

City of Lynchburg  
Procurement Division  
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Lynchburg, Virginia 24504  
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**Addendum for Invitation for Bids  
Kemper Street Bridge Replacement Project  
14-886**

Date: 01/02/2014  
From: Lisa Moss, Buyer VCA  
RE: Addendum No. 2

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This Addendum supplements and amends the original Plans and Specifications and shall be taken into account in preparing proposals and shall become a part of the Contract Documents. The Bidder shall indicate receipt of this Addendum and all previously issued Addenda on the Bid Form.

**1. *What is AEP's requirements in regards to poles?***

On Plan Sheet 12(1) REVISE Note 1 to read: AEP will provide and install all ornamental light poles, luminaries and conductor cable. Contractor shall install all remaining items such as pole foundations, junction boxes and conduits. Contractor shall remove all light poles as indicated on the plans to be removed. Contractor shall relocate all light poles as indicated on the plans to be relocated.

The following quantities in the "Lighting Quantities" summary schedule on Plan Sheet 12(1) are for information only and are not bid items:

- a) Luminaire 150 Watt HPS
- b) Lighting pole 16' Ornamental
- c) Conductor Cable #1/0

Revised Bid Form, which reflects this change, has been included in this Addendum.

**2. *Please clarify when overhead signs are to be removed. Will there be a need for temporary signs?***

Contractor shall provide temporary signage

Overhead signs on Kemper Street are to be removed in Phase 1 of the Transportation Management Plan and used as temporary ground mounted signs with adequate temporary supports, as appropriate.

Contractor shall also use proposed signs S-1 through S-8, Plan Sheet 8(6) and 8(7), with temporary posts or as appropriate to comply with M.O.T. phasing of construction to direct traffic to northbound lane and southbound lane of Route 29, Lynchburg Expressway. These signs shall be removed and relocated per Plan Sheets 8(1) – 8(3) when M.O.T. phasing allows. Coordinate sign usage with M.O.T. phasing.

Cost for temporary use of signs shall be included in price bid for other items. No separate payment will be made.

Contractor to use Portable Changeable Message Signs (Note 17, Sheet 1G(1) for notifying traffic on Route 29, Lynchburg Expressway, of opened or closed ramps at the Kemper Street interchange.

**3. *Are the existing Bridge plans available? Can you include them in the addendum?***

The existing bridge drawings are attached for information only. Contractor is responsible for verifying accuracy of existing drawings.

**4. *Page 30 of Bridge plans references a Debris Barrier. Can you please elaborate on this a bit further to clarify the need and use?***

The purpose of the debris barrier is to protect traffic on the expressway from falling debris due to demolition and deck placement.

5. ***Please explain the gap between the box beams...approach span not main span.***

In Note 1 on sheet 7(30) **REPLACE** “demolition of structure” with “deck placement”

In Note 3 on sheet 7(30) **REPLACE**. “the deck overhang” with “the deck overhang and spans a & c median”.

In Notes section on sheet 7(30), **ADD** this note: 7. Traffic shall not be allowed on the existing structure during beam removal or any other time while the existing transverse lateral ties are detensioned.

**CLARIFICATION**

The bridge phasing shall be as follows (in terms of bridge phasing, NOT traffic phasing):

- Construction Phase One
  - Install traffic service barrier.
  - Close bridge (only at night, prior to detensioning transverse lateral ties).
  - Detension all transverse lateral ties in the span under demolition.
  - Remove beams noted for demolition in Construction Phase One.
  - Retension all transverse lateral ties using new length ties for remainder of existing structure.
  - Reopen to traffic
    - The bridge must be reopened to traffic every morning, and lateral ties shall be fully installed and tensioned in the remaining portion of the existing structure.
  - Remove substructure elements to limits shown in plans.
  - Construct portion of new structure.
  
- Optional Construction Phase One - For spans a & c
  - Install traffic service barrier.
  - Close bridge (only at night, prior to detensioning transverse lateral ties).
  - Detension all transverse lateral ties in the span under demolition.
  - Remove Area under median, including diaphragms.
  - Retension all transverse lateral ties using new length ties for portion of existing structure to remain.
  - Reopen to traffic
    - The bridge must be reopened to traffic every morning, and lateral ties shall be fully installed and tensioned in the remaining portion of the existing structure.
  - Remove beams noted for demolition in Construction Phase One.
  - Remove substructure elements to limits shown in plans.
  - Construct portion of new structure.
  
- Construction Phase Two
  - Detension all transverse lateral ties in the span under demolition.
  - Remove beams noted for demolition in Construction Phase Two.
  - Remove substructure elements to limits shown in plans.

6. ***Ramp A you stated could possibly borrow from. What is the quantity that can be borrowed?***

On Sheet 1A, **DELETE** note allowing area of Ramp A to be a Borrow/Waste site. Bid item "Earthwork Lump Sum" shall include cost for all cut, embankment, borrow and waste material required to complete the project. Contractor shall secure necessary offsite areas and submit documentation for City approval.

7. ***Message boards have no bid item on bid sheet. How do you want that to be bid?***

"Portable Changeable Message Boards" has been added to the Revised Bid Form.

8. **Group 2 barrel Lights. Do you want lights on barrels? Type B lights?**

Provide Type A warning lights on Group 2 Channelizing devices (drums) in taper areas only. On Plan Sheet 2E(4), incidental summary, **REVISE** "Warning Light Type B to Type A" quantity has been changed on the Revised Bid Form.

9. **Please clarify the traffic control plans for the North bound lane of Kemper St. Please clarify plans for this closure.**

See note 30 on Plan Sheet IG(1).

10. **A revision is being made to the City Project Manual Page PM-4:Bid Form " The bid shall remain valid and may not be withdrawn for a period of 120 days from this date."**

11. **Are there quantities for retention excavation?**

Quantities are unavailable.

12. **Are there any specs on the pickets? Solid/tube: Thickness?**

The pickets shall be 1/2" x 1/2" solid steel.

13. **Trident spears? Are you concerned over danger of using these? All they have done is add 1/2" pickets to a BR27C where the rails are smaller than standard. They even have post spacing 7-6'6" with a three post minimum. I wonder if we need to be concerned the 1/2" pickets are welded to the two rails and we pick up the unit by putting forks under the top rail the 1/2" pickets will be lifting and carrying the bottom rail, twisting maybe bending. And the posts are 4"x4", the runners 2 1/2" x 2 1/2"... 1/2" pickets might look a bit out of proportion.**

**CLARIFICATION:** It is the Contractor's responsibility to take the necessary precautions to prevent damage to the railing during installation.

In the fifth note on sheet 7(24), **REPLACE** "post and rail" with "post, rail, and picket"

**ADD** the following to the end of the fifth note on sheet 7(24)

After galvanizing, all steel members shall be painted black with the following Tnemec paint system (or approved equal):

Surface Preparation: SSPC-SP7 abrasive sweep blast.

First Coat: Series N69 Black at 4.0-6.0 mils dft.

Second Coat: Series 73 Urethane Black at 2.0-3.0 mils dft.

Total Dry Film Thickness: 6.0-9.0 mils dft.

### **ADDITIONAL COMMENTS**

14. Plan Sheet IG(9) and IG (10):

Note 6 in the Phase I Notes, Plan Sheet IG(9), and Note 6 in the Phase 2 notes, Plan Sheet IG(10) should read in the parenthesis section "Removing and setting of bridge beams"

15. Plan Sheet IG(5) and IG(6) **ADD** note, "See bridge plans Sheet 7 (30) for complete bridge closure information during bridge beam removal".

16. Plan Sheet IC: Entered Addendum #2 revision information on revision data Sheet for plan Sheets 2, 2A, 2F(13) and 3. Plan Sheets included with this Addendum.

17. Specifications:

- a) **DELETE** pages 1-1 thru 1-104.
- b) **ADD ATTACHED** pages 1-1 thru -1-22.
- c) **ADD ATTACHED** Special Provision, Precast Clay Pavers
- d) **ADD ATTACHED** Special Provision, Precast Concrete Pavers
- e) **DELETE** original Bid Form and **REPLACE** with **REVISED** Bid Form:
  - 1) **DELETE** No. 166, VDOT Item Code 55501, Luminaire 150 Watt HPS, 11 each
  - 2) **DELETE** No. 175, VDOT Item Code 59000, Lighting Pole 16' Ornamental, 11 each
  - 3) **DELETE** No. 180, VDOT Item Code 59001, NS Conductor Cable #1/0
  - 4) **REVISE** No.32, VDOT Item Code 13611, Impact Attenuator Service (35 MPH) from 2 each to 3 each
  - 5) **ADD** No. 192, Precast Concrete Pavers, 1 Lump Sum
  - 6) **ADD** No. 193, Precast Clay Pavers, 1 Lump Sum
  - 7) **ADD** No. 194, VDOT Item Code 24279, Portable Changeable Message Board, 4 each
  - 8) **REVISE** No. 69, VDOT Item Code 24288, Warning Light Type B, to Warning Light Type A and REVISE Quantity from 162,760 day to 82,620 day.

Above noted Bid Items have been revised.

18. Plan sheet 9(2) in the pole schedule, Pole A, under pole location station, **REVISE** sta. 19+56 to sta. 19+53.
19. If there are any traffic signal discrepancies noted on the plan sheets, the traffic signal plans, Sheet 9(1), 9(2), 9(3) control.
20. Plan sheet 12(1) **ADD** to note C located below the lighting quantities summary the following:  
The contractor shall be responsible for the foundation design. The contractor shall furnish the foundation designer with the soil condition, slope condition and any other field data necessary to design the pole foundations. Foundation size and rebar requirements are to be determined by the foundation designer. Coordinate light pole anchor bolts with foundation design.
21. In the "Revised Bid Form, Addendum #2" **REVISE** the following:
  1. No. 109, VDOT item code 51386, **DELETE** "One Arm 24', **ADD** "One Arm 30'.
  2. No. 110, VDOT item code 51392, Sig. Pole MP-1 30' Comb. Lumin. One Arm 30' **ADD** One Arm 39'. **REVISE** estimated quantity from 2 each to 1 each.
  3. No. 111, VDOT item code 51394, Sig. Pole MP-1 30' Comb. Lumin. One Arm 32' **ADD** One Arm 34'.
  4. No. 112, VDOT item code 51396, **DELETE** "One Arm 34', **ADD** "One Arm 26". **REVISE** estimated quantity from 2 each to 1 each.
  5. No. 174, VDOT item code 56205 Test Bore **REVISE** estimated quantity from 16 each to 32 each.

"Revised bid from, Addendum #2, 12/30/13 is attached."

22. **The Hazardous Material report from F & R has been attached to this addendum.** All costs for asbestos or lead removal and disposal shall be included in the bid item Dismantle & Remove Exist. Structure (Str. No. 1851)
22. **A revision is being made to the City Project Manual PM-11 Construction Agreement:**  
"Contractor shall pay \$1500.00 for each day that expires after the time specified for completion"
23. **The contractor shall be responsible for Stormwater Pollution Prevention Plan (SWPPP) requirements along with all efforts needed and fees for the duration of the project regardless of**

**changes or updates to the governing laws or regulation- Reference City Project Manual Bid 14-886, Section 4.7.2.5- page PM 39.**

24. This will be a unit price project. Award to be made on total base bid.

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*Company Name:* \_\_\_\_\_ *Address:* \_\_\_\_\_ *Date:* \_\_\_\_\_

*Authorized Signature:* \_\_\_\_\_ *Title:* \_\_\_\_\_

*Print Name:* \_\_\_\_\_ *Telephone No.:* \_\_\_\_\_

*Fax No.:* \_\_\_\_\_

**REVISED BID FORM**  
**ADDENDUM #2**  
**Revised 12-30-13**

NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
1.	00100	MOBILIZATION	1	LS		
2.	67350	NS WATER LINE SYSTEM	1	LS		
3.	60120	STRUCTURE EXCAVATION	1662	CY		
4.	60403	CONCRETE CLASS A3	554	CY		
5.	60410	CONCRETE CLASS A4	360	CY		
6.	60490	BRIDGE DECK GROOVING	889	SY		
7.	61219	PRESTRESSED CONC. BULB-T 45" DEPTH, +30'-40'	10	EA		
8.	61220	PRESTRESSED CONC. BULB-T 45" DEPTH, +40'-50'	10	EA		
9.	61225	PRESTRESSED CONC. BULB-T 45" DEPTH, +90'-100'	10	EA		
10.	61700	REINFORCING STEEL	30,140	LB		
11.	61704	CORROSION RESISTANT REINFORCING STEEL CLASS I	139,500	LB		
12.	62045	STEEL RAILING	349	LF		
13.	64005	SELECT MATERIAL TYPE I MIN. CBR-30	2,302	TON		
14.	69500	STRUCTURE 8000 SUBSTRUCTURE SURFACE REPAIRS	5	SY		
15.	02110	NS GEOCOMPOSITE WALL DRAIN	135	SY		
16.	67260	DISMANTLE & REMOVE EXIST. STRUCTURE (STR NO.1851)	1	LS		
17.	69740	CONCRETE SLAB SLOPE PROTECTION, 4"	221	SY		
18.	00101	CONSTRUCTION SURVEYING	1	LS		
19.	00111	CLEARING AND GRUBBING	1	LS		
20.	00120	EARTHWORK	1	LS		
21.	00525	CONCRETE CLASS A3 MISC.	3	CY		
22.	00529	FLOWABLE BACKFILL	18	CY		
23.	01152	15" CONC PIPE	611	LF		
24.	06740	DROP INLET DI-7A	1	EA		
25.	06817	DROP INLET DI-3B, L=12'	2	EA		
26.	06818	DROP INLET DI-3B, L=6'	3	EA		
27.	06819	DROP INLET DI-3B, L=8'	5	EA		
28.	06820	DROP INLET DI-3B, L=10'	1	EA		
29.	06822	DROP INLET DI-3B, L=14'	1	EA		

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NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
30.	06826	DROP INLET DI-3BB, L=6'	1	EA		
31.	16516	FLEXIBLE PVMT TIE-IN PLANING (0-2" DEPTH)	220	SY		
32.	13611	IMPACT ATTENUATOR SERVICE (35 MPH)	3	EA		
33.	09056	MANHOLE MH 1 OR 2	7	LF		
34.	09057	FRAME & COVER MH-1	1	EA		
35.	10128	AGGR. BASE MAT'L. TY I NO 21B	6,575	TN		
36.	10612	ASPH. CONC. BASE CR. TY BM-25.0	3,042	TN		
37.	10611	ASPH. CONC. TY IM-19.0D	917	TN		
38.	10636	ASPH. CONC. TY SM-9.5D	797	TN		
39.	12020	STD CURB CG-2	773	LF		
40.	12022	RAD CURB CG-2	612	LF		
41.	12600	STD COMB CURB & GUTTER CG-6	1,138	LF		
42.	12610	RAD COMB CURB & GUTTER CG-6	813	LF		
43.	13108	CG-12 DETECTABLE WARNING SURFACE	4	SY		
44.	13220	HYDR CEMENT CONC SIDEWALK 4"	550	SY		
45.	13320	STD GUARDRAIL GR-2	2,025	LF		
46.	13315	GUARDRAIL TERMINAL STD GR-11	5	EA		
47.	13345	ALT. BREAKAWAY CABLE TERMINAL GR-9	4	EA		
48.	13383	FIXED OBJECT ATTACH. GR-FOA-1 TY I	3	EA		
49.	13384	FIXED OBJECT ATTACH. GR-FOA-1 TY II	2	EA		
50.	13609	IMPACT ATTEN. SER. TY III (TL-2, 45 MPH MAX)	1	EA		
51.	21021	MOD. MEDIAN STRIP MS-1A	94	SY		
52.	21110	MEDIAN STRIP MS-1A	601	SY		
53.	13421	MEDIAN BARRIER MB-3	60	LF		
54.	21110	PAVED DITCH MOD PG-2A, TYPE E	465	LF		
55.	24000	OBSCURING ROADWAY	82	UNIT		
56.	24100	ALLAYING DUST	822	HR		
57.	24152	TYPE III BARRICADE 8'	9	EA		
58.	24160	CONSTRUCTION SIGNS	728	SF		
59.	24278	GROUP 2 CHANNELIZING DEVICES	162,756	DAY		

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NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
60.	24281	ELECTRONIC ARROW	10,522	HR		
61.	06751	NS DROP INLET D1-2B, L=12'	1	EA		
62.	50900	NS SIGN POST STP-1, 2 3/16"	53	LF		
63.	50900	NS SIGN POST STP-1, 2 1/2"	420	LF		
64.	50900	NS SPD-3 SIGN POST	187	LF		
65.	51248	NS CONC. FOUNDATION SSP-VIA	13	EA		
66.	24340	NS WORK ZONE TRAFFIC CONTROL MANAGEMENT	1	LS		
67.	14260	CRUSHER RUN AGGR. NO. 25 OR 26	500	TN		
68.	67210	NS ASPHALT CONCRETE PATCH 6"	40	SY		
69.	24288	WARNING LIGHT TY A	82,620	DAY		
70.	24296	TRAFFIC BARRIER SERVICE CONC. SINGLE FACE	620	LF		
71.	24430	DEMOLITION OF PAVEMENT (FLEXIBLE)	12,338	SY		
72.	25506	FIELD OFFICE TY I	18	MO		
73.	26116	DRY RIP RAP CL A-I	41	TN		
74.	27012	TOPSOIL CLASS A 2"	2	AC		
75.	27102	REGULAR SEED	338	LBS		
76.	27103	OVERSEEDING	211	LBS		
77.	27104	LEGUME SEED	53	LBS		
78.	27105	LEGUME OVERSEEDING	33	LBS		
79.	27215	FERTILIZER (15-30-15)	1	TN		
80.	27250	LIME	8	TN		
81.	27415	CHECK DAM (ROCK) TY II	24	EA		
82.	27430	SILTATION CONTROL EXCAVATION	1,105	CY		
83.	27451	INLET PROTECTION TYPE A	3	EA		
84.	27461	INLET PROTECTION TYPE B	23	EA		
85.	27505	TEMP. SILT FENCE	5,140	LF		
86.	27345	TEMPORARY DIVERSION DIKE	1,463	LF		
87.	85012	OUTLET PROTECTION	8	EA		
88.	27580	TEMPORARY SEDIMENT BASIN EXCAVATION	58	CY		
89.	40081	8" DI WATER MAIN	21	LF		

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NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
90.	40101	10" DI WATER MAIN	605	LF		
91.	41008	8" GATE VALVE & BOX	1	EA		
92.	41010	10" GATE VALVE & BOX	2	EA		
93.	41104	ADJUST EXIST VALVE BOX	2	EA		
94.	41403	8"x8" TAPPING SLEEVE VALVE & BOX	1	EA		
95.	41409	10"x10" TAPPING SLEEVE VALVE & BOX	2	EA		
96.	41412	16"x10" TAPPING SLEEVE VALVE & BOX	1	EA		
97.	42765	ADJUST EXIST FRAME & COVER	1	EA		
98.	50108	SIGN PANEL	1,593	SF		
99.	50430	SIGN POST STP-1, 2" SQ 10 GA.	228	LF		
100.	50490	CONC. FOUNDATION STP-1	56	EA		
101.	50900	STREET SIGNS	32	SF		
102.	22643	FENCE STD FE-CL	300	LF		
103.	22663	CORNER BRACE UNIT STD FE-CL	4	EA		
104.	51030	CONTROLLER	2	EA		
105.	51160	ELEC. SERVICE GROUNDING ELECTRODE 10'	2	EA		
106.	51180	TRAFFIC SIGNAL HEAD SECT. 12" STD	40	EA		
107.	51248	CONCRETE FOUNDATION SIGNAL POLE PF-8	4	EA		
108.	51245	CONCRETE FOUNDATION CF-1	2	EA		
109.	51386	SIG. POLE MP-1 30' COMB LUMIN. ONE ARM 30'	1	EA		
110.	51392	SIG. POLE MP-1 30' COMB LUMIN. ONE ARM 30', ONE ARM 39'	1	EA		
111.	51394	SIG. POLE MP-1 30' COMB LUMIN. ONE ARM 32', ONE ARM 34'	1	EA		
112.	51396	SIG. POLE MP-1 30' COMB LUMIN. ONE ARM 26'	1	EA		
113.	51425	LUMINAIRE ARM, 18'	5	EA		
114.	51597	8/2 CONDUCTOR CABLE	42	LF		
115.	51603	14/5 CONDUCTOR CABLE	1,659	LF		
116.	51607	14/7 CONDUCTOR CABLE	284	LF		
117.	51614	SIAMESE CABLE	1,204	LF		
118.	27300	SOD	233	SY		

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NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
119.	52000	NS SIGNAL POLE MP-1 25'	1	EA		
120.	51234	CONC. FOUNDATION SIGNAL POLE PF-1	1	EA		
121.	38953	NS LANDSCAPE TREES	79	EA		
122.	38953	NS LANDSCAPE SHRUBS	2,860	EA		
123.	38953	NS LANDSCAPE GROUNDCOVERS	2,727	EA		
124.	28810	NS LANDSCAPE 3" SHREDDED HARDWOOD MULCH	280	SY		
125.	38953	NS LANDSCAPE 30 MIL PVC CHECK DAMS	4	EA		
126.	56055	NS LANDSCAPE 4" DIA PERF. PVC UNDERDRAIN	40	LF		
127.	38953	NS LANDSCAPE BIORETENTION MEDIA MIX	197	CY		
128.	00490	NS LANDSCAPE CLASS I BACKFILL MATERIAL	105	TN		
129.	38953	NS LANDSCAPE COBBLE WEIR (D50=8" ROCK)	28	CY		
130.	24420	NS LANDSCAPE CONCRETE SLAB DEMOLITION	58	SY		
131.	38953	NS LANDSCAPE CONCRETE WEIRS	4	EA		
132.	38953	NS LANDSCAPE DOUBLE WASHED AGGREGATE	224	CY		
133.	38953	NS LANDSCAPE DUCTILE IRON INLET GRATE	2	EA		
134.	38953	NS LANDSCAPE EXCAVATION-STEP POOL	135	CY		
135.	13232	NS LANDSCAPE GEOTEXTILE DRAINAGE FABRIC	40	SY		
136.	38953	NS LANDSCAPE OVERFLOW INLET MODIFICATIONS RG-2	1	LS		
137.	38953	NS LANDSCAPE OVERFLOW INLET MODIFICATIONS RG-3	1	LS		
138.	38953	NS LANDSCAPE PRECAST CONCRETE WALLS	110	LF		
139.	00120	NS LANDSCAPE REGULAR EXCAVATION	558	CY		
140.	38953	NS LANDSCAPE SAND FILL (FILTER BED AREA)	60	CY		
141.	38953	NS LANDSCAPE SANDSTONE BOULDERS	18	CY		
142.	38953	NS LANDSCAPE TEMPORARY SEEDING	200	SY		
143.	38953	NS LANDSCAPE TREE PROTECTION FENCING & STAKES	1,329	LF		

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NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
144.	38953	NS LANDSCAPE TREE REMOVAL (COMPL. ROOT SYSTEM)	41	EA		
145.	38953	NS LANDSCAPE TREE REMOVAL (GRIND TO GRADE)	11	EA		
146.	38953	NS LANDSCAPE WOOD CHIPS (1" SURFACE)	1	CY		
147.	38953	NS LANDSCAPE WOOD CHIPS (30% MIX IN FILTER BED)	25	CY		
148.	51830	HANGER ASSEMBLY SM-3, ONEWAY	12	EA		
149.	51840	HANGER ASSEMBLY SMD-2	8	EA		
150.	52000	TRAFFIC SIGNALIZATION EMERGENCY PREEMPTION (3-WAY)	2	LS		
151.	52000	TEMPORARY SIGNALIZATION	2	LS		
152.	52000	TRAFFIC SIGNAL. ADAPTIVE TRAFFIC CONTROL SYSTEM	3	LS		
153.	52001	TRAFFIC SIGNALIZATION NO. 8 BONDED GROUND	836	LF		
154.	52002	ELEC. SERVICE SE-3, TYPE B	2	EA		
155.	52002	TRAFFIC SIGNALIZATION FURNISH MONITOR	3	EA		
156.	54020	TYPE A PAVE. LINE MARKING 4"	7,465	LF		
157.	54022	TYPE A PAVE. LINE MARKING 6"	1,420	LF		
158.	54024	TYPE A PAVE. LINE MARKING 8"	714	LF		
159.	54040	PREFORMED 12" THERMOPLASTIC	125	LF		
160.	54042	PREFORMED 24" THERMOPLASTIC (STOP BAR)	135	LF		
161.	54105	ERADICATION OF EXIST PAVEMENT MARKING	4,000	LF		
162.	54300	PAVE. MESS. MARK. ELONGATED ARROW (SINGLE)	9	EA		
163.	54512	CONSTR. PAVE. MARK (TY D CL - II) 4"	8,000	LF		
164.	54552	CONSTR. PAVE. MARKING (TY F) 4"	8,000	LF		
165.	55140	CONCRETE FOUNDATION LF-1 TY A	16	EA		
166.	---	NOT USED	--	--		
167.	55586	JUNCTION BOX JB-S1	46	EA		
168.	55587	JUNCTION BOX JB-S2	5	EA		
169.	55588	JUNCTION BOX JB-S3	4	EA		

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NO.	VDOT ITEM CODE	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL ESTIMATED
170.	56020	1" CONDUIT	44	LF		
171.	56030	2" CONDUIT	3,983	LF		
172.	56034	3" CONDUIT	33	LF		
173.	56200	TRENCH EXCAVATION ECI-1	2,750	LF		
174.	56205	TEST BORE	32	EA		
175.	---	NOT USED	--	--		
176.	85013	TEMPORARY SEEDING	100	LBS		
177.	51963	SIGN REMOVAL	16	EA		
178.	51248	CONCRETE FOUNDATION LF-1 (MOD)	11	EA		
179.	24702	NS REMOVE LIGHT & POLE	30	EA		
180.	---	NOT USED	--	--		
181.	52002	NS THERMAL DETECTION SYSTEM	7	EA		
182.	54100	PREFORMED 12"X18" THERMOPLASTIC (YIELD SYMBOL)	8	EA		
183.	59060	NS QUEUE DETECTION SYSTEM	1	LS		
184.	54042	PREFORMED 24" (DIAG) THERMOPLASTIC	204	LF		
185.	25565	BASELINE PROGRESS SCHEDULE	1	LS		
186.	25567	PROGRESS SCHEDULE UPDATE	24	EA		
187.	00700	POST INSTALLATION INSPECTION	611	LF		
188.	11070	SAW CUT, 6"	1,350	LF		
189.	54075	TYPE B CLASS VI CONTRAST PAVEMENT LINE MARKING 4"	550	LF		
190.	24505	NS RELOCATE EXIST LIGHT POLE	16	EA		
191.	-	RECORD DRAWINGS	1	LS		
192.	-	PRECAST CONCRETE PAVERS	1	LS		
193.	-	PRECAST CLAY PAVERS	1	LS		
194.	24279	PORTABLE CHANGEABLE MESSAGE BOARD	4	EA		
<b>TOTAL BASE BID</b>						

**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.

12-1-11 (SPCN)

**SECTION 101.02—TERMS** of the Specifications is amended to replace the definition of "Board", "Commissioner", "Contract Engineer", "Department", "Deputy Commissioner", "Engineer", "Notice to Proceed", "Plans" and "State", with the following terms:

- Board - City of Lynchburg, Virginia
- Commissioner - Director of Public Works
- Contract Engineer - City Engineer
- Department - City of Lynchburg, Virginia
- Deputy Commission - Deputy Director of Public Works
- Engineer - Director of Public Works

**Engineer.** The Director of Public Works, as designated by the City of Lynchburg, Virginia, who acts directly or through his duly authorized representative(s) and who is responsible for street design, construction, and maintenance. The Director, or his representative(s), acts within the scope of the particular duties assigned to him or the authority given to him by the City of Lynchburg, Virginia, these Specifications, supplemental specifications, and the Contract documents.

**Section 101.02—Terms** of the Specifications is amended to replace the definition for **Notice to Proceed**, **Plans** and **State** with the following:

**Notice to Proceed.** A specified date, identified as such and set forth in the contract, on which the Contractor may begin the work.

**Plans.** The approved plans and standard drawings, profiles, cross sections, computer output listings, supplemental drawings or exact reproductions thereof, and all subsequent approved revisions thereto that show the location, character, dimensions, and details of the work specified in the Contract.

**State.** City of Lynchburg, Virginia.

And to add the following terms:

**City.** The City of Lynchburg, Virginia, a Virginia governmental entity.

**Commonwealth.** Commonwealth of Virginia.

**Owner.** The City of Lynchburg, Virginia.

And to add the following definition:

**Affiliate.** Any business entity which is closely associated to another business entity so that one has the power to control the other either directly or indirectly; or, where one business entity systematically shares resources, officers and/or other management with another business entity to the extent that a business relationship legally exists or is publicly perceived to exist; or, when a third party has the power to control both; or, where one business entity has been so closely allied with another through an established course of dealings, including but not limited to the lending of financial wherewithal or engaging in joint ventures, so as to cause a public perception that the two firms are one entity.

And to replace throughout the Specifications, "Treasurer of Virginia" with "City's Commissioner of the Revenue".

VIRGINIA DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION FOR  
**PROJECT COMMUNICATION AND DECISION MAKING**

January 3, 2005c  
Reissued July 2008

**I. DESCRIPTION**

The intent of this provision is to establish procedures, processes and guidelines for making decisions and managing communications regarding work under contract on construction and maintenance projects. The information contained herein is not meant to be all inclusive but to serve as a minimal general framework for promoting efficient and effective communication and decision making at both the project and, if needed, executive administrative level. It is also not meant to override the decision-making processes or timeframes of specific contract requirements.

**II. DEFINITIONS**

For the purposes of this provision the following terms will apply and be defined as follows:

**Submittals** – Documents required by the contract that the Contractor must submit for the Department's review, acceptance or approval. These may include shop drawings, working drawings, material test reports, material certifications, project progress schedules, and schedule updates. The Contractor shall produce submittals as early as practicable when required by the contract so as not to delay review and determination of action.

**Confirmation of verbal instructions (COVI)** - Contractor requested written confirmation of agreements and instructions developed in negotiations with the Department concerning the Work under contract. Agreements must be able to be quantified using existing contract procedures and will, in the vast majority of cases, not impact contract time and cost. When time and/or cost are impacted, they must be clearly spelled out in the COVI.

**Requests for information (RFI)** – Requests generated by either the Contractor or the Department that the other party supplies information to better understand or clarify a certain aspect of the Work.

**Requests for owner action (ROA)** – Requests when the Contractor asks that the Department take certain action(s) the Contractor feels is required for proper completion of a portion of the Work or project completion.

**Contract change requests (CCR)** - Request where the Contractor asks the Department to make an equitable adjustment to the contract because of excusable and/or compensable events, instructions that have or have not been given or other work requiring time and/or cost beyond that specified or envisioned within the original contract.

**Requests for contractor action (RCA)** – Request generated by the Department where the Department asks the Contractor to take certain action that is in the best interests of the project and/or is required for proper completion of a portion of the Work or for project completion.

**Contract change directives (CCD)** – Directive by the Department which instructs the Contractor to perform work beyond that specified or envisioned in the original contract and which may specify instructions, time, and cost(s) to make an equitable adjustment to the original contract.

**Responsible Person** – The individual in the normal or escalated resolution process, for either the Contractor or the Department, having the direct authority, responsibility and accountability to formulate and respond to each category of information request.

### III. PROCESS FOR DECISION MAKING

Project teams composed on responsible individuals directly involved in the administration, prosecution, and inspection of the Work from the Contractor and the Department shall define and agree upon the field decision-making process during the pre-construction conference. This information relative to the process should be written down and distributed to all parties of the process once it is established. Where there are responsibility, authority or personnel changes associated with this process such changes shall be distributed to all affected parties as quickly as practicable after they are effective so as not to delay or impede this process.

The process for making field decisions with respect to the Work detailed in the contract basically requires the following steps:

1. The Contractor and the Engineer agree on the decision-making process, the identity, authority and accountability of the individuals involved and on the cycle times for response for each category of decision.
2. The party requiring the information generates the appropriate request documents, and calls for a decision from the individual who is accountable for the particular facet of the Work under consideration within the agreed period.
3. The responding party has an internal decision-making process that supports the individual who is accountable and provides the information required within the agreed period for each category of request.
4. The party receiving the decision has an internal process for accepting the decision or referring it for further action within an agreed period of time.

The process also requires that clear and well-understood mechanisms be in place to log and track requests, document the age and status of outstanding requests and actions to be taken on requests that have not been answered within the agreed period.

Both the Department and the Contractor shall agree on the following:

- The documentation and perhaps format to be developed for each category of information requested,
- The name (as opposed to organizational position) of all individuals with the responsibility, authority and accountability to formulate and respond to each category of information requested. The District Administrator (DA) or Chief Executive Officer (CEO) of the Contractor may delegate the responsibility and authority for formulating and responding to requests, however, the accountability for meeting the established response time(s) remains with the District Administrator and CEO.
- The cycle times for each stage in the decision-making process,
- The performance measures to be used to manage the process,
- The action to be taken if cycle times are not achieved and information is not provided in a timely manner.

The following general guideline and timeframe matrix will apply to the various requests for action. Again, please note these guidelines are general in scope and may not apply to specific contract timeframes for response identified within the requirements of the Contract documents. In such cases, specific contract requirements for information shall apply.

**PROCESS GUIDELINES FOR REQUESTS GENERATED BY THE CONTRACTOR**

Process	Situation	Normal resolution process		Escalated process		Final resolution
		By	Within (calendar days)	By	Within	
Submittal	Where the Contractor requests the Department's review, acceptance or approval of shop drawings, materials data, test reports, project progress schedules, or other submittals required by standard Specifications or other contract language.	Department's Designated Project Manager	<ul style="list-style-type: none"> <li>Acknowledge: 3 days<sup>1</sup></li> <li>Accept or Return: 14 days</li> <li>Final Determination/Approve: 30 days or as outlined in contract documents.</li> </ul>	DA or their designee*	7 days	Submit ROA or CCR
Confirmation of Verbal Instruction (COVI)	Resolving routine field issues, within the framework of the Contract, in negotiation with Owner field personnel.	Department's Appropriate field personnel	<ul style="list-style-type: none"> <li>Confirmation: 1 day<sup>2</sup></li> </ul>	Submit RFI, ROA or CCR	7 days	(See process for RFI, ROA, or CCR)
Request for Information (RFI)	Requests the Department to supply information to better understand or clarify a certain aspect of the work.	Department's Designated Project Manager	<ul style="list-style-type: none"> <li>Action: 14 days (or appropriate Action Plan)</li> </ul>	DA or their designee*	7 days	Submit ROA or CCR
Request for Owner Action (ROA)	Requests that the Department take certain action the Contractor feels is required for proper completion of a portion of the Work or project completion.	Department's Designated Project Manager	<ul style="list-style-type: none"> <li>Acknowledge: 3 days<sup>1</sup></li> <li>Action: 14 days (or appropriate Action Plan)</li> </ul>	DA or their designee*	7 days	Submit CCR
Contract Change Request (CCR)	Requests the Department to make an equitable adjustment to the contract because of excusable and/or compensable events, instructions that have or have not been given or other work requiring time and/or cost beyond that specified or envisioned within the original contract.	Department's Designated Project Manager	<ul style="list-style-type: none"> <li>Acknowledge: 3 days<sup>1</sup></li> <li>Action: 30 days (45 federal days if federal oversight project)</li> </ul>	DA or their designee*	7 days	Established dispute resolution and claims process

<sup>1</sup> Process initiated on the last business day of a week shall be acknowledged before 5 pm on the next VDOT business day.

<sup>2</sup> The absence of a written confirmation from the Owner to a Contractor's written request for confirmation of a verbal instruction shall constitute confirmation of the verbal instruction.

**PROCESS GUIDELINES FOR REQUESTS GENERATED BY THE OWNER**

Process	Situation	Normal resolution process		Escalated process		Final resolution
		By	Within (calendar days)	By	Within	
1. RFI	Requests the Contractor to supply information to better understand or clarify a certain aspect of the work. (RFI)	Contractor's Project Superintendent	<ul style="list-style-type: none"> <li>Action: 14 days (or appropriate written Action Plan)</li> </ul>	Contractor's Project Manager	7 days	Submit RCA or CCD
2. RCA	Requesting the Contractor take certain action(s) that is in the best interests of the project and/or is required for proper completion of a portion of the work or for project completion. (RCA)	Contractor's Project Superintendent	<ul style="list-style-type: none"> <li>Response or Action to safety and environmental issues: 1 day</li> <li>Otherwise acknowledge: 3 days<sup>1</sup></li> <li>Action: 14 days (or appropriate Action Plan)</li> </ul>	Contractor's Project Manager	7 days	Submit CCD
3. CCD	Instructs the Contractor to perform work beyond that specified or envisioned in the original contract and undertakes action(s) to make an equitable adjustment to the contract. (CCD)	Contractor's Project Superintendent	<ul style="list-style-type: none"> <li>Acknowledge: 3 days<sup>1</sup></li> <li>Action: 30 days</li> </ul>	CEO or their designee**	7 days	Established dispute resolution and termination process

<sup>1</sup> Process initiated on the last business day of a week shall be acknowledged before 5 p m on next project business day.

VIRGINIA DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION FOR  
**CPM PROGRESS SCHEDULE FOR CATEGORY III PROJECTS**

March 1, 2011

**Section 103.06(e) Progress Schedule** of the Specifications is deleted and replaced by this provision.

**Section 108.03 Progress Schedule** of the Specifications is deleted and replaced by this provision.

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

**I. GENERAL REQUIREMENTS**

This work shall consist of generating and maintaining a project Progress Schedule to aid the Contractor and the Department in planning and executing the Work. The Progress Schedule shall be used by the Contractor, the Department, and all involved parties to plan and schedule all work required to complete the project. The Progress Schedule shall also be used by the Department to monitor progress of the individual activities required to complete the project; as well as to assess the overall progress of the Work and to evaluate the effects of time-related changes on the project. The Progress Schedule shall consist of a Critical Path Method (CPM) Progress Schedule, Progress Schedule Narrative, and Progress Earnings Schedule submitted in accordance with the requirements of this provision.

The Contractor shall prepare and submit, for the Engineer's review and acceptance, a Progress Schedule to communicate the Contractor's intentions and proposed plan to accomplish the Work in accordance with the requirements of the Contract. 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 Contractor shall maintain the Progress Schedule, at a minimum, 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 Contractor shall attend a Scheduling Conference with the Engineer no later than seven (7) calendar days prior to beginning the Work, with the exception of project start-up activities such as submittals, mobilization, surveying, construction access and signage, erosion and sedimentation controls, etc., as approved by the Engineer. The Scheduling Conference will be held to discuss the Contractor's overall plan to complete the Work and the detail work plan 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. The Contractor shall discuss his/her 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. During the Scheduling Conference key issues and project specific requirements necessary for the development of the Baseline Progress Schedule shall also be discussed. Such key issues shall include as applicable, but are not limited to key submittals, permits, construction access, right of way, environmental, utility, traffic or local events identified in the Contract Documents that may impact traffic; as well as other limitations to the Work or any known constraints or foreseeable issues that may impact the schedule. Such project specific requirements shall include as applicable, but are not limited to scheduling, phasing, sequencing, milestone(s), work to

be performed by the Department or other previously identified involved parties; or any known or likely constructability issues relative to the Contract plans and specifications.

## II. OVERVIEW OF THE VARIOUS REQUIRED PROGRESS SCHEDULE SUBMISSIONS

**A. Preliminary Progress Schedule** – At least two (2) business days prior to the Scheduling Conference, 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 sequence and 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 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 sequence and timing of the remaining Work. 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. 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. 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 remainder of the Work.

**B. Baseline Progress Schedule** – Within thirty (30) calendar days after the Notice to Proceed (NTP) date or as approved by the Engineer, the Contractor shall submit in its entirety, his/her 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 be prepared based on the Critical Path Method (CPM) and shall depict in a time-scaled bar-chart plot, 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 reflect a practicable work plan and logical progress of the Work as indicated in the Contract Documents or as approved by the Engineer. When preparing the schedule, the Contractor shall consider as applicable, all known or specified constraints or restrictions such as: holidays,

seasonal, normal weather, traffic or previously identified local events that may impact traffic, utility, railroad, right-of-way, environmental, permits, or other limitations to the Work that will impact the schedule. 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 proposed overall work plan to complete the entire project as reflected on the Baseline Progress Schedule. 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 reflect the anticipated progress of the Work as shown on the Baseline Progress Schedule and shall be prepared on the VDOT Form C-13C in accordance with the VDOT Post-Award Scheduling Guide. At the Contractor's discretion, the Progress Schedule may be cost-loaded, in which case, the Progress Earnings Schedule shall then be prepared and submitted using the VDOT Form C-13CPM.

The Baseline Progress Schedule will be reviewed by the Engineer for acceptance in accordance with Section VII. 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 Progress Schedule. Until a subsequent Revised Progress Schedule is submitted and accepted, the accepted Baseline Progress Schedule shall remain the SOR 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) business 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 current status of the Work 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 also describe any progress deficiencies, schedule slippages, or 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 by percent complete based on the actual total earnings to date relative to the Total Contract Value. The Progress Earnings Schedule Update shall show the actual monthly and cumulative earnings to date as reflected on the Contractor's payment estimate, any variance in percent complete relative to the SOR, and the projected earnings for the remaining

payment periods. The Progress Earnings Schedule Update shall be prepared on the VDOT Form C-13C or as specified herein and in accordance with the VDOT Post-Award Scheduling Guide.

The Progress Schedule Update will be reviewed by the Engineer for acceptance in accordance with Section VII. 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 delays on the remaining Work.

**D. Revised Progress Schedule** – When the current Progress Schedule or work plan deviates significantly from the SOR, the Contractor shall submit to the Engineer for review and acceptance a Revised Progress Schedule to represent the Contractor's revised plan to complete the remaining work. Deviate significantly will be construed to mean deviations from the SOR resulting from schedule impacts or major changes in the Progress Schedule that alter the project critical path, Contract interim milestone(s), or project completion; or causes a major shift in the Progress Earnings Schedule. A Revised Progress Schedule will be required when:

1. The Engineer approves a Schedule Impact Analysis (SIA) for authorized or unanticipated changes in the Work or conditions that significantly impacts the Progress Schedule, as determined by the Engineer.
2. The Contractor proposes a different approach to his/her work plan that significantly impacts the Progress Schedule or the Engineer determines that the current Progress Schedule Update or Contractor's current work plan deviates significantly from the SOR. Such deviations may include, but are not limited to major changes in the Contractor's proposed phasing, general sequence, resource plan, means and methods, or durations. The Contractor may revise his/her Progress Schedule at any time, at his/her discretion; however, the Engineer will only consider accepting a Revised Progress Schedule submission for major changes that deviate significantly from the SOR.
3. 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 the progress deficiency will not result in an extension of the completion date of the project beyond the Contract time limit and a Recovery Plan is not required to correct the progress deficiency. In such cases, the Engineer will request a meeting with the Contractor to discuss the progress deficiency to determine the appropriate corrective action required.

The Revised Progress Schedule submission shall be based on the currently accepted Progress Schedule Update and 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, approved changes in the Work, and the proposed plan for completing the remaining work. The Revised Progress Schedule shall be submitted in lieu of a subsequent Progress Schedule Update unless directed otherwise by the Engineer. 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/her 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 CHANGES AND DELAYS

- A. **Changes, Delays, and Schedule Impacts** – When changes in the Work that will impact the schedule are proposed or authorized by the Engineer, the Contractor shall submit for the Engineer's review and approval, a Schedule Impact Analysis (SIA) to determine the impact of the change. Also, when the Contractor believes he is entitled to a time extension and/or additional compensation for a time-related impact that is attributable to a cause beyond the control of and without the fault, negligence, or responsibility of the Contractor or those for whom the Contractor is responsible, the Contractor shall submit for the Engineer's review and approval, a SIA and all available supporting data to substantiate the request for modification of the Contract. The Contractor's request and SIA shall be submitted in accordance with the following:

1. Impacts Due to Directed or Authorized Changes: When the Engineer issues a written order or authorizes a change in the Work in writing, the Contractor shall submit in writing within seven (7) calendar days of the Engineer's written direction or as required by the Engineer, a request for modification of the Contract, if the Contractor believes that additional time and/or compensation is required to perform the Work. Such changes in the Work may include, but are not limited to directed or authorized changes in accordance with the applicable portions of Sections 104.02, 108.05, and 109.05 of the Specifications. The Contractor shall submit along with his/her request a *prospective* Schedule Impact Analysis (SIA) to substantiate the request for modification of the Contract in accordance with this provision and the applicable portions of Sections 104.02, 108.05, and 109.05 of the Specifications.
2. Impacts Due to Unanticipated Changes or Delays: When the Contractor discovers or encounters previously unknown or unanticipated changes in the Work or conditions, or a delay event that he believes will impact progress of the Work or completion of the project, the Contractor shall notify the Engineer in writing within two (2) working days of such discovery or encounter. Such changes in the Work or conditions or delay events may include, but are not limited to unusually severe weather, extraordinary or catastrophic weather events, errors or omissions in the Contract Documents; or differing site conditions or utility delays in accordance with the applicable portions of Sections 104.03 and 105.08 of the Specifications.

The Contractor shall then gather all available pertinent information and data necessary to determine how such change in the Work or condition will impact progress of the Work or completion of the project. The Contractor and the Department shall promptly meet to evaluate the scope and potential impact of such change or condition to allow the Engineer to make a timely decision on how to proceed, as well as to determine how the impact of such change or condition can be avoided or mitigated.

The Engineer may direct the Contractor to submit a SIA prior to proceeding with the work affected by such change, condition, or delay, in which case the Contractor

shall submit in writing within seven (7) calendar days after receipt of the Engineer's direction, a request for modification of the Contract and a *prospective* SIA to substantiate the request for modification of the Contract.

Otherwise, the Contractor shall submit in writing a request for modification of the Contract and a *contemporaneous* SIA to substantiate the request for modification of the Contract. The request for modification of the Contract and SIA shall be submitted within fourteen (14) calendar days of completion of the changed work or work directly impacted by such condition, or the cessation date of the delay event, or as approved by the Engineer.

3. Unresolved Impacts: When the Contractor believes he is entitled to a time extension and/or additional compensation for an unresolved impact to the Work that is attributable to a cause beyond the control of and without the fault, negligence, or responsibility of the Contractor or those for whom the Contractor is responsible, the Contractor shall submit for the Engineer's review and approval, a request for modification of the Contract and a *retrospective* SIA to substantiate the request for modification of the Contract. Such impacts may involve, but are not limited to changes authorized by either Force Account Work or Unilateral Work Order, or other changes for which the scope of the change or magnitude of the impact could not be determined or mutually agreed to at the time the change was authorized or the delay event or changed condition was encountered.

The Contractor's notice of a change, a subsequent meeting with the Engineer, or submittal of a request for modification of the Contract as defined herein, shall not constitute a notice of intent to file a claim as required by Section 105.19. *No part of this provision is intended to alter, replace, or supersede Section 105.19 of the Specifications. The Contractor must adhere to Section 105.19 as well as this provision to preserve their rights to file a claim.*

- B. Schedule Impact Analysis (SIA)** – The SIA submission shall include a SIA schedule and a written SIA statement as well as supporting data and such information necessary for the Department to make an adequate and timely evaluation of any time-related request received from the Contractor for modification of the Contract. The SIA submission shall consist of the following:

1. A SIA schedule, as specified herein, which shall depict the schedule impact of the change in the Work or condition or delay event based on the currently accepted Progress Schedule Update, submitted prior to the earlier of the date the change in the Work was authorized or the changed condition or delay event was encountered. If the most recently submitted Progress Schedule Update is unacceptable, then the Engineer will evaluate the request based on the previously accepted Progress Schedule Update. In which case, the Contractor shall update the previously accepted Progress Schedule Update to show the actual progress of the Work to date as of the earlier of the date the change in the Work was authorized or the changed condition or delay event was encountered. The SIA schedule shall:
  - a) Be based on the "Time Impact Analysis (TIA)" or "Contemporaneous Schedule Analysis" method as determined by the Engineer, to determine the status of the currently accepted Progress Schedule Update before and after the change in the Work or condition or delay event.
  - b) Show a fragnet (fragmentary network of added or changed activities) representing the added work, changed work or condition, or delay event(s). The fragnet activities shall be logically linked to the affected activities to show the direct impact on the work.

- c) Show the current status of the completed and on-going activities as of the date the change in the Work was authorized or the changed condition was encountered or the delay event started.
  - d) Depict the schedule impact by showing a comparison between the impacted Progress Schedule Update and the most recently accepted Progress Schedule Update with a data date closest to and prior to the earlier of the date the change in the Work was authorized or the changed condition or delay event was encountered.
  - e) Depict the overall impact on the project critical path, Contract interim milestone(s), other significant dates, and the Contract fixed completion date, as applicable.
2. A written SIA statement to:
- a) Describe the type, cause, and scope of the added work, changed work or condition, or delay event.
  - b) Provide sequence and timing of events and/or actions by all involved parties relating to the change or delay.
  - c) Describe the particular operations affected as well as identify by Activity ID and Activity Name the activities that are directly impacted.
  - d) Describe the impact on the critical path, total float, Contract interim milestone(s), other significant dates, or the Contract fixed completion date, as applicable.
  - e) Include a comparative analysis report relative to the currently accepted Progress Schedule Update to identify all changes made to the impacted Progress Schedule.
  - f) Identify any actions taken and/or needed to avoid or mitigate the delay or the effects of the delay.

Approval or rejection of the SIA by Engineer shall be made within ten (10) business days after receipt of the SIA, unless subsequent meetings and negotiations are necessary, as determined by the Engineer. Upon approval by the Engineer, the Contractor shall incorporate the SIA into the Progress Schedule and shall submit the impacted Progress Schedule as a Progress Schedule Update or Revised Progress Schedule as directed by the Engineer. If appropriate, the approved SIA shall be used to substantiate any request for a time extension or time-related damages or additional compensations, in accordance with the applicable portions of Sections 104.02, 104.03, 105.08, 108.04, and 109.05 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 submit his/her Progress Schedule in the Primavera proprietary exchange format (XER) to ensure compatibility with the Department's scheduling software system. 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. For projects that are included in a multi-contract mega-project, the Contractor shall prepare and maintain his/her Progress Schedule in the Department's scheduling software system. At the Contractor's request, secured access via the internet may be granted to allow the Contractor to develop and maintain his/her 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 software settings detail requirements defined in the VDOT Post-award Scheduling Guide.
3. Work Breakdown Structure (WBS): The Baseline Progress Schedule shall be organized using a multi-level hierarchical Work Breakdown Structure (WBS). The Contractor shall define a project WBS to allow for a hierarchical organization and breakdown of the Work based on the Contractor's approach and in accordance with the phasing/sequence of construction and traffic control plans as specified in the Contract or as approved by the Engineer.
4. Activity Codes: The Contractor shall define and assign as appropriate, activity codes to allow for filtering, grouping, and sorting of activities by Responsibility, Phase, Stage, Feature of Work, Area, Location, Work Type, Crew, and Contract Modification activity codes to facilitate review and use of the Progress Schedule. If Primavera (P6) or equivalent scheduling software with similar features is used to prepare the Progress Schedule, the Contractor shall define activity codes using the project-specific activity codes option. Use of global activity codes shall not be allowed and shall be grounds for rejecting the Progress Schedule submission. Project-specific activity codes shall be defined and assigned in accordance with the detail requirements defined in the VDOT Post-award Scheduling Guide.
5. Calendars: The Contractor shall define and assign as appropriate, project-specific calendar to each activity to indicate when the activity can be performed. If Primavera (P6) or equivalent scheduling software with similar features is used to prepare the Progress Schedule, the Contractor shall define the project calendars using the project-specific option. The project calendars shall indicate, as applicable, the standard working hours per day, standard working days per week, and non-work days such as week-ends, holidays, weather days, local events, environmental, time-of-year restrictions, etc. 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 in accordance with the detail requirements defined in the VDOT Post-award Scheduling Guide.
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 Progress Schedule shall show as applicable, Contract milestones and other key milestones for significant project events. The Progress Schedule shall also show, as applicable, administrative, procurement, MOT, work to be performed by other involved parties, discrete work activities to indicate the type of operation and location of the work, and other necessary time-based tasks required for completion of the project. The Work shall be sub-divided as practical, to such a level that the activity durations for on-site work excluding, activities whose durations are specified elsewhere in the Contract, are twenty (20) workdays or less. Longer durations may be allowed, as approved by the Engineer, for activities that typically

span long periods of time such as fabrication and delivery of materials, administrative, MOT, or other such level of effort activities.

7. Network Logic: The Progress Schedule network logic shall be based on the Precedence Diagram Method (PDM) and shall show the order and interdependence 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 Path". The Progress Schedule network logic shall be developed in accordance with the detail requirements defined in the VDOT Post-award Scheduling Guide.
8. Schedule Constraints: All Contract milestone activities shall be constrained, as applicable, with a "Start On or After" (Early Start) date or "Finish On or Before" (Late Finish) date equal to the "Start No Earlier Than" or "Must Finish By" date specified in the Contract, except as specified below. The Contractor's use of schedule constraints with the exception of the specific requirements defined below is not allowed, unless approved by the Engineer. The use of schedule constraints such as "Start On" or "Finish On" for the purpose of manipulating float or the use of schedule constraints that violate network logic such "Mandatory Start" or "Mandatory Finish" will not be allowed. When a schedule constraint is used, other than the schedule constraints specified herein, the Contractor shall provide explanation for the use of such constraint in the Progress Schedule or Progress Schedule Narrative.
9. Data Date: The data date is defined as the current status date of the Progress Schedule, which defines the start date for the scheduled remaining Work. 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 no more than five (5) business days prior to the submittal date.
  - b) For the monthly Progress Schedule Update submissions the data date shall be the Contractor's monthly progress estimate date as defined in Section 109.08(a) of the Specifications.
10. Total Float: This section is intended to apply only to considerations of Contract time extension requests relative to available total float. Considerations for other time-related impacts, if any, are covered in other Sections of the Specifications. Any request for a Contract time extension will be evaluated, in accordance with Section 108.04, based on the critical path and available total float. Total float is defined as the amount of time, typically expressed in days (number of workdays or calendar days depending on the assigned calendar), that an activity can be delayed without extending the completion date of a related Contract interim milestone or the project, as applicable. Except as specified herein, total float shall be calculated, as applicable, relative to a constrained Contract interim milestone date or the Contract fixed completion date specified in the Contract or a subsequent Work Order.

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 responsibly in the best interest of the project and in a manner that best serves the timely completion of the Work by either a specified Contract interim milestone or the Contract fixed completion date, as applicable.

For A+B based Contracts for which the Contractor bids the Contract time and/or Contract interim milestone(s), any float on a critical activity or activities on the critical path 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 project float for use by either the Department or the Contractor for the benefit of the project.

The Contractor shall not modify the Progress Schedule at any time for the purpose of manipulating float. Negative float conditions will not be allowed in the Preliminary, Baseline, or Revised Progress Schedule.

11. Progress Schedule Update: The Progress Schedule Update shall reflect the actual status of the Work and the current plan to complete the remaining work as of the current data date. It shall show the actual start/finish dates for each completed activity and the actual start date, remaining duration, and progress (percent complete) of each on-going activity. The Progress Schedule Update shall allow for an accurate determination of progress of completed and on-going work based on total actual cost (earnings) to date; as well as an accurate projection of the anticipated monthly earnings for the remaining work based on remaining cost. The Progress Schedule Update shall be based on the most recently accepted Progress Schedule and shall be prepared in accordance with the detail requirements defined in the VDOT Post-award Scheduling Guide.

**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 methodology, scheduling assumptions, and general procedures for completing each major feature of Work;
    - iii) A list of the major resources (number and type of crews and equipment) required to complete the project as scheduled. For early completion schedules (projects with an early completion interim milestone provision or projects with scheduled completion dates earlier than the Contract specified date by thirty (30) calendar days or more), the Contractor shall also provide a written resource plan for the major operations to demonstrate the Contractor's ability and commitment to provide resources at the level required to complete the work within the timeframes shown in the Progress Schedule;
    - iv) Anticipated daily production rates for each major operation.
  - b) A description of the project critical path.

- c) 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 involved parties.
- d) A log identifying the schedule constraints used in the Progress Schedule and reason for using each constraint.
- e) A description of the calendar(s) used in the Progress Schedule 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.).
- f) 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 major 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 Progress Schedule submission.
- f) A listing of adverse weather dates and number of days lost this period due to adverse weather or conditions resulting from adverse weather. List the activities affected and any impacts to the critical path.
- g) A description of problems encountered or anticipated since the previous Progress Schedule submission, including an explanation of any corrective actions taken or required to be taken.
- h) A description of work planned for the next update period and actions to be taken by the Department or other involved parties.

## V. REPORTING AND SUBMITTAL REQUIREMENTS FOR PROGRESS SCHEDULE SUBMISSIONS

Unless directed otherwise 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, and date of submittal (e.g. C00012345B01\_B-1\_12-30-10.xer, C00012345B01\_U-1\_1-10-11.xer, 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 export file copy of the Progress Schedule in an "XER" file format in version 6.2 or lower. Each CD shall be labeled to indicate the Contract ID, type of submission, filename, and submittal 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 organized by WBS and sorted by early start 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).
4. Electronic file copies by email of the following:
  - a) A working export file of the Progress Schedule in an "XER" file format in version 6.2 or lower.
  - b) Electronic "PDF" copy of the 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) Predecessors: Activity ID, Activity Name, Early Start, Early Finish, Relationship Type, Lag, Driving (Yes or No), Constraint, and Constraint Date;
    - xii) Successors: Activity ID, Activity Name, Early Start, Early Finish, Relationship Type, Lag, Driving (Yes or No), Constraint, and Constraint Date.
  - c) Electronic "PDF" copy of the Progress Schedule Narrative.
  - d) Electronic "PDF" copy of the Progress Earnings Schedule S-Curve.

- e) A working file of the Progress Earnings Schedule (VDOT Form C-13C).

## 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. If the Contractor fails to submit his/her complete Preliminary Progress Schedule at least two (2) business days prior to the Scheduling Conference, the Contractor shall not commence Work, with the exception of project start-up activities such as submittals, mobilization, surveying, construction access and signage, erosion and sedimentation controls, etc., until after seven (7) calendar days from the date the Contractor submits his/her complete Preliminary Progress Schedule, unless otherwise approved in writing by the Engineer.
2. If the Contractor fails to submit his/her complete Baseline Progress Schedule within thirty (30) calendar days after the NTP date or as approved by the Engineer, the Engineer will delay approval of the Contractor's next monthly progress estimate following the due date of the Baseline Progress Schedule 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 of the Contractor's next monthly progress estimate following the due date of the Progress Schedule 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 of the Contractor's next monthly progress estimate following the due date of the Progress Schedule 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, unless subsequent review meetings are necessary, as determined by the Engineer. 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 only 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, which may include comments or minor concerns on the submission and/or a request for clarification or justification. When the Engineer's response include any comments, concerns, or request for clarification or justification, the Contractor shall respond accordingly within seven (7) calendar days of receipt of the Engineer's response. The Contractor's response may include a resubmission of the Progress Schedule to address the Engineer's comments or concerns or provide clarification or justification accordingly.

If the Contractor's Progress Schedule submission is deemed to be unacceptable, the Engineer will issue a written notification of non-conformance, which will include a request for resubmission and 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 prompting the Engineer's decision or to facilitate review and acceptance of the Progress Schedule submission.

When the Progress Schedule submission is deemed by the Engineer 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.

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 Work within the Contract specified interim milestone(s) or the Contract time limit, as applicable.

## **VIII. MONITORING THE WORK AND ASSESSING PROGRESS**

**A. Monitoring The Work** – The Engineer will monitor the Work regularly to identify 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. The Contractor shall furnish his/her detailed 30-day look-ahead schedule at the progress meeting and shall be prepared to discuss the current status of the Work and planned operations for the following thirty (30) calendar days. 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 one of the following conditions occurs:

1. The actual total earnings to date percentage for work completed, based on the Contractor's progress payment estimate, falls behind the SOR planned cumulative earnings percentage by more than ten (10) percentage points. If the Progress Earnings Schedule is based on a cost-loaded Progress Schedule, then the unsatisfactory progress threshold will be based on falling behind the SOR planned cumulative late dates earnings percentage. Payments for Stored Materials, Materials on Hand, or Adjustments (asphalt, fuel, etc.) shall not be included in the actual progress earnings.
2. The calculated completion date of a Contract interim milestone is later than the specified completion date by more than fourteen (14) calendar days.

3. The calculated project completion date is later than the Contract fixed completion date by more than thirty (30) 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 discuss any actions taken or required by the Contractor to reverse this trend and to correct the progress deficiency or schedule slippage.

When the Contractor’s actual progress is deemed unsatisfactory as defined by any one 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, unless there is a pending decision by the Engineer on a request for modification of the Contract for which the Contractor has previously provided documentation as required.

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. Such “good faith” efforts shall be provided in sufficient detail to allow the Engineer to fully evaluate the Contractor’s plans for recovery. 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/her 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/her 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**

Required Progress Schedule submissions will be measured and paid for in accordance with the following:

- A. Basis of Payment** – Progress payments will be made in accordance with the following:
1. Progress payments for the Baseline Progress Schedule pay item will be made as follows:

- a) A twenty-five (25) percent of the Contract bid item lump sum amount will be made upon acceptance of the Preliminary Progress Schedule submission.
  - b) A seventy-five (75) percent of the Contract bid item lump sum amount will be made upon acceptance of the Baseline Progress Schedule submission. When a Baseline Progress Schedule is provided in lieu of a Preliminary Progress Schedule, a payment of one hundred (100) percent of the Contract bid item lump sum amount will be made upon acceptance of the Baseline Progress Schedule submission.
2. Progress payments for the Progress Schedule Update pay item will be made as follows:
- a) Progress payments of one each (1 EA) at the Contract bid item unit price will be made upon acceptance of the Progress Schedule Update submission.
  - b) A Revised Progress Schedule may be required in lieu of and paid for upon acceptance as a Progress Schedule Update, as determined by the Engineer. When a Revised Progress Schedule is required by the Engineer, in addition to a regular Progress Schedule Update submission, progress payments of one each (1 EA) at the Contract bid item unit price will be made under the pay item for Progress Schedule Updates upon acceptance of the Revised Progress Schedule submission.
  - c) Upon approval, the SIA shall be incorporated into the Progress Schedule Update or Revised Progress Schedule, as directed by the Engineer, and paid for as a Progress Schedule Update. When a SIA is required in addition to a regular Progress Schedule Update submission, progress payment of one each (1 EA) at the Contract bid item unit price will be made upon approval under the pay item for Progress Schedule Update.
  - d) Progress payments of one each (1 EA) at the Contract unit price will be made upon acceptance of the Final As-built Schedule submission.
3. No separate measurement and payment will be made for attendance of the Scheduling Conference, progress meetings or other schedule related meetings. All costs associated with attendance of the scheduling meetings will be considered incidental.

**B. Payment Items** – Payments for all associated costs to attend schedule meetings, prepare, update, revise, and/or furnish the Progress Schedule will be made under the following pay items:

<b>Pay Item</b>	<b>Pay Unit</b>
Baseline Progress Schedule	Lump Sum
Progress Schedule Update	Each

SPECIAL PROVISION  
PRECAST CLAY PAVERS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Clay paver units
- B. Sand setting bed and joint sand.

1.02. REFERENCES

- A. American Society of Testing Materials (ASTM):
  - 1. C902 Standard Specification for Pedestrian And Light Traffic Paving Brick
  - 2. C1272 Standard Specification for Heavy Vehicular Paving Brick
  - 3. C136 Method for Sieve Analysis for Fine and Coarse Aggregate.
  - 4. C67 Method of Sampling and Testing Brick and Structural Clay Tile.
  - 5. C33 Specification for Concrete Aggregates.
  - 6. C144-89 Standard Specification for Aggregate for Masonry Mortar.

1.03. QUALITY ASSURANCE

- A. Installation shall be by an installer with at least two years' experience and who has installed at least 200,000 sq. ft. of sand set pavers in commercial projects.

1.04. SUBMITTALS

- A. Submit shop or product drawings and product data.
- B. Submit samples of brick paving units. Clay pavers shall match type, size, color and brand as used on the adjacent sections of the Midtown Connector project.
- C. Submit sieve analysis for grading of bedding and joint sand.
- D. Submit test results for compliance of paving unit requirements to ASTM C 902 or ASTM C 1272 from and independent testing laboratory.
- E. Submit installer qualifications: provide satisfactory evidence that the installer complies with the qualifications set out in section 1.03.
- F. Schedule & Work Plan: submit a detailed schedule and work plan.

## 1.05. DELIVERY, STORAGE AND HANDLING

- A. Deliver brick pavers to the site in steel banded, plastic banded, or plastic wrapped cubes or on pallets capable of transfer by fork lift or clamp lift. Unload pavers at job site in such a manner that no damage occurs to the product.
- B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be secured in place.

## 1.06. ENVIRONMENTAL CONDITIONS

- A. Do not install sand or pavers during heavy rain or snowfall.
- B. Do not install frozen sand.

## PART 2 PRODUCTS

### 2.01. MANUFACTURED UNITS

Brick pavers may have spacer bars on each unit. These ensure a minimum joint width between each unit in which the sand is placed. Spacer bars help prevent contact of the edges with adjacent pavers and subsequent chipping. Manually installed pavers may be installed with or without spacer bars.

- A. Brick pavers shall be A Grade pavers manufactured/supplied by a member of the Brick Institute of America (BIA).
- B. Pavers shall meet the following requirements set forth in ASTM C 902, Specification for Pedestrian and Light Traffic Paving Brick or C 1272 Specification for Heavy Vehicular Paving Brick and shall conform to the PX standard.
  - 1. Minimum average compressive strength of 10,000 psi.
  - 2. The average cold water absorption shall not be greater than 6% with no individual unit testing greater than 7%. Absorption test results may not be achieved through the use of sealers or other products applied to the clay paver. (Sealer protection degrades over time requiring re-application after several years.)
  - 3. Resistance of 50 freeze-thaw cycles, when tested in accordance with ASTM C67. In addition the clay paver must pass CSA-A231.2 freeze thaw test in saline solution without the use of sealers or other products applied to the paver. A test report must be submitted by the manufacturer. (Salt is the most common substance used for de-icing during the winter months.)

4. Dimensional tolerances should meet the PX standard. The dimensional tolerances around the mean values for length, width, and depth shall be 1/16". (Studies show that dimensional tolerances are directly linked to joint width size and proper interlock.)
5. The pavers should be solid units without core holes or other perforations.
6. The contractor shall ensure that the manufacturer conducts a test sampling of 24 pavers every 50,000 pavers manufactured to determine the pavers compliance with dimensional and water absorption characteristics. The 24 paver sample shall be representative of the color mix in the typical finished package and chosen on a consistent basis from one kiln car. (Proper control procedures and testing are standard operating procedure for high quality manufacturers.)

## 2.02. BEDDING AND JOINT SAND

The type of sand used for bedding is often called concrete sand. Sands vary regionally. Contact paver installers local to the project and confirm sand(s) successfully used in previous similar applications.

- A. Bedding and joint sand shall be clean, non-plastic, free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Grading of samples shall be done according to ASTM C136. The particles shall be sharp and conform to the grading requirements of ASTM C33 as shown in Table 1.

Table 1  
Grading Requirements for Bedding and Joint Sand

Sieve Size	Percent Passing
3/8 in.	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

## 2.03. EDGE RESTRAINTS

- A. Edge restraints are required on all installations. Edge restraints are to be pre-cast or cast-in-place concrete, plastic, or steel as specified in the drawings. Install as per manufacturer's specifications.

## 2.04. JOINT SAND STABILIZERS (IF APPLICABLE)

Joint sand stabilizers prevent sand loss and maintain interlock which is critical in situations where sand loss could be a problem. Some situations typically requiring joint sand stabilizers are at the bottom of a grade, areas where rain water runoff is not caught by gutters, and crosswalks. Please consult the allied products section on our web site for information on joint sand stabilizers. Always follow the manufacturer's recommendations for installation of these products.

## 2.05. FILTER GEOTEXTILE (IF APPLICABLE)

- A. The woven geotextile fabric shall be MIRAFI 700X supplied by Mirafi, Inc., Charlotte, NC or equal.

## PART 3 EXECUTION

For installations on a compacted gravel base the subgrade shall be compacted to a minimum of 95% modified proctor density. Compacted aggregate shall be applied in even lifts of 4" and also compacted to a minimum of 95% modified proctor density. The specifier should be aware that the top surface of the pavers may be 1/8 to 1/4 inch above the final elevations after compaction. This difference in initial and final elevations is to compensate for possible minor settling.

### 3.01 EXAMINATION

- A. Verify that base is dry, uniform, even and ready to support sand, pavers and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.
- D. Beginning of installation means acceptance of base and edge restraints.

### 3.02 INSTALLATION

- A. Provide edge restraints as indicated - install edge restraints prior to placing unit pavers.

- B. Lay Filter Geotextile (if applicable) along edges where indicated in the drawings. Place geotextile over the compacted base course overlapping ends and edges at least 12 inches.
- C. Spread the sand evenly over the base course and screed to 1 - 1 ½ inches thickness. The screeded sand should not be disturbed. Sufficient sand shall be placed to ensure that no delay occurs in laying pavers. The screeded bedding sand shall not be subjected to any traffic by either mechanical or pedestrian use.
- D. Ensure that pavers are free of foreign material before installation. The installer shall take the pavers from the pallet by row consisting of 18 pavers. Each row shall be installed together to ensure proper color mix.
- E. Lay the pavers in the pattern(s) as shown on the drawings. Full pavers are to be laid first. The pavers should be laid hand tight. Maintain straight pattern lines and adjust as necessary.
- F. Joints between the pavers shall be between 1/16 inch wide.
- G. Fill gaps at the edges of the paved area with cut pavers or edge units. Cut pavers to be placed along the edge using a masonry saw and in such a manner that no segment is smaller than one quarter of a full paver.
- H. Use a low amplitude, high frequency plate vibrator capable of 3000 to 5000 lbs. centrifugal compaction force to vibrate the pavers into the sand. Vibrate the pavers, sweeping dry sand into the joints and vibrating until they are full. This will require at least two or three passes with the vibrator. Do not vibrate within three feet of the unrestrained edges of the paving units. (A plate vibrator is not recommended for straight edge pavers, instead use a hand tamp and board method for compaction)
- I. All work to within three feet of the laying face must be left fully compacted with sand-filled joints at the completion of each day.
- J. Sweep off excess sand when the job is complete. Contractor shall return to the site one month after installation is complete to inspect sand in joints. Contractor is responsible for adding additional sand to fill joints where necessary.
- K. The final surface elevations shall not deviate more than 3/8 inch under a 10 foot long straightedge.
- L. The surface elevation of pavers shall be 1/8 to 1/4 inch above adjacent drainage inlets, concrete collars or channels.

### 3.03 JOINT SAND STABILIZER APPLICATION (if applicable)

- A. The surface shall be made clean and free from oil, dust from cutting and any loose material prior to the application of an epoxy joint sand stabilizer. (Any sand or dirt left

on the pavers during sealing WILL BE SEALED TO THE PAVER. It is extremely difficult to correct this mistake!) The surface and joint sand shall be dry for its full depth prior to commencing work.

- B. The treated area shall be protected from rain or moisture and shall not be trafficked for 24 hours after the completion of the stabilizer application.

### 3.04 FIELD QUALITY CONTROL

- A. After removal of excess sand, check final elevations for conformance to the drawings.

### 3.05 PROTECTION AND CLEAN UP

#### A. Protection:

1. Protect work from damage, discoloration and theft.
2. All vehicles and equipment operating on the completed pavers before and after application of the joint sand stabilizer shall be maintained in a clean condition, so that oil, tar, rubber or other matter is not deposited on the surface of the pavers or adjacent paving and features.

#### B. Clean up:

1. All materials generated by construction work in this section shall be removed at the end of each section of the work and the site shall be left in a clean and safe condition.
2. After completion of any repair work, clean all exposed surfaces with clean water and stiff brushes until all stains and dirt are removed. Use cleaning solutions only that are recommended by the paver and stabilizer manufacturers and do not use wire brushes.

### 3.06 MAINTENANCE

#### A. Repairs:

1. Repair or replace any damaged work to the original specified condition.
2. Where lateral displacement of the pavers has occurred adjacent to edge restraints the cut pavers shall be replaced with new pavers of the correct size to comply with the specified joint widths and the surface shall be re-established.

#### B. Maintenance:

1. The installer shall return to the site at the Owners request over a period of one year from handover to rectify any problems in the work caused by its failure to adequately align the pavers, compact the bedding sand or fill the joints.

### 3.07 MEASUREMENT AND PAYMENT

Precast clay pavers shall be paid for at the lump sum price bid, complete-in-place, including all labor, equipment and materials, excavation, compaction, disposal of excess material, all types of clay pavers required, spacers, bedding material, joint sand, edge restraints, filter geotextile, aggregate base material, repairing damaged pavers and any other items required for a complete installation.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Precast Clay Pavers	Lump Sum

END OF SECTION

SPECIAL PROVISION  
PRECAST CONCRETE PAVERS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Concrete paver units
- B. Sand setting bed and joint sand

1.02. REFERENCES

- A. American Society of Testing Materials (ASTM):
  - 1. C1272 Standard Specification for Heavy Vehicular Paving Brick
  - 2. C136 Method for Sieve Analysis for Fine and Coarse Aggregate.
  - 3. C67 Method of Sampling and Testing Brick and Structural Clay Tile.
  - 4. C33 Specification for Concrete Aggregates.
  - 5. C144-89 Standard Specification for Aggregate for Masonry Mortar.

1.03. QUALITY ASSURANCE

- A. Installation shall be by an installer with at least two years' experience and who has installed at least 200,000 sq. ft. of sand set pavers in commercial projects.

1.04. SUBMITTALS

- A. Submit shop or product drawings and product data.
- B. Submit samples of concrete paving units. Concrete pavers shall match type, size, color and brand as used on the adjacent sections of the Midtown Connector project.
- C. Submit sieve analysis for grading of bedding and joint sand.
- D. Submit test results for compliance of paving unit requirements to ASTM C 902 or ASTM C 1272 from an independent testing laboratory.
- E. Submit installer qualifications: provide satisfactory evidence that the installer complies with the qualifications set out in section 1.03.
- F. Schedule & Work Plan: submit a detailed schedule and work plan.

1.05. DELIVERY, STORAGE AND HANDLING

- A. Deliver concrete pavers to the site in steel banded, plastic banded, or plastic wrapped cubes or on pallets capable of transfer by fork lift or clamp lift. Unload pavers at job site in such a manner that no damage occurs to the product.

- B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be secured in place.

#### 1.06. ENVIRONMENTAL CONDITIONS

- A. Do not install sand or pavers during heavy rain or snowfall.
- B. Do not install frozen sand.

### PART 2 PRODUCTS

#### 2.01. MANUFACTURED UNITS

- A. Concrete pavers may have spacer bars on each unit. These insure a minimum joint width between each unit in which the sand is placed. Spacer bars help prevent contact of the edges with adjacent pavers and subsequent chipping. Manually installed pavers may be installed with or without spacer bars.
- B. Concrete pavers shall be A Grade pavers manufactured/supplied by a member of the Brick Institute of America (BIA).
- C. Pavers shall meet the following requirements set forth in C 1272 Specification for Heavy Vehicular Paving Brick and shall conform to the PX standard.
  - 1. Minimum average compressive strength of 10,000 psi.
  - 2. The average cold water absorption shall not be greater than 6% with no individual unit testing greater than 7%. Absorption test results may not be achieved through the use of sealers or other products applied to the concrete paver. (Sealer protection degrades over time requiring re-application after several years.)
  - 3. Resistance of 50 freeze-thaw cycles, when tested in accordance with ASTM C67. In addition the clay paver must pass CSA-A231.2 freeze thaw test in saline solution without the use of sealers or other products applied to the paver. A test report must be submitted by the manufacturer. Salt is the most common substance used for de-icing during the winter months.
  - 4. Dimensional tolerances should meet the PX standard. The dimensional tolerances around the mean values for length, width, and depth shall be 1/16". (Studies show that dimensional tolerances are directly linked to joint width size and proper interlock.)
  - 5. The pavers should be solid units without core holes or other perforations.

6. The contractor shall ensure that the manufacturer conducts a test sampling of 24 pavers every 50,000 pavers manufactured to determine the pavers compliance with dimensional and water absorption characteristics. The 24paver sample shall be representative of the color mix in the typical finished package and chosen on a consistent basis from one kiln car. (Proper control procedures and testing are standard operating procedure for high quality manufacturers.)

## 2.02. BEDDING AND JOINT SAND

The type of sand used for bedding is often called concrete sand. Sands vary regionally. Contact paver installers local to the project and confirm sand(s) successfully used in previous similar applications.

- A. Bedding and joint sand shall be clean, non-plastic, free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Grading of samples shall be done according to ASTM C136. The particles shall be sharp and conform to the grading requirements of ASTM C33 as shown in Table 1.

Table 1  
Grading Requirements for Bedding and Joint Sand

Sieve Size	Percent Passing
3/8 in.	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

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- F. Joints between the pavers shall be between 1/16 inch and 1/8 inch (2 to 3 mm) wide.
- G. Fill gaps at the edges of the paved area with cut pavers or edge units. Cut pavers to be placed along the edge using a masonry saw and in such a manner that no segment is smaller than one quarter of a full paver.
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END OF SECTION