots and remeasure thickness. A minimum of one (1) per project.
In Place Pavement Density and Depth Checks by cores for Stone Matrix Asphalt (SMA)		VTM-006	Establish trial section and test sections. Minimum of one (1) sample per 1,000 feet with a maximum of 5 samples per day/night's production for density and depth for test sections. Three (3) cores for test strip.	Two (2) stratified random cores per one day/ night production obtained independently of contractor. Minimum two (2) per project.	Locality Representative Independently weigh and measure a minimum of one (1) QC core per day/night's production Locality representative will observe the taking of these cores and will maintain control of these cores once obtained
Permanent Pavement Marking	VDOT Section 512		Contractor QC Testing	VST	IA

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>Contractor QC Test</u>	<u>VST</u>	<u>IA</u>
<u>PERMANENT PAVEMENT MARKING</u>					
Permanent Pavement Marking - Preformed Tape		VTM-94	Daily perform VTM 94 at start up with periodic checks every three hours of operation	Randomly select three (3) ten foot in place sections of markings per day and measure thickness and width. Skip lines and edge lines are considered separately. Inspect PM for correct placement, straightness and edges. Observe the bead embedment, color (night and day) and brightness/reflectivity. Inspect structure of tape to ensure patterned waffles have not been damaged by roller	Review all C-85 reports during production to verify that plan quantities match application quantities and that daily measurements are performed according to VTM 94.
Permanent Pavement Marking - Liquid Materials (Paint, thermoplastic and epoxy)		VTM-94	Daily perform VTM 94 at start up with periodic checks every three hours of operation	Randomly select three (3) ten-foot in place sections of markings per day and measure thickness and width. Skip lines and edge lines are considered separately. Inspect PM for correct placement, straightness and edges. Observe the bead embedment, color (night and day) and brightness/reflectivity. Review application rates to ensure proper thickness has been applied	Review start up calibrations. Ensure one plate sample is taken and tested for thickness, width, bead distribution and embedment. Retain sample for further testing if needed. Review all C-85 reports during production to verify that calculated quantities match application rates and that daily measurements are performed according to VTM 94.

QC/VST/IA Frequency - Misc Roadway and Structure

Material Type	Spec Section	Test Reference	QC Testing	VST	IA
Pre-cast Structures	VDOT Section 404				
Verify bedding material is installed properly and that pre-cast materials are not chipped or cracked		N/A	Daily and when shipment arrives on project	Inspect Precast structure before backfilling operations begin.	Inspect Pre-cast structures when received on job site. Inspect bedding before setting structure.
Load Bearing Piles	VDOT Section 403				
Monitor operation and document blow counts		N/A	Continuously	Review documentation weekly.	Daily
Perform Center of Gravity Calculations		N/A	For each Foundation	one out of every twenty (20) foundations	one out of every ten (10) foundations
Structural Steel	VDOT Section 407				
Receive Bolts, sample, verify the documentation is complete and perform laboratory Skidmore, tension and galvanized coating testing	VDOT 226.02(h)		Each nut-bolt-washer (NBW) assembly lot shall be sampled at a minimum rate of 2 assemblies per NBW lot. The documentation	Ea. NBW assembly lot shall be tested, one bolt in direct tension, one assembly for galvanized coating and one nut and bolt for rotational capacity testing (Rot-	The documentation shall be reviewed to insure all parts are present and that the required tests have been performed by the producers and that the markings match the

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>QC Testing</u>	<u>VST</u>	<u>IA</u>
STRUCTURAL STEEL cont. Receive bolts, sample, verify the documentation is complete & perform lab Skidmore, tension & galvanized coating testing			shall be collected from the bolt supplier and the galvanizer for each lot and supplied along with the samples to the QAM. QC personnel shall monitor the storage and conditions of the bolts to insure they remain in good well lubricated condition.	Cap) as per section 226	suppliers. The results of the VST shall be reviewed to insure the material passed the tests.
Verify daily Skidmore testing is performed IAW (in accordance with) proper procedures for each lot Note: NBW assembly may be reused after Skidmore testing in a connection if no defects are noted in visual inspection and the nut runs freely up the bolt for the full thread length - Only new NBW assemblies may be tested each day	VDOT 407.06(c)		Ea. Day & Ea. NBW lot (3 bolts per lot) used shall be Rot-Cap tested in the Skidmore device IAW proper procedures	Minimum three (3) NBW assemblies for each lot being installed shall be observed by the IA inspector	Three NBW assemblies from each lot shall be Rot-Cap tested at the QAMs lab independently each week during erection
Verify the installation crews are using proper installation procedures IAW specs. to tension the bolts	VDOT 407.06		Monitor ea. Crew (2-3 workers) during erection to insure proper technique (TOTN – turn-of-the-nut or DTI – direct tension indicating washers) is followed	NA	Monitor ea. Crew (2-3 workers) for a half dozen NBW assemblies once at the beginning of each four hour work period
Verify the bolted connections have been tensioned properly using statistical sampling frequency and a calibrated torque wrench	VDOT 407.06(c)4	ASTM 325	For each connection, test 10% or a minimum of 2 NBW assemblies verifying the required torque. Complete testing before the deck is formed.	Test 2 NBW assemblies in 25% of the slip critical connections (minimum of 2 connections per splices) and 2 NBW assemblies in 10% of the secondary member connections	Monitor all the torque testing for each main member connection (slip-critical connections) and at the beginning of each period where secondary members are being checked.

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>QC Testing</u>	<u>VST</u>	<u>IA</u>
STRUCTURAL STEEL			1 sample per manufacturer per most common size per structure (Contractor is to install pieces)		
Rebar Splicer (Tension Test)		ASTM A615		NA	Verify Machine Calibration annually
Protective Coating of Metal Structures	VDOT Section 411		Contractor QC testing	VST	IA
Monitor surface preparation		SSPC-PA	Three surface profile measurements per day of blasting.	Review all reports showing the preparation protocols	Two (2) surface profile measurements per week of blasting.
check coating thickness according to SSPC -PA		SSPC-PA	Five(5) spot measurements (15 Readings) per day as defined in PA-2 for coating thickness after each layer of paint at each location	Review all reports showing-painting application rates including the tests performed on profiles and thicknesses.	One spot measurement (3 readings) as defined in PA-2 for coating thickness after each layer of paint at each location
Underdrains	VDOT Section 501				
Inspect to ensure no deficiencies		VTM 108	All accessible outlet locations; Additionally a minimum of 10% of longitudinal sections	One (1) every twenty-five (25) outlet locations. A minimum of one per project independent of IA.	Observe 10% of outlet locations; Additionally a minimum of 1% of longitudinal sections
Guardrail	VDOT Section 505				
Verify that guardrail is installed per specifications and at proper height			Daily	Spot-check every 500 linear feet for proper height	Spot-check every 50 linear feet for proper height.

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>QC Testing</u>	<u>VST</u>	<u>IA</u>
Fencing	VDOT Section 507				
Verify fencing type, height and location		N/A	Daily	Weekly	
Barbed Wire	VDOT Section 242	ASTM A121	One sample every 50 rolls or spools	NA	NA
Chainlink Fence	VDOT Section 242	AASHTO M181	One sample from 3 rolls for every 50 rolls.	NA	NA
ROW Monuments	VDOT Section 503				
Verify monument type and location		N/A	10% of ROW monuments	1% of ROW monuments	
Maintenance of Traffic	VDOT Section 512				
Monitor installation and maintenance and use Work Zone Safety Checklist		N/A	Daily (Locality Inspector)	Weekly (Locality Project Manager)	
Sound Wall Barriers	VDOT Section 519				
Verify location and installation with shop drawings		N/A	Daily	Weekly	
Topsoil and Seeding	VDOT Section 602/603				

<u>Material Type</u>	<u>Spec Sect</u>	<u>Test Ref.</u>	<u>QC Testing</u>	<u>VST</u>	<u>IA</u>
TOPSOIL & SEEDING					
Verify proper material is utilized at application rates from plans		N/A	Daily	Weekly	
Traffic Signs	VDOT Section 512				
Verify that signs meeting current standards are utilized in locations per plans		N/A	Daily	Weekly	
Traffic Signals	VDOT Section 703				
Monitor installation for conformance with plans and specifications		N/A	Daily	Weekly	
Water and Sewer Facilities	VDOT Section 520				
Monitor installation for conformance with plans and specifications		N/A	Daily	Weekly	
Electrical and Signal Components	VDOT Section 238				
Tether Wire		ASTM A475	One sample per project	NA	NA
Span Wire		ASTM A475	One sample per project	NA	NA
Masonry	VDOT Section 202				
Wall Units			one sample consisting of 10 units per 10,000 units	NA	NA

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- Verification testing shall be required if contractor's workforce performs QC testing that is used for Acceptance testing. If Locality or its consultant performs Acceptance testing, Verification testing shall not be required.
- IA testing shall be conducted by different personnel and different equipment than used for the QC/acceptance testing, QC/acceptance sampling or Verification testing.

1004 – ARCHITECTURAL FINISH AND CONCRETE SURFACE COLOR COATING

I. DESCRIPTION

This work shall consist of developing, furnishing and placing simulated stone masonry by means of concrete form liners in accordance with these specifications and in reasonably close conformity with the lines, patterns, textures, colors and dimensions as shown on the plans or established by the Engineer.

II. QUALITY ASSURANCE

The products and work shall be supplied by a Contractor having a minimum of three consecutive years experience in textured / colored concrete construction. The Contractor shall furnish evidence to the satisfaction of the Engineer that proposed products have been successfully used in similar applications. The Engineer shall approve the pattern, color and texture of the sample walls prior to proceeding with the work. The Engineer shall also approve the finish product.

III. MATERIALS

Form Liner: Form Liner shall be a high quality re-usable product manufactured of high strength urethane which attaches easily to conventional forming systems and shall not compress more than 0.6 mm. Form Liners shall match the patterns as shown on the plans.

Release Agent: The release agent shall be compatible with the form liner special surface finish and color system to be applied.

Wall Ties: The wall ties shall have set break-backs at 2” minimum from the finished concrete surface.

Penetrating Sealer: Concrete surface coatings shall be from VDOT’s current list of approved surface color coatings.

IV. CONSTRUCTION REQUIREMENTS

Shop drawings and sample panels: Prior to beginning any work, representative shop drawings shall be provided for form liner patterns. Shop drawings shall indicate the layout of the finished patterns and shall be drawn at a scale sufficient to show the detail of all stones and joint patterns. Shop drawings shall indicate the specific form liner arrangement which exactly correlates to the position that each form liner will be used on the proposed structure. The form liners shall be patterned so that long continuous horizontal or vertical lines do not occur on the exposed surface. The line patterns shall be of a random nature. The texture of the form liner shall be #12010, Minnehaha Blend by Custom Rock International, St. Paul, MN, (800) 637-2447. Local contact, Hunt Valley, (410) 356-9677, representative Isaac Sparks. City has an existing example of wall using same form liner and surface color coating on Gay/Noll Streets, as required for this project.

Shop drawings shall be submitted in accordance with Section 105.10 of the VDOT Road and Bridge Specifications (City Modification) for review and approval. If necessary, the shop drawings shall be revised by the Contractor, at no additional expense, until the proposed form liner patterns and arrangement receive the approval of the Engineer.

Once the representative shop drawings have been approved, the Contractor shall then provide and erect on site, sample panels of the form liner patterns and coloration. The size of the sample panels shall be as follows:

Retaining Wall Form Liner – 4’ x 4’ x 8” thick

The form liners shall be capable of withstanding anticipated concrete pour pressures without leakage, causing physical or visual defects. The form liners shall be removable without causing concrete surface deterioration or weakness in the substrate. Form release agents, form stripping methods and patching materials, as well as related construction shall be mutually compatible with surface finish and

concrete stain to be applied so as to produce an acceptable finished product.

Form Liner butt joints shall be carefully blended into the approved pattern and finished off to the final concrete surface. No visible vertical or horizontal seams or conspicuous form marks created by butt joining form liners will be allowed.

Finished texture and pattern shall be continuous without visual disruption to the satisfaction of the Engineer.

Liquid curing compound shall not be used on concrete surfaces that are to receive penetrating color stain.

PENETRATING STAIN SURFACE PREPERATION

Work under this Section shall include surface cleaning preparation to assure the surface is free of all latency, dirt, dust, grease, efflorescence, paint and any foreign material prior to the stain application in accordance with the manufacturer's recommendations. The Contractor shall correct at his own cost, any surface problems created as a direct result of the surface preparation methods used.

The Contractor is advised that sand blasting will not be allowed for cleaning concrete surfaces, as it will reduce the special surface texture. Pressure washing with water is the preferred method of removing latence. The completed surface shall be free of blemishes, discoloration, surface voids and conspicuous form marks to the satisfaction of the Engineer.

The Contractor shall apply the concrete surface color coating at a suitable time that precludes damage to concrete surface by his construction activities.

Concrete Surface Color Coating system shall be applied using approved stains suitable for the purpose intended and in a manner consistent with the design intent on the project as stated herein. The approved sample shall be the basis for determining the appropriate color/stain application. The coloring agent shall be a penetrating stain mix, compatible color finish designed for new concrete possessing resistance to moisture, alkali, acid and mildew, mold and fungus discoloration or degradation as evidenced by manufacturer's product information. The Contractor shall supply current photographic or video evidence of similar work that has been completed and that is at least three years old. The coloring agent shall be breathable, allowing moisture and vapor transmission. Final stain colors are to consist of colors that shall give an appearance as close as possible to the existing stone in the adjacent walls. Any areas lacking a uniform appearance (consistent with the approved sample) shall be re-coated to the satisfaction of the Engineer.

Manufacturer's Technical Representative shall be available for consultations and recommendations prior to and during the prosecution of work under this section. (See Section IV for contact information).

MEASUREMENT AND PAYMENT

Architectural / Treatment shall not be measured for payment but will be paid for at the contract unit price. Such price shall be considered full compensation for furnishing and installing of all form liners, concrete, shop/working drawings, sample panels, the development and preparation of working drawings, the development and furnishing of all form liners, the construction and finishing of all sample panels, the services of the manufacturer's representative, the application of the simulated stone form liner finish, concrete to fill the form liners, and all materials, labor, equipment tools and incidentals to complete the work shall be included in the bid price for "architectural finish".

Concrete Surface Color Coating shall be measured for payment but will be paid for at the contract unit price. Such price shall be full compensation for preparation of surfaces and furnishing and applying coatings to sample panels and designated areas on the project.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Architectural Finish	Square Yards

1005 – SIGN SPECIFICATIONS

Sign installations shall meet the requirements of the Manual of Uniform Traffic Control Devices (MUTCD) as well as the following City specifications:

1. Stop signs blanks shall be a minimum of 36" x 36" and 0.8" thick made of diamond grade materials. The corner radius of each sign blank used in the city must match the radius of the corresponding sign face that is installed on the sign blank.
2. Street sign sizes at major multi-lane streets (non-signalized), including all side streets, are 10" in height and 0.80" in thickness. Letter sizes are a (c) series 8" upper case capital letter with 6" lower case letters and made of diamond grade materials. If the street name contains a y or g or any letter that when in lower case hangs down below the rest of the letters, the sign blank size needs to be 12" in height. Sign blanks are to be mounted on the post back to back above the stop sign and have spacers in all four corners (sign blank lengths vary due to length of street name).
3. Street sign sizes at major multi-lane signalized intersections are 14" in height and 0.80" in thickness. Letters sizes are a (c) series 12" upper case capital letter with 9" lower case letters and made of diamond grade materials. They are to be mounted to the traffic arms with gusset tubes and astro-brackets.
4. Street signs in residential areas are 6" in height and 0.80" in thickness and letter sizes are 4" (c) series upper case capital letter with 4" lower case letters and made of diamond grade materials. These signs can be mounted in brackets above the stop sign (sign blank lengths vary due to length of street name).
5. Street signs have a green background with white letters. Private signs have a white background with black letters.
6. Signs to be installed or upgraded in the city are to be made by MUTCD standards and made of 3M brand Scotchlite diamond grade (dg-3) materials (4090). A layer of clear 3M protective overlay film needs to be installed on each individual sign face.
7. Post sizes are 2" x 2" outside diameter square galvanized 14 ft. metal posts with holes on all sides and entire length of post (which vary depending on size of signs to be installed). Average post sizes are 10 ft., 12ft. and 14ft. in length.
8. Anchors are 2.25" x 2.25" outside diameter and 36" in length. Outside sleeves are 2.25" x 2.25" inside diameter 12" in length. Both anchors and sleeves shall be 12 gauge construction. Anchors and sleeves to have holes. Also, if the existing post is going to be in the sidewalk please contact the City of Harrisonburg Traffic Engineering Sign Department before the sidewalk installation process is started.
9. Any sign and post that is to be installed on a concrete median strip or other concrete surface shall be mounted using a Kleen Break Model 425 Coupler Assembly or comparable model. See specification sheet. To level and secure the post properly inside the post coupler base shims maybe required from the manufacturer.

10. Corner bolts are used to connect posts, anchors and sleeves together to complete the assembly. The anchor and sleeve assembly shall be 2" to 4" above the ground or sidewalk level. The minimum depth of the post down inside of the anchor and sleeve assembly is 12".
11. Sign mounting rivets (3/8th in. drive rivets) need to be tamper proof approved, if the signs are being installed on a temporary basis a 5/16th in. X 2 1/2 in. bolt with a 5/16th in. x-18 nylon locking nut with a 1/2" head and a nylon washer with a 5/16" hole and 7/8" diameter which is placed on the bolt so that the washer is up against the sign face.
12. Stop signs and street signs, etc., if installed as a combination or separate, are to have a height of no less than 7'(ft) 2" (in.) minimum from the top of the ground or sidewalk to the bottom of the 1st sign.
13. The installed sign post shall have a distance which will vary depending on the sidewalk width, utility strip construction width, and the sight distance will be a factor when determining that distance. The average distance from the back side of the curb to the edge of the sign blank is 24".
14. Before any signs are installed, the locations of the posts need to be checked in the MUTCD to make sure that clearances for wheelchair access is met.
15. Any signs that are installed in the smaller median strips need to be a smaller size, if possible, due to the limited size.

XCESSORIES SQUARED DEV. & MFG. Auburn, IL 62615

tel: 217-438-3535 fax: 217-438-3917

BILL OF MATERIALS

*Do not scale drawing-work to dimensions
 *All tolerances +/- $\sqrt[64]{64}$ " unless otherwise noted
 *Unit of Measure - Inches

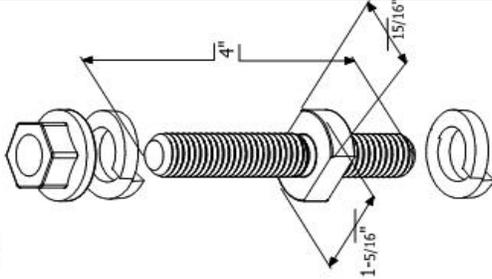
PROPRIETARY PRINT

NOT TO BE DUPLICATED

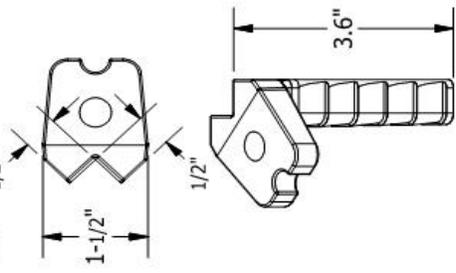
PROPERTY OF XCESSORIES SQUARED

①	TX175200-G	1 each	Duct. Iron Class 65-45-12, gal. ASTM A153
②	RB30-EPDM	1 each	EPDM rubber 85 durometer, shore A
③	SMKB3-G	1 each	Duct. Iron Class 65-45-12, gal. ASTM A153
④	LWX35F-G	1 each	Forged Steel, gal. ASTM A153
⑤	SBH5840-Z	1 set	$\frac{5}{8}$ "-11 unc SAE J429 bolt, SAE J995 nut & ANSI 18.21.1 washer, zinc ASTM B633

⑤ $\frac{5}{8}$ "-11 SHEAR BOLT HDW SET



④ LOCKING WEDGE

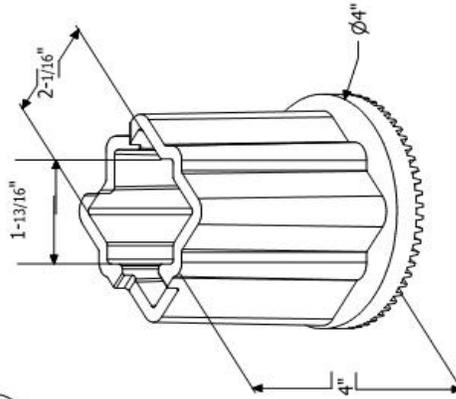


NOTE: Locking Wedge is included with Square Post Receiver

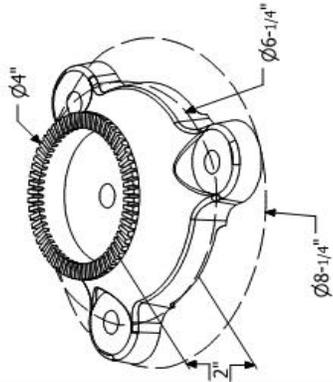
REPLACEMENT HARDWARE

INDEXABLE POST RECEIVER

①

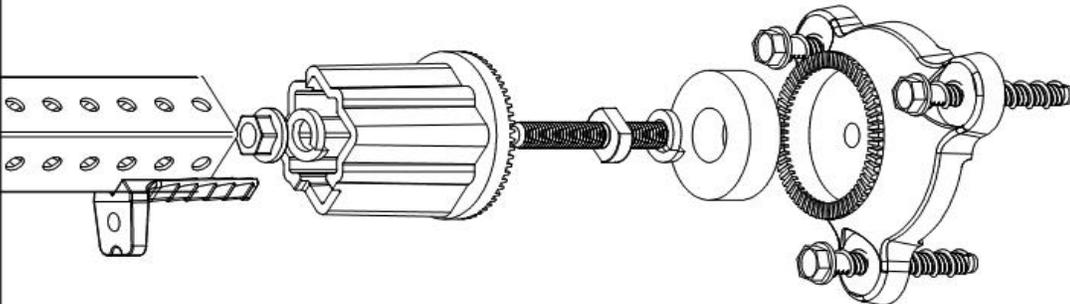
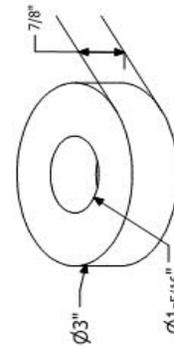


③ SURFACE MOUNT ANCHOR BASE



RUBBER BUSHING

②

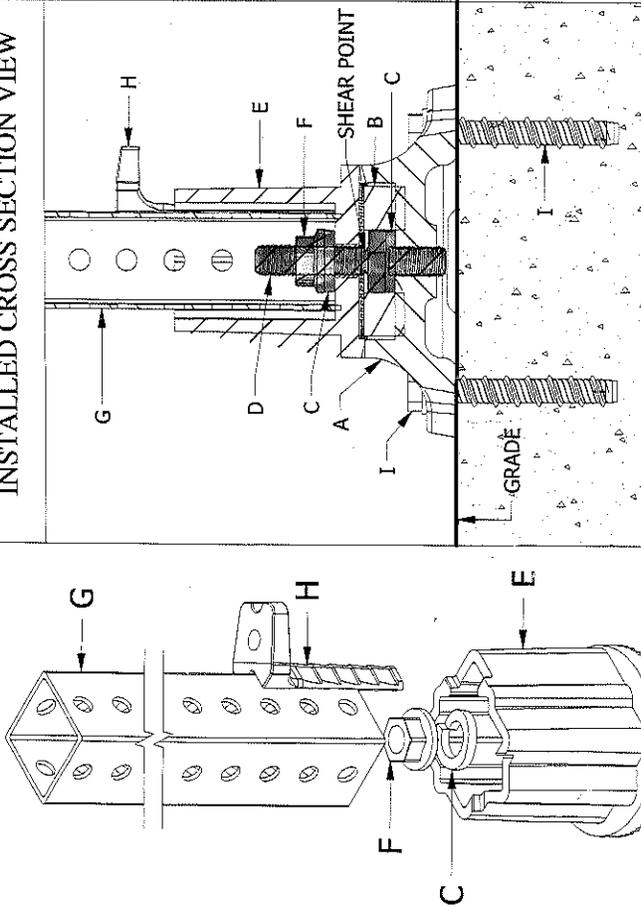


complete assembly
 P/N: XKBSM42520-G

- A. UNIT SHALL ALLOW FOR 360° INDEXING FOR PROPER SIGN ORIENTATION AFTER ANCHORING HALF IS PERMANENTLY SET.
- B. SECURE SIGN SUPPORT TO COUPLER WITH USE OF DRIVEABLE LOCKING WEDGE, WHICH SHALL ELIMINATE ALL TOLERANCE BETWEEN POST AND COUPLER WITHOUT THE NEED FOR THREADED FASTENERS.
- C. ALL COMPONENTS OF ORIGINAL INSTALLATION SHALL BE REUSABLE WITH THE EXCEPTION OF THE SHEAR BOLT, WHICH MUST BE REPLACED AFTER EACH IMPACT. REUSE OF RUBBER BUSHING AND LOCKING WEDGE IS DETERMINED BY THEIR CONDITION AFTER IMPACT.
- D. MUST BE FHWA ACCEPTED, MEETING CURRENT AASHTO & NCHRP 350 REQUIREMENTS.

DWG#	XKBSM42520-G	Revision	Date	Description of Revision (Supersedes Previous Drawing)
		Original	1-17-06	
		Rev. A	1-24-08	Combined bottom half coupler & surface mount base as one unit (Supersedes Previous Drawing)
DESCRIPTION	Kleen Break Model 425 coupler assembly for 1-3/4" & 2" square post (surface mount inst.)			
FINISH	Hot Dip Galvanize per ASTM A153	DRAWN BY	MEL	WEIGHT 12.5 lbs.

INSTALLED CROSS SECTION VIEW



PARTS LIST

- A SURFACE MOUNT ANCHOR BASE
- B RUBBER BUSHING
- C LOCK WASHER
- D 5/8"-11 X 4" SHEAR BOLT
- D-1 SHOULDER
- E TOP HALF COUPLER
- F 5/8"-11 SERRATED FLANGE NUT
- G SIGN SUPPORT
- H SIGN SUPPORT LOCKING WEDGE
- I CONCRETE MOUNTING FASTENER (not included)

INSTALLATION PROCEDURE

TOOLS NEEDED:

15/16" SOCKET, XKBW-1516 KLEEN BREAK WRENCH AND 16 OZ. HAMMER

STEP 1 Using the surface mount anchor base (A) as a template, mark and drill three holes in the concrete, corresponding to the three holes in the anchor base (A). (1/2"Ø x 4" minimum concrete mounting fastener recommended)

NOTE: Orientation of the surface mount anchor base (A) does not need to be set at this step, the top half post receiving coupler (E) can be indexed for proper sign orientation during step 4.

NOTE: The stub height after impact will be less than 3", exceeding FHWA/NCHRP350 requirements.

STEP 2 Thread short end of shear bolt (D), with lock washer (C) under shoulder (D-1), into threaded hole in surface mount anchor base (A). Tighten with XKBW-1516 Kleen Break Wrench or a 15/16" open end wrench until split ring lock washer (C) is fully compressed.

NOTE: Be sure that the shear point of shear bolt (D) is now above shoulder (D-1).

STEP 3 Slide rubber bushing (B) over shear bolt (D) until seated firmly into round cavity in surface mount anchor base (A).

STEP 4 Slide top half of coupler (E) over shear bolt (D) until it rests on the rubber bushing (B). Using lock washer (C), thread 5/8" flange nut (F) onto top of shear bolt (D) with a 15/16" deep well socket. Rotate top receiving half of coupler (E) to proper orientation of sign before tightening flange nut (F), not to exceed 110 ft.-lbs. Be sure coupler teeth are fully meshed. Total Kleen Break coupler assembly should be completely tight before proceeding to the next step.

STEP 5 Insert sign support (G) into top half of coupler (E). Locking wedge (H) should be positioned at a corner of the sign support (G). With a hammer, drive the sign support locking wedge (H) between sign support (G) and top half coupler (E) at pre-determined location until seated in corresponding depression of top half coupler (E).

NOTE: It is not necessary to drive the locking wedge (H) until it has bottomed out in the post receiving coupler (E). Due to the tolerance when hot dip galvanizing (thickness, runs, or drips) the locking wedge can be fully engaged at different depths.

NOTE: The sign support locking wedge (H) will keep the sign support (G) secure without need of additional fasteners or hardware.

NOTE: Locking Wedge (H) can be removed by using a Light Duty Wedge Puller.

REINSTALLATION AFTER IMPACT

Remove sign support locking wedge (H) from top half coupler (E) with hammer. Remove both ends of broken shear bolt (D) from both coupler halves (A) & (E). Reassemble following steps 2 through 5 from the installation procedure.

1006 – BUS SHELTER HARDWARE & PAD DESIGN

Contractor shall provide and install the bus shelters and construct the pads to the following specifications:

Advertising and Non-Advertising Free-standing Shelters.

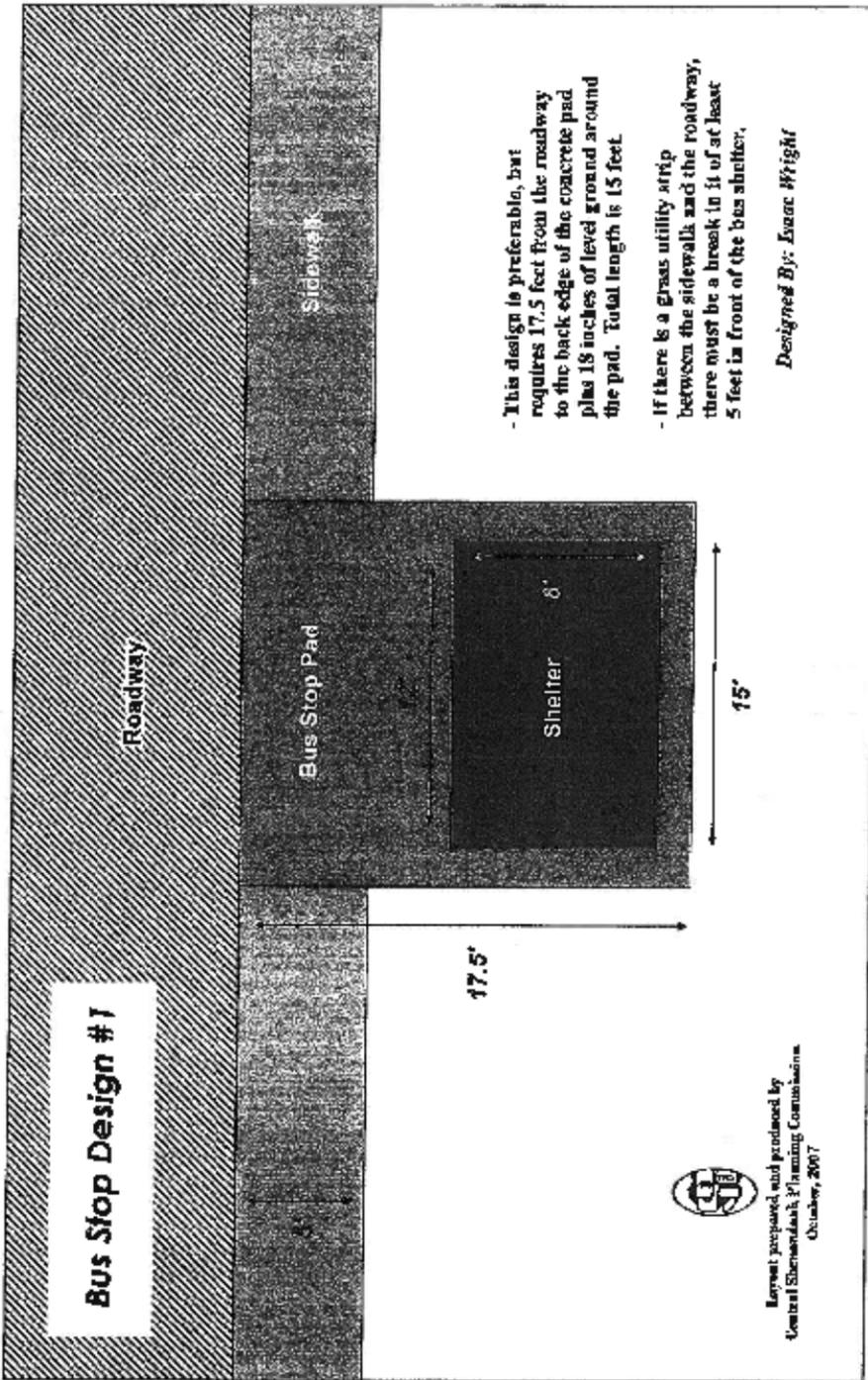
- a. Shelter and bench design shall comply with Americans with Disability Act (ADA) requirements and shelter design shall accommodate one wheel chair.
- b. Barrel vault roof to be shipped in a single complete section, ready for installation.
- c. Shelter roof should be poly-carbonate with 6mm bronze tint glazing.
- d. Shelters shall have a rear wall, full end walls and an open front. Vertical mullions shall be incorporated for support.
- e. Shelter wall type to be ¼" clear polycarbonate, HDPT is open to manufacturer recommendation based on durability.
- f. Design shall enable the installation of the wall panels, leaving a 6" to 10" gap between the bottom framing and the surface of a level concrete pad front, no windscreen or sunscreen panel and be graffiti proof.
- g. Size: Length = 16' Width = 6' Height = 8' (seven feet [7'] to lowest point on roof) and Length = 12' Width = 6' Height = 8' (seven feet [7'] to lowest point on roof)
- h. Shelters shall be constructed of modular interchangeable components.
- i. Shelters should come with adjustable leveling feet.
- j. Individual bus shelter frames, hardware kits, roof modules and accessories shall be identical in color and quality. Color should be RAL 5011 Steele Blue powder coated finish.
- k. Shelters shall be designed to withstand dead loads of 40 PFS and minimum wind load of 70 MPH.
- l. Contractor should ensure no burrs or sharp edges on shelters or accessories that may cause injury to patrons or employees.
- m. Contractor must certify that the shelter materials meet the current requirements of the following organizations:

The contractor will provide signed and sealed architectural drawings and complete assembly instructions with the submittal.

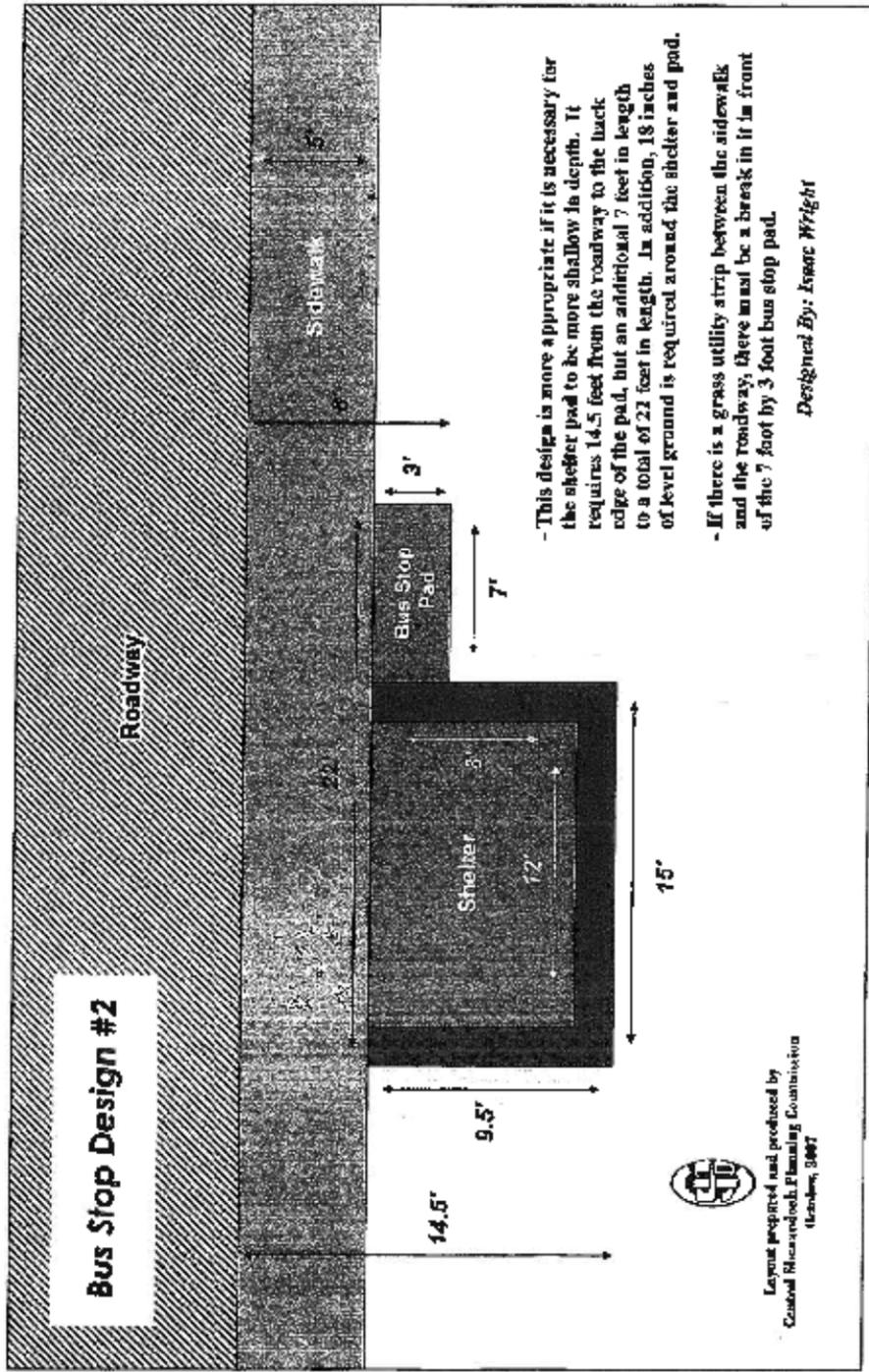
Aluminum	The Aluminum Association
Stainless Steel	A.S.T.M. American Society of Testing Materials
Glazing	ANSI American National Standards Institute
Welding	American Welding Society
Galvanizing	Standard Specifications for Zinc (hot galvanized) Coatings on structural Steel Shapes, Plates and Bars

The contractor shall furnish an affidavit from the materials manufacturer certifying materials used meet the requirements specified with the submittal.

- n. Each shelter shall be guaranteed against faulty workmanship, material, assembly and installation for at least one (1) year from date of delivery. The Contractor shall repair or replace any defective items at no cost to the City of Harrisonburg.
- o. Bench type: Recycled HDPE (high-density polyethylene) bench with back and two (2) anti-vagrant bars – Six (6) ft
- p. Trash receptacles shall be heavy-duty 20 gallon mounted, hanging trash receptacles with ring fasteners for trash bags. The finish shall match the shelter and be warranted for a minimum of 3 years against lifting, peeling or flaking.
- q. Map/Schedule Holder Frames for displaying HDPT Route Schedule and Map.



V



Bus Stop Design #2

Roadway

Sidewalk

Bus Stop Pad

Shelter

14.5'

9.5'

3'

7'

3'

5'

22'

15'

- This design is more appropriate if it is necessary for the shelter pad to be more shallow in depth. It requires 14.5 feet from the roadway to the back edge of the pad, but an additional 7 feet in length to a total of 22 feet in length. In addition, 18 inches of level ground is required around the shelter and pad.

- If there is a grass utility strip between the sidewalk and the roadway, there must be a break in it in front of the 7 foot by 3 foot bus stop pad.

Designed By: Isaac Wright



LAYOUT prepared and produced by
 Grand Haven Board of Planning Commission
 Grand Haven, MI 49437

1007 – PRECAST MODULAR BLOCK RETAINING WALL SYSTEM

PART 1: GENERAL

1.01 Description

- A. Work includes furnishing and installing precast modular blocks (PMB) to the lines and grades shown on the plans and as specified herein. Also included, is furnishing and installing appurtenant materials, including aggregate base used for wall base, unit fill, backfill, etc. required for construction of the complete system.
- B. The contractor is solely responsible for safety. The Engineer and Owner shall not be responsible for means or methods of construction or for safety of workers or the public.

1.02 References

- A. ASTM - American Society for Testing and Materials
- B. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
- C. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregate
- D. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- E. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort
- F. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- G. ASTM D4595 - Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
- H. ASTM D5262 - Standard Test Method for Evaluating the Unconfined Creep Behavior of Geosynthetics
- I. ASTM D6638 - Standard Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units (Modular Concrete Blocks)
- J. ASTM D6916 - Standard Test Method for Determining the Shear Strength Between Segmental Concrete Units
- K. ASTM C33 - Standard Specification for Concrete Aggregates

1.03 Submittals

- A. Contractor shall submit for review 2 sets of shop drawings for the retaining wall system prepared by a Professional Engineer registered in Virginia. The shop drawings shall indicate the layout, height, and construction details of the retaining wall system. The Contractor shall submit actual product samples to owner for approval prior to ordering the product if an equivalent is being used. Design shall conform to relevant requirements and design methodologies of AASHTO Standard Specifications for Highway Bridges. Upon request, design calculations shall also be submitted. Minimum safety factors for design shall be as follows:

GRAVITY WALL GEOGRID REINFORCED WALL

SLIDING	1.5	1.5
OVERTURNING	1.5	2.0
BEARING	2.0	2.0

- B. If geogrid reinforcement is required by the contractor’s design, submit manufacturer’s literature and test data for geogrids to be used in the reinforced wall system if geogrid is not a standard combination with test data published on Stone Strong (or equivalent) web site. Test data shall include connection strength data for geogrid with Stone Strong (or equivalent) modular units determined in accordance with ASTM D6638, as well as geogrid tensile strength and creep data in accordance with ASTM D4595 and ASTM D5262.
 - C. Submit grain size test results for aggregates to be used for the wall base and for unit fill.
 - D. Submit test results on borrow material to be used for common backfill and for select backfill (if used) including Proctor and grain size or Atterberg limits results.
- 1.05 Delivery, Storage, and Handling
- A. Contractor shall check the materials upon delivery to assure that proper materials have been received.
 - B. Contractor shall protect the materials from damage. Damaged material shall not be incorporated into the wall or the reinforced soil embankments.
 - C. Contractor shall prevent excessive mud, concrete, adhesives and other substances that may adhere from coming in contact with the materials.
 - D. Exposed faces of precast modular block units shall be reasonably free of chips, cracks, or stains when viewed from a distance of 10 feet.

PART 2: MATERIALS

2.01 Wall Units

- A. Precast modular blocks shall be Stone Strong units manufactured under license from Stone Strong LLC (or equivalent).
- B. Dimension tolerances for precast modular blocks shall be +/- 3/16 inch for height, +/- 1/2 inch for length (along face), and +/- 1 inch for width (face to tail).
- C. Concrete for precast modular blocks shall have a minimum 28-day compressive strength of 4,000 psi. Entrained air content shall be between 5 and 7%.
- D. Steel reinforcement shall be provided in extended blocks with a width greater than 44 inches (24-ME, 24-62, & 24-86 units). In geogrid reinforced walls, reinforced 24SF blocks shall be used below the top 12 feet of the wall, and heavy duty reinforcement shall be used in all blocks more than 33 feet below the top of the wall. Units shall be reinforced according standard Stone Strong (or equivalent) engineering guidance. All reinforcing shall have a minimum yield strength of 60 ksi. Minimum clear cover to reinforcement shall be 1½ inches.
- E. The face pattern shall be “Chiseled Granite”. The color of the units shall be natural gray.

2.02 Geogrid

N/A

2.03 Wall Base

- A. The wall base shall consist of dense graded crushed aggregate. A minimum of 75% of coarse material shall have 2 or more fractured faces. Wall base material shall meet the following gradation:

<u>US STANDARD SIEVE SIZE</u>	<u>PERCENT PASSING</u>
1-1/2"	80-100
3/4"	50-90
#4	0-40
#200	0-10

- B. The contractor may substitute concrete with a minimum 28-day compressive strength of 3,000 psi for the granular base material. Concrete may be placed full thickness or as a topping over a compacted granular the base. If used as a topping, the concrete shall have a minimum thickness of 3 inches.

2.04 Unit Fill

- A. Unit fill shall consist of a screened crushed aggregate. A minimum of 75% of coarse material shall have 2 or more fractured faces. Unit fill material shall meet the following gradation:

<u>US STANDARD SIEVE SIZE</u>	<u>PERCENT PASSING</u>
1-1/2"	100
3/4"	50-75
#4	0-40
#200	0-5

2.05 Backfill

- A. If a select granular reinforced zone is indicated, it shall consist of fill sand or other clean aggregate meeting the following gradation:

<u>US STANDARD SIEVE SIZE</u>	<u>PERCENT PASSING</u>
3/4"	100
#200	0-5

- B. All other backfill behind and in front of the wall shall consist of suitable on-site soil or imported borrow and shall be approved by the Geotechnical Engineer. Backfill shall generally consist of sands, silts, or lean clays with a liquid limit less than 45 and a plasticity index less than 20. Fat clay soils, cobbles, and large rock should generally be avoided unless approved by the Geotechnical Engineer based on local practices. Frozen soils, excessively wet or dry soils, debris, and deleterious materials should not be used.

2.06 Drain Tile

- A. Drain tile shall be a perforated or slotted PVC or corrugated HDPE pipe. The drain tile should be connected to storm drains or daylighted at low points and/or periodically along the wall alignment as shown on the plans.

2.07 Geotextile Fabric

N/A

2.08 Concrete for Tail Extensions

N/A

PART 3: EXECUTION

3.01 Excavation

- A. Excavate as required for installation of the retaining wall system. Excavate to the base level for a sufficient distance behind the face to permit installation of the base.
- B. Slope or shore excavation as necessary for safety and for conformance with applicable OSHA requirements.

3.02 Wall Base

- A. Foundation soils shall be excavated to the dimensions shown on the plans. Foundation soil shall be observed by the Geotechnical Engineer to confirm that the bearing soils are similar to the design conditions or assumptions.
- B. Construct the wall base to the lines and grades shown on the plans. Place and consolidate concrete, strike, and finish plane and level. Overexcavated areas shall be filled with additional concrete or granular base material. Compact granular base material to provide a hard and level surface to support the wall units. Base material shall be compacted to a minimum of 95 percent of the maximum dry density (ASTM D698, Standard Proctor). Final base elevation shall be within 0.1 feet of plan elevation.
- C. Prepare and smooth the granular material to ensure complete contact of the first course with the base. The base may be dressed with fine aggregate to aid leveling.

3.03 Unit Installation

- A. Place the first course of units directly on the wall base. Check units for level and alignment. Units shall be within 1/8 inch of level from end to end and from front to back. Adjacent units should be in contact. If possible, begin placing units at the lowest section of the wall.
- B. Fill all voids between and within the blocks with granular unit fill. Additional unit fill is not required behind the units, but may be placed for the convenience of the contractor.
- C. Place backfill behind the units in maximum loose lifts of 8 inches and compact. Compact all backfill to a minimum of 95 percent of the maximum dry density (ASTM D698, Standard Proctor). For cohesive soils, the moisture content at the time of compaction should be adjusted to within -2 and +3 percent of optimum. Place backfill in successive lifts until level with the top of the facing unit.
- D. Remove all excess aggregate and other materials from the top of the units before laying up the next course.
- E. For geogrid reinforced walls, place the correct geogrid at the locations and elevations shown on the plans or the shop drawings. Geogrid reinforcement shall be placed horizontally on compacted backfill. The length of the geogrid is measured from the front face of the wall. Extend the grid onto the front face flange of the facing unit. Orient the geogrid with the strong axis (machine direction) placed perpendicular to the wall face. Geogrid shall not be spliced by any means in the roll direction.
- F. Geogrids shall be placed side by side to provide complete coverage along the wall face. No overlap is required between adjacent grids on straight sections of the wall. On convex curves, place a minimum of 3 inches of backfill material between overlapping geogrid layers.
- G. Place the next course of precast modular block units in running bond with the previous course. Place the web recess over the alignment hoop protruding from the unit below, and pull the unit forward to contact the hoop. Batter should be within 1/4 inch tolerance (4 inches from 24 SF unit below, 2 inches from 6 SF unit below).

- H. For geogrid reinforced walls, pull geogrids taught and stake the loose end before placing the next course of backfill. Backfill shall be placed, spread, and compacted in such a manner that minimizes the development of wrinkles in the geogrid and/or movement of the geogrid. Do not operate equipment directly on the geogrid. A minimum backfill depth of 6 inches should be placed before operating equipment over the grids.
- I. Continue placing successive courses to the elevations shown on the plans. Construct wall in level stages, placing the units at each course for the entire length of the wall, if possible. Unit fill and backfill should be placed to the level of the top of the facing unit before placing the next course.
- J. Provide temporary swales to divert runoff away from wall excavation and away from face.
- K. Final grade above and below the retaining wall shall provide for positive drainage and prevent ponding. Protect completed wall from other construction. Do not operate large equipment or store materials above the wall that exceed the design surcharge loads.
- L. Where tail extensions are indicated on the plans, concrete shall be placed in the center void between the blocks extending to the minimum width behind the blocks indicated on the drawings. Tail extensions may be formed or may be placed directly against a cut embankment. Tail extensions should be placed in lifts not to exceed 4½ feet until the previous lift has fully set. The tail extension should be allowed to reach 2,000 psi compressive strength before backfill is placed above the top of the extension.

PART 4: CONSTRUCTION QUALITY CONTROL AND ASSURANCE

4.01 Construction Quality Control

- A. The contractor is responsible to ensure that all installation and materials meet the quality specified in the construction drawings.
- B. The contractor shall verify that installation is in accordance with the specifications and construction drawings.

4.02 Quality Assurance

- A. The owner is responsible to engage testing and inspection services to provide independent quality construction assurance.
- B. Compaction testing shall be done a minimum of every 1 foot of vertical fill and every 100 lineal feet along the wall.
- C. Testing shall be done at a variety of locations to cover the entire backfill zone.
- D. The independent inspection professional should perform sufficient testing and observation to verify that wall installation substantially conforms to the design drawings and specifications.

1008 – CEMETARY WALL

Contractor shall salvage and reinstall plaque labeled “DONATED BY ARMSTRONG FAMILY” as well as ornamental balls. A picture has been included for reference below. The cost for salvaging and reinstalling these items shall be included in the price for “Modular Block Wall D”.

