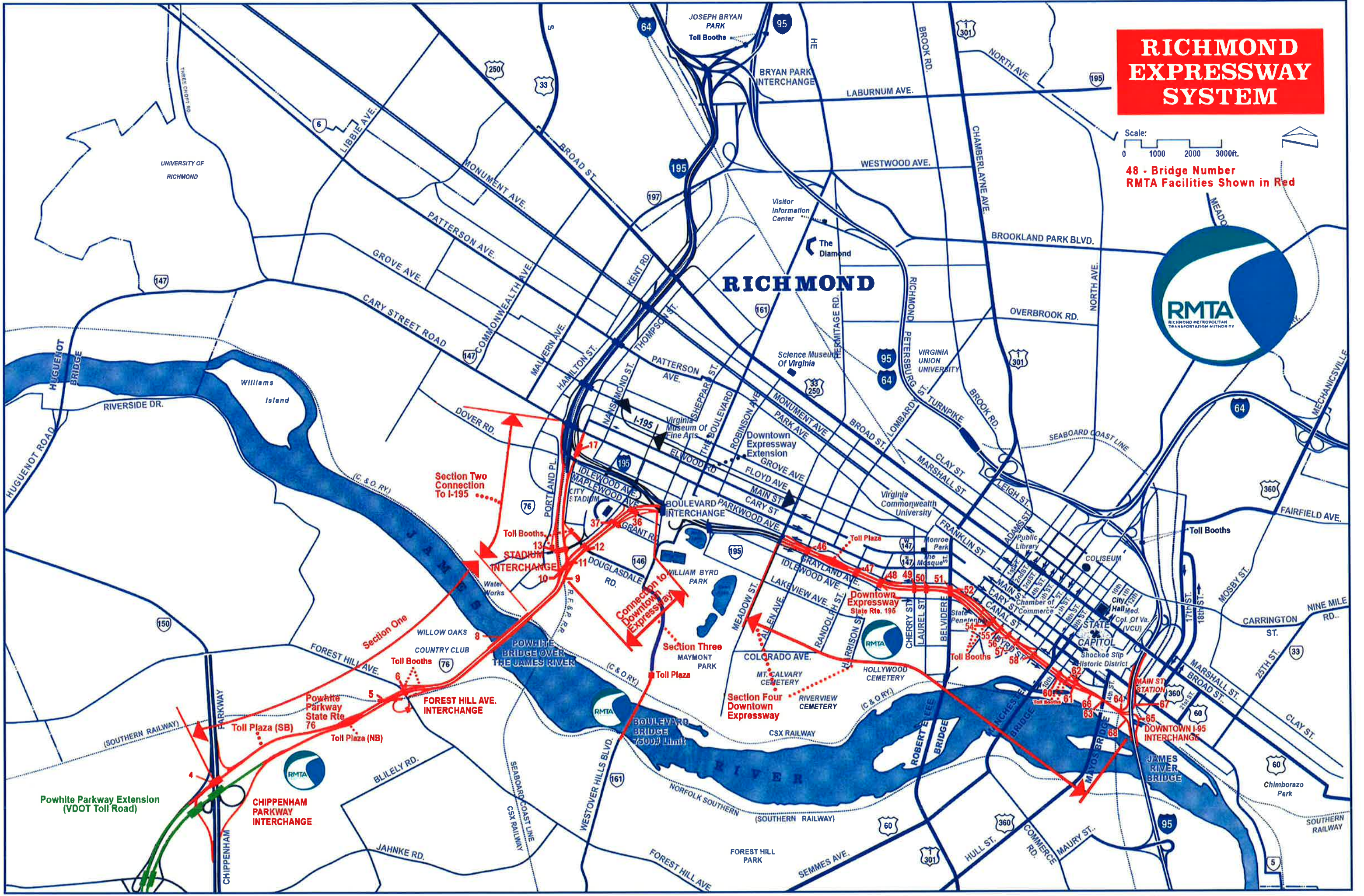


**APPENDIX
MOL-2017**

WORK LOCATIONS

RICHMOND EXPRESSWAY SYSTEM

Scale: 0 1000 2000 3000ft.
48 - Bridge Number
RMTA Facilities Shown in Red



Section Two
Connection
To I-195

Section One

Section Three

Section Four
Downtown
Expressway

Powhite Parkway Extension
(VDOT Toll Road)

CHIPPENHAM
PARKWAY
INTERCHANGE

FOREST HILL AVE.
INTERCHANGE

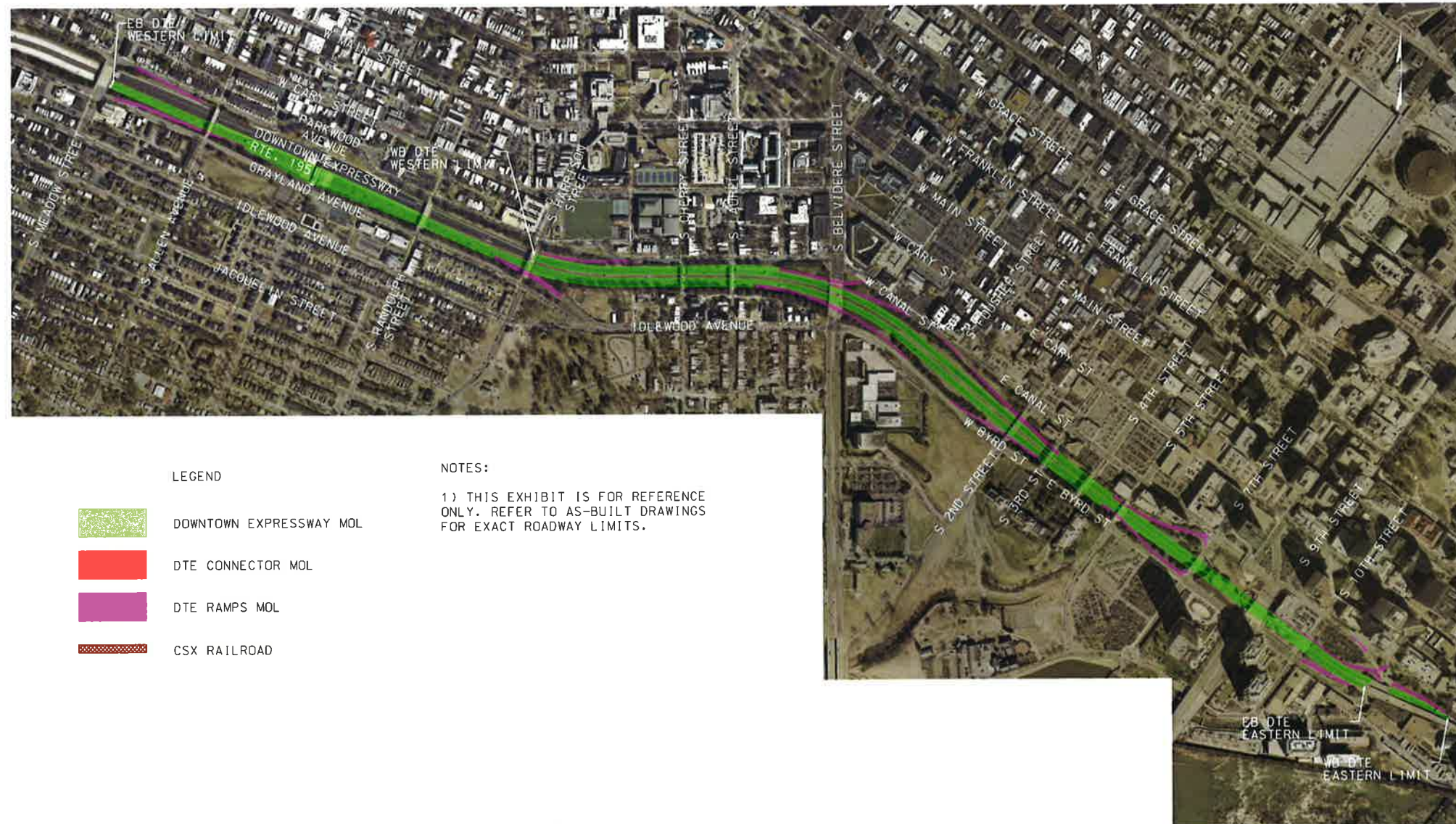
POWHITE
BRIDGE OVER
THE JAMES RIVER

Downtown
Expressway
State Rte. 196





MAIN ST
STATION

DOWNTOWN I-95
INTERCHANGE

JAMES RIVER
BRIDGE



LEGEND

-  DOWNTOWN EXPRESSWAY MOL
-  DTE CONNECTOR MOL
-  DTE RAMPS MOL
-  CSX RAILROAD

NOTES:

1) THIS EXHIBIT IS FOR REFERENCE ONLY. REFER TO AS-BUILT DRAWINGS FOR EXACT ROADWAY LIMITS.

DOWNTOWN EXPRESSWAY WESTBOUND LIMITS

EB DTE LIMITS

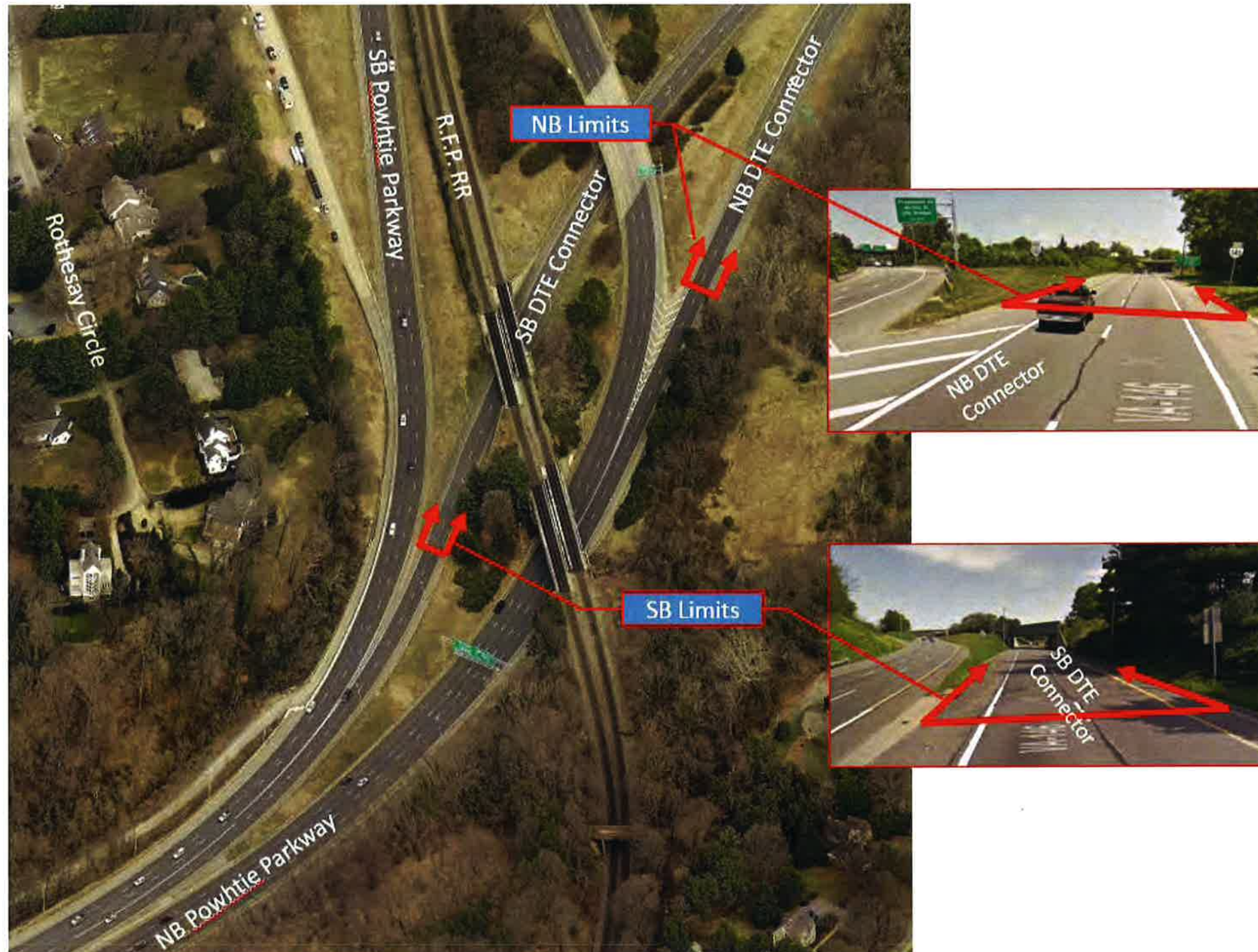
WB DTE LIMITS



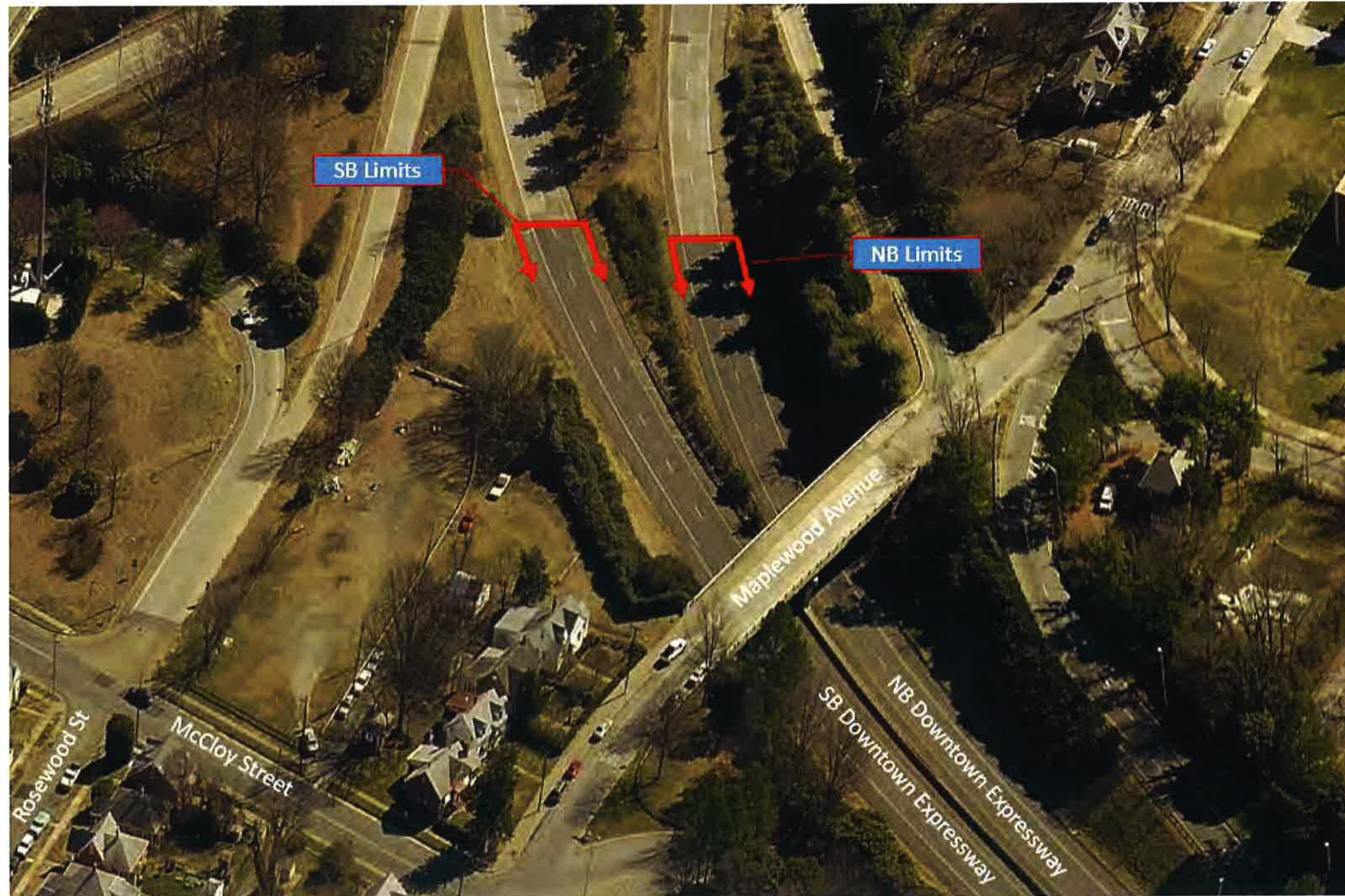
DOWNTOWN EXPRESSWAY EASTBOUND LIMITS



DOWNTOWN EXPRESSWAY CONNECTOR SOUTHERN LIMITS



DOWNTOWN EXPRESSWAY CONNECTOR NORTHERN LIMITS



DOWNTOWN EXPRESSWAY

EB DTE LIMITS: S MEADOW ST TO E BYRD ST
WB DTE LIMITS: S HARRISON ST TO VIRGINIA ST

RECORD PLAN SET (PARTIAL)

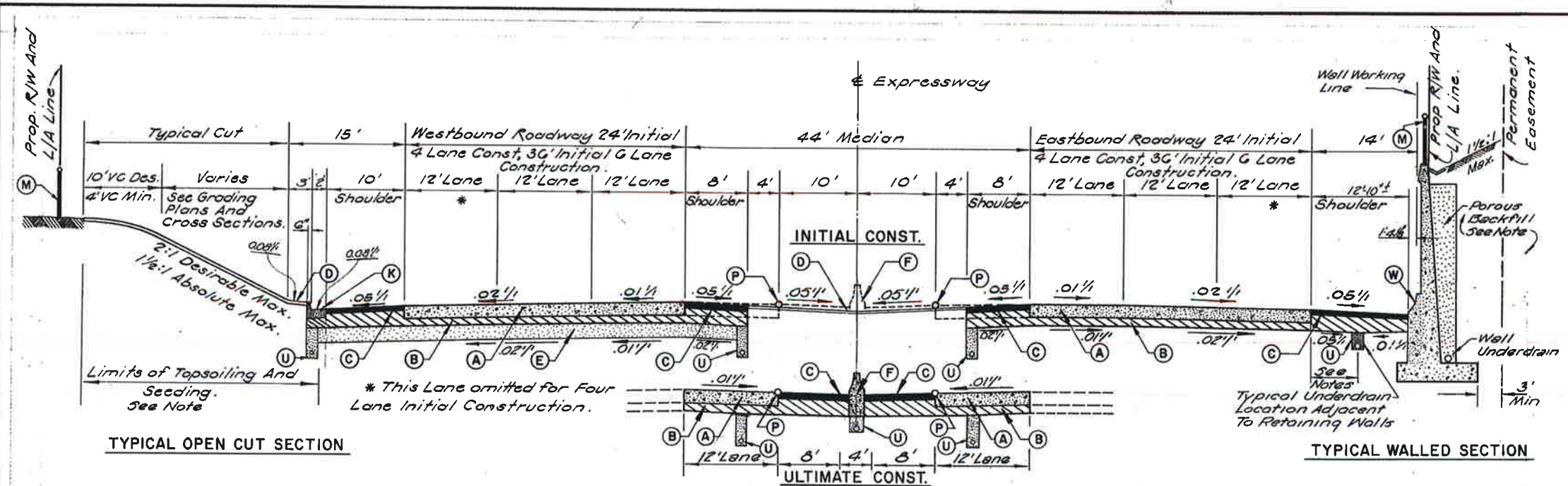
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	20	

LEGEND

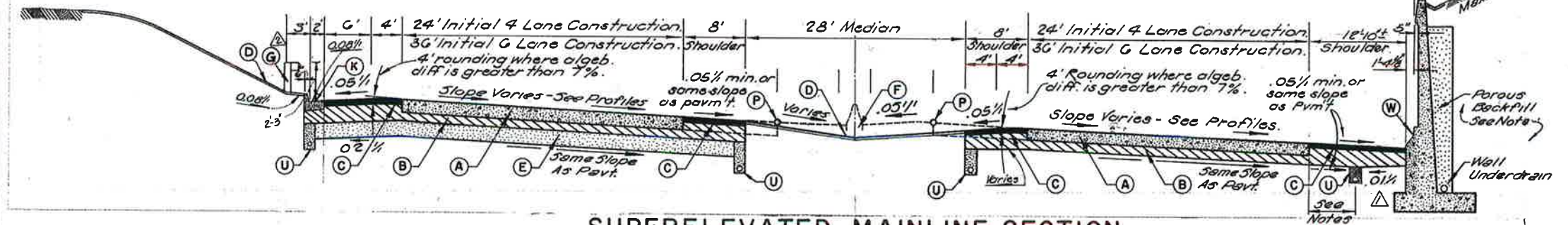
- (A) 8" Continuously Reinforced P.C.C. Pavement
- (B) 6" Subbase Course, Aggregate Size 21 or 21A Cement Stabilized 4% By Weight. Cure With 0.2 Gal./S.Y. Of RC-250 Or AE-2 & Cover With 15 Lbs./S.Y. Grade B Sand Or No.10 Aggregate.
- (C) 3" Bituminous Concrete Pavement Type I-2, Prime Subbase With 0.4 Gal./Sq. Yd. RC-250 Or AE-2.
- (D) 3" Topsoil Class "B" and Seed As Indicated In General Notes.
- (E) Undercut, Backfill With Select Material, Type I Min. CBR-30. (See Profiles. For Location and Depth).
- (F) Concrete Median Barrier (Std. MB-6A)
- (G) Steel Beam Guardrail (Std. GR-2A or 2B and GR-1A or 1B) Type and Location See Pavement Plans.
- (H) 6" Curb (Std. CG-2) For Location See Pavement Plans.
- (K) Combination Curb and Gutter (Std. CG-6).
- (L) P.C.C. Sidewalk (4" Thick).
- (M) Chain Link Fence (Std. FE-2).
- (P) Profile Grade Line.
- (U) Underdrain (Std. UD-1 or UD-2) For Location See Grading and Drainage Plans, Cross Sections and Underdrain Tabulation.
- (V) 8" Reinforced P.C.C. Pavement.
- (W) Concrete Barrier (Std. MB-6B Mod.)

GENERAL NOTES:

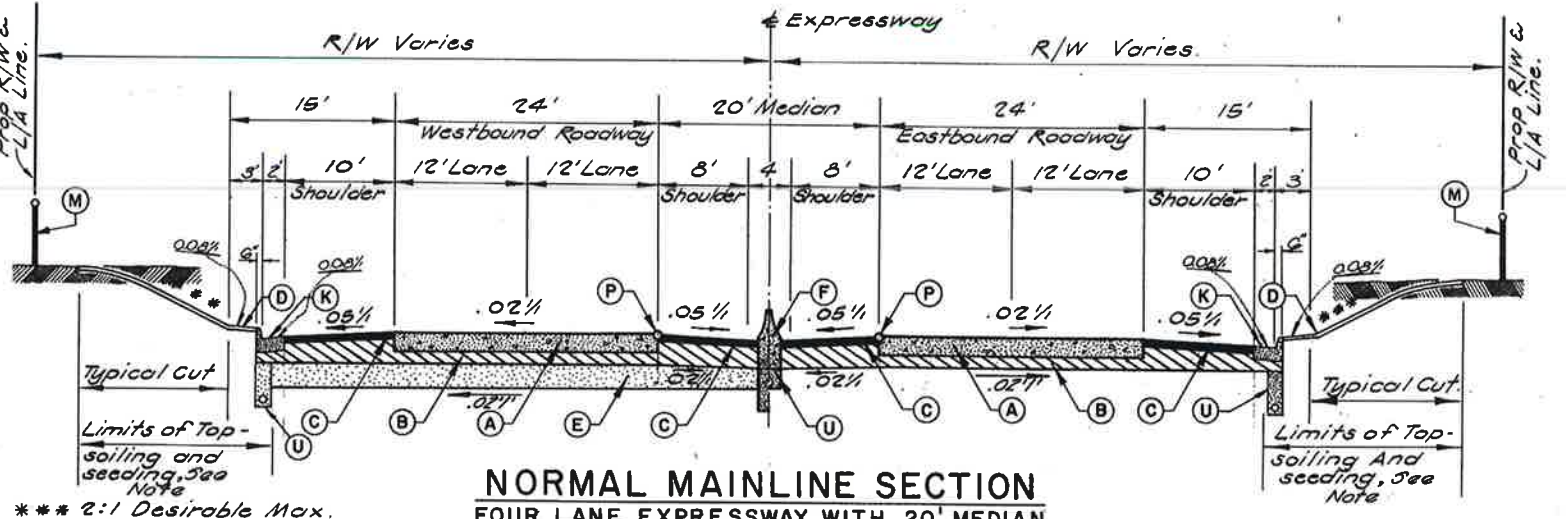
- Typical Sections Are Intended To Show The General Features Of The Proposed Construction. For Exact Details At Any Given Location Refer To Pavement Plans.
- Disturbed Areas Outside The Limits Of Cut And Fill Slopes Shall Be Topsoiled And Seeded As Directed By The Engineer.
- For Construction Slopes And Backfill Requirements Behind Retaining Walls See Sheet No.
- For Exact Location Of Roadway Underdrain Adjacent To Walls See Grading Drainage and Utility Plans, Miscellaneous Details, Cross Sections and Underdrain Tabulations.



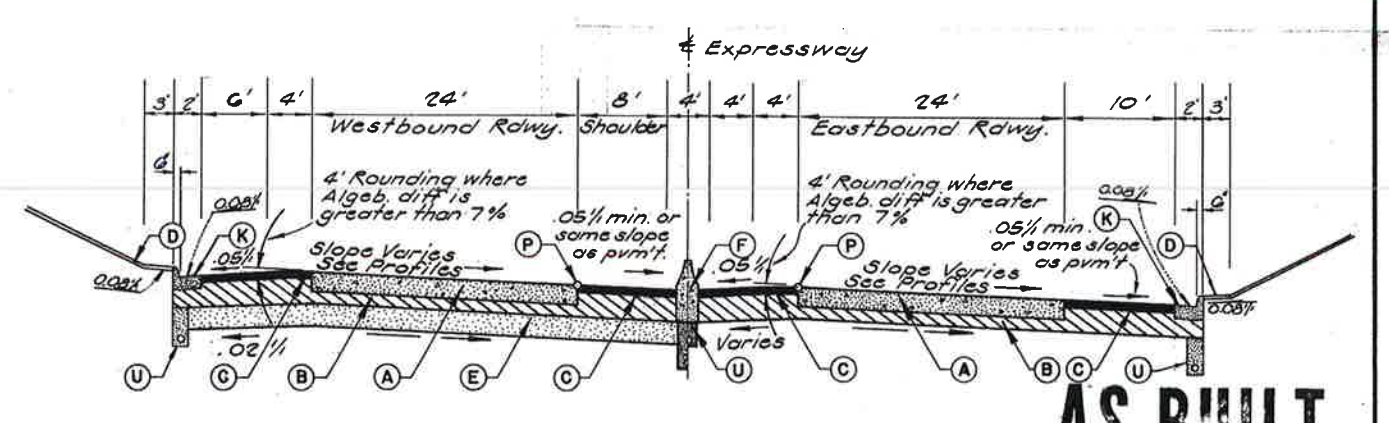
NORMAL MAINLINE SECTION WITH PROVISIONS FOR FUTURE WIDENING



SUPERELEVATED MAINLINE SECTION WITH PROVISIONS FOR FUTURE WIDENING



NORMAL MAINLINE SECTION FOUR LANE EXPRESSWAY WITH 20' MEDIAN NO PROVISIONS FOR FUTURE WIDENING



SUPERELEVATED MAINLINE SECTION FOUR LANE EXPRESSWAY WITH 20' MEDIAN NO PROVISIONS FOR FUTURE WIDENING

AS BUILT
RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

TYPICAL MAINLINE SECTIONS

MADE	CHECKED	IN CHARGE	BY	DATE
TK	WHM	JRF		4/27
				10/27
				11/14/75
				2/12/76

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY

SCALE: ---
CONTRACT NO.: 8
SHEET NO. OF ---

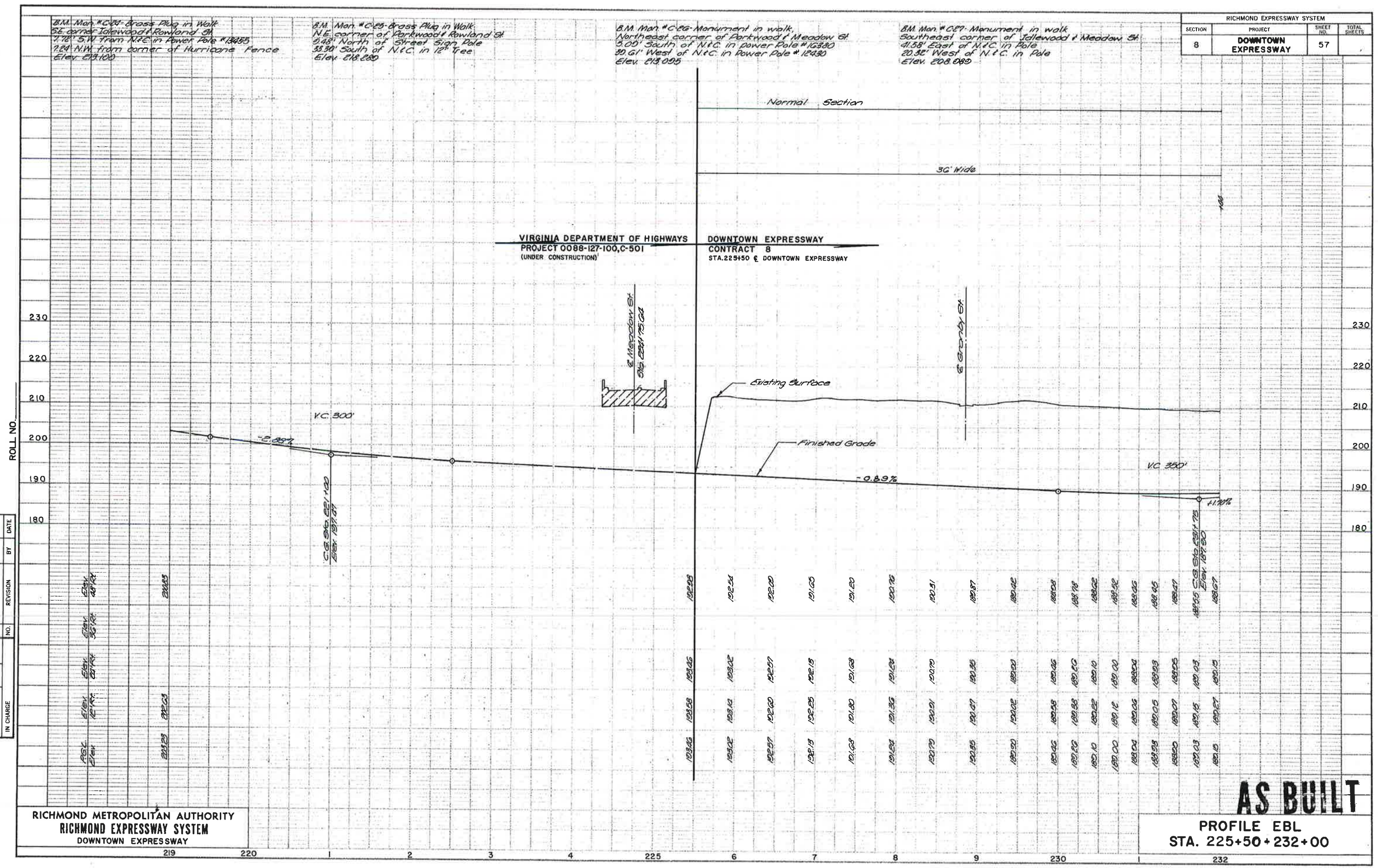
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	57	

B.M. Mon #C-24- Brass Plug in Walk
56' corner Idlewood & Rowland St
7.78' S.W. from N.E. in Power Pole #13435
7.24' N.W. from corner of Hurricane Fence
Elev. 219.100

B.M. Mon #C-25- Brass Plug in Walk
N.E. corner of Parkwood & Rowland St
9.48' North of Street Sign Pole
38.30' South of N.C. in 12" Tree
Elev. 218.280

B.M. Mon #C-26- Monument in walk
Northeast corner of Parkwood & Meadow St
3.00' South of N.C. in Power Pole #15380
39.61' West of N.C. in Power Pole #12430
Elev. 218.025

B.M. Mon #C-27- Monument in walk
Southeast corner of Idlewood & Meadow St
41.58' East of N.C. in Pole
20.32' West of N.C. in Pole
Elev. 208.080

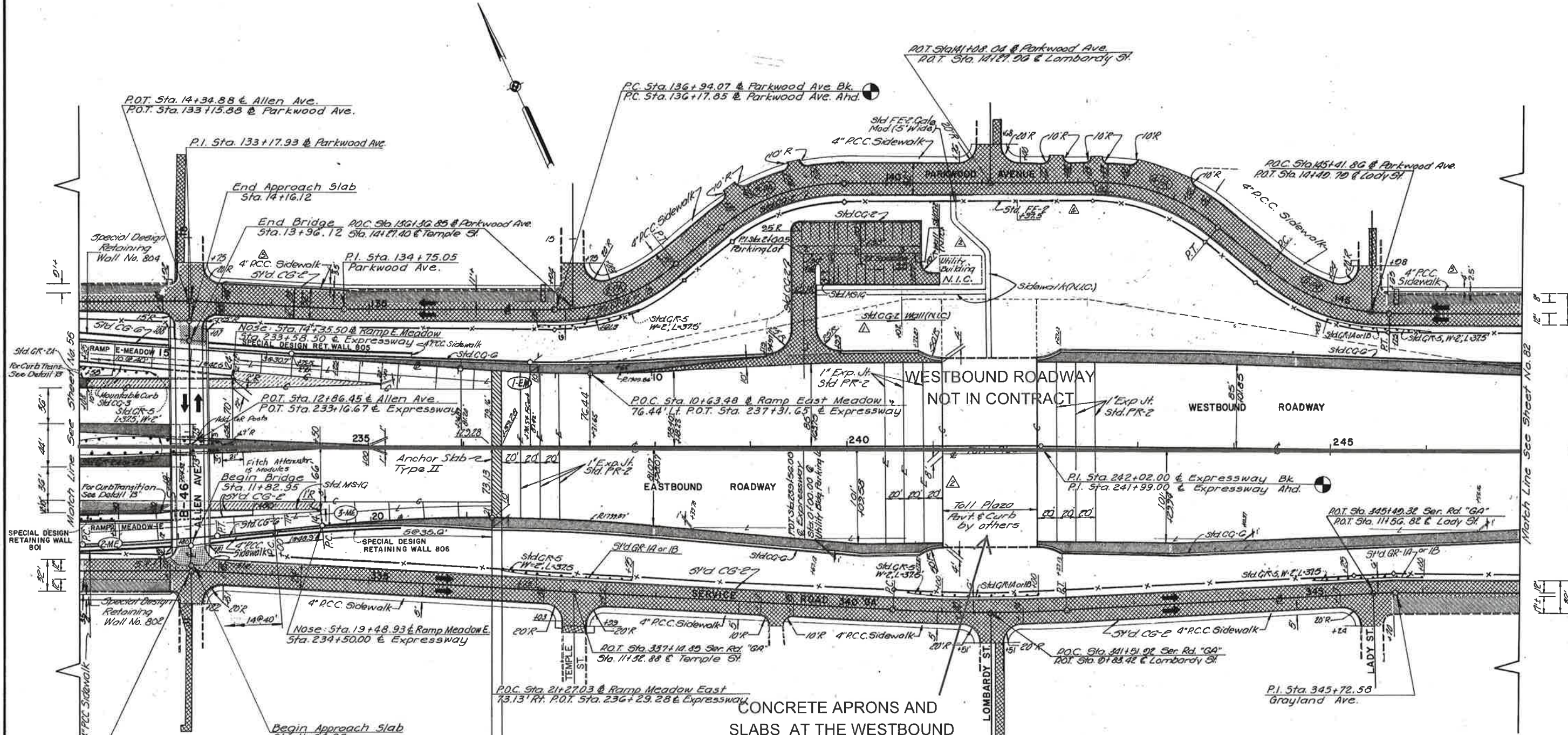


MADE	BY	DATE	NO.	REVISION	BY	DATE
CHECKED						
IN CHARGE						

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT
PROFILE EBL
STA. 225+50+232+00

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	70	



CONCRETE APRONS AND SLABS AT THE WESTBOUND TOLL PLAZA ARE NOT IN CONTRACT

SEE DTE-ORT 2011 PLANS FOR CURRENT ROADWAY GEOMETRY

- LEGEND**
- Bituminous Concrete Paved Shoulder
 - Concrete Bridge Approach Slabs
 - Existing Pavement to be Resurfaced
 - Bituminous Concrete Pavement
 - Plain P.C.C. Base topped with Bituminous Concrete type 3-5.
 - Longitudinal Joint
 - Construction Joint
 - Transverse Joint

AS BUILT

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

PAVEMENT PLAN
STA. 232+00 TO STA. 247+00

AMERICAN ENGINEERS
Richmond, Virginia
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
General Consultants

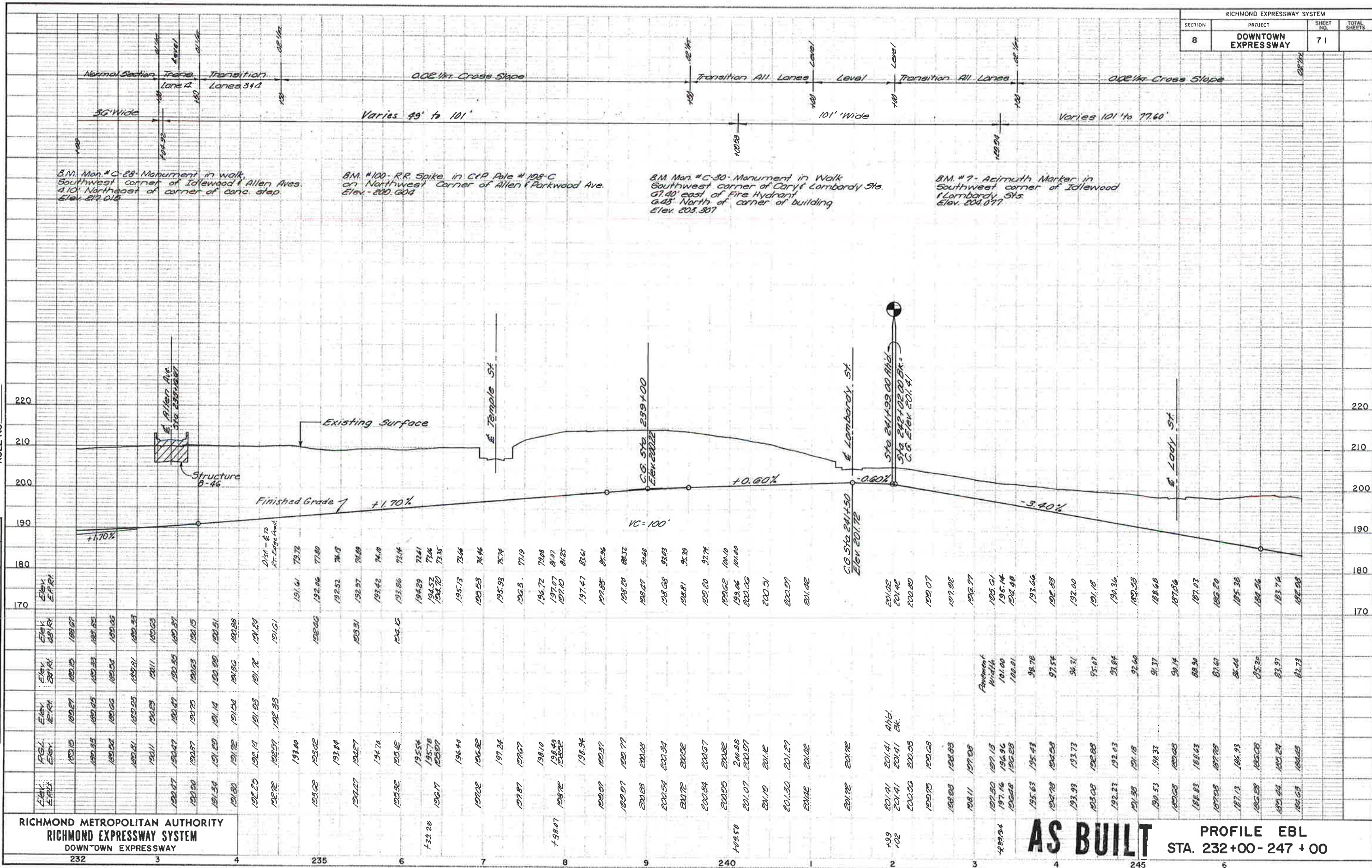
SCALE: 1" = 50'
CONTRACT NO. 8
SHEET NO. OF

NO.	REVISION	BY	DATE
1	Add Sidewalk	DGT	2-76
2	Rev. Median Section	MMH	11-75
3	Add Pavement Detail	R.K.L.	8/21/75
4	Revise Walk loc. Toll Plaza	P.H.T.	10-576
5	Rev. Park Area	P.H.T.	3-20-76

MADE	CHECKED	IN CHARGE

Note:
For Curb Transition Detail 'B' See Sheet
For profile see sheet

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	71	



MADE	BY	DATE
CHECKED	BY	DATE
IN CHARGE	BY	DATE

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT PROFILE EBL
STA. 232+00 - 247+00

B.M. Mon. # C-28 Monument in walk, Southwest corner of Idlewood & Allen Aves. 4.10' Northeast of corner of conc. step. Elev. 217.015

B.M. #100 - R.R. Spike in C&P Pole # 108-C on Northwest Corner of Allen & Parkwood Ave. Elev. 220.604

B.M. Mon. # C-30 Monument in Walk Southwest corner of Cary & Lombardy Sts. 67.40' east of Fire Hydrant 6.48' North of corner of building. Elev. 205.307

B.M. # 7 - Azimuth Marker in Southwest corner of Idlewood & Lombardy Sts. Elev. 204.077

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	82	

END OF WESTBOUND ROADWAY MILL & OVERLAY
AND END OF RAMP LINDEN WEST MILL & OVERLAY

PORTION OF WESTBOUND ROADWAY
WEST OF B-48 IS NOT IN CONTRACT

END OF RAMP WEST LINDEN
MILL & OVERLAY. (35' PAST PT)

SEE DTE-ORT 2011 PLANS
FOR CURRENT
ROADWAY GEOMETRY

AS BUILT

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

PAVEMENT PLAN
STA. 247+00 TO STA. 261+50

AMERICAN ENGINEERS
Richmond, Virginia
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
General Consultants

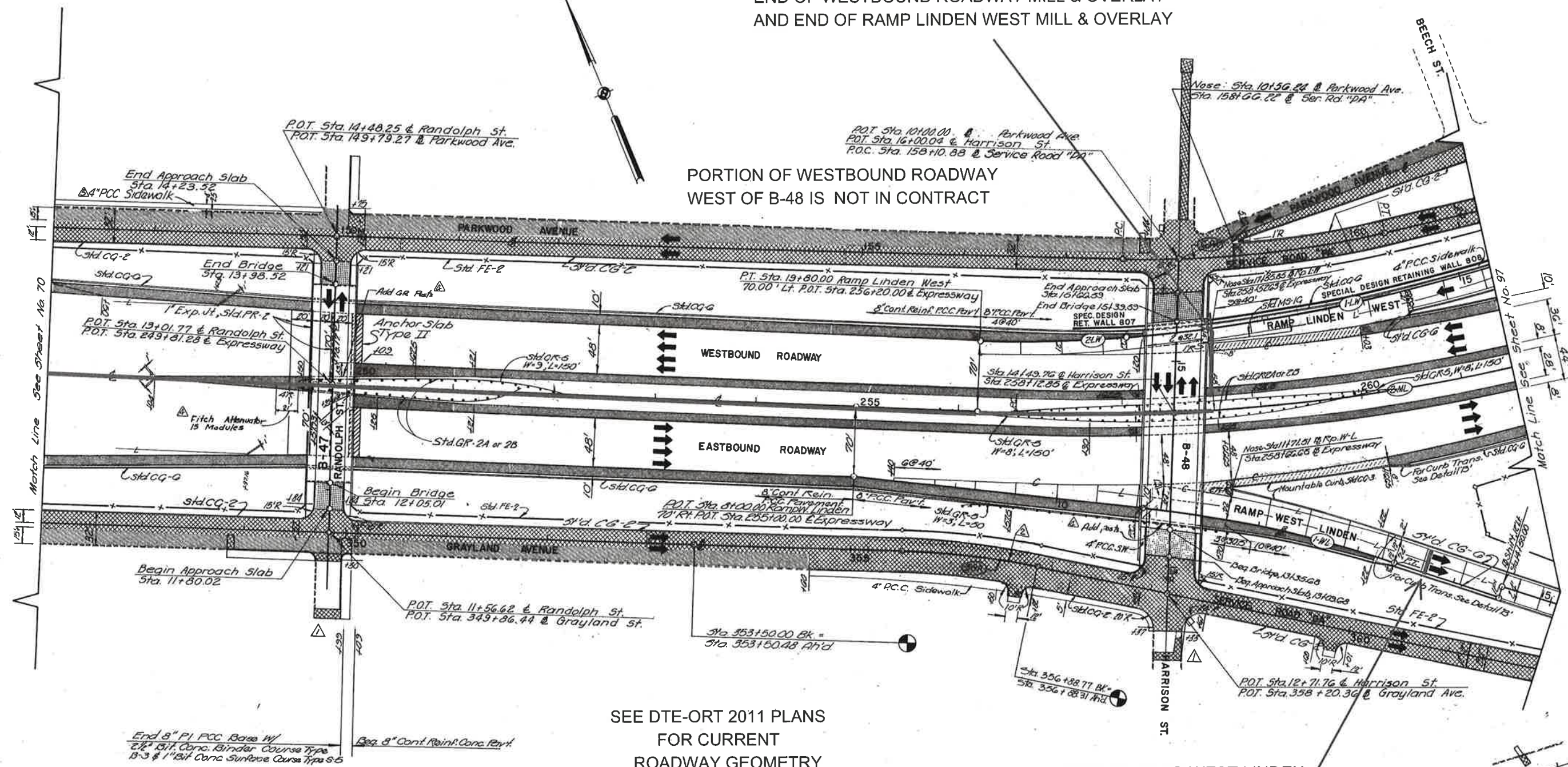
SCALE: 1" = 50'
CONTRACT NO. 8
SHEET NO. OF

- LEGEND**
- Bituminous Concrete Paved Shoulders
 - Concrete Bridge Approach Slabs
 - Existing Pavement to be Resurfaced
 - Bituminous Concrete Pavement
 - 6" Plain P.C.C. Base topped with 2" Bituminous Concrete type 3-5
 - Longitudinal Joint
 - Construction Joint
 - Transverse Joint

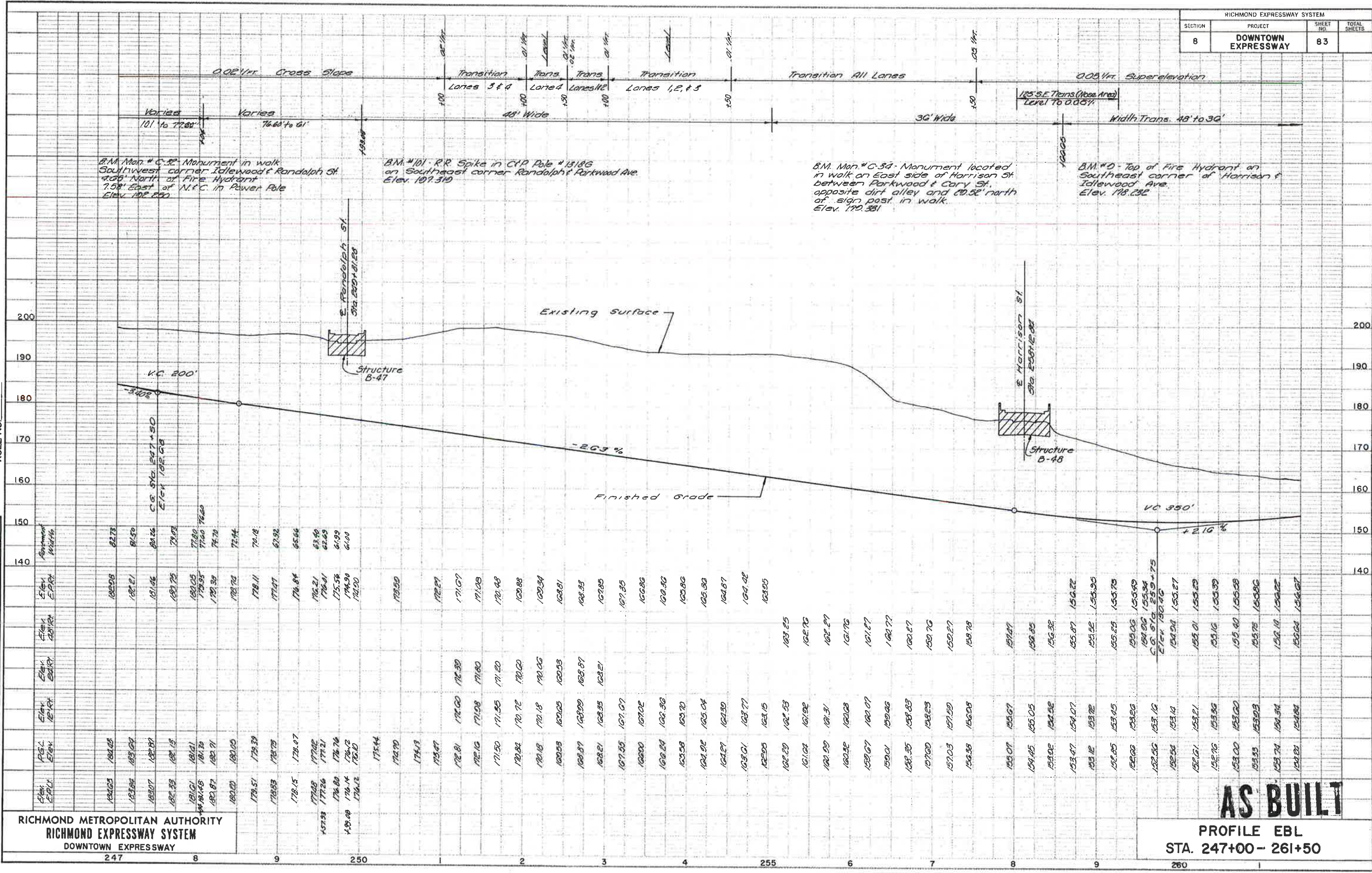
NOTE
For Curb Transition Detail
15' see Street
For profile see sheet 85

MADE	CHECKED	IN CHARGE	BY	DATE	NO.	REVISION	BY	DATE

ADD	ADD SIDEWALK	DGT	2-76
ADD	ADD JOINT DETAIL	RKL	4/1/75
REVISE	REVISE CURB 3-CA	RKL	11/5/76
REVISE	REVISED PAVEMENT PATCH	P.H.T.	3-29-74



RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	83	



B.M. Mon # C-32 Monument in walk Southwest corner Idlewood & Randolph St 4.00' North of Fire Hydrant 7.50' East of N.C. in Power Pole Elev. 192.500

B.M. #101 R.R. Spike in CYP Pole #13186 on Southeast corner Randolph & Parkwood Ave. Elev. 197.319

B.M. Mon # C-34 Monument located in walk on East side of Harrison St between Parkwood & Cary St. opposite dirt alley and 20.50' north of sign post in walk. Elev. 190.381

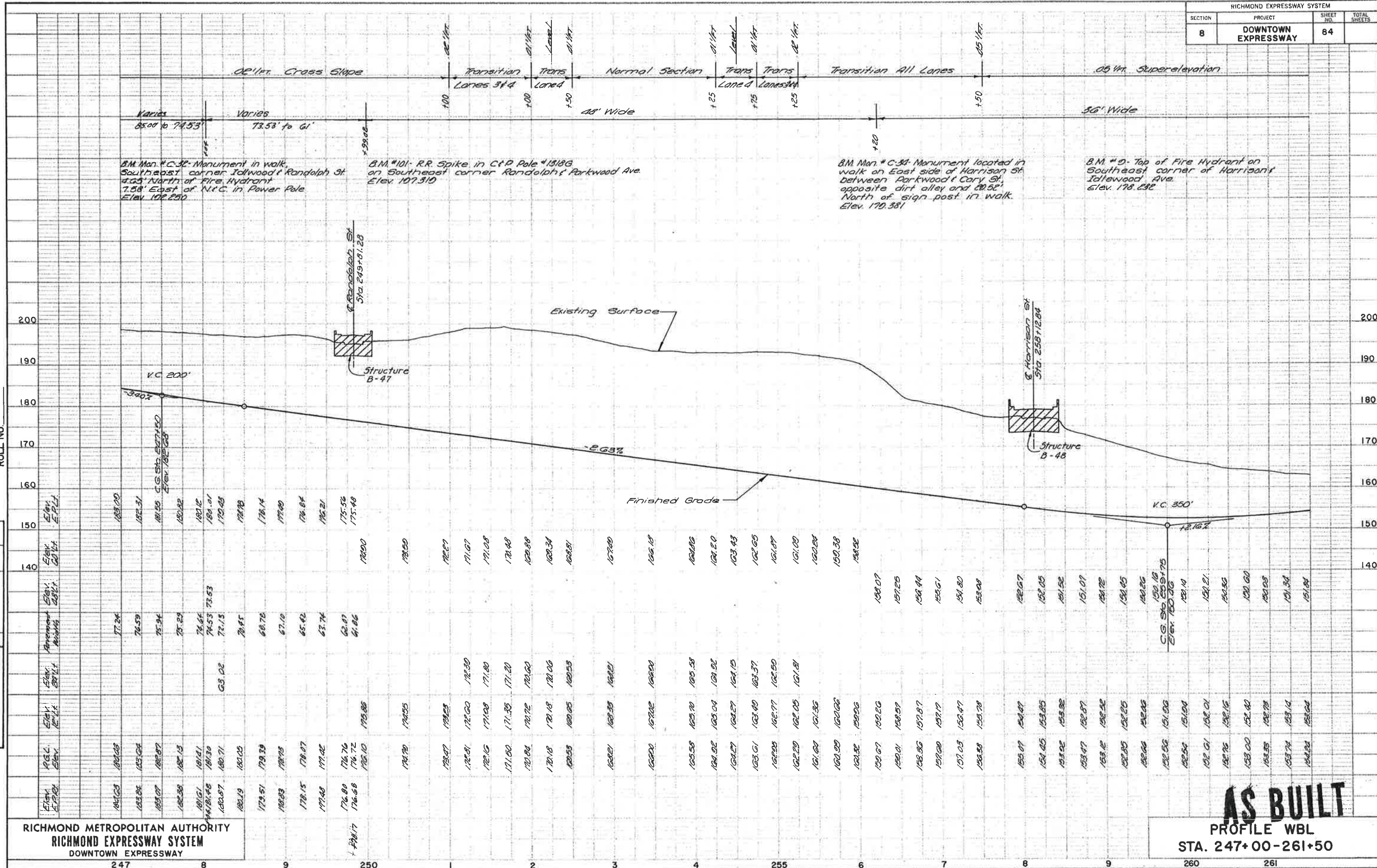
B.M. #D - Top of Fire Hydrant on Southeast corner of Harrison & Idlewood Ave. Elev. 178.232

MADE	CHECKED	IN CHARGE	BY	DATE

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT
PROFILE EBL
STA. 247+00 - 261+50

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	84	



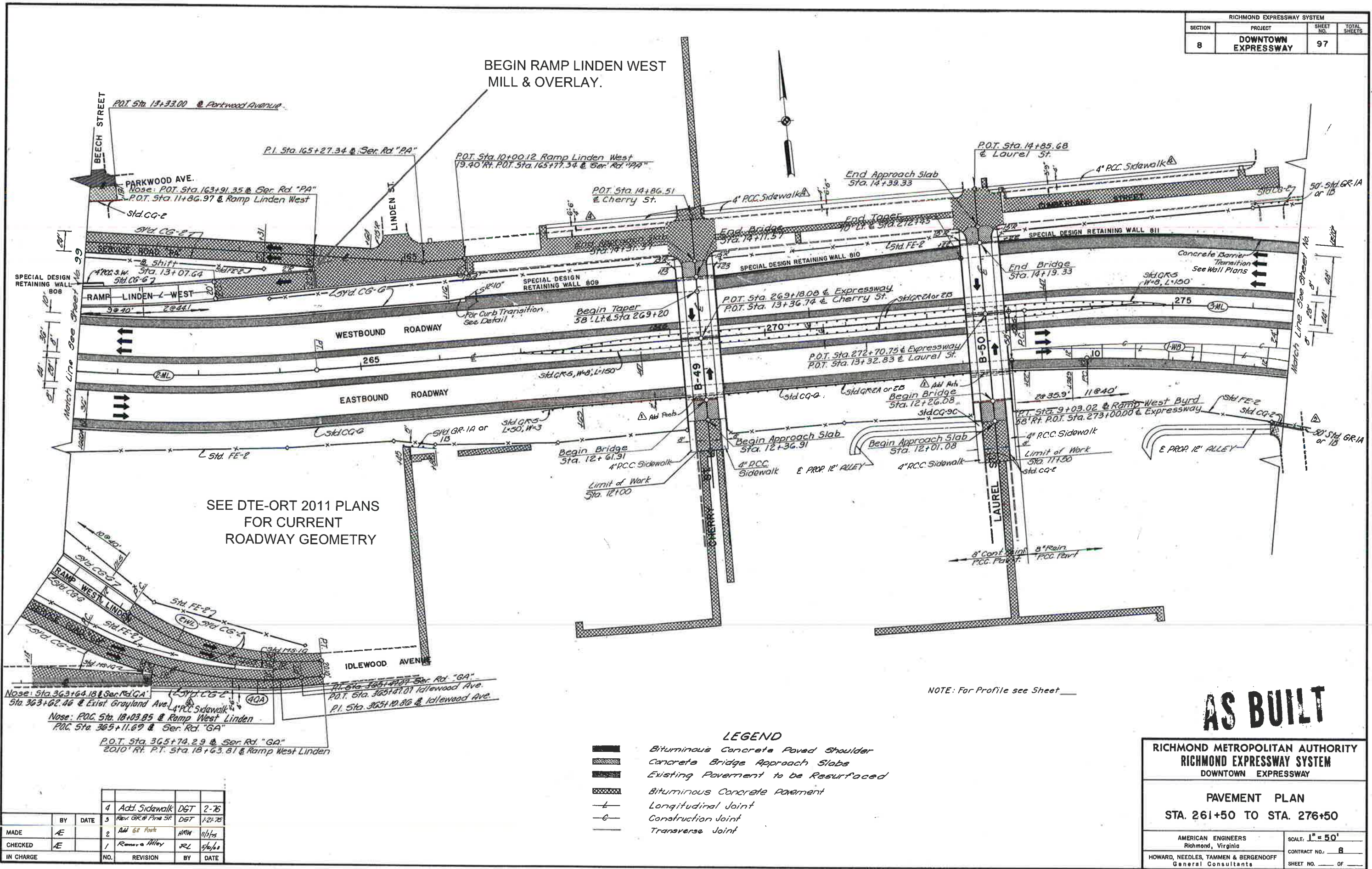
MADE	BY	DATE
CHECKED	BY	DATE
IN CHARGE	BY	DATE

NO.	REVISION	BY	DATE

RICHMOND METROPOLITAN AUTHORITY
 RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY

AS BUILT
 PROFILE WBL
 STA. 247+00-261+50

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	97	



- LEGEND**
- Bituminous Concrete Paved Shoulder
 - Concrete Bridge Approach Slabs
 - Existing Pavement to be Resurfaced
 - Bituminous Concrete Pavement
 - Longitudinal Joint
 - Construction Joint
 - Transverse Joint

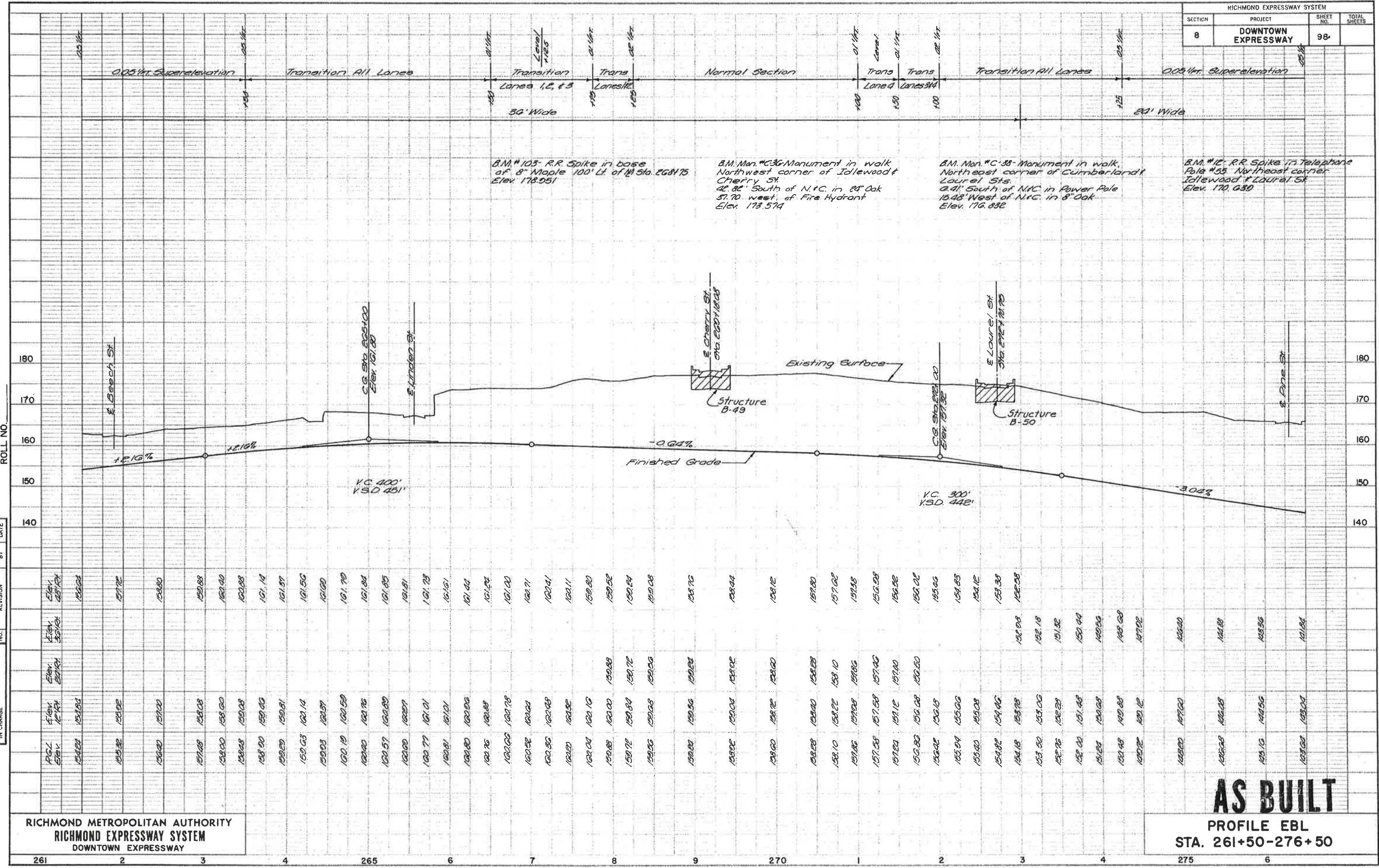
AS BUILT

**RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY**

**PAVEMENT PLAN
STA. 261+50 TO STA. 276+50**

AMERICAN ENGINEERS Richmond, Virginia	SCALE: 1" = 50' CONTRACT NO. B
HOWARD, NEEDLES, TAMMEN & BERGENDOFF General Consultants	SHEET NO. 97 OF 97

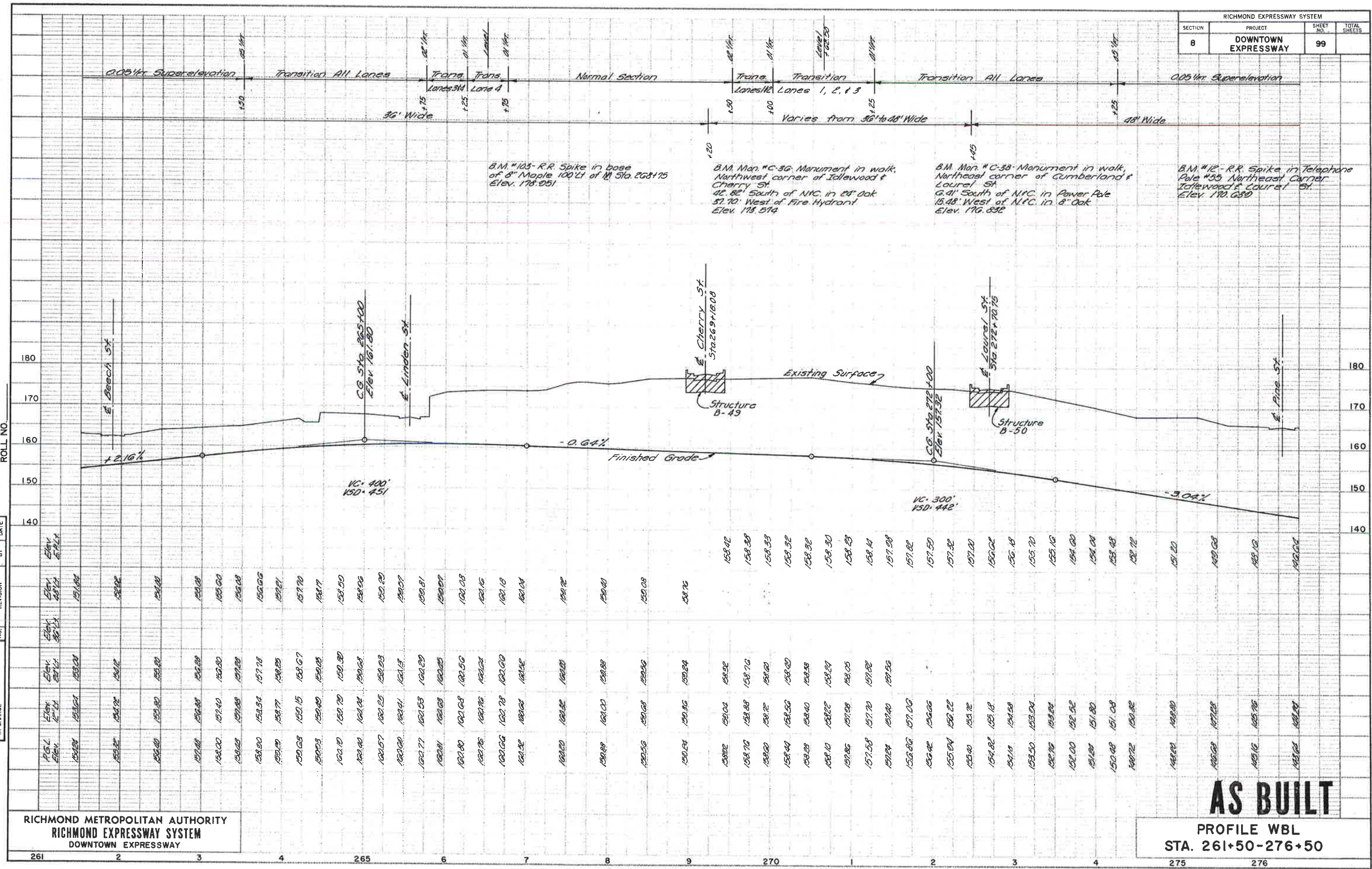
NO.	REVISION	BY	DATE
4	Add Sidewalk	DGT	2-76
3	Rev. GR @ Pine St.	DGT	1-21-75
2	ADD GR Posts	HAW	11/75
1	Remove Alley	RL	5/1/68



MADE	CHECKED	IN CHARGE	BY	DATE
NO.	REVISION	BY	DATE	

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT
PROFILE EBL
STA. 261+50-276+50

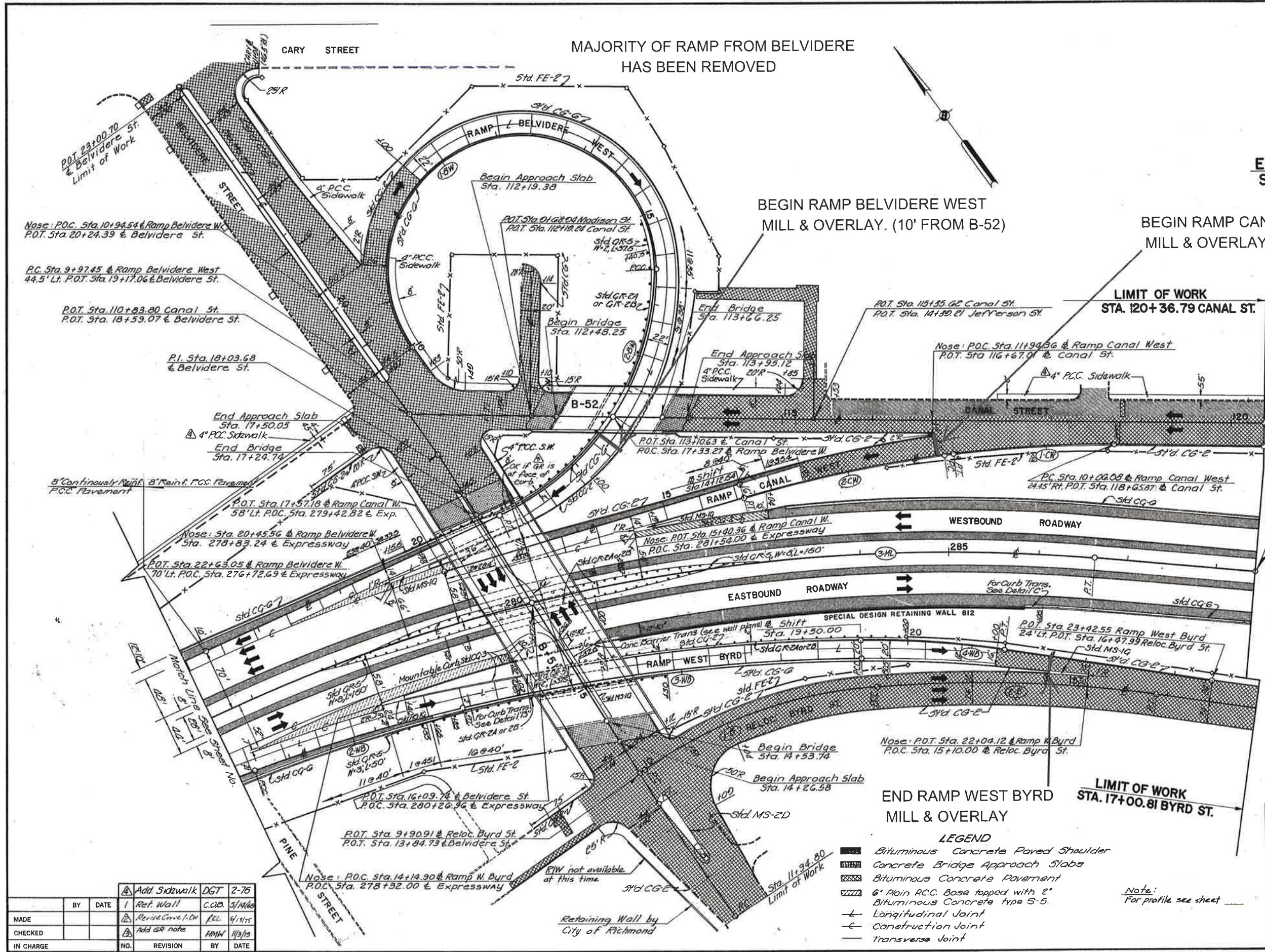


MADE	BY	DATE
CHECKED		
IN CHARGE		

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT
PROFILE WBL
STA. 261+50-276+50

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	110	



**END CONTRACT C-8
STA. 288+43.31**

BEGIN RAMP CANAL WEST
MILL & OVERLAY.

BEGIN RAMP BELVIDERE WEST
MILL & OVERLAY. (10' FROM B-52)

**LIMIT OF WORK
STA. 120+36.79 CANAL ST.**

**LIMIT OF WORK
STA. 17+00.81 BYRD ST.**

END RAMP WEST BYRD
MILL & OVERLAY

AS BUILT

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

PAVEMENT PLAN
STA. 276+50 TO STA. 288+43.31

AMERICAN ENGINEERS
Richmond, Virginia
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
General Consultants

SCALE: 1" = 50'
CONTRACT NO. 8
SHEET NO. OF

- LEGEND**
- Bituminous Concrete Paved Shoulder
 - ▨ Concrete Bridge Approach Slabs
 - ▩ Bituminous Concrete Pavement
 - ▧ 6" Plain P.C.C. Base topped with 2" Bituminous Concrete type S-5.
 - Longitudinal Joint
 - Construction Joint
 - Transverse Joint

Note:
For profile see sheet

NO.	REVISION	BY	DATE
1	Add Sidewalk	DGT	2-76
2	Ref. Wall	C.A.B.	5/11/66
3	Revise Curve I.C.W.	P.C.L.	6/1/75
4	Add GR note	H.M.W.	11/3/75

MADE	BY	DATE

CHECKED	BY	DATE

IN CHARGE	NO.	REVISION	BY	DATE

Retaining Wall by
City of Richmond

R/W not available
at this time

Limit of Work
Sta. 11+94.80

Begin Approach Slab
Sta. 14+26.58

Nose: P.O.T. Sta. 22+04.12 & Ramp W. Byrd
P.O.C. Sta. 15+10.00 & Reloc. Byrd St.

P.O.T. Sta. 23+42.55 Ramp West Byrd
24' Lt. P.O.T. Sta. 16+47.99 Reloc. Byrd St.

P.C. Sta. 10+00.08 & Ramp Canal West
24.45' Rt. P.O.T. Sta. 118+63.87 & Canal St.

Nose: P.O.C. Sta. 11+94.86 & Ramp Canal West
P.O.T. Sta. 116+67.01 & Canal St.

P.O.T. Sta. 115+55.02 Canal St.
P.O.T. Sta. 14+30.01 Jefferson St.

End Approach Slab
Sta. 113+95.12
4" P.C.C. 20'R

End Bridge
Sta. 113+66.25

Begin Bridge
Sta. 112+48.25

Begin Approach Slab
Sta. 112+19.38

Nose: P.O.C. Sta. 14+14.90 & Ramp W. Byrd
P.O.T. Sta. 278+32.00 & Expressway

P.O.T. Sta. 9+90.91 & Reloc. Byrd St.
P.O.T. Sta. 13+84.73 & Belvidere St.

P.O.T. Sta. 16+09.74 & Belvidere St.
P.O.C. Sta. 280+26.96 & Expressway

P.O.T. Sta. 22+63.05 & Ramp Belvidere W.
70' Lt. P.O.C. Sta. 276+72.69 & Expressway

Nose: Sta. 20+45.56 & Ramp Belvidere W.
Sta. 278+83.24 & Expressway

P.O.T. Sta. 17+57.18 & Ramp Canal W.
58' Lt. P.O.C. Sta. 279+42.82 & Exp.

End Approach Slab
Sta. 17+50.05
4" P.C.C. Sidewalk

P.I. Sta. 18+03.68
& Belvidere St.

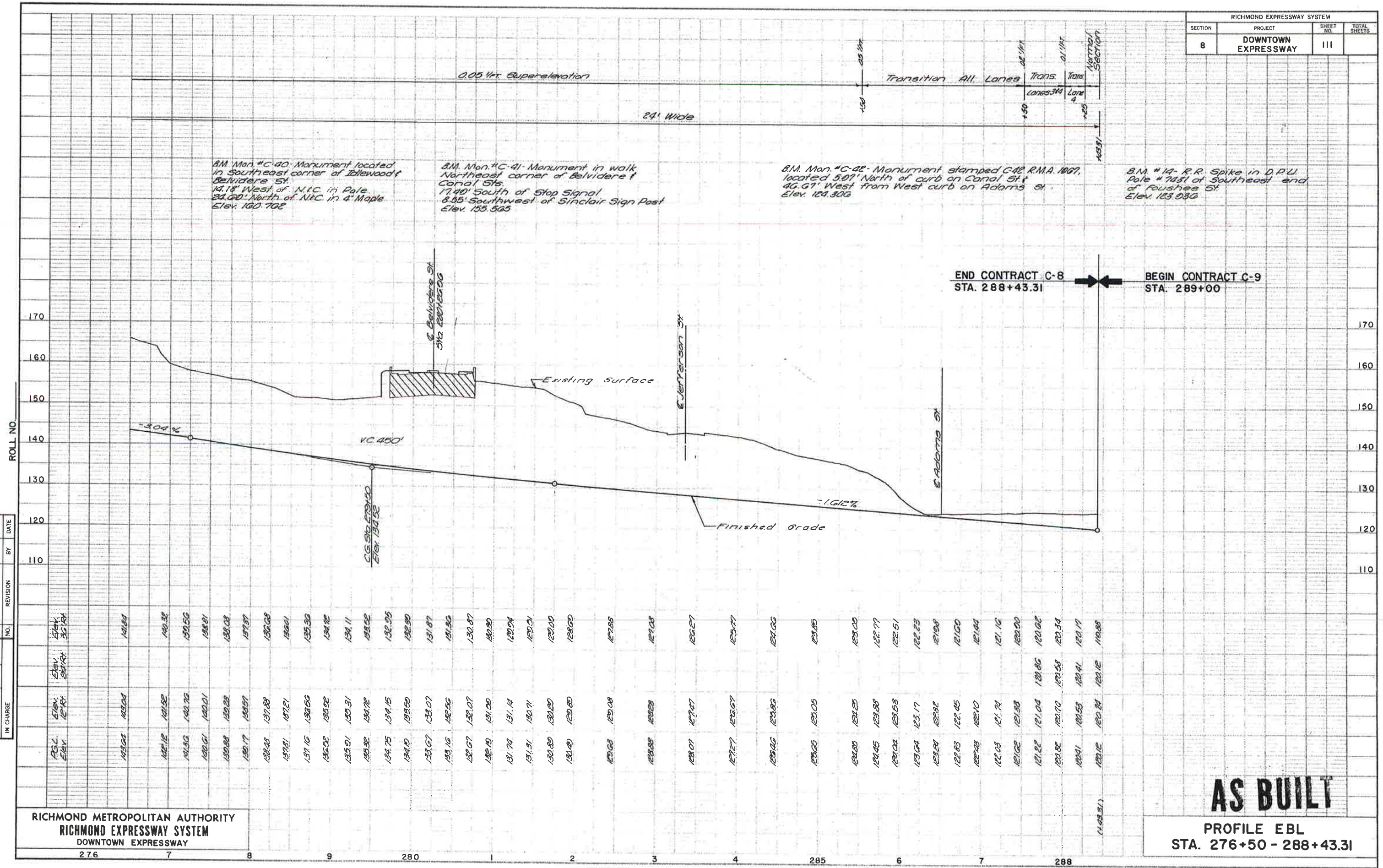
P.O.T. Sta. 110+83.80 Canal St.
P.O.T. Sta. 18+59.07 & Belvidere St.

P.C. Sta. 9+97.45 & Ramp Belvidere West
44.5' Lt. P.O.T. Sta. 19+17.06 & Belvidere St.

Nose: P.O.C. Sta. 10+94.54 & Ramp Belvidere W.
P.O.T. Sta. 20+24.39 & Belvidere St.

P.O.T. 23+00.70
& Belvidere St.
Limit of Work

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	111	



MADE	BY	DATE
CHECKED		
IN CHARGE		

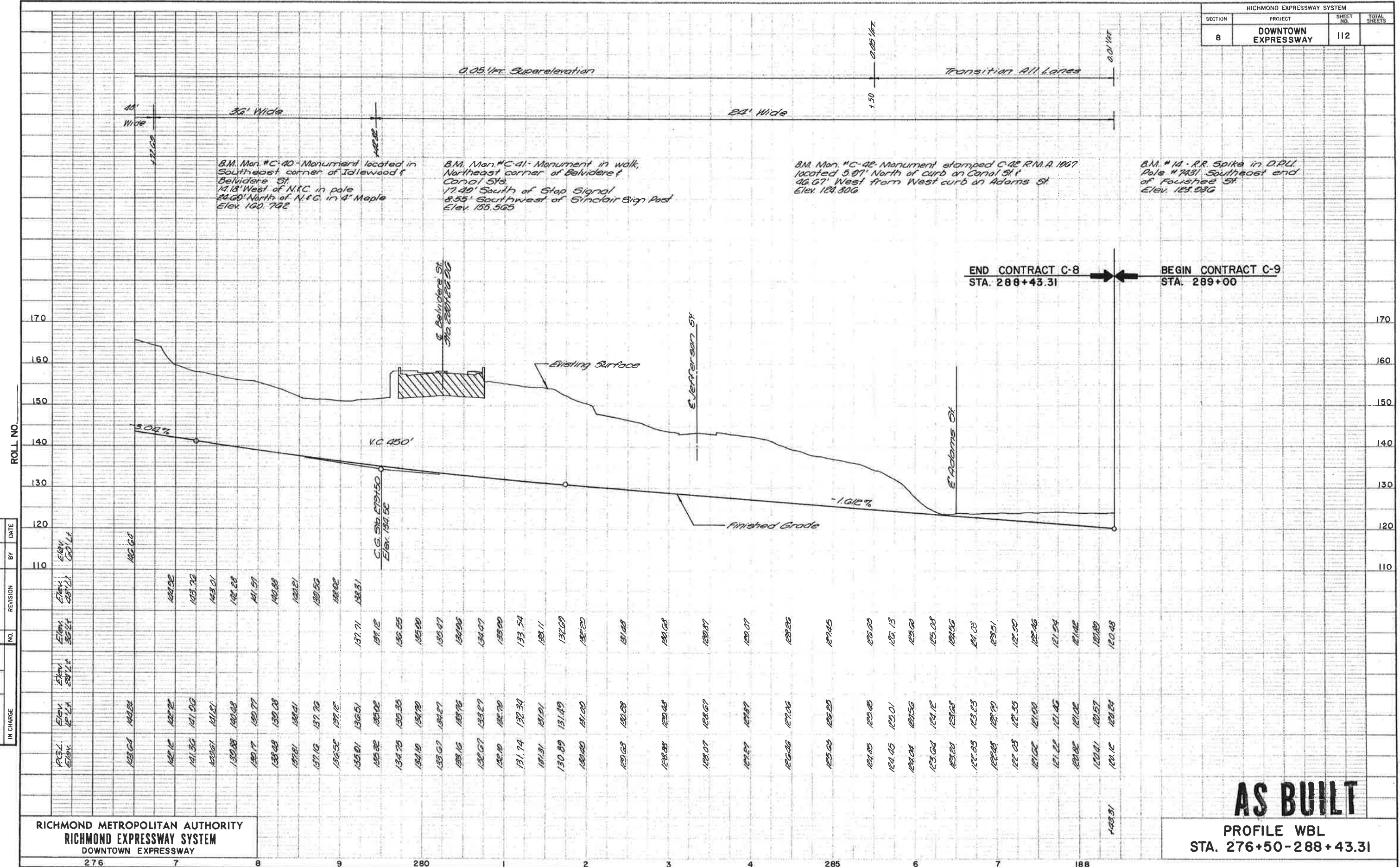
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RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT

PROFILE EBL
STA. 276+50 - 288+43.31

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
8	DOWNTOWN EXPRESSWAY	112	



MADE	BY	DATE
CHECKED		
IN CHARGE		

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT
PROFILE WBL
STA. 276+50-288+43.31

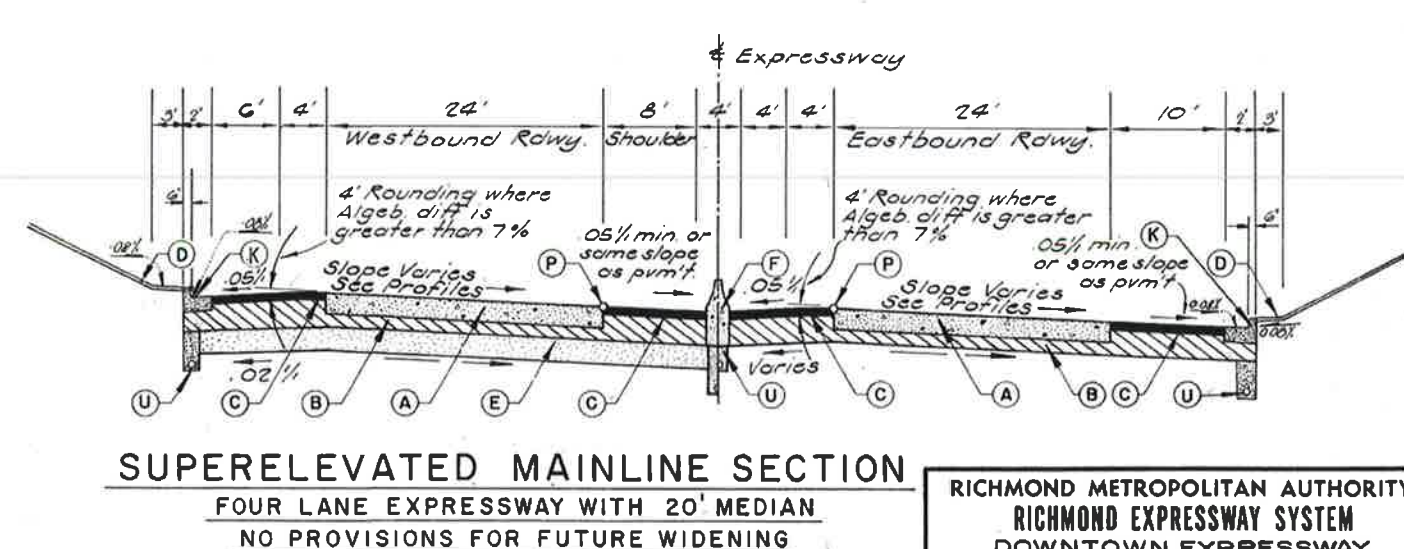
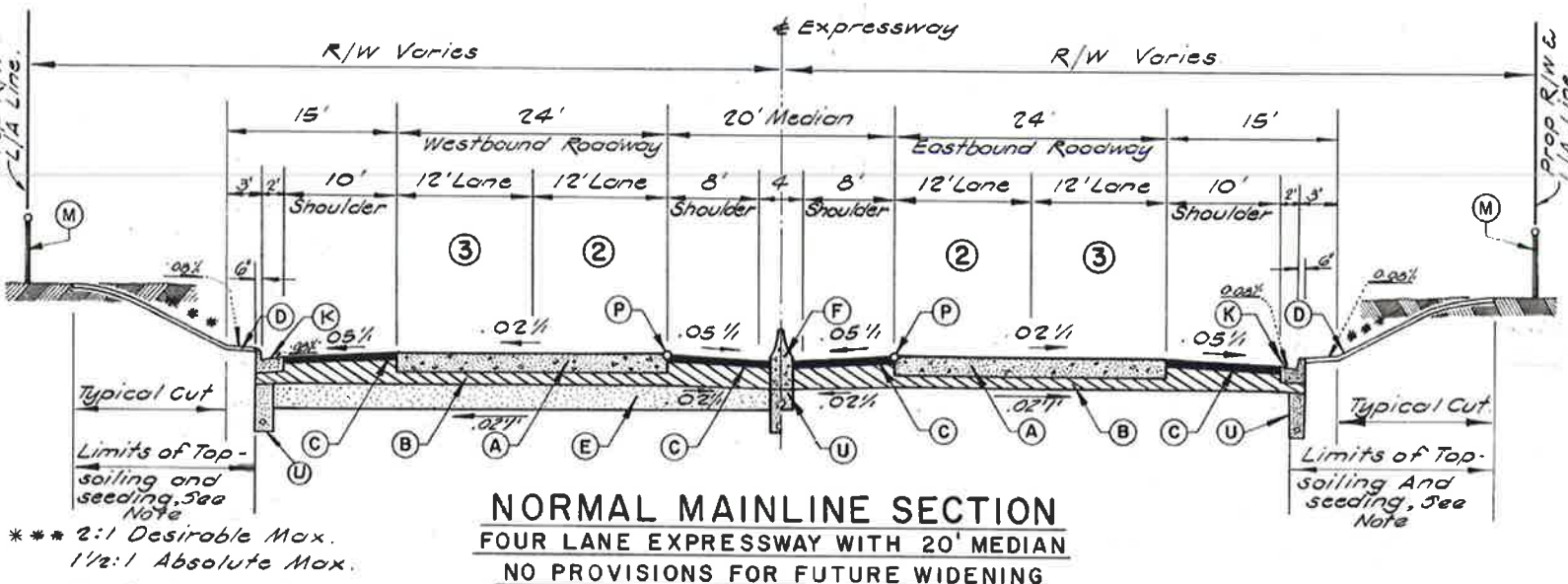
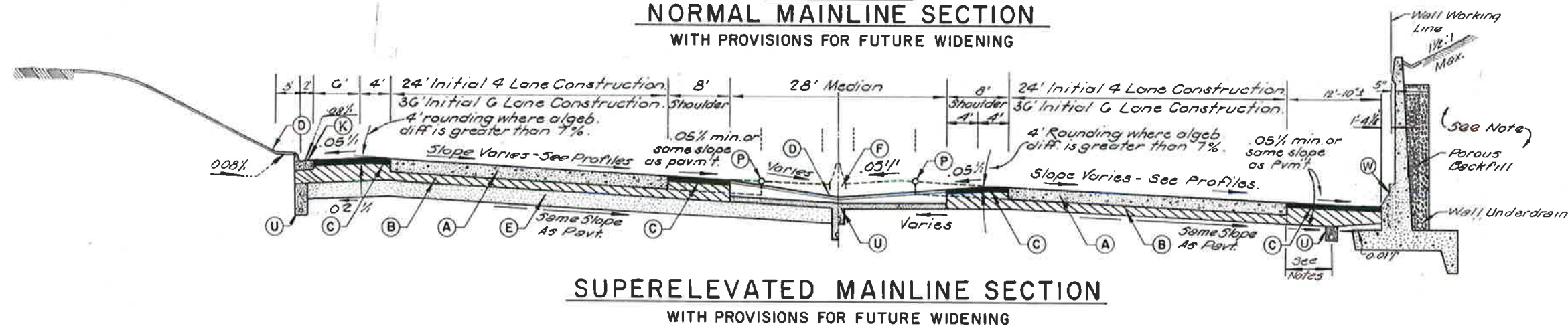
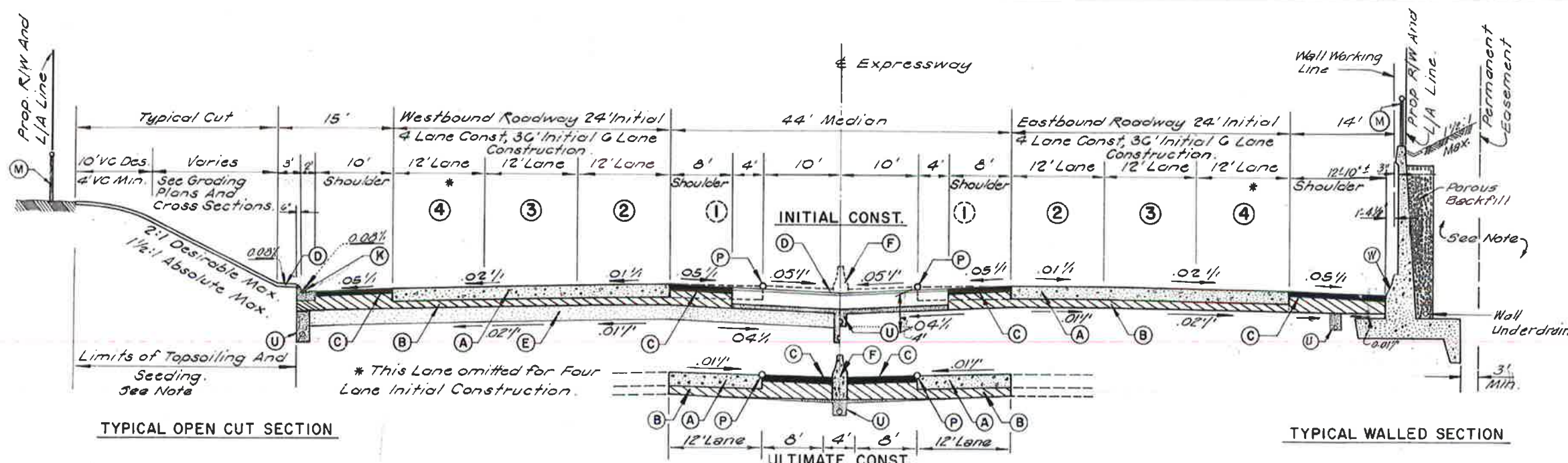
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	10	

LEGEND:

- (A) 8" Continuously Reinforced P.C.C. Pavement.
- (B) 6" Subbase Course Aggregate Size 21 or 21A Cement Stabilized 4% by Weight. Cure With 0.2 Gal./S.Y. of RC-250 or AE-2 & Cover with 15 Lbs./S.Y. Grade B Sand or No. 10 Aggregate.
- (C) 3" Bituminous Concrete Pavement Type I-2, Prime Subbase With 0.4 Gal./Sq. Yd. RC-250 Or AE-2.
- (D) 3" Topsoil Class "B" and Seed As Indicated in General Notes. (4" Topsoil on all Marl Slopes)
- (E) Undercut, Backfill With Select Material, Type I Min. CUR-30. (See Profiles For Location and Depth).
- (F) Std. MB-6A Concrete Median Barrier.
- (G) Steel Beam Guardrail (Std. GR-2A or 2B). For Type and Location See Pavement Plans.
- (H) 6" Curb (Std. CG-2) For Location See Pavement Plans.
- (J) 5" Barrier Curb (Std. CG-2, Mod.).
- (K) Combination Curb and Gutter (Std. CG-6).
- (L) P.C.C. Sidewalk (4" Thick).
- (M) Chain Link Fence (Std. FE-2).
- (P) Profile Grade Line.
- (U) Underdrain (Std. UD-1 or UD-2) For Location See Grading and Drainage Plans, Cross Sections and Underdrain Tabulation.
- (V) 8" Reinforced P.C.C. Pavement.

GENERAL NOTES:

- Typical Sections Are Intended To Show The General Features Of The Proposed Construction. For Exact Details At Any Given Location Refer To Pavement Plans.
- Disturbed Areas Outside The Limits Of Cut And Fill Slopes Shall Be Topsoiled And Seeded As Directed By The Engineer.
- For Construction Slopes And Backfill Requirements Behind Retaining Walls See Sheet No. 117
- For Exact Location Of Roadway Underdrain Adjacent To Walls See Grading Drainage and Utility Plans, Miscellaneous Details, Cross Sections and Underdrain Tabulations.



RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

TYPICAL MAINLINE SECTIONS

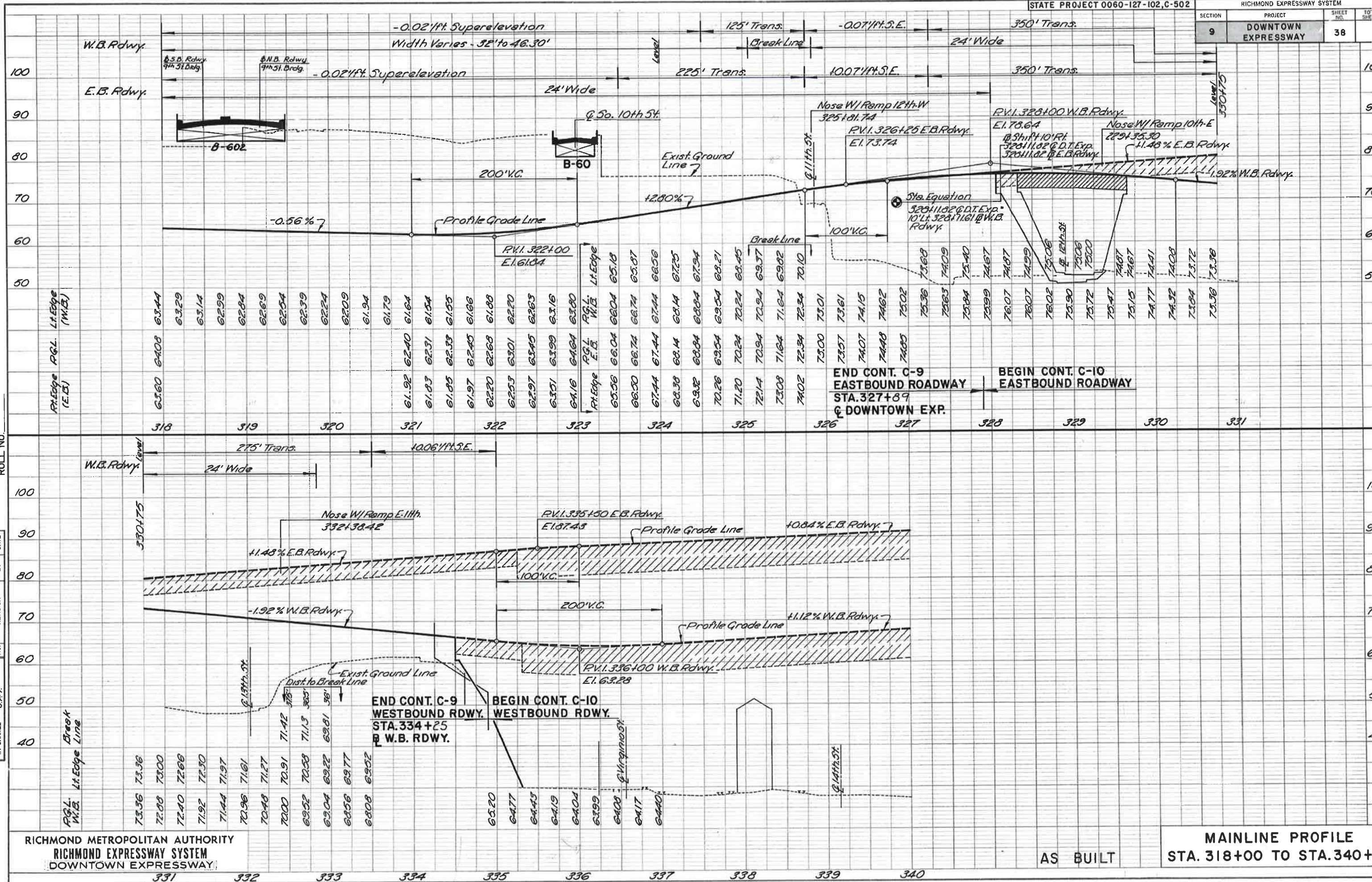
BY	DATE	NO.	REVISION	BY	DATE
MADE	WHM	4/67			
CHECKED	WHM	10/67	1 As Built	TEM	6-77
IN CHARGE	JPF				

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY

SCALE: ---
CONTRACT NO.: C-9
SHEET NO. 10 OF ---

AS BUILT

SECTION	PROJECT	SHEET NO.	TO SHEET
9	DOWNTOWN EXPRESSWAY	38	



MADE	JRH	9/67	Z	As Built	TEM	6-77
CHECKED	C.B.	10/67	1	1/2" Scale	JR	9/68
IN CHARGE	J.F.F.		NO.	REVISION	BY	DATE

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT

MAINLINE PROFILE
STA. 318+00 TO STA. 340+00

END CONT. 8
STA. 288+43.31
BK.

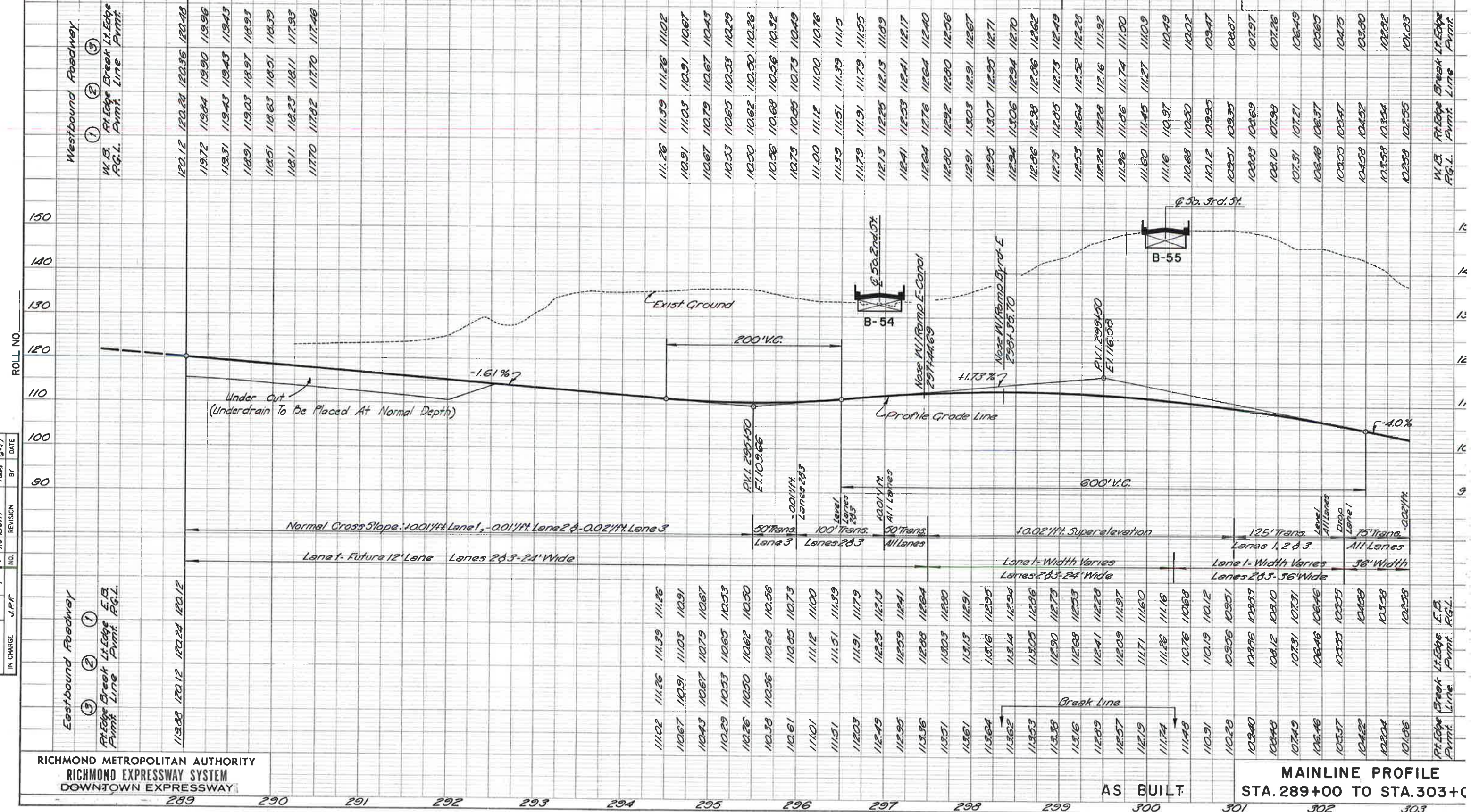
BEGIN CONT. 9
STA. 289+00.00 AHD.

Normal Cross Slope: +0.01'/ft. Lane 1, -0.01 Lane 2 & -0.02'/ft. Lane 3

Lane 1 - Future 12' Lane Lanes 2 & 3 - 24' Wide

Lane 1 - Width Varies Lanes 2 & 3 - 24' Wide

Lane 1 - Width Varies Lanes 2, 3 & 4 - 36' Wide

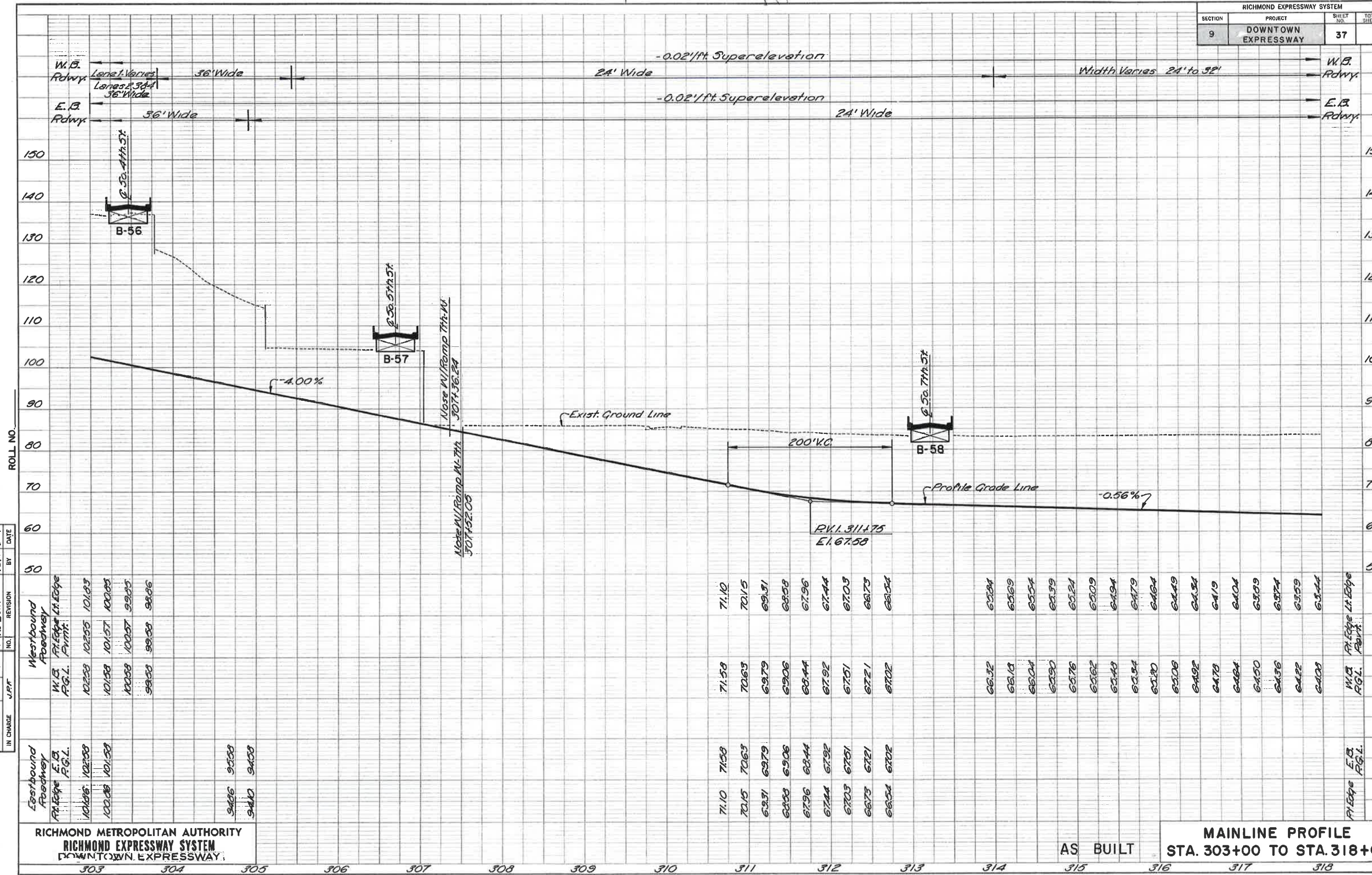


MADE	JRH 9/67	REVISION	DATE
CHECKED	C.B. 10/67	NO.	BY
IN CHARGE	J.P.F.		

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT

MAINLINE PROFILE
STA. 289+00 TO STA. 303+00



MADE	JRW	9/67	TEM	6-77
CHECKED	C.B.	10/67	BY	DATE
IN CHARGE	J.P.F.		REVISION	
			NO.	

Station	Westbound Roadway P.G.L.	Westbound Roadway Rt. Edge Lt. Edge	Eastbound Roadway P.G.L.	Eastbound Roadway Rt. Edge Lt. Edge
10253	10255	10183	10258	10158
10158	10157	10085	10158	10085
10058	10057	9985	10058	9985
9958	9958	9886	9958	9886
9858			9858	
9758			9758	
9658			9658	

Station	W.B. P.G.L.	W.B. Rt. Edge	W.B. Lt. Edge	E.B. P.G.L.	E.B. Rt. Edge	E.B. Lt. Edge
71.10	71.58	71.10	71.10	71.10	71.58	71.10
70.15	70.63	70.15	70.15	70.15	70.63	70.15
69.31	69.79	69.31	69.31	69.31	69.79	69.31
68.58	69.06	68.58	68.58	68.58	69.06	68.58
67.96	68.44	67.96	67.96	67.96	68.44	67.96
67.44	67.92	67.44	67.44	67.44	67.92	67.44
67.03	67.51	67.03	67.03	67.03	67.51	67.03
66.73	67.21	66.73	66.73	66.73	67.21	66.73
66.54	67.02	66.54	66.54	66.54	67.02	66.54
65.84	66.32	65.84	65.84	65.84	66.32	65.84
65.69	66.17	65.69	65.69	65.69	66.17	65.69
65.54	66.04	65.54	65.54	65.54	66.04	65.54
65.39	65.90	65.39	65.39	65.39	65.90	65.39
65.24	65.76	65.24	65.24	65.24	65.76	65.24
65.09	65.62	65.09	65.09	65.09	65.62	65.09
64.94	65.49	64.94	64.94	64.94	65.49	64.94
64.79	65.34	64.79	64.79	64.79	65.34	64.79
64.64	65.20	64.64	64.64	64.64	65.20	64.64
64.49	65.06	64.49	64.49	64.49	65.06	64.49
64.34	64.92	64.34	64.34	64.34	64.92	64.34
64.19	64.78	64.19	64.19	64.19	64.78	64.19
64.04	64.64	64.04	64.04	64.04	64.64	64.04
63.89	64.50	63.89	63.89	63.89	64.50	63.89
63.74	64.36	63.74	63.74	63.74	64.36	63.74
63.59	64.22	63.59	63.59	63.59	64.22	63.59
63.44	64.08	63.44	63.44	63.44	64.08	63.44

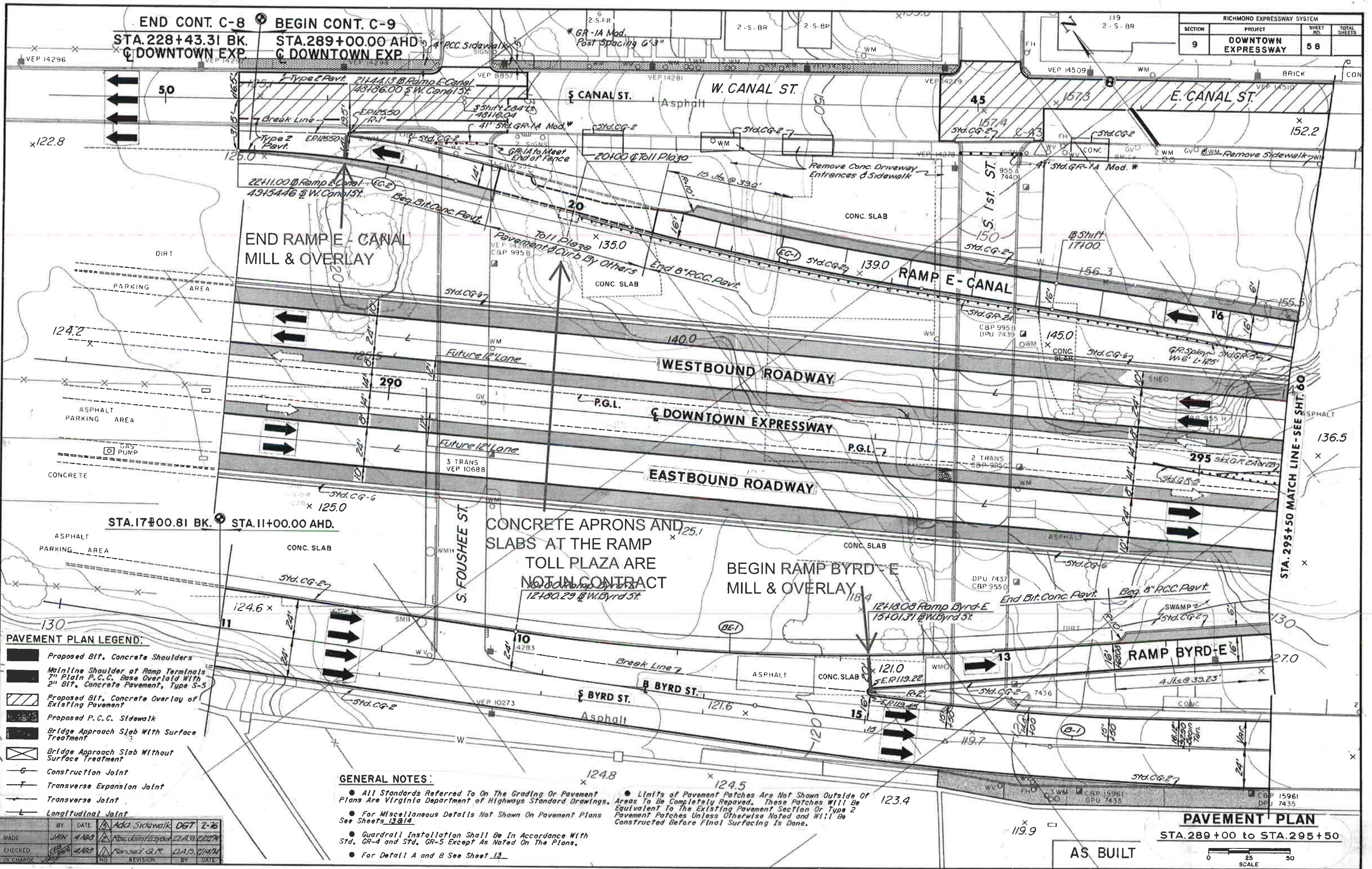
RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY

AS BUILT
MAINLINE PROFILE
STA. 303+00 TO STA. 318+00

END CONT. C-8 BEGIN CONT. C-9

STA. 228+43.31 BK. & DOWNTOWN EXP. STA. 289+00.00 AHD. & DOWNTOWN EXP.

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	58	



PAVEMENT PLAN LEGEND:

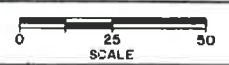
- Proposed Bit. Concrete Shoulders
- Mainline Shoulder at Ramp Terminals 7" Plain P.C.C. Base Overlaid With 2" Bit. Concrete Pavement, Type S-5
- Proposed Bit. Concrete Overlay of Existing Pavement
- Proposed P.C.C. Sidewalk
- Bridge Approach Slab With Surface Treatment
- Bridge Approach Slab Without Surface Treatment
- Construction Joint
- Transverse Expansion Joint
- Transverse Joint
- Longitudinal Joint

GENERAL NOTES:

- All Standards Referred To On The Grading Or Pavement Plans Are Virginia Department of Highways Standard Drawings.
- For Miscellaneous Details Not Shown On Pavement Plans See Sheets 12 & 14.
- Limits of Pavement Patches Are Not Shown Outside Of Areas To Be Completely Repaved. These Patches Will Be Equivalent To The Existing Pavement Section Or Type 2 Pavement Patches Unless Otherwise Noted and Will Be Constructed Before Final Surfacing Is Done.
- Guardrail Installation Shall Be In Accordance With Std. GR-4 and Std. GR-5 Except As Noted On The Plans.
- For Detail A and B See Sheet 13.

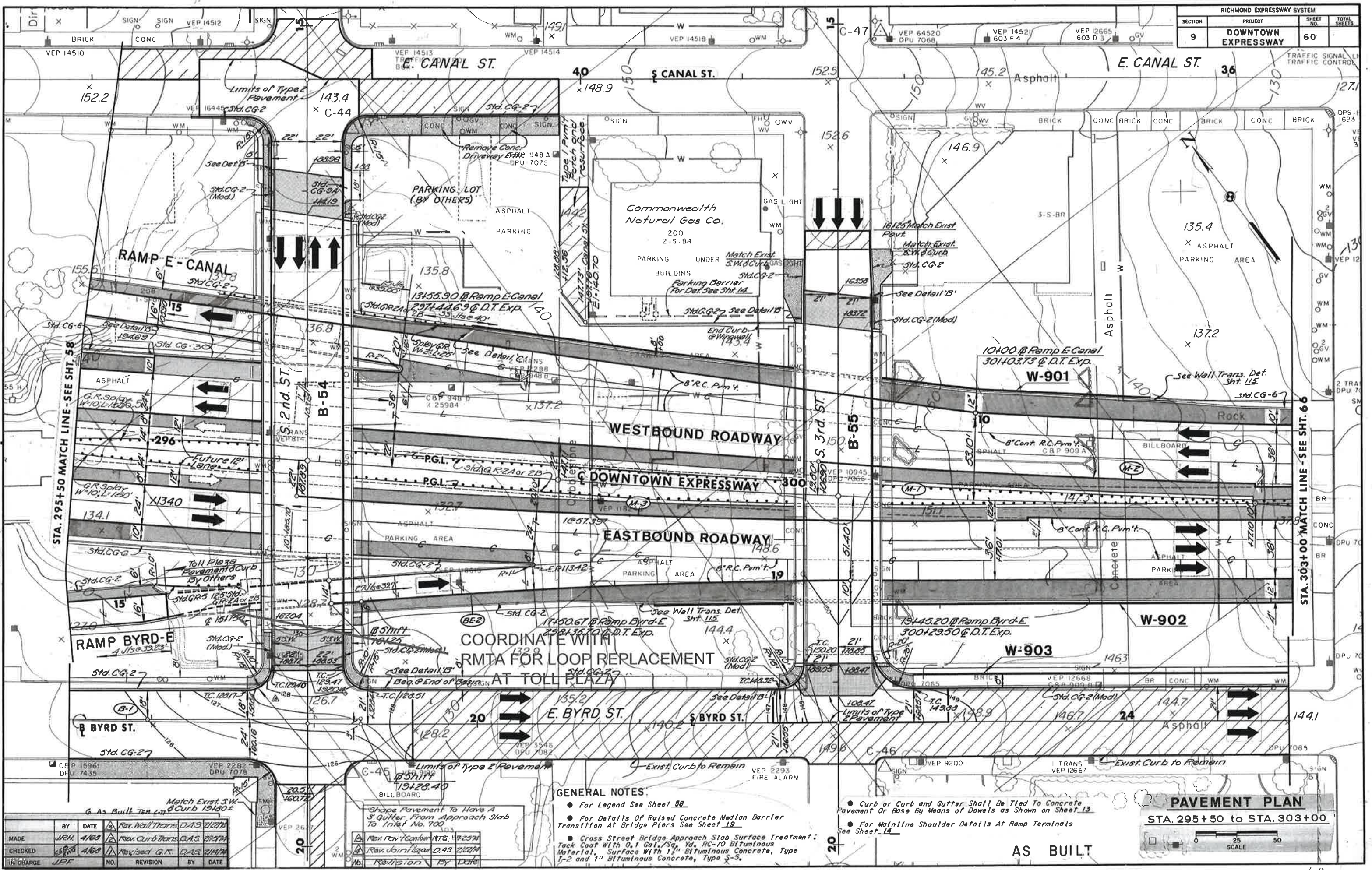
BY	DATE	ADD. SIDEWALK	DGT	2-76
MADE	JAH	4/80	REV. DETAIL LAYOUT	12.13.2027
CHECKED	CP	4/80	NEWSPRINT G.R.	D.A.S./J.H.M.
IN CHARGE			NO. REVISION	BY DATE

PAVEMENT PLAN
STA. 289+00 to STA. 295+50



AS BUILT

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	60	



BY	DATE	REVISION	BY	DATE	
MADE	JRH	4/88	REV. CURB TRANS.	DAS	2/14/78
CHECKED	JPF	4/88	REVISED G.R.	DAS	2/14/78
IN CHARGE	JPF				

NO.	REVISION	BY	DATE
1	Rev. Pav. Transition	RTB	10/25/78
2	Rev. Joint Layout	DAS	2/14/78

GENERAL NOTES:

- For Legend See Sheet 58
- For Details Of Raised Concrete Median Barrier Transition At Bridge Piers See Sheet 19
- Cross Street Bridge Approach Slab Surface Treatment: Tack Coat With 0.1 Gal./Sq. Yd. RC-70 Bituminous Material. Surface With 1" Bituminous Concrete, Type I-2 and 1" Bituminous Concrete, Type S-5.

• Curb or Curb and Gutter Shall Be Tied To Concrete Pavement Or Base By Means of Dowels as Shown on Sheet 13

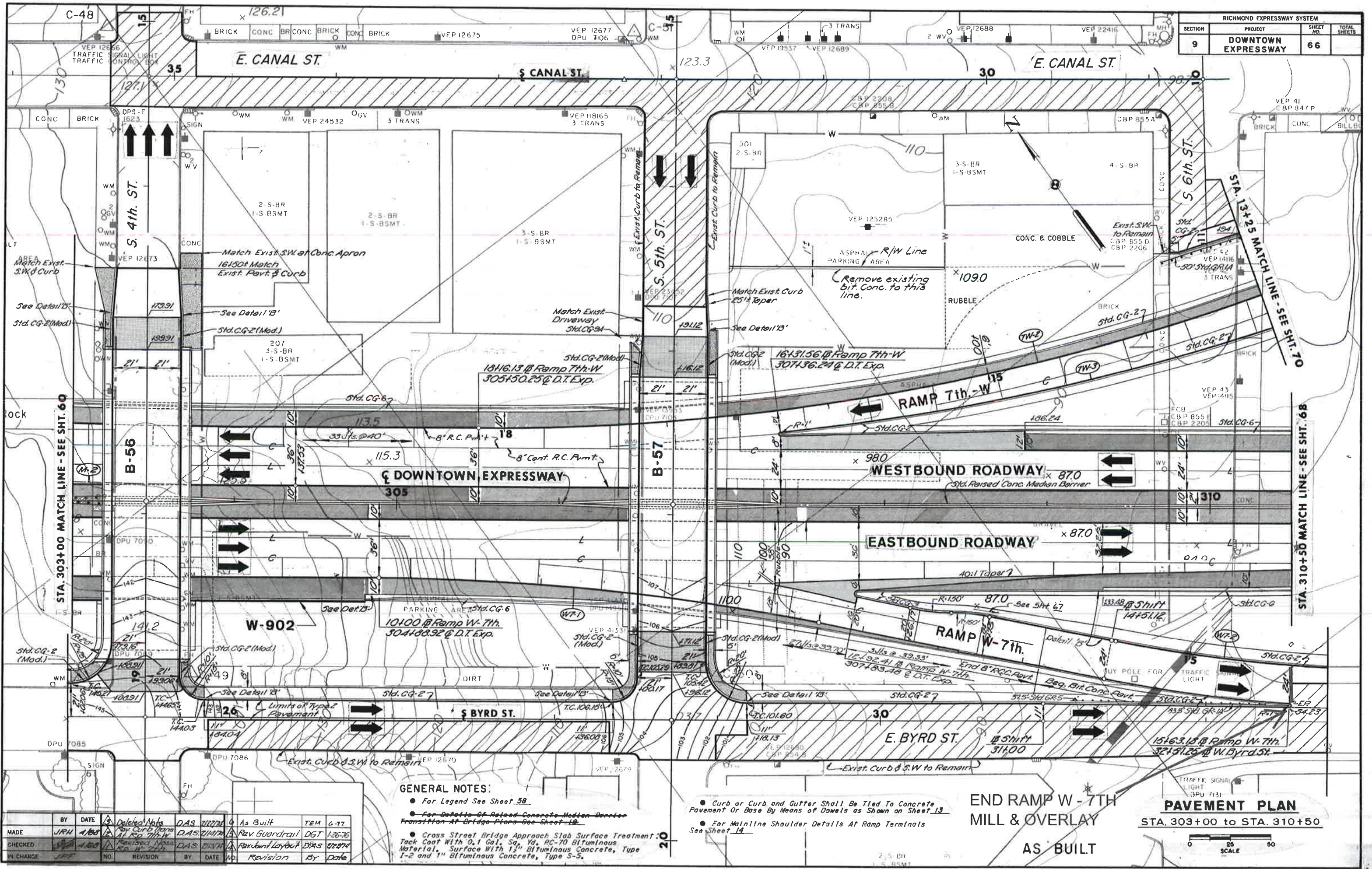
• For Mainline Shoulder Details At Ramp Terminals See Sheet 14

PAVEMENT PLAN
 STA. 295+50 to STA. 303+00

AS BUILT

SCALE: 0 25 50

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	66	



GENERAL NOTES:

- For Legend See Sheet 58
- For Details of Raised Concrete Median Barrier Transition At Bridge Piers See Sheet 18
- Cross Street Bridge Approach Slab Surface Treatment: Tack Coat With 0.1 Gal. Sq. Yd. RC-70 Bituminous Material, Surface With 1 1/2" Bituminous Concrete, Type I-2 and 1" Bituminous Concrete, Type S-5.

- Curb or Curb and Gutter Shall Be Tied To Concrete Pavement Or Base By Means of Dowels as Shown on Sheet 13
- For Mainline Shoulder Details At Ramp Terminals See Sheet 14

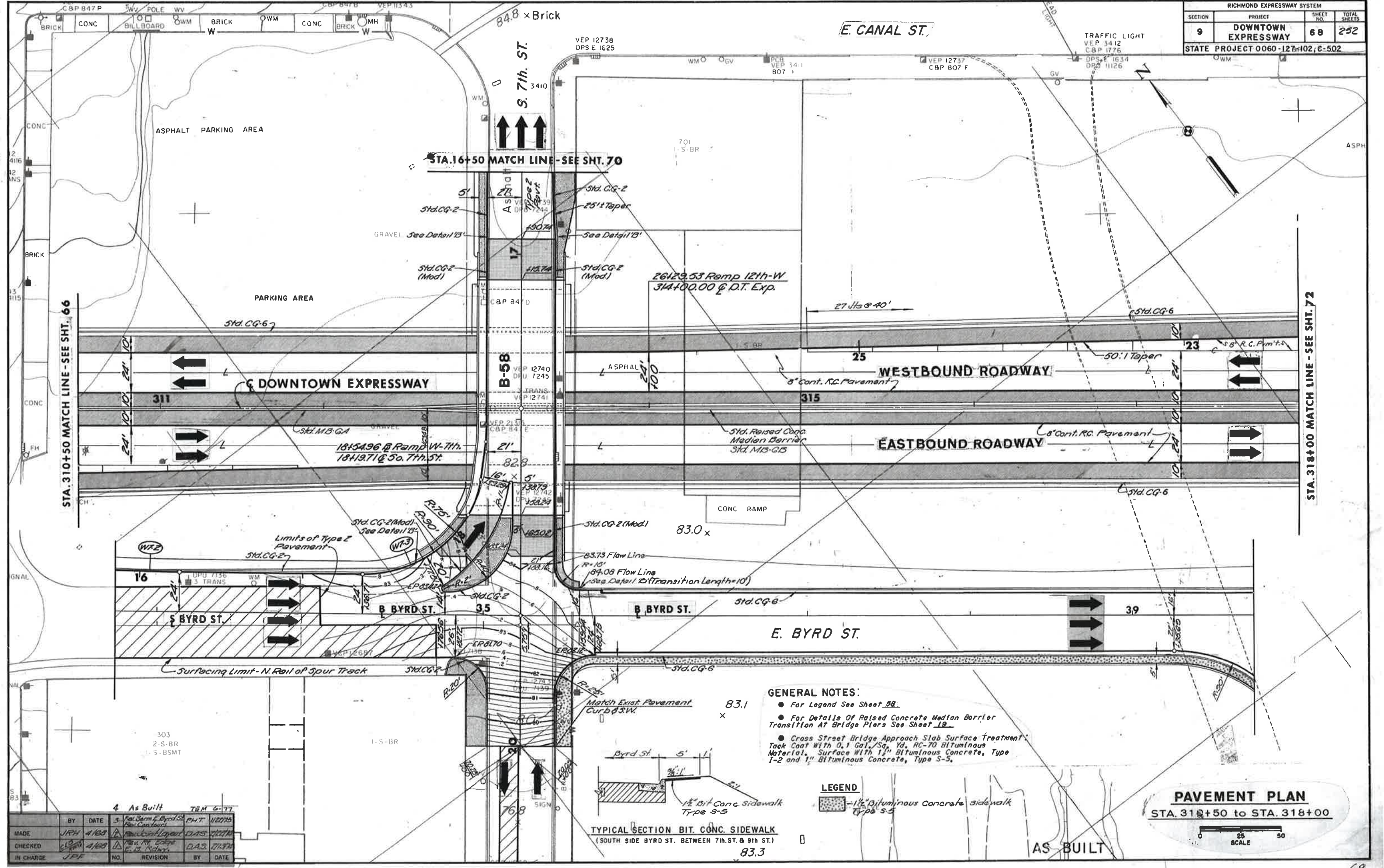
**END RAMP W - 7TH
MILL & OVERLAY
AS BUILT**

PAVEMENT PLAN
STA. 303+00 to STA. 310+50

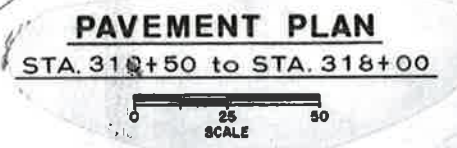


BY	DATE	REVISION	NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE
MADE	JRH	1-80	1	Deleted Note	DAS	11/7/76	1	As Built	TEM	6-77
CHECKED	JRH	1-80	2	Rev Guardrail	DAS	11/17/76	2	Rev Guardrail	DGT	126/76
IN CHARGE	JRH	1-80	3	Rev. Curb Layout	DAS	11/17/76	3	Rev. Curb Layout	DAS	11/17/76

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	68	252
STATE PROJECT 0060-127-102; C-502			

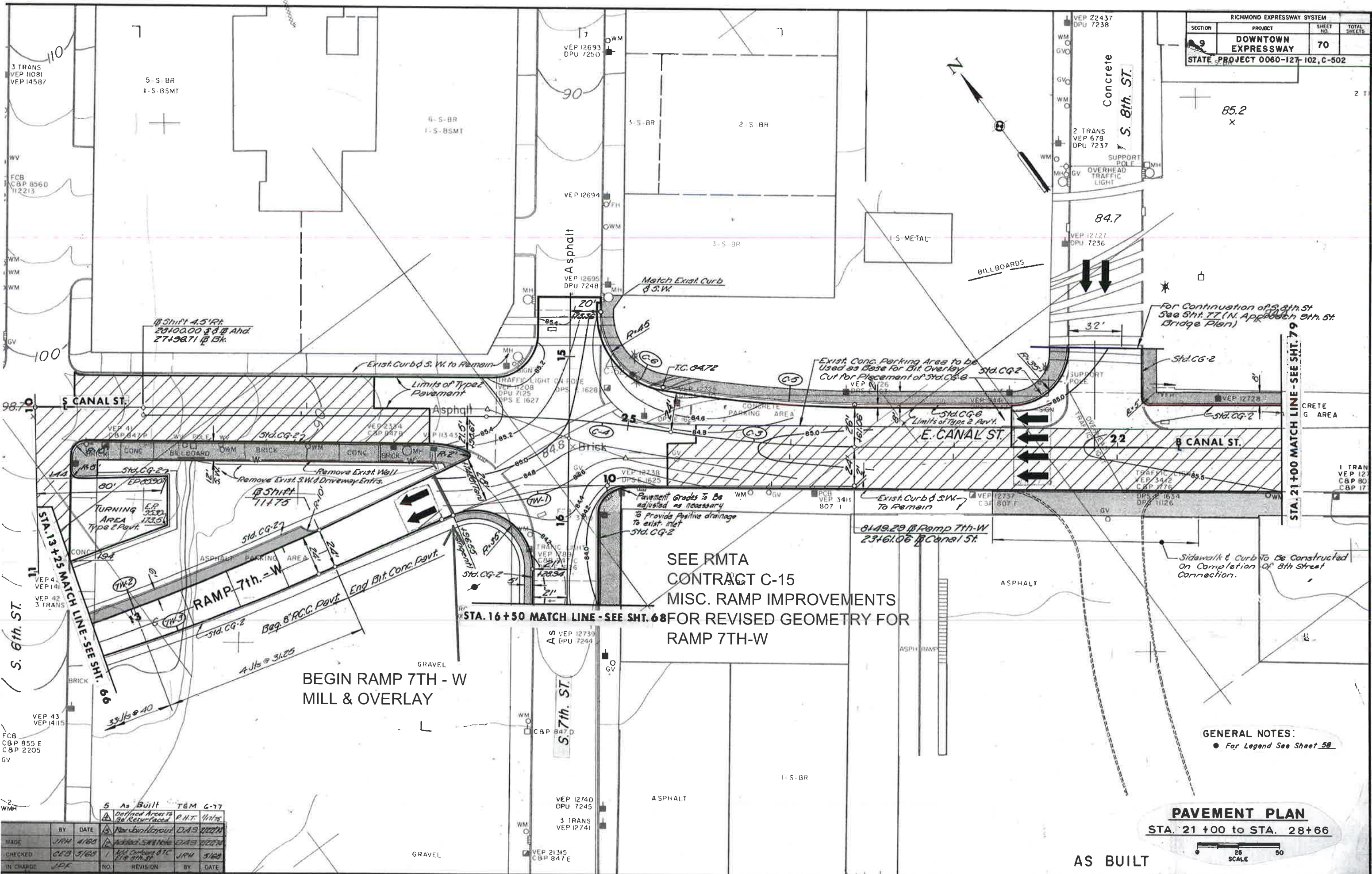


- GENERAL NOTES:**
- For Legend See Sheet 58
 - For Details Of Raised Concrete Median Barrier Transition At Bridge Piers See Sheet 19
 - Cross Street Bridge Approach Slab Surface Treatment: Top Coat With 0.1 Gal./Sq. Yd. RC-70 Bituminous Material. Surface With 1" Bituminous Concrete, Type I-2 and 1" Bituminous Concrete, Type S-5.



4 As Built				TEM 6-77		
MADE	BY	DATE	NO.	REVISION	BY	DATE
	JRH	4/80	1	As Built	DAS	4/80
	JRH	4/80	2	As Built	DAS	4/80
	JRH	4/80	3	As Built	DAS	4/80

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	70	
STATE PROJECT 0060-127-102, C-502			



NO.	REVISION	BY	DATE
1	As Built	T&M	6-77
2	Defined Areas to be Resurfaced	P.H.T.	11/1/75
3	Revised layout	D.A.S.	10/27/74
4	Added 5th St. to 7th St.	D.A.S.	10/27/74
5	1st Change to 8th St. to 7th St.	J.R.U.	5/1/68

NO.	REVISION	BY	DATE
1	As Built	T&M	6-77
2	Defined Areas to be Resurfaced	P.H.T.	11/1/75
3	Revised layout	D.A.S.	10/27/74
4	Added 5th St. to 7th St.	D.A.S.	10/27/74
5	1st Change to 8th St. to 7th St.	J.R.U.	5/1/68

SCALE 1" = 20'

E. CANAL ST.

STA. 19+25 MATCH LINE - SEE SHT. 79

STA. 91+25 MATCH LINE - SEE SHT. 79

TRANS VEP 12736
CBP 807 D
CBP 1777

VEP 10674
CBP RC7E

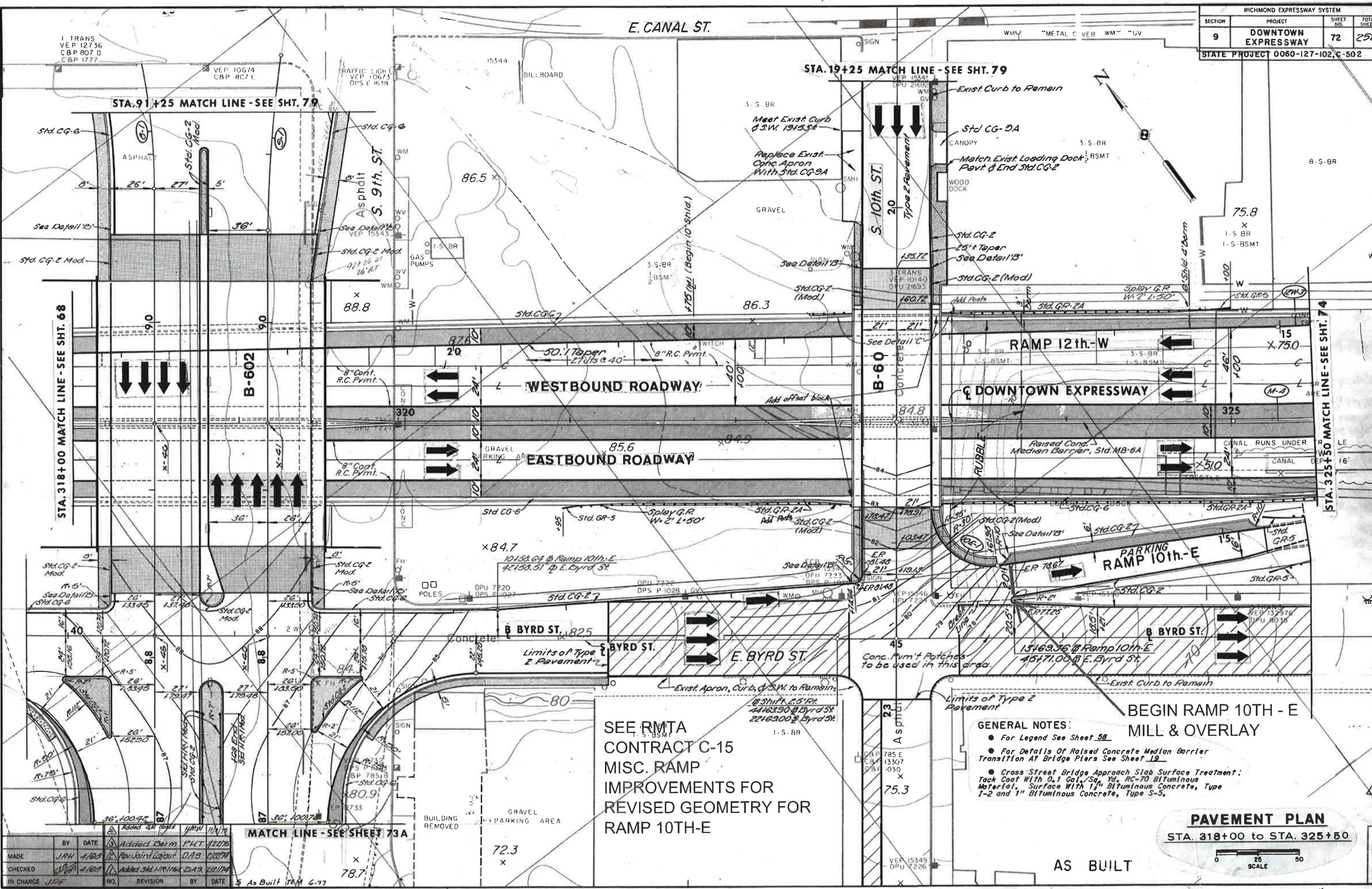
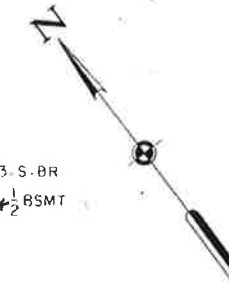
TRAFFIC LIGHT
VEP 10673
DPS E 1638

15344

BILL BOARD

SIGN

WMV METAL CURB WM VGV



STA. 318+00 MATCH LINE - SEE SHT. 68

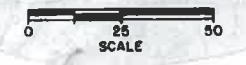
STA. 325+50 MATCH LINE - SEE SHT. 74

SEE RMTA
CONTRACT C-15
MISC. RAMP
IMPROVEMENTS FOR
REVISED GEOMETRY FOR
RAMP 10TH-E

- GENERAL NOTES:**
- For Legend See Sheet 58
 - For Details Of Raised Concrete Median Barrier Transition At Bridge Piers See Sheet 19
 - Cross Street Bridge Approach Slab Surface Treatment: Tack Coat With 0.1 Gal./Sq. Yd. RC-70 Bituminous Material. Surface With 1" Bituminous Concrete, Type 1-2 and 1" Bituminous Concrete, Type S-3.

BEGIN RAMP 10TH - E
MILL & OVERLAY

PAVEMENT PLAN
STA. 318+00 to STA. 325+50



AS BUILT

BY	DATE	DESCRIPTION	BY	DATE
IRH	4/18/97	Added Berm P.H.T.	IRH	11/21/96
MADE	IRH	Revised Layout	DAB	11/21/96
CHECKED	IRH	Added 36" W/16" D.A.S.	IRH	11/21/96
IN CHARGE	JPF			

MATCH LINE - SEE SHEET 73A

As Built

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOT. SHEETS
9	DOWNTOWN EXPRESSWAY	74	

END RAMP E-11
MILL & OVERLAY
AT END OF RAISED ISLAND
ALONG CANAL

BEGIN RAMP 12TH - W
MILL & OVERLAY

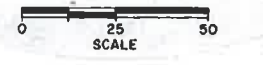
END EB ROADWAY AND
RAMP 10TH - E
MILL & OVERLAY

COORDINATE WITH
RMTA FOR LOOP REPLACEMENT
AT TOLL PLAZA

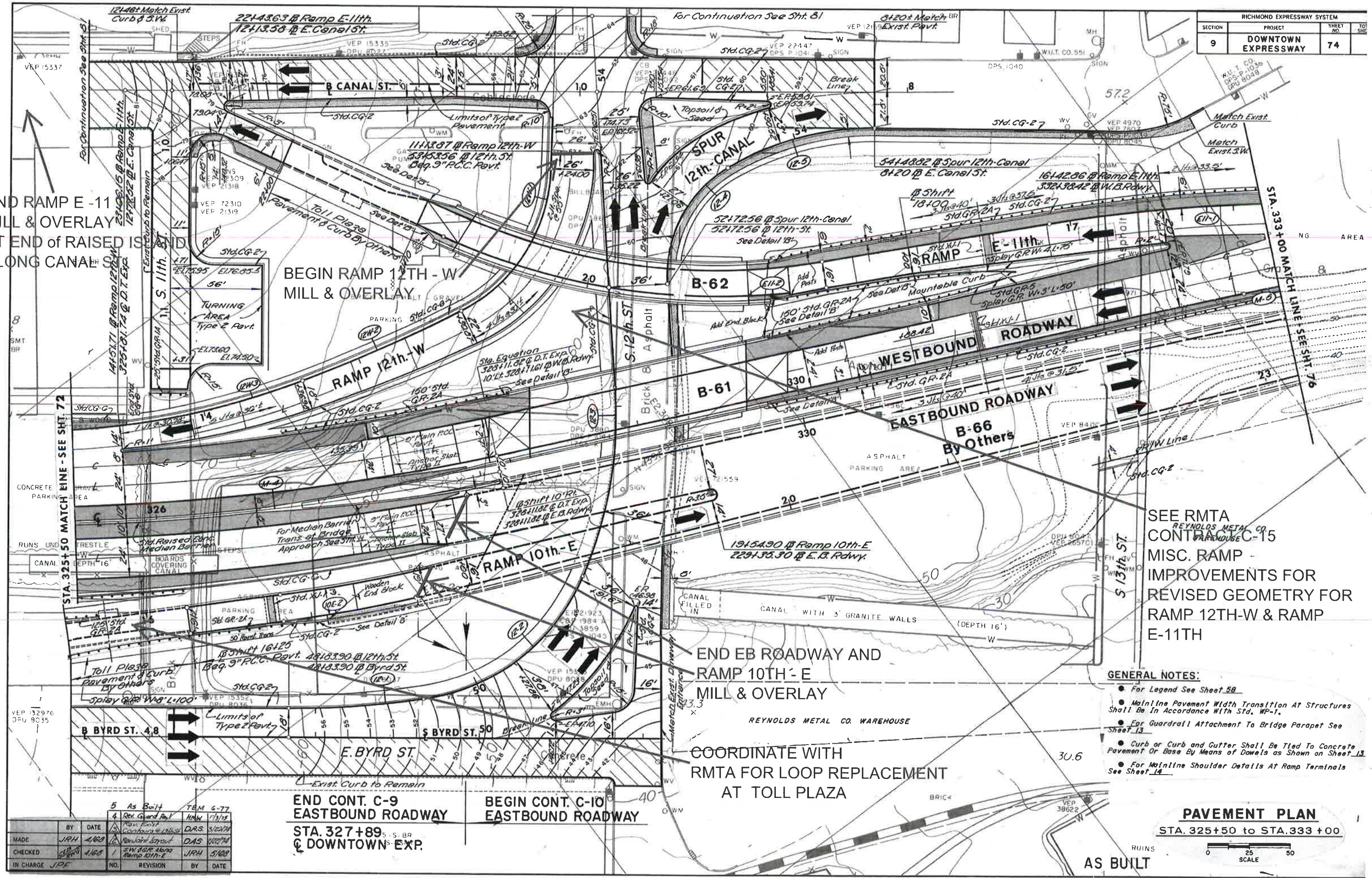
SEE RMTA
REYNOLDS METAL CO.
CONTRACT C-15
MISC. RAMP -
IMPROVEMENTS FOR
REVISED GEOMETRY FOR
RAMP 12TH-W & RAMP
E-11TH

- GENERAL NOTES:**
- For Legend See Sheet 58
 - Mainline Pavement Width Transition At Structures Shall Be In Accordance With Std. WP-1.
 - For Guardrail Attachment To Bridge Parapet See Sheet 13
 - Curb or Curb and Gutter Shall Be Tied To Concrete Pavement Or Base By Means of Dowels as Shown on Sheet 13
 - For Mainline Shoulder Details At Ramp Terminals See Sheet 14

PAVEMENT PLAN
STA. 325+50 to STA. 333+00

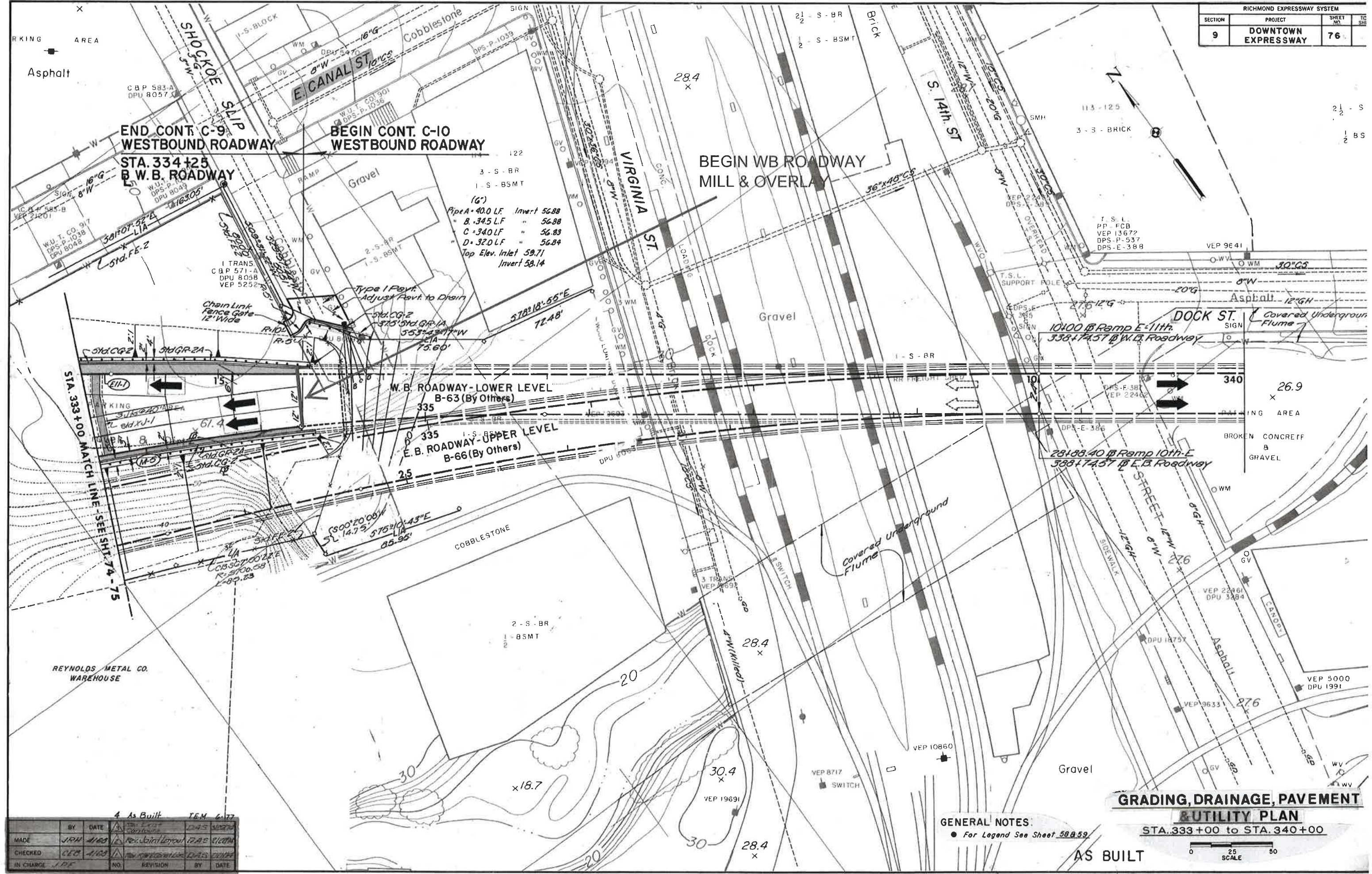


AS BUILT



BY	DATE	REVISION	BY	DATE
JRH	4/68	1	JRH	5/68
IN CHARGE	JPK	NO.	REVISION	BY

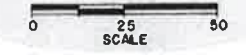
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
9	DOWNTOWN EXPRESSWAY	76	



(6")
 Pipe A - 40.0 LF Invert 56.88
 B - 34.5 LF " 56.88
 C - 34.0 LF " 56.83
 D - 32.0 LF " 56.84
 Top Elev. Inlet 59.71
 Invert 58.14

GENERAL NOTES:
 ● For Legend See Sheet 58.59

GRADING, DRAINAGE, PAVEMENT & UTILITY PLAN
 STA. 333+00 to STA. 340+00



AS BUILT

BY	DATE	REVISION	BY	DATE
MADE	JRM	4/85		
CHECKED	CEB	4/85		
IN CHARGE	JFF			

RICHMOND METROPOLITAN AUTHORITY

RICHMOND EXPRESSWAY SYSTEM

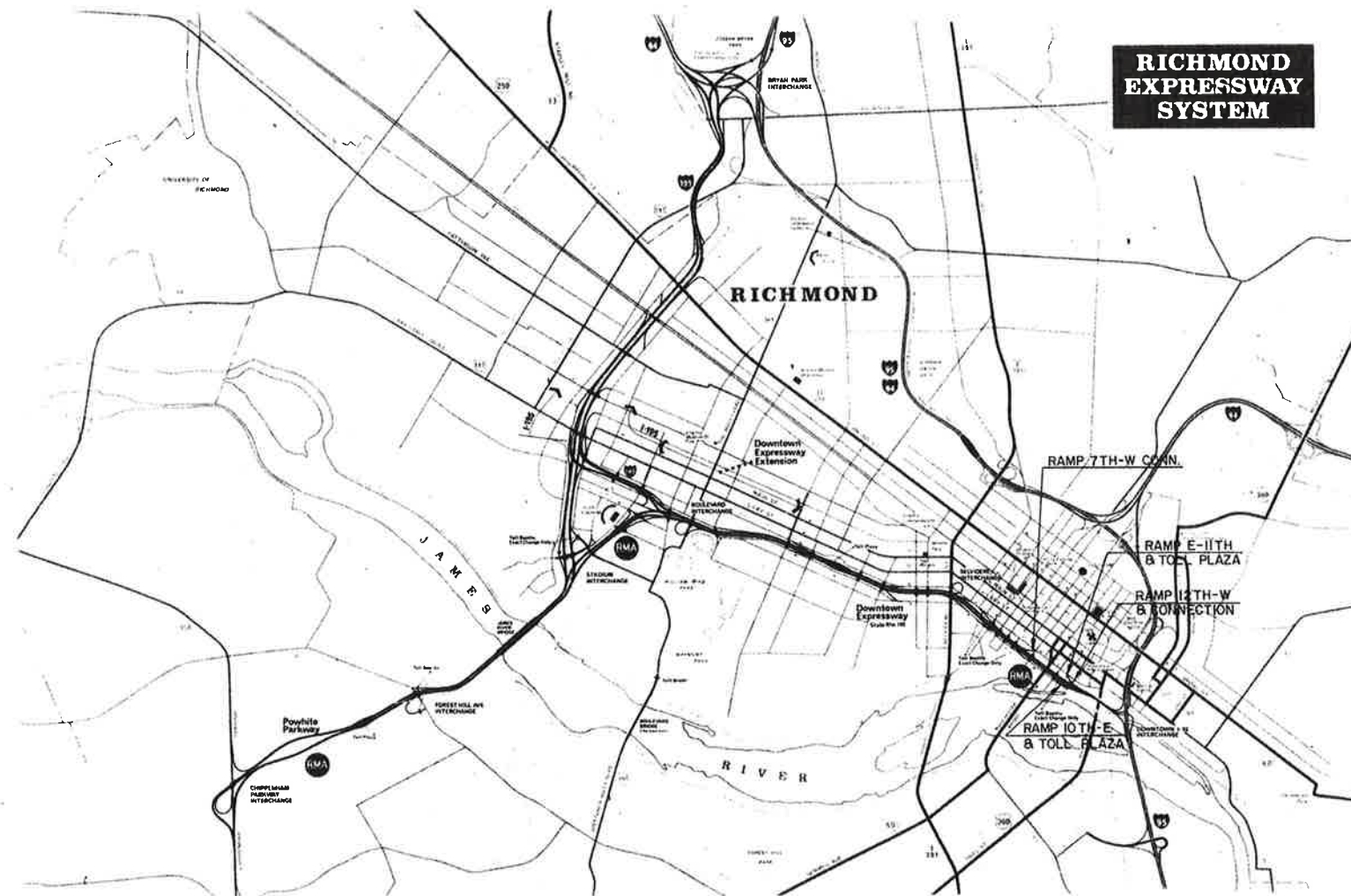
DOWNTOWN EXPRESSWAY MISCELLANEOUS RAMP IMPROVEMENTS

LIMITED ACCESS HIGHWAY			
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
C-15	1990 - 1991 IMPROVEMENTS	1	80

SHEET INDEX

SHEET NO.	DESCRIPTION
7	Title Sheet/Sheet Index
1A	Revision Data Sheet
1B	General Notes/Legend
1C	Geometric Layout Plan
1D	Curve Data Summary
1E	Reference Ties
1F - 1J	Construction Sequence & Maintenance Of Traffic
2A, 2B	Typical Sections
2C	Misc. Details
2D(1) - 2D(5)	Two-Lane Ramp Toll Plaza Plan & Details
2E	Temporary Erosion and Siltation Control
2F, 2G	Drainage Details
2H	Drainage Tabulation
2J	Drainage Summary
2K	Incidental, Pavement and Earthwork Summary
2L	Roadside Development
3, 4	Grading, Drainage & Paving Plans
5A, 5B	Profiles
X1 - X5	Cross-Sections
Signing & Striping Plans:	
S-1	General Notes, Legend and Estimate of Quantities
S-2	Plan - 7th Street
S-3	Plan - 10th, 11th and 12th Streets
S-4	Sign Schedule (Regulatory)
S-5	Sign Schedule
S-6	Sign Face Layout and Details
Electrical Plans:	
E-1	General Notes, Legend and Estimate of Quantities
E-2	Plan - 7th Street
E-3	Plan - 10th, 11th and 12th Streets
E-4, E-5	Electrical Details
Bridge and Wall Plans:	
6(1) - 6(31)	Bridge B-62 Widening Plans
7(1) - 7(4)	Retaining Walls #1, 2 and 3

Excludes Sheet 11 and 21.



RICHMOND EXPRESSWAY SYSTEM

DESIGNED BY
REVISED BY

SUBMITTED BY	
Date	
2-1-91	<i>Robert O. Newman</i>
Date	HOWARD, NEEDLES, TAMMEN & BERGENDOFF GENERAL CONSULTANT

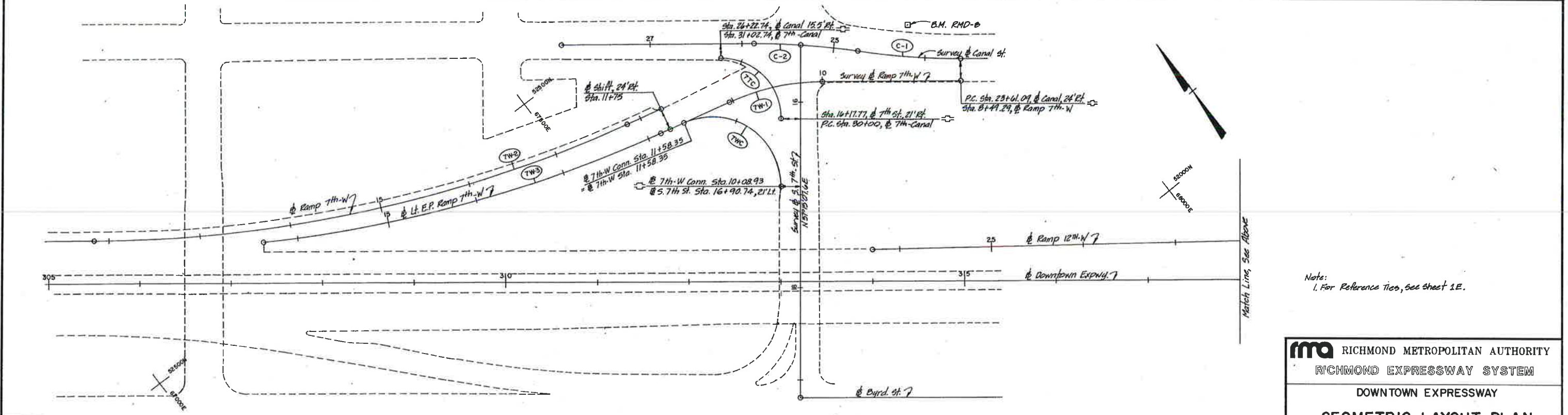
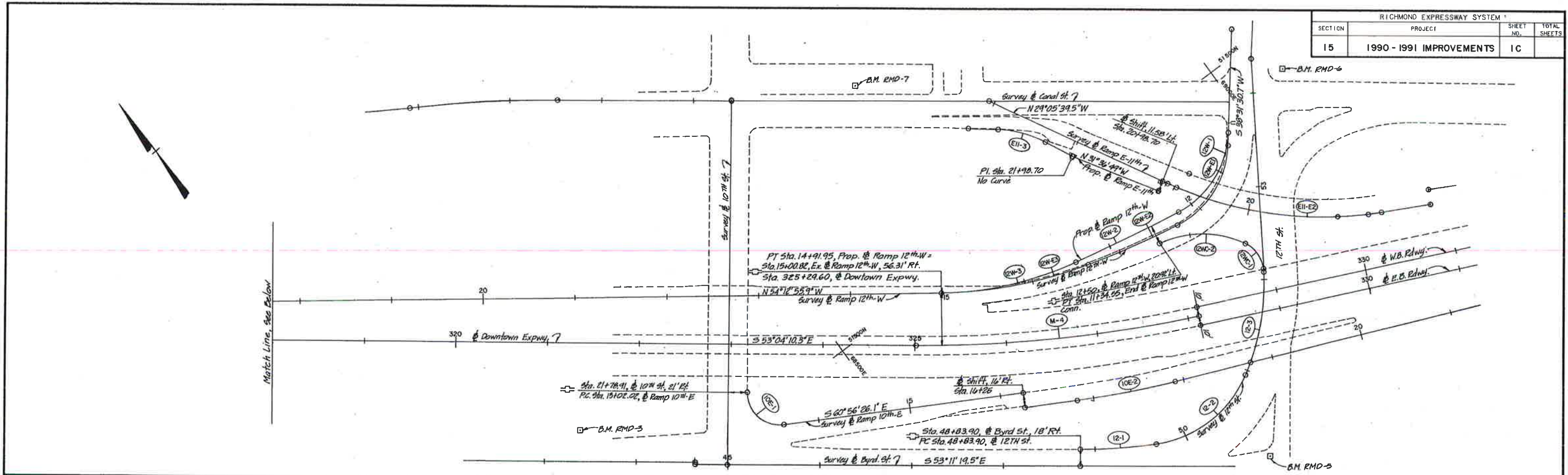
RECOMMENDED BY	
Date	
2-1-91	<i>Robert O. Newman</i>
Date	GENERAL MANAGER, RICHMOND METROPOLITAN AUTHORITY

CONVENTIONAL SIGNS	
STATE LINE	LEVEE OR EMBANKMENT
COUNTY LINE	BRIDGES
CITY, TOWN OR VILLAGE	CULVERTS
RIGHT OF WAY LINE	DROP INLET
FENCE LINE	TROLLEY POLES
UNFENCED PROPERTY LINE	POWER POLES
FENCED PROPERTY LINE	TELEPHONE OR TELEGRAPH POLES
TRAVELED WAY	MARSH
GUARD RAIL	HEDGE
RETAINING WALL	WOODS
RAILROADS	GROUND ELEVATION
BASE OR SURVEY LINE	GRADE ELEVATION
	POLES WITHIN CONSTRUCTION LIMITS

Plans Revised			
Sheet No.	Date	Sheet No.	Date

AS BUILT

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
15	1990 - 1991 IMPROVEMENTS	IC	



Note:
1. For Reference ties, see sheet 1.E.

	By	Date	No.	Revision	By	Date
Designed	ICM	1-91				
Drawn	JLT	1-91				
Checked	PHT	1-91				
Approved	RDJ	1-91				

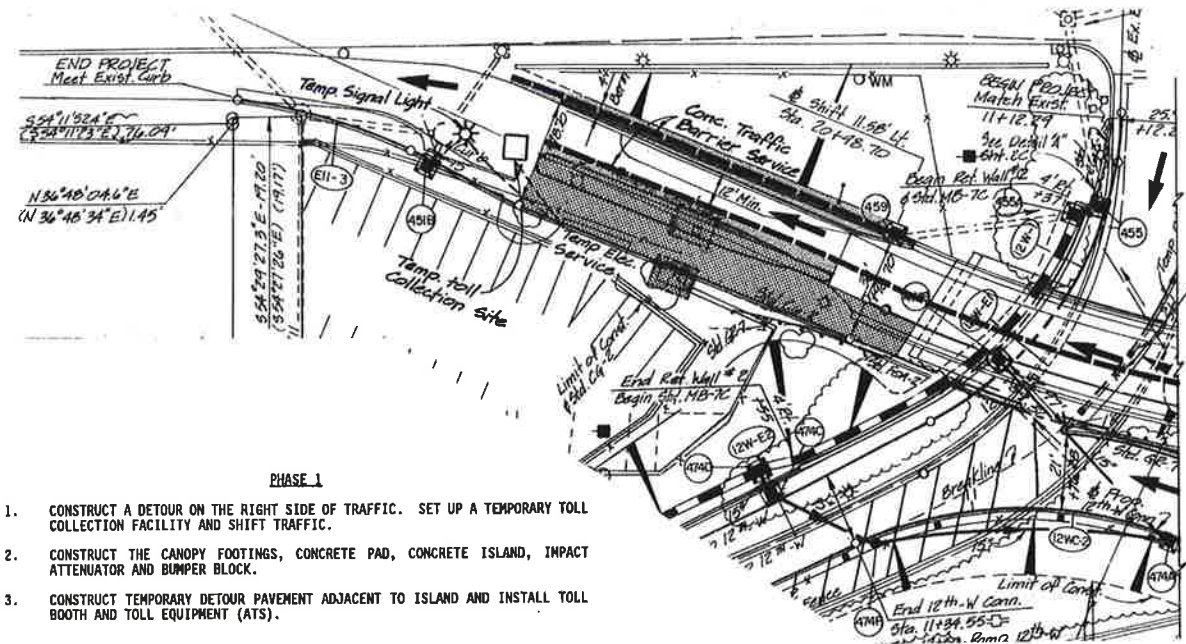
ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY
GEOMETRIC LAYOUT PLAN

HOWARD NEEDLES TAMMEN & BERGENDOFF
Architects Engineers Planners
ALEXANDRIA, VA.

HNTB

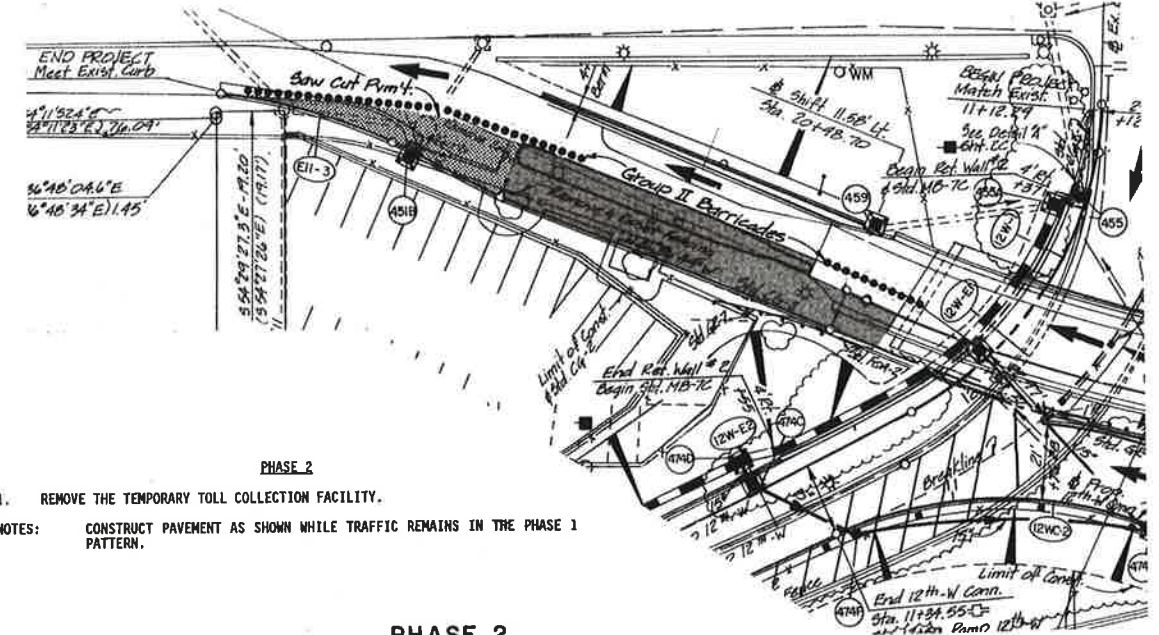
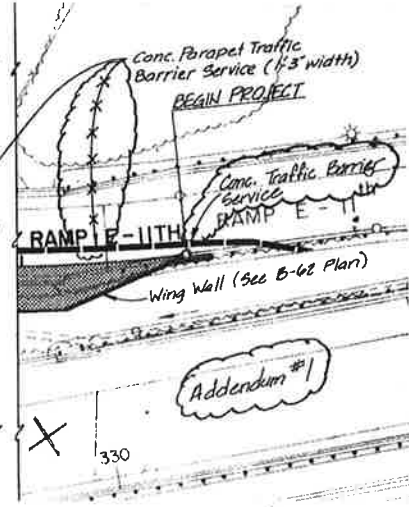
Scale: 1" = 50'
Date: JAN. 1991
Contract No. C-15
Sheet: IC of 1

AS BUILT



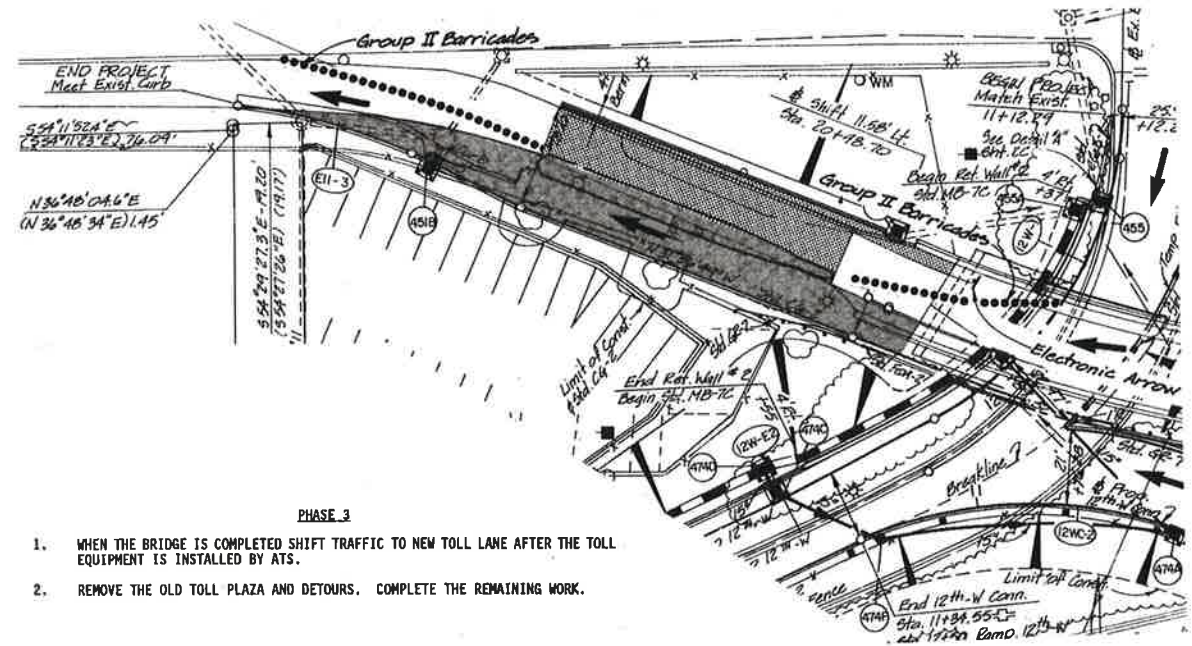
1. CONSTRUCT A DETOUR ON THE RIGHT SIDE OF TRAFFIC. SET UP A TEMPORARY TOLL COLLECTION FACILITY AND SHIFT TRAFFIC.
2. CONSTRUCT THE CANOPY FOOTINGS, CONCRETE PAD, CONCRETE ISLAND, IMPACT ATTENUATOR AND BUMPER BLOCK.
3. CONSTRUCT TEMPORARY DETOUR PAVEMENT ADJACENT TO ISLAND AND INSTALL TOLL BOOTH AND TOLL EQUIPMENT (ATS).

PHASE 1



1. REMOVE THE TEMPORARY TOLL COLLECTION FACILITY.
- NOTES: CONSTRUCT PAVEMENT AS SHOWN WHILE TRAFFIC REMAINS IN THE PHASE 1 PATTERN.

PHASE 2



1. WHEN THE BRIDGE IS COMPLETED SHIFT TRAFFIC TO NEW TOLL LANE AFTER THE TOLL EQUIPMENT IS INSTALLED BY ATS.
2. REMOVE THE OLD TOLL PLAZA AND DETOURS. COMPLETE THE REMAINING WORK.

PHASE 3

GENERAL NOTES

1. SIGNING AND BARRICADES FOR CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION, DATED 1988 INCLUDING ALL CURRENT REVISIONS, THE VIRGINIA WORK AREA PROTECTION MANUAL DATED JANUARY 1987 AND THE CITY OF RICHMOND.
 2. THE DAILY MANIPULATION OF TRAFFIC PATTERNS TO CONNECT NEW TO EXISTING ROADS, CONSTRUCTION PAVEMENT OVERLAYS, ETC. ARE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP.
 3. THE CONTRACTOR MAY BEGIN ELEMENTS OF WORK OUT OF SEQUENCE PROVIDED THAT:
 - A. TRAFFIC IS MAINTAINED AT A LEVEL OF SERVICE EQUAL TO THAT SHOWN ON THE PLANS;
 - B. FUTURE STAGE TRAFFIC CAN BE MAINTAINED AS ORIGINALLY INTENDED OR EQUIVALENT; AND
 - C. ANY SIGNIFICANT DEPARTURES FROM THE PROPOSED SEQUENCE ARE APPROVED IN WRITING BY THE ENGINEER PRIOR TO IMPLEMENTATION.
 4. WHERE ELEMENTS OF CONSTRUCTION ARE NOT NEEDED FOR MAINTENANCE OF TRAFFIC IN A SUBSEQUENT STAGE, THE WORK CAN BE EXTENDED INTO THE NEXT STAGE AT THE CONTRACTOR'S OPTION WITH THE APPROVAL OF THE ENGINEER. HOWEVER, IF NEEDED TO PROVIDE TRAFFIC SERVICE, THE WORK SHALL BE COMPLETED DURING THE STAGE INDICATED.
 5. LIMITATION OF OPERATION - TRAFFIC SHALL NOT BE RESTRICTED BETWEEN THE HOURS OF 6:00 A.M. AND 9:30 A.M. (EXIT RAMP) OR 3:00 P.M. AND 7:00 P.M. (ENTRANCE RAMP) MONDAY THROUGH FRIDAY. THE 12TH STREET ENTRANCE RAMP MAY BE CLOSED FOR A PERIOD OF THREE MONTHS. DURING THIS PERIOD NO CONSTRUCTION WILL BE PERMITTED ON THE 7TH STREET ENTRANCE RAMP.
- ALL LANES SHALL BE OPEN TO TRAFFIC DURING ADVERSE WEATHER OR TRAFFIC CONDITIONS AS DETERMINED BY THE ENGINEER.

LEGEND

- CONSTRUCTION THIS PHASE
- DETOUR CONSTRUCTION THIS PHASE
- COMPLETED CONSTRUCTION IN PREVIOUS PHASES
- INDICATES TRAFFIC LANES
- TRAFFIC BARRIER SERVICE, CONCRETE
- GROUP II CHANNELIZING DEVICES FOR TRAFFIC CONTROL
- IMPACT ATTENUATOR SERVICE TYPE I

Note: Warning lights on concrete traffic barrier service shall be @ 125 C-C unless otherwise noted.

	By	Date				
Designed	PHT	1-91				
Drawn	JLT	1-91				
Checked	ICM	1-91				
Approved	EBL	1-91	No.	Revision	By	Date

richmond RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

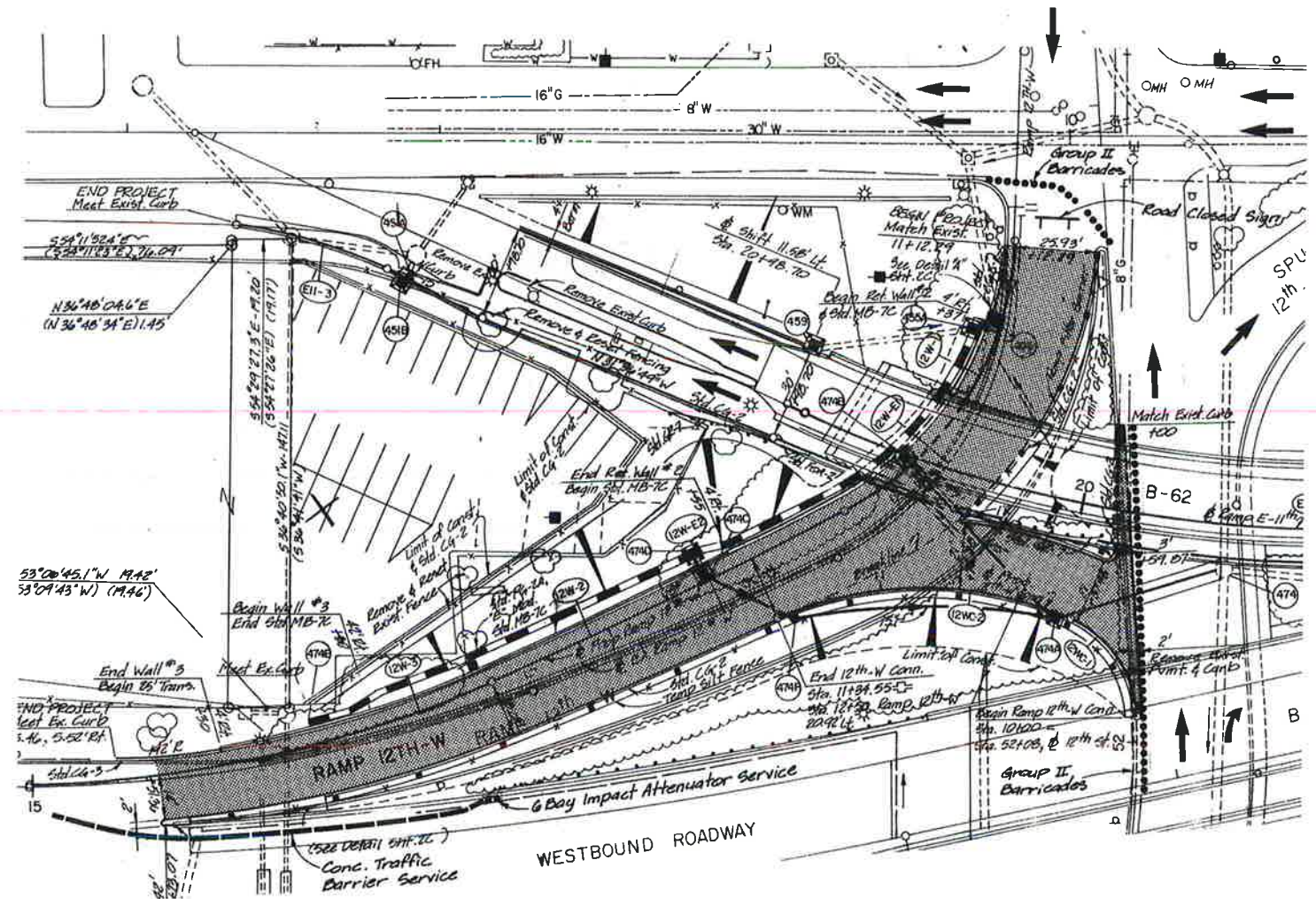
RAMP E-11TH
CONSTRUCTION SEQUENCE & MAINTENANCE OF TRAFFIC

HOWARD NEEDLES TAMMEN & BERGENDOFF
Architects Engineers Planners
ALEXANDRIA, VA. **HNTB**

Scale: N/A Date: JAN. 1991 Contract No. C-15 Sheet: 1F of 1

AS BUILT








RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
15	1990 - 1991 IMPROVEMENTS	16	



NOTES:

1. CONSTRUCTION MUST BE COMPLETED ON PROPOSED RAMP 12TH-W AND 12TH-W CONNECTOR WITHIN 3 MONTHS FROM THE DATE OF CLOSING EXISTING RAMP 12TH-W TO TRAFFIC.
2. CLOSE EXISTING RAMP 12TH-W TO TRAFFIC, PLACE BARRICADES AND BARRIERS AS SHOWN AND CONSTRUCT ALL OF RAMPS 12TH-W AND 12TH-W CONNECTOR.

LEGEND

-  CONSTRUCTION THIS PHASE
-  DETOUR CONSTRUCTION THIS PHASE
-  COMPLETED CONSTRUCTION IN PREVIOUS PHASES
-  INDICATES TRAFFIC LANES
-  TRAFFIC BARRIER SERVICE, CONCRETE
-  GROUP II CHANNELIZING DEVICES FOR TRAFFIC CONTROL
-  IMPACT ATTENUATOR SERVICE TYPE I

Note:
Warning lights on concrete traffic barrier service shall be @ 125' C.C unless otherwise noted.

AS BUILT

	By	Date	No.	Revision	By	Date
Designed	ICM	1-91				
Drawn	J.T.	1-91				
Checked	FHT	1-91				
Approved	RBN	1-91				

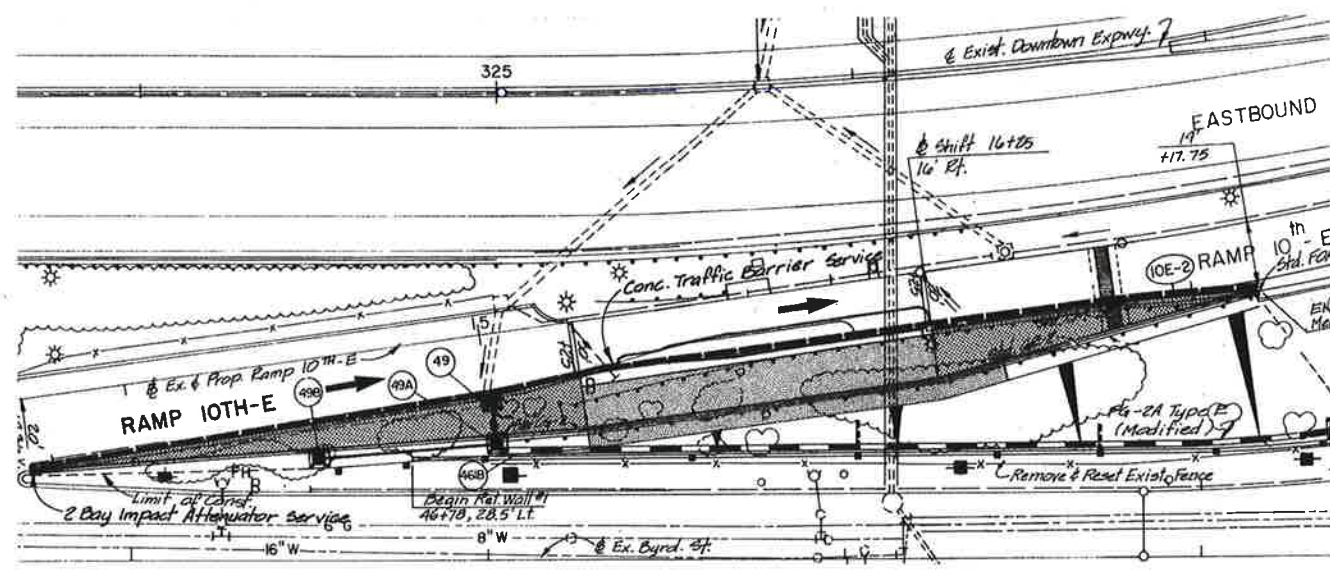
RM RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

**RAMP 12TH - W
CONSTRUCTION SEQUENCE &
MAINTENANCE OF TRAFFIC**

HOWARD NEEDLES TAMMEN & BERGENDOFF
Architects Engineers Planners **HNTB**
ALEXANDRIA, VA.

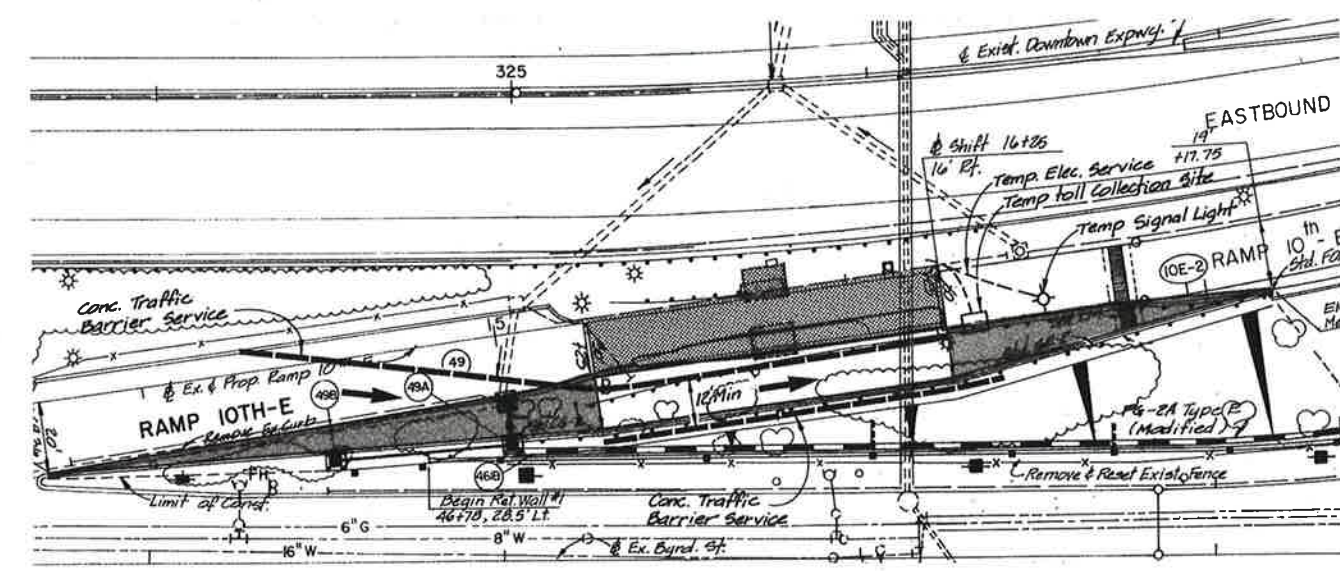
Scale:	Date:	Contract No.	Sheet:
N/A	JAN. 1991	C-15	16 of

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
15	1990-1991 IMPROVEMENTS	IH	



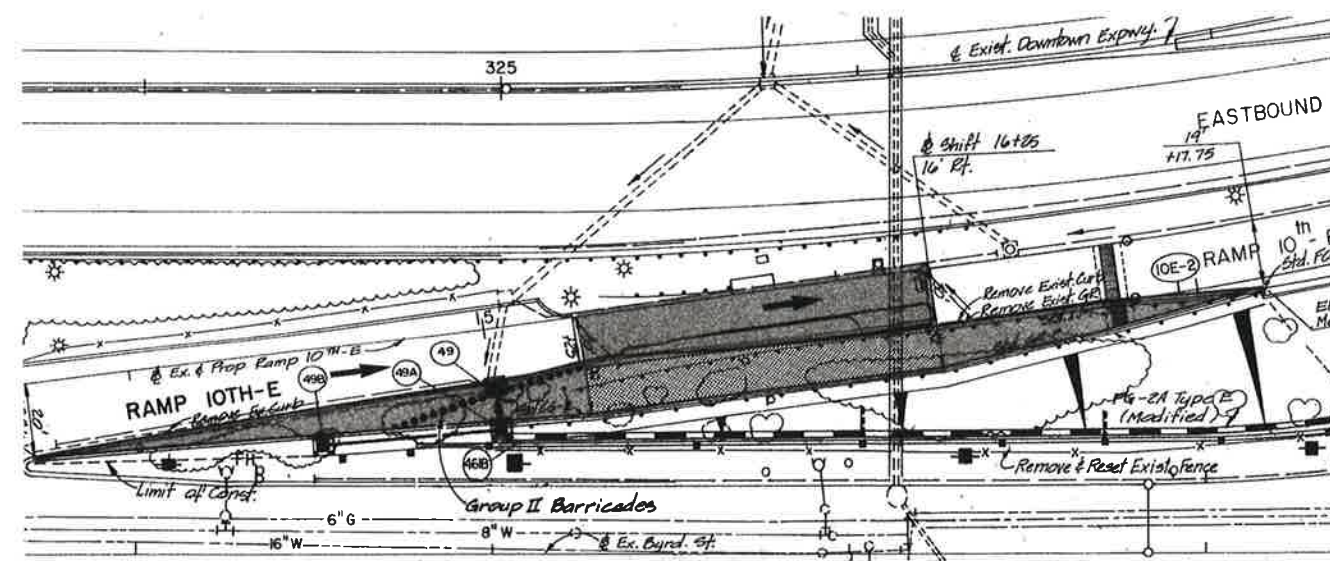
- PHASE 1**
1. PLACE CONCRETE TRAFFIC BARRIER SERVICE ALONG THE EDGE OF EXISTING PAVEMENT AND CONSTRUCT THE WIDENED PAVEMENT.
 2. CONSTRUCT DETOUR PAVEMENT AS SHOWN.

PHASE 1



- PHASE 2**
1. SET UP TEMPORARY TOLL COLLECTION FACILITY AND SHIFT TRAFFIC TO NEWLY WIDENED PAVEMENT AND DETOUR.
 2. CONSTRUCT CANOPY FOOTINGS, CONCRETE PAD, CONCRETE ISLAND, IMPACT ATTENUATOR AND BUMPER BLOCK.
 3. INSTALL TOLL COLLECTION MACHINE (INSTALLED BY ATS).








PHASE 2



- PHASE 3**
1. SHIFT TRAFFIC TO NEW AUTOMATIC TOLL COLLECTION LANE AND REMOVE TEMPORARY TOLL COLLECTION FACILITY.
 2. REMOVE TEMPORARY DETOUR AND COMPLETE CONSTRUCTION OF THE TOLL PLAZA AREA.

PHASE 3

LEGEND

-  CONSTRUCTION THIS PHASE
-  DETOUR CONSTRUCTION THIS PHASE
-  COMPLETED CONSTRUCTION IN PREVIOUS PHASES
-  INDICATES TRAFFIC LANES
-  TRAFFIC BARRIER SERVICE, CONCRETE
-  GROUP II CHANNELIZING DEVICES FOR TRAFFIC CONTROL
-  IMPACT ATTENUATOR SERVICE TYPE I

Note:
Warning lights on concrete traffic barrier service shall be @ 125' C-C unless otherwise noted.

Note: For M.O.T. General Notes, See Sheet 1F.

	By	Date			
Designed	PHI	1-91			
Drawn	SLT	1-91			
Checked	ICM	1-91			
Approved	RBL	1-91	No.	Revision	By Date

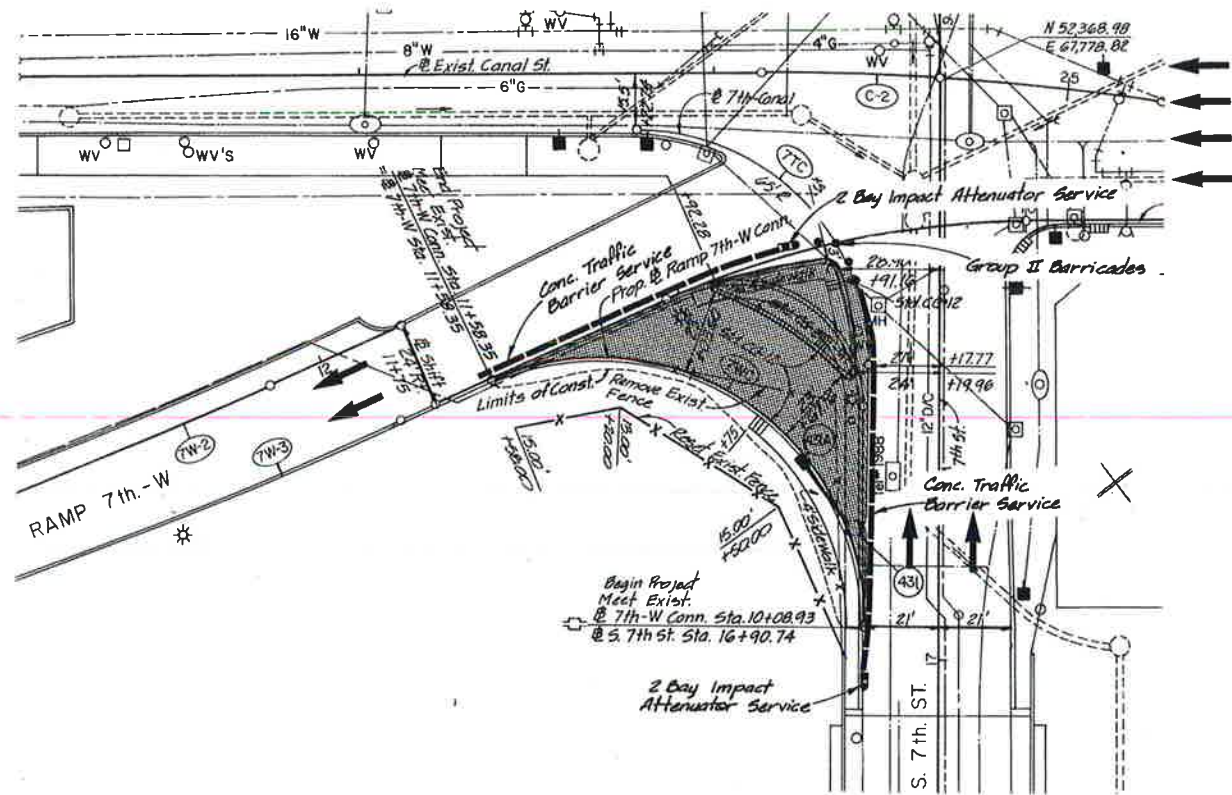
HOWARD NEEDLES TAMMEN & BERGENDOFF
Architects Engineers Planners
ALEXANDRIA, VA.

HNTB

Scale: N/A Date: JAN. 1991 Contract No. C-15 Sheet: IH of








AS BUILT

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
15	1990-1991 IMPROVEMENTS	IJ	



- NOTES:**
- CONSTRUCTION SHALL NOT BEGIN ON RAMP 7TH-W CONNECTOR UNTIL ALL CONSTRUCTION HAS BEEN COMPLETED ON RAMP 12TH-W AND THE RAMP HAS BEEN RE-OPENED TO TRAFFIC.
 - ERECT BARRICADES AND BARRIERS ALONG 7TH STREET AND EXISTING RAMP 7TH-W AS SHOWN AND CONSTRUCT ALL OF RAMP 7TH-W CONNECTOR.

LEGEND

-  CONSTRUCTION THIS PHASE
-  DETOUR CONSTRUCTION THIS PHASE
-  COMPLETED CONSTRUCTION IN PREVIOUS PHASES
-  INDICATES TRAFFIC LANES
-  TRAFFIC BARRIER SERVICE, CONCRETE
-  GROUP II CHANNELIZING DEVICES FOR TRAFFIC CONTROL
-  IMPACT ATTENUATOR SERVICE TYPE I

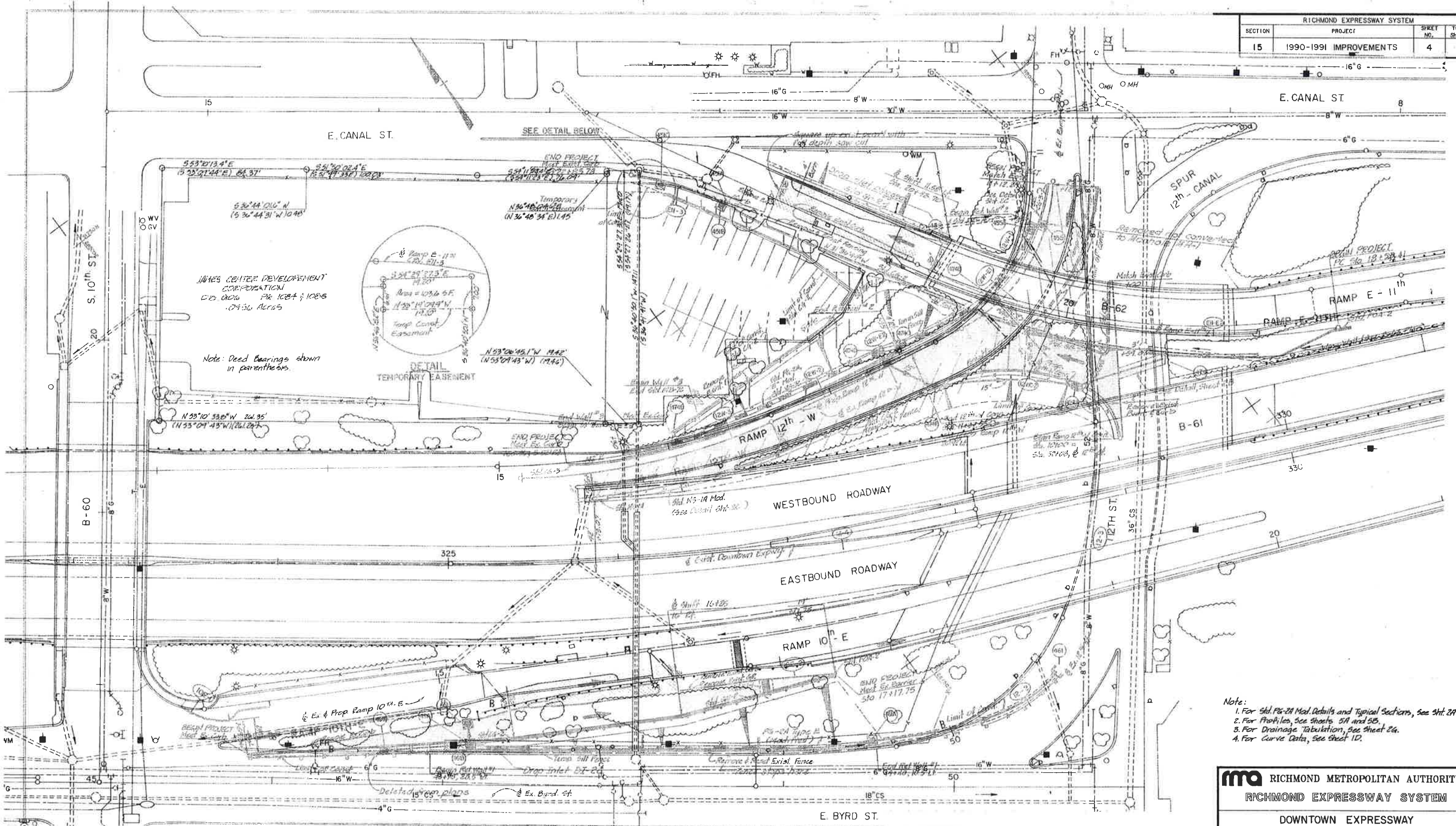
Note:
Warning lights on concrete traffic barrier service shall be @ 125' OC unless otherwise noted.

AS BUILT

	By	Date	No.	Revision	By	Date
Designed	ICM	1-91				
Drawn	JT	1-91				
Checked	PHT	1-91				
Approved	RBW	1-91				

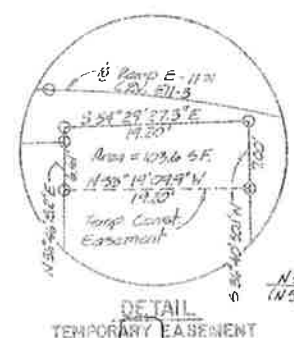
RM RICHMOND METROPOLITAN AUTHORITY			
RICHMOND EXPRESSWAY SYSTEM			
RAMP 7TH-W CONNECTOR CONSTRUCTION SEQUENCE & MAINTENANCE OF TRAFFIC			
HOWARD NEEDLES TAMMEN & BERGENDOFF Architects Engineers Planners		HNTB	
Scale: N/A	Date: JAN. 1991	Contract No. C-15	Sheet: IJ of

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
15	1990-1991 IMPROVEMENTS	4	



JAMES CENTER DEVELOPMENT
 CORPORATION
 C/D 0106 P& 1084 & 1085
 .0436 Acres

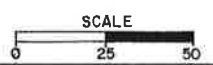
Note: Deed Bearings shown
 in parentheses



- Note:
1. For Std. PG-28 Mod. Details and Typical Sections, See Sht. 29
 2. For Profiles, See sheets 5A and 5B.
 3. For Drainage Tabulation, See sheet 24.
 4. For Curve Data, See sheet 1D.

	By	Date			
Designed					
Drawn					
Checked					
Approved	No.	Revision	By	Date	

- LEGEND:
- FULL STRENGTH PVMT.
 - PAVED SHOULDER
 - DEMOLITION OF PAVEMENT
 - DEMOLITION OF TOLL PLAZA



AS BUILT

ma RICHMOND METROPOLITAN AUTHORITY
 RICHMOND EXPRESSWAY SYSTEM

**DOWNTOWN EXPRESSWAY
 GRADING, DRAINAGE &
 PAVEMENT PLAN**

HOWARD NEEDLES TAMMEN & BERGENDOFF
 Architects Engineers Planners
 ALEXANDRIA, VA. **HNTB**

Scale: 1" = 25'
 Date: JAN. 1991
 Contract No.: C-15
 Sheet: 4 of 4

DOWNTOWN EXPRESSWAY REHABILITATION

**DOWNTOWN EXPRESSWAY &
DOWNTOWN EXPRESSWAY CONNECTOR**

RECORD PLAN SET (PARTIAL)

**RICHMOND
METROPOLITAN AUTHORITY**

RICHMOND EXPRESSWAY SYSTEM

DOWNTOWN EXPRESSWAY REHABILITATION

LIMITED ACCESS HIGHWAY

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
	DOWNTOWN EXPRESSWAY REHABILITATION	1	18

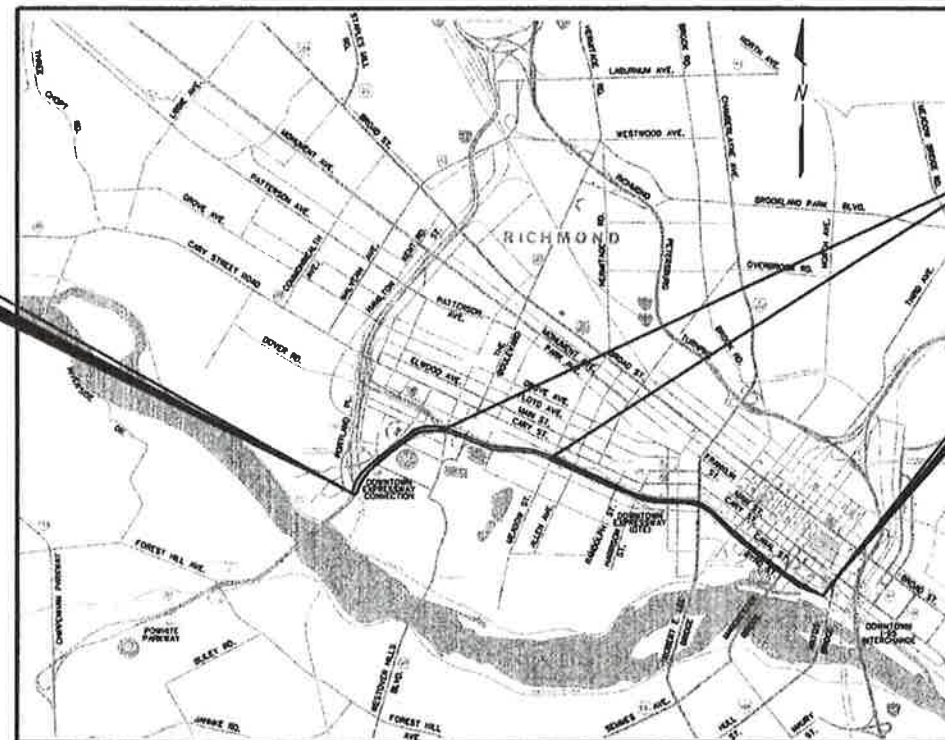
CONFORMED PLANS

THESE DRAWINGS INCORPORATE ALL CHANGES TO THE BID PLANS MADE BY ADDENDA 1, 2 AND 3.
 ADDENDUM No. 1, JANUARY 10, 2000: SHEETS 2, 6, 14, & 17.
 ADDENDUM No. 2, JANUARY 13, 2000: SHEETS 4, 5, 6A, 15, 17 & 18.
 ADDENDUM No. 3, JANUARY 17, 2000: SHEET 2.

INDEX OF SHEETS

SHEET NO.	TITLE
1	COVER SHEET
2	GENERAL NOTES
3-6	DETAILS AND TYPICAL SECTIONS
7-17	PLANS
18	MAINTENANCE OF TRAFFIC AND CONSTRUCTION SEQUENCING NOTES

CONTRACTOR SHALL NOTIFY "MISS UTILITY" @ 800-552-7001 48 HOURS IN ADVANCE OF ANY EXCAVATION ACTIVITY



LIMIT OF CONSTRUCTION DOWNTOWN EXPRESSWAY CONNECTION

NOT IN CONTRACT (VDOT FACILITY)

LIMIT OF CONSTRUCTION DOWNTOWN EXPRESSWAY



CONTRACT DTE-2000

CONVENTIONAL SIGNS

STATE LINE	LEVES OR EMBANKMENT
COUNTY LINE	BRIDGES
CITY/TOWN OR VILLAGE	CULVERTS
RIGHT OF WAY LINE	DROP INLET
FENCE LINE	POWER POLES
UNFENCED PROPERTY LINE	TELEPHONE OR TELEGRAPH POLES
FENCED PROPERTY LINE	TELEPHONE OR TELEGRAPH LINES
WATER LINE	HEDGES
SANITARY SEWER LINE	TREES
GAS LINE	HEAVY WOODS
ELECTRIC UNDERGROUND CABLE	GROUND ELEVATION
TRAVELED WAY	GRADE ELEVATION
GUARD RAIL	
RETAINING WALL	
RAILROADS	
BASE OR SURVEY LINE	

FOR ADDITIONAL SYMBOLS AND SIGNS SEE LEGEND ON SHEET 1.

SUBMITTED BY

12/20/99 Date *[Signature]*
 GENERAL CONSULTANT

RECOMMENDED BY

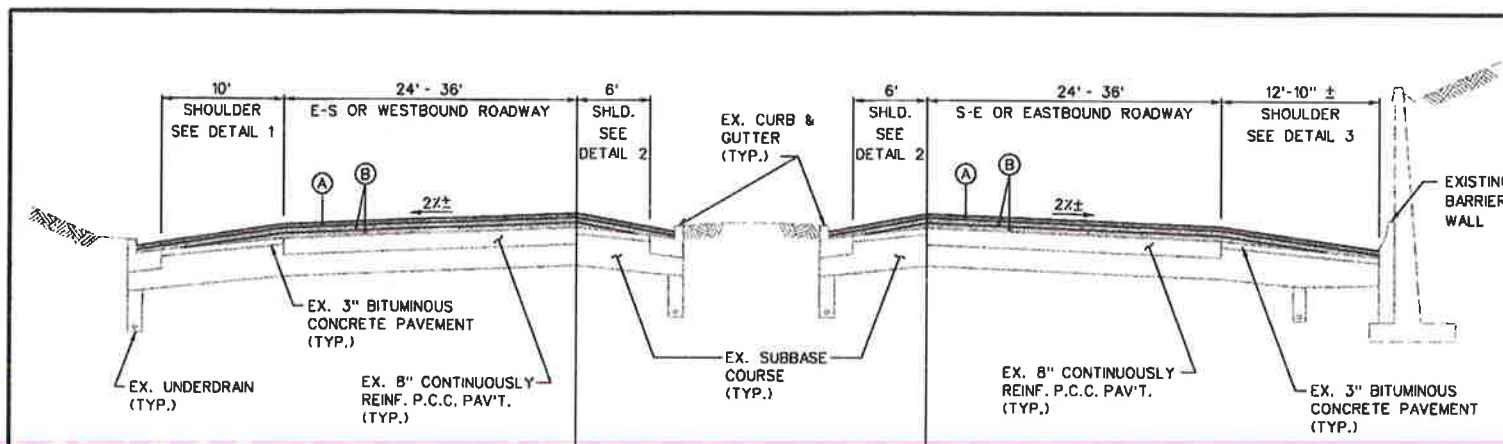
12/29/99 Date *[Signature]*
 GENERAL MANAGER, RICHMOND METROPOLITAN AUTHORITY

Plans Revised

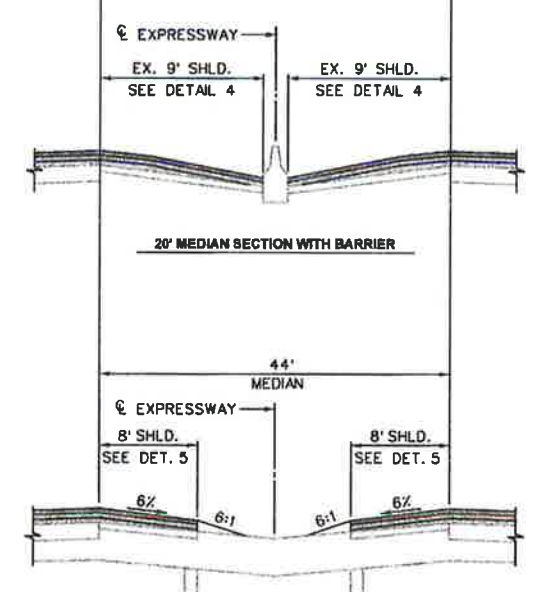
Sheet No.	Date	Sheet No.	Date



SUPERVISED BY
 DESIGNED BY
 CADD OPERATOR
 REVISED BY

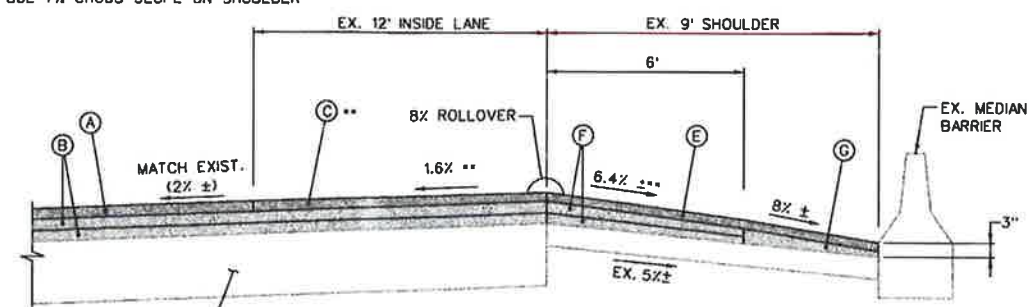


CURBED MEDIAN SECTION

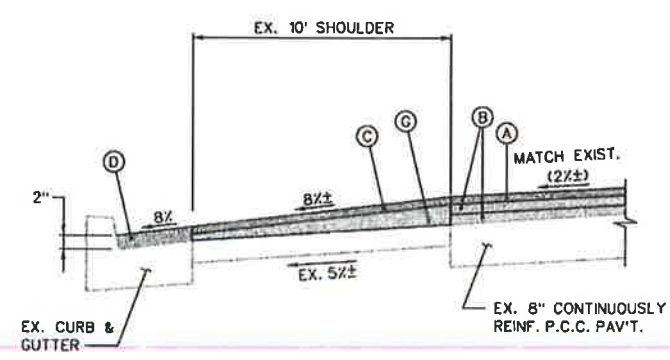


NORMAL MAINLINE SECTION

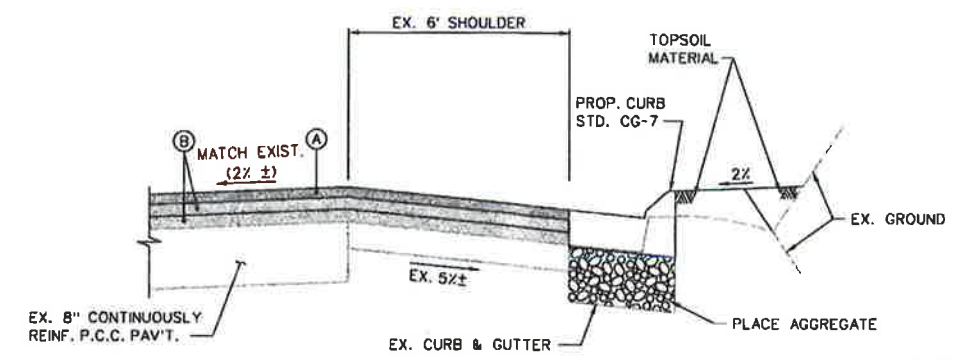
** IN CERTAIN AREAS (INSIDE LANE) IS SLOPED AT 1%. IN THESE AREAS: USE ITEM (A) IN LIEU OF ITEM (C) USE 1% CROSS SLOPE ON INSIDE LANE USE 7% CROSS SLOPE ON SHOULDER



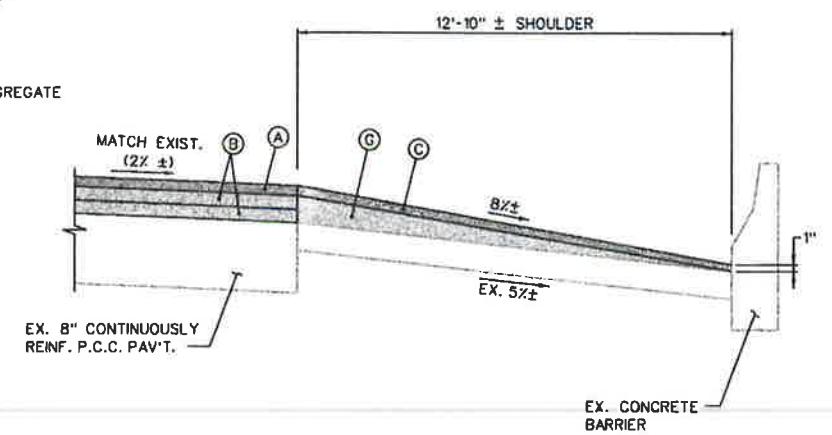
DETAIL 4



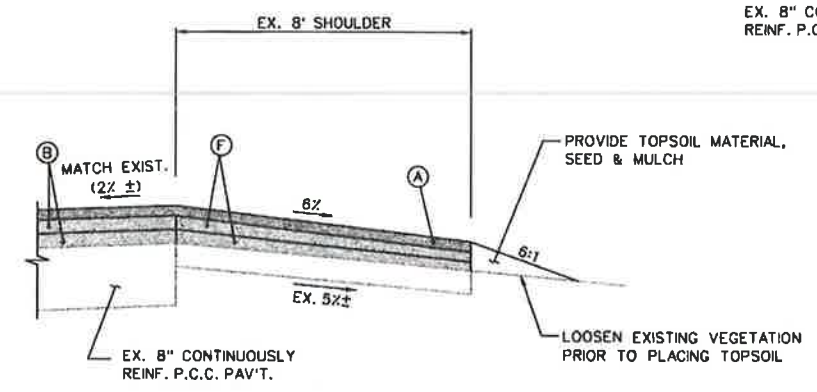
DETAIL 1



DETAIL 2



DETAIL 3



DETAIL 5

PAVEMENT LEGEND

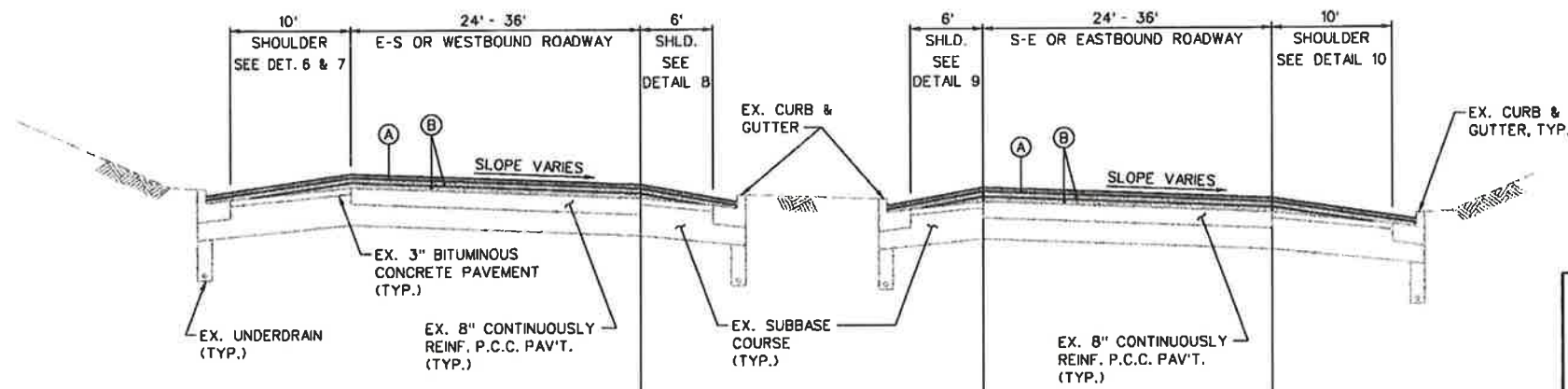
- (A) 1.5" STONE MATRIX ASPHALT SURFACE COURSE, TYPE SMA-SURFACE
- (B) 2" STONE MATRIX ASPHALT INTERMEDIATE COURSE, TYPE SMA-INTERMEDIATE
- (C) 1"-1.5" SMA SURFACE COURSE, TYPE SMA-SURFACE
- (D) VARIABLE DEPTH SMA SURFACE COURSE, TYPE SMA-SURFACE
- (E) 1" SMA SURFACE COURSE, TYPE SMA-SURFACE
- (F) 1.5"-TO 2"-SMA-INTERMEDIATE COURSE, TYPE SMA-INTERMEDIATE
- (G) VARIABLE DEPTH SMA INTERMEDIATE COURSE, TYPE SMA-INTERMEDIATE (PLACE IN LIFTS NOT TO EXCEED 3")
- (H) 1.5" SMA INTERMEDIATE COURSE, TYPE SMA-INTERMEDIATE
- (I) WEDGE AND LEVEL COURSE (SEE SPECIAL PROVISIONS)

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY REHABILITATION
 — DETAILS & TYPICAL SECTIONS —

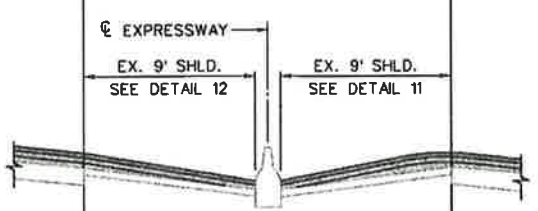
HNTB
 CORPORATION

MADE	BY	DATE			
CHECKED	LAM	12/99			
IN CHARGE	GKL		NO.	REVISION	BY DATE

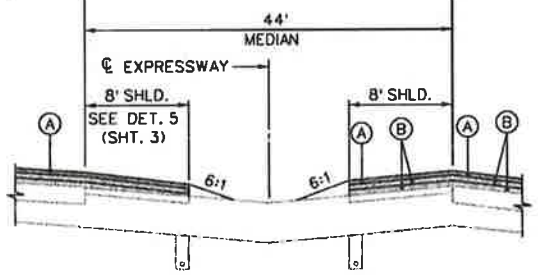
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CURBED MEDIAN SECTION

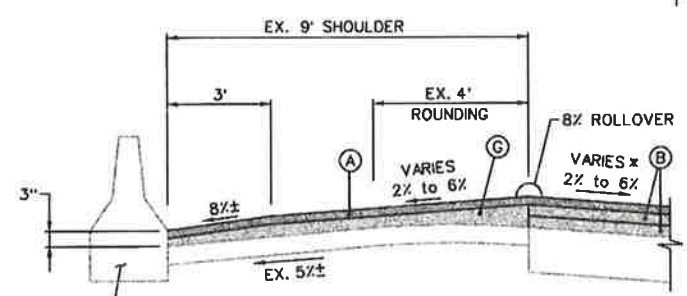


20' MEDIAN SECTION WITH BARRIER



OPEN MEDIAN SECTION

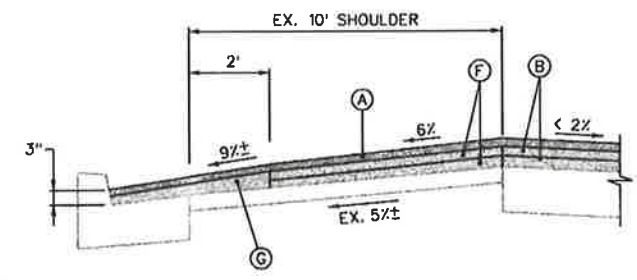
SUPERELEVATED MAINLINE SECTION



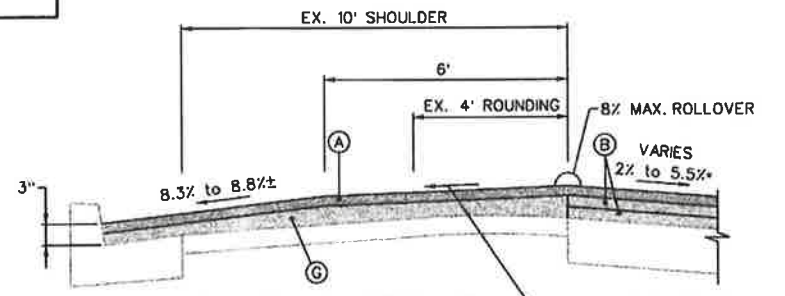
DETAIL 11

* WHEN ROADWAY CROSS SLOPE IS LESS THAN 2%, USE DETAIL 4, SHT 3

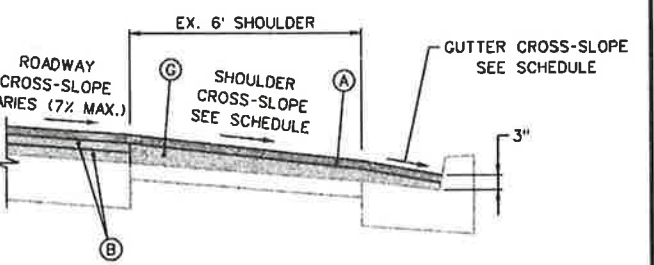
FOR PAVEMENT LEGEND, SEE SHT. 3



DETAIL 6



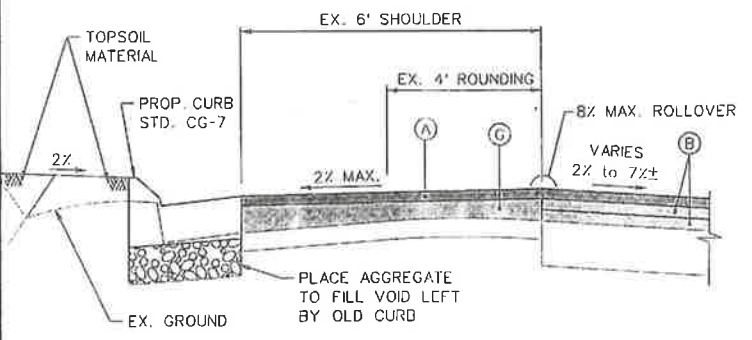
DETAIL 7



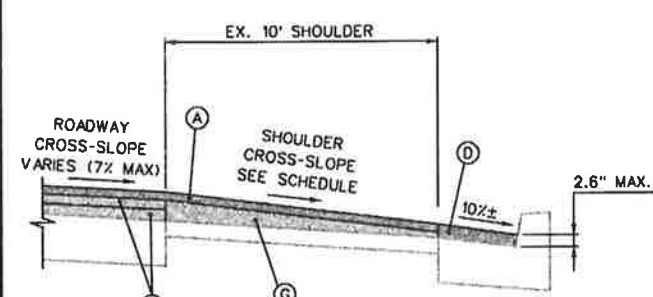
SHOULDER CROSS-SLOPE SCHEDULE

ROADWAY CROSS-SLOPE	SHOULDER CROSS-SLOPE	GUTTER CROSS-SLOPE
≤ 5%	8%	10%
> 5%	ROADWAY CROSS SLOPE + 3% (10% MAX.)	12%

DETAIL 8



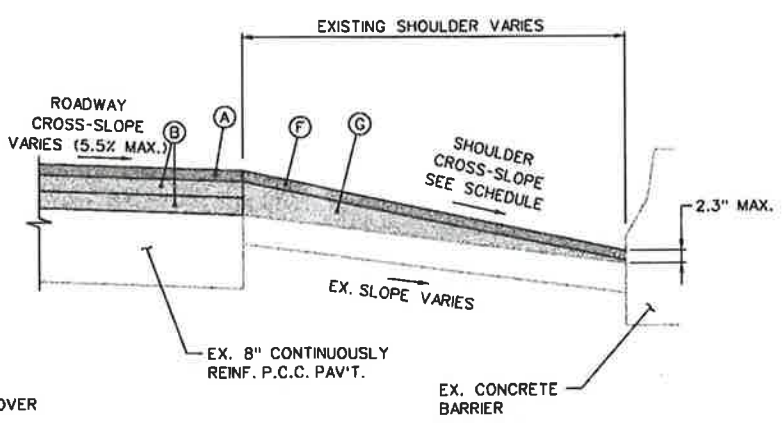
DETAIL 9



SHOULDER CROSS-SLOPE SCHEDULE

ROADWAY CROSS-SLOPE	SHOULDER CROSS-SLOPE
≤ 5%	7%
> 5%	ROADWAY CROSS SLOPE + 2%

DETAIL 10



SHOULDER CROSS-SLOPE SCHEDULE

ROADWAY CROSS-SLOPE	SHOULDER CROSS SLOPE
≤ 5%	8%
> 5%	RDWY CROSS SLOPE + 3%

DETAIL 12

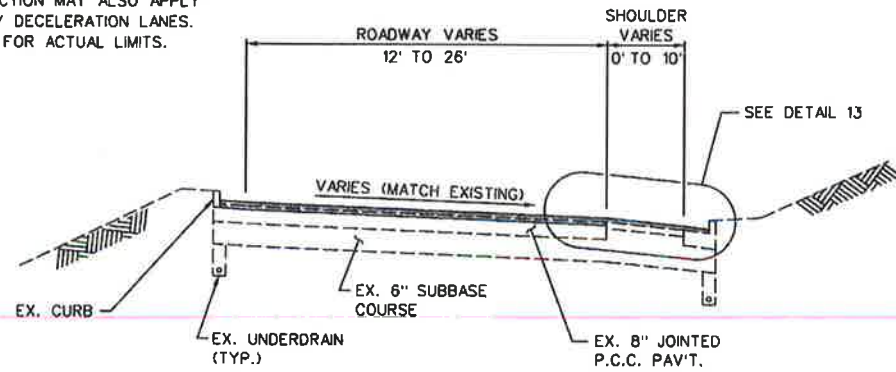
BY	DATE	NO.	REVISION	BY	DATE
MADE	JAI 12/99				
CHECKED	LMM 12/99	Δ	REVISED DETAIL 9	LMM	1/13/00
IN CHARGE	GKL				

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY REHABILITATION
 — DETAILS & TYPICAL SECTIONS —

HNTB
 CORPORATION

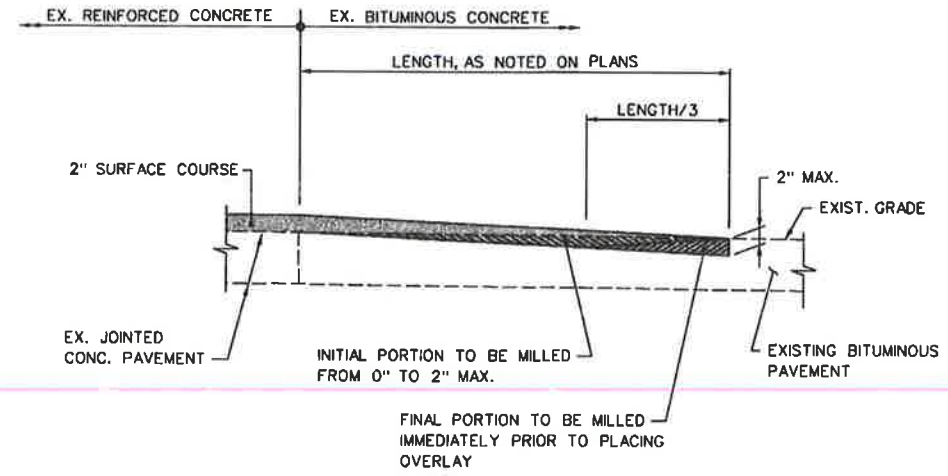
Scale: NONE Date: 12/27/99 Contract No.: DTE-2000 Sheet: 4 of 18

NOTE: TYPICAL SECTION MAY ALSO APPLY ON ACCEL / DECELERATION LANES. SEE PLANS FOR ACTUAL LIMITS.



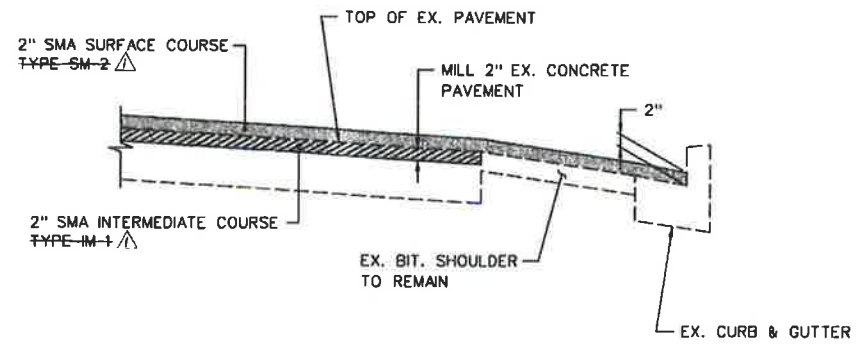
TYPICAL RAMP SECTION

NTS



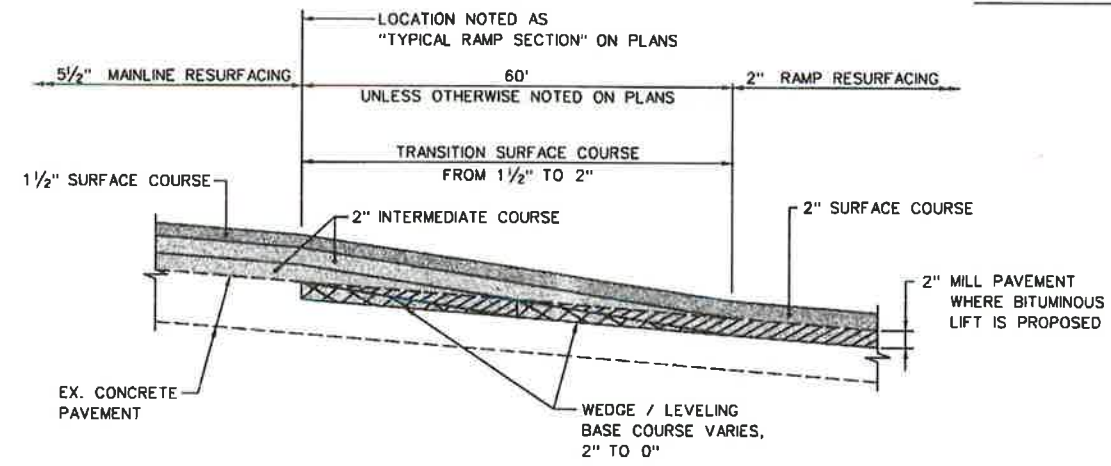
TYPE 2 HEEL-IN DETAIL

NTS



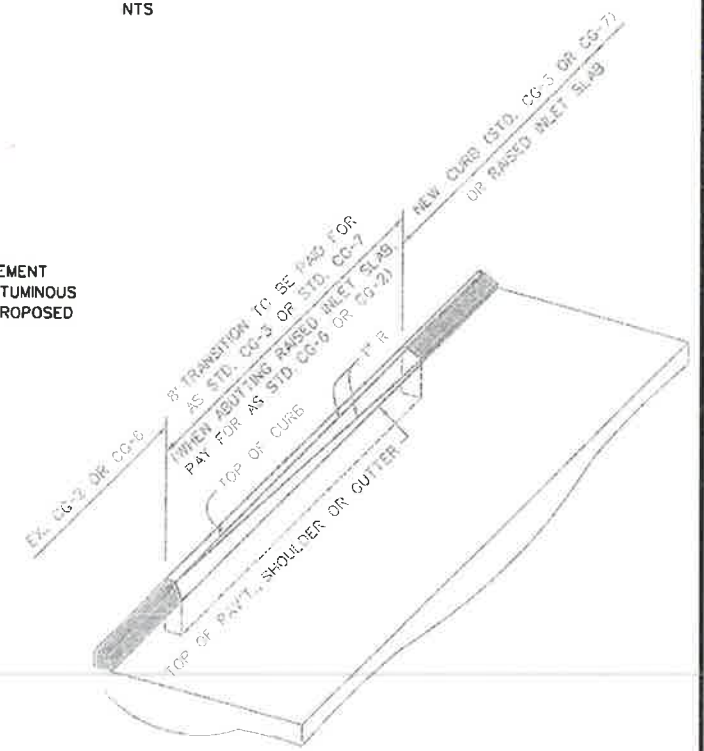
DETAIL 13 RAMP RESURFACING

NTS



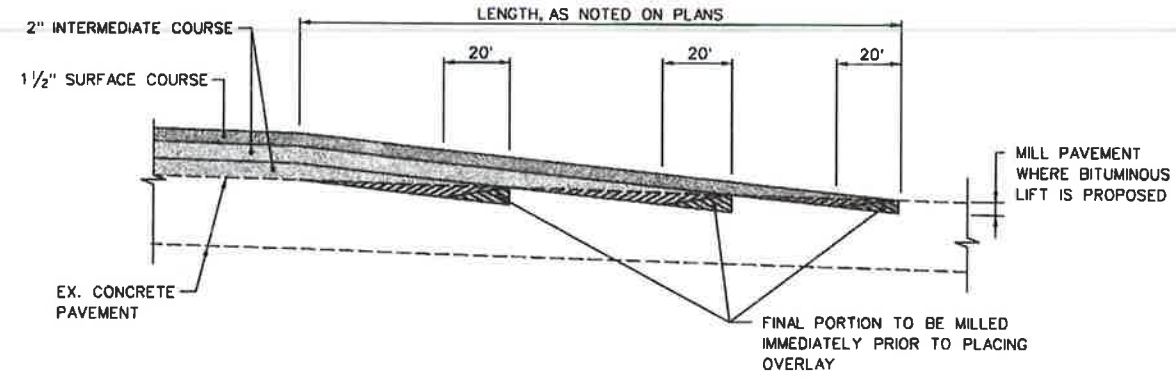
DETAIL FOR TRANSITIONING MAINLINE RESURFACING TO RAMP RESURFACING

NTS



CURB TRANSITION DETAIL

NTS



TYPE 1 HEEL-IN DETAIL

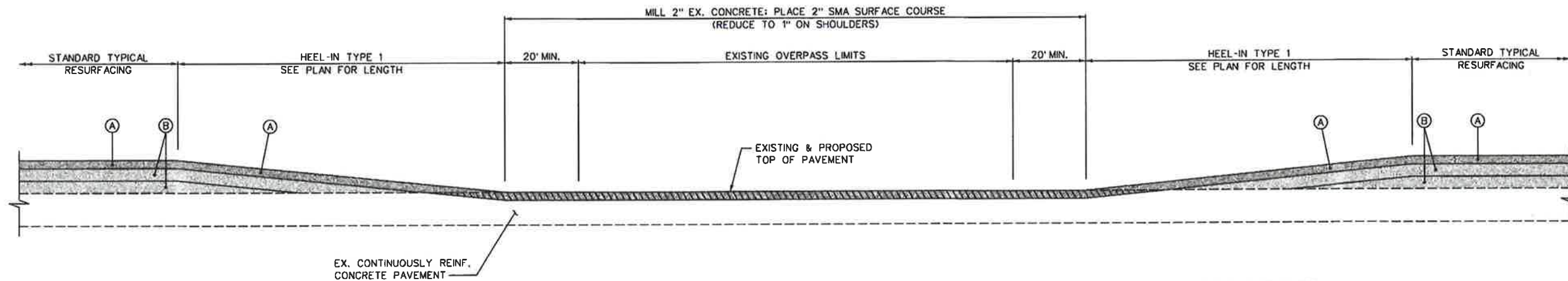
NTS

MADE	BY	DATE	NO.	REVISION	BY	DATE
	JM	12/99		ADDED DETAIL	LMM	1/13/00
	LAM	12/99		REVISED LABEL	LMM	1/10/00
	GKL					

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY REHABILITATION
 — DETAILS & TYPICAL SECTIONS —

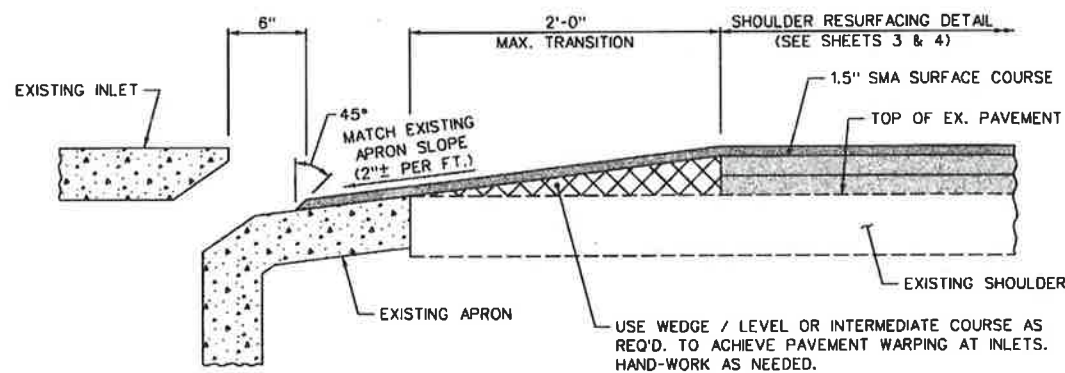
HNTB
 CORPORATION

Scale: NONE Date: 12/27/99 Contract No.: DTE-2000 Sheet: 5 of 18



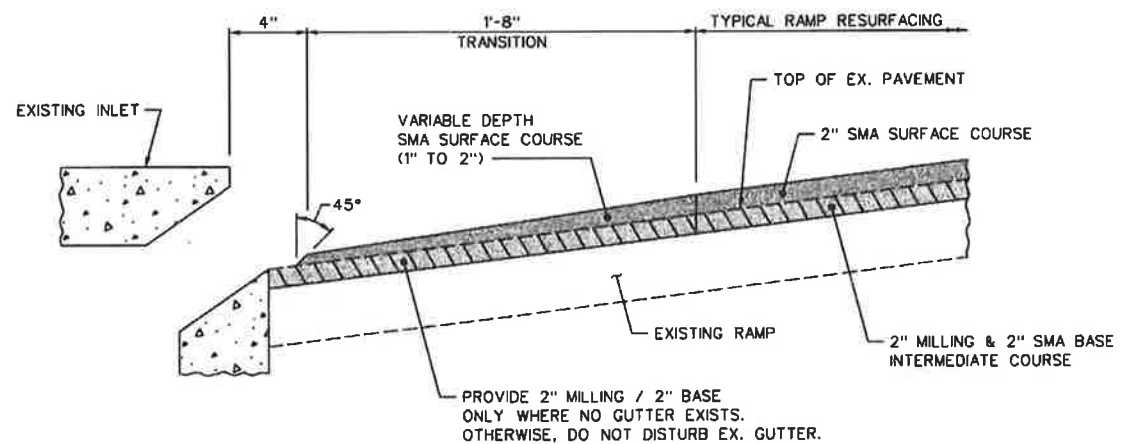
METHOD OF RESURFACING ROADWAY AT CLEARANCE SENSITIVE BRIDGES

NTS



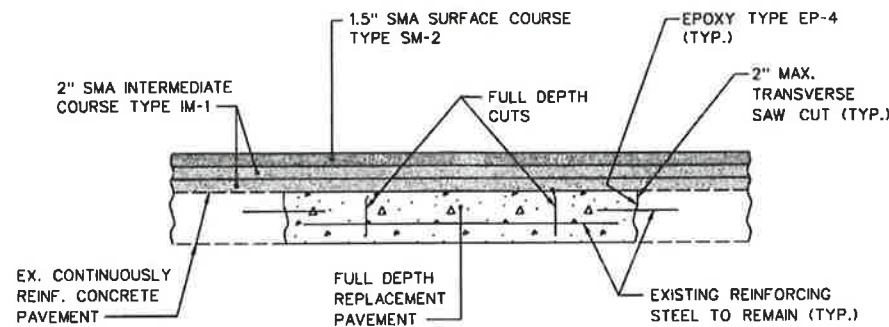
INLET TREATMENT AT OUTSIDE SHOULDER, MAINLINE

NTS - SEE NOTE 4



INLET TREATMENT ON RAMP

NTS

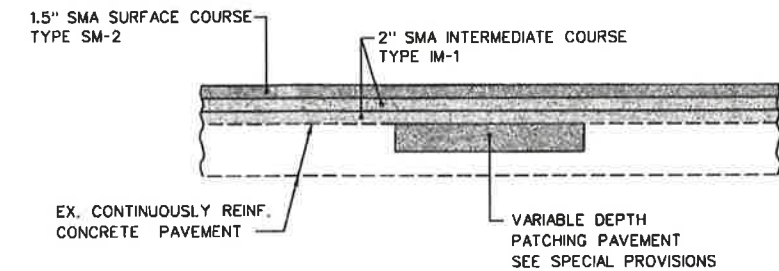


FULL DEPTH PAVEMENT REPAIR CONTINUOUSLY REINFORCED CONCRETE

NTS

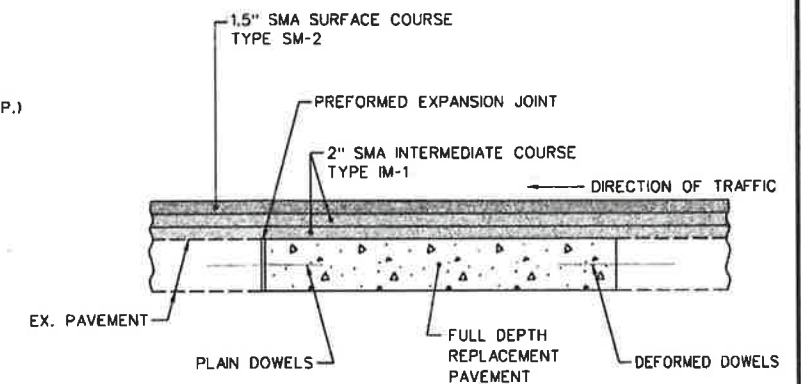
NOTES FOR INLET DETAILS

- 1) SHOULDER RESURFACING TRANSITIONS FOR INLET TREATMENT SHALL BEGIN AS FOLLOWS:
 RAMPS: 10' UPSTREAM & DOWNSTREAM OF INLET.
 MAINLINE: 3' UPSTREAM OF INLET
 2' DOWNSTREAM OF INLET.
- 2) FOR MEDIAN INLETS AT CONCRETE BARRIER, SEE SPECIAL PROVISIONS FOR ADJUSTMENT DETAIL REQUIREMENTS.
- 3) FOR MEDIAN INLETS IN CURBED SECTIONS, INLET SLABS SHALL BE RAISED. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
- 4) THIS DETAIL INTENDED AS MORE ECONOMICAL ALTERNATIVE TO "DROP INLET GUTTER BLOCK" DETAIL IN SPECIAL PROVISIONS. ENGINEER TO DETERMINE APPLICABILITY ON CASE BY CASE BASIS.



PARTIAL DEPTH BITUMINOUS PAVEMENT REPAIR

NTS



FULL DEPTH PAVEMENT REPAIR PLAIN & REINFORCED CONCRETE

NTS

MADE	JAN	12/99			
CHECKED	LAM	12/99			
IN CHARGE	GNL		NO.	REVISION	BY DATE

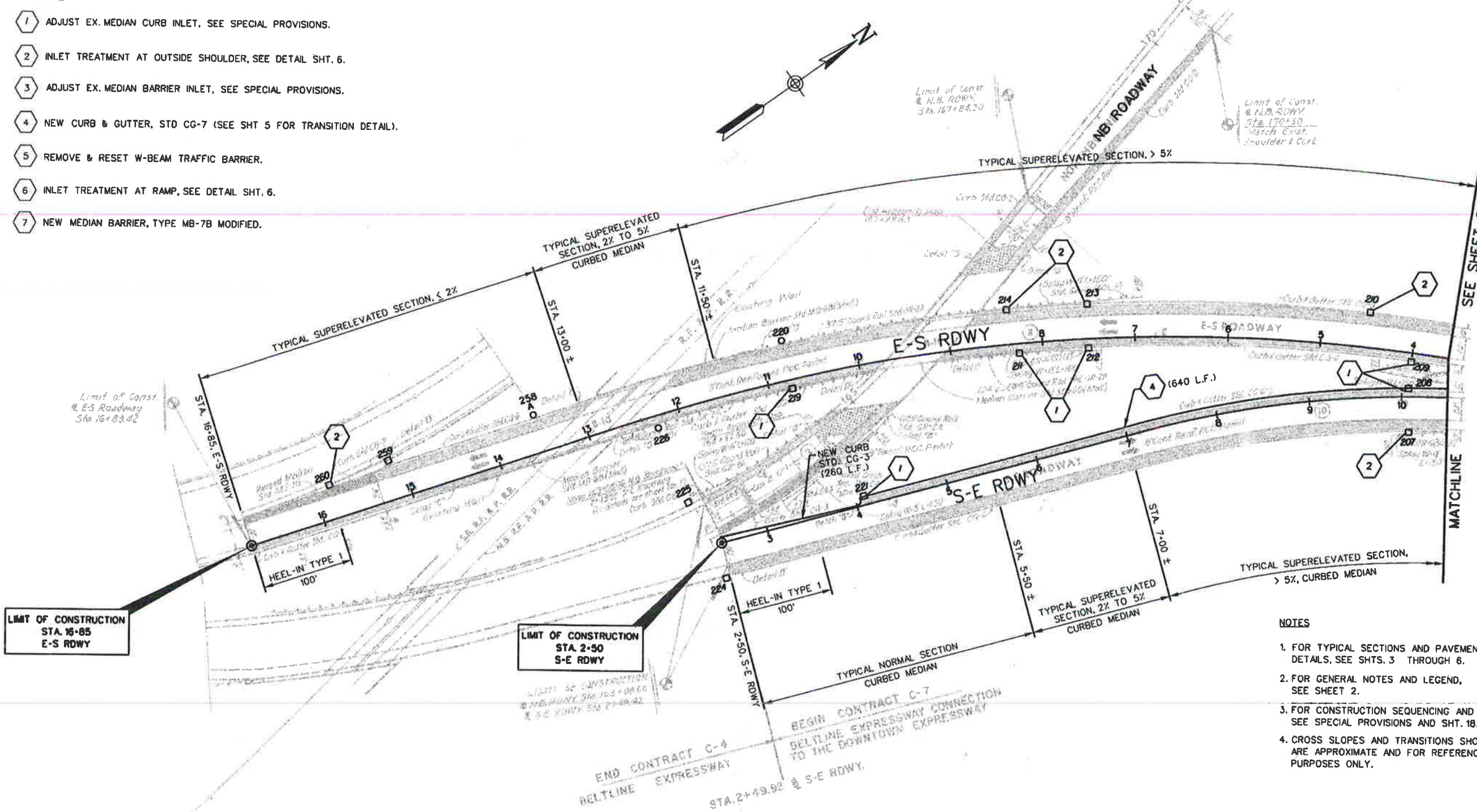
ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY REHABILITATION
 — DETAILS & TYPICAL SECTIONS —

HNTB
 CORPORATION

Scale: NONE Date: 12/27/99 Contract No.: DTE-2000 Sheet: 6 of 18

KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED.



- NOTES**
1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
 2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
 3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 18.
 4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.

FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

RM RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

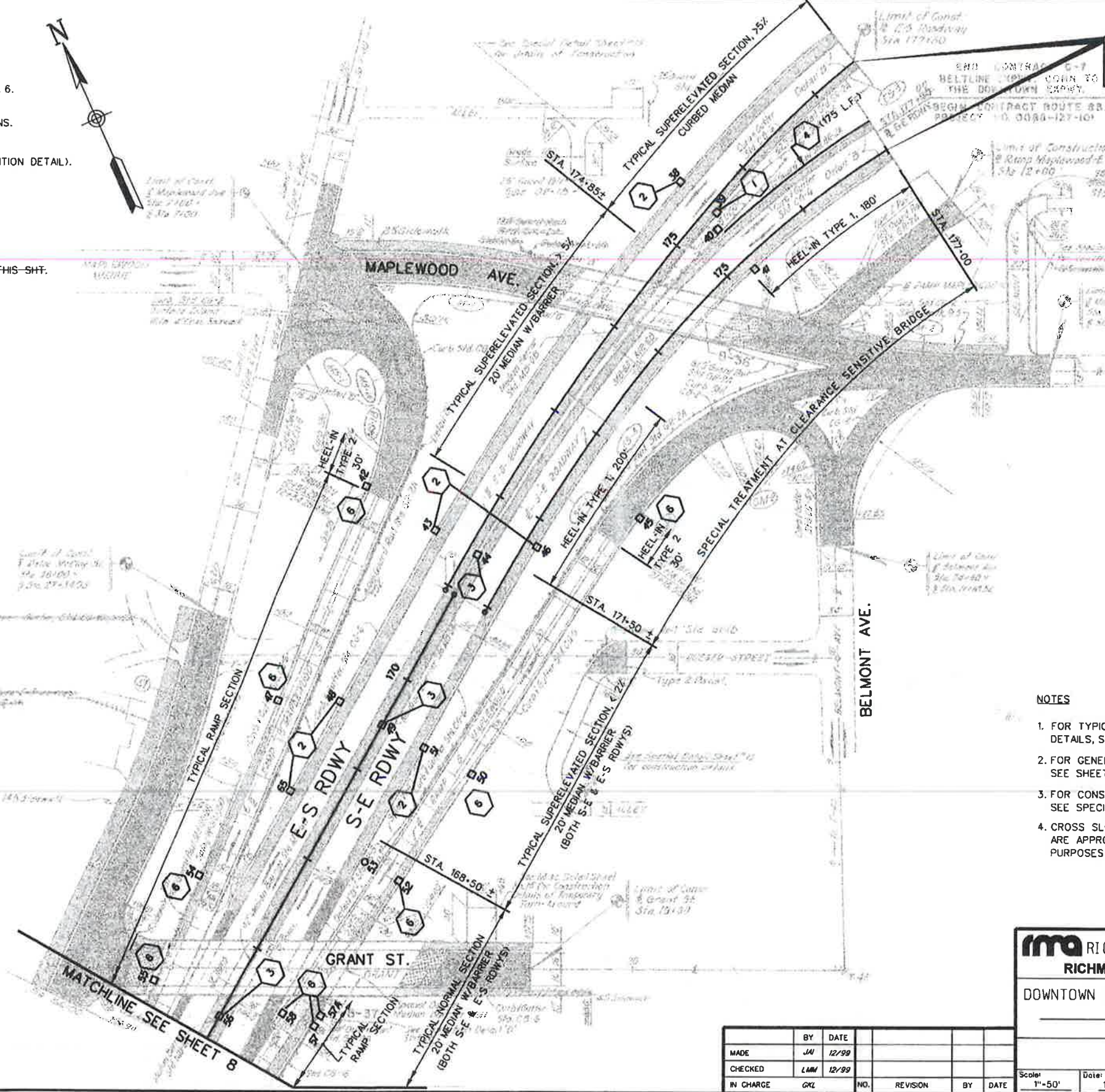
HNTB
CORPORATION

Scale: 1"=50' Date: 12/27/99 Contract No.: DTE-2000 Sheet: 7 of 18

MADE	BY	DATE	NO.	REVISION	BY	DATE
	JW	12/99				
CHECKED	LMB	12/99				
IN CHARGE	GHZ					

KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED. -SEE DETAIL THIS SHT.



NOTES

1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 1B.
4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.

FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY REHABILITATION
 PLAN



MADE	BY	DATE	NO.	REVISION	BY	DATE
CHECKED	LMM	12/99				
IN CHARGE	GKL					

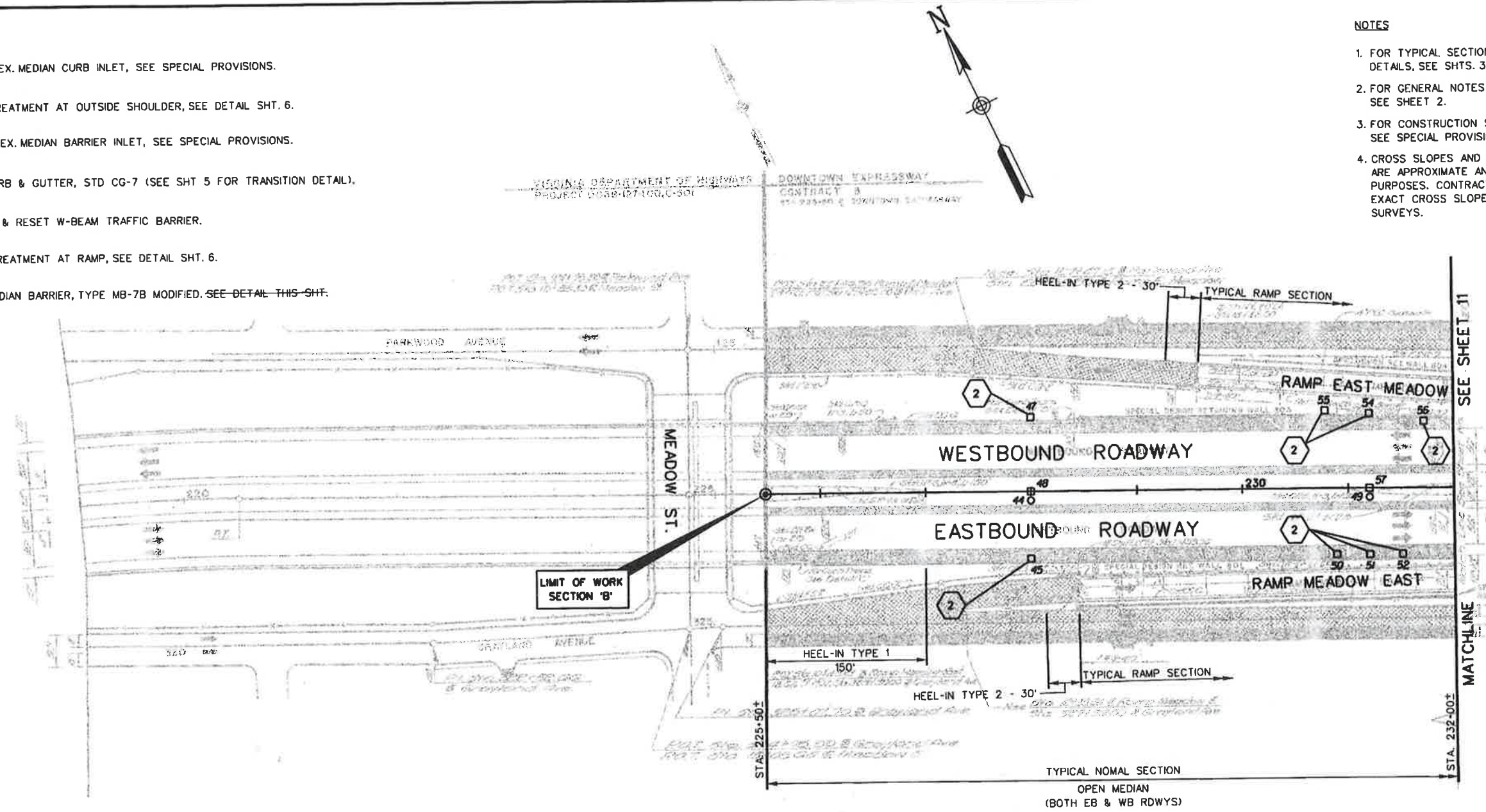
Scale: 1"=50'	Date: 12/27/99	Contract No.: DTE-2000	Sheet: 9 of 18
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KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
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- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED. SEE DETAIL THIS SHT.

NOTES

- 1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
- 2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
- 3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 1B.
- 4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES. CONTRACTOR SHALL DETERMINE EXACT CROSS SLOPE DATA BASED ON FIELD SURVEYS.



FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

richmond metropolitan authority
RICHMOND EXPRESSWAY SYSTEM
 DOWNTOWN EXPRESSWAY REHABILITATION
 PLAN

BY	DATE				
MADE	JM	12/99			
CHECKED	LMM	12/99			
IN CHARGE	GKL		NO.	REVISION	BY DATE

HNTB CORPORATION

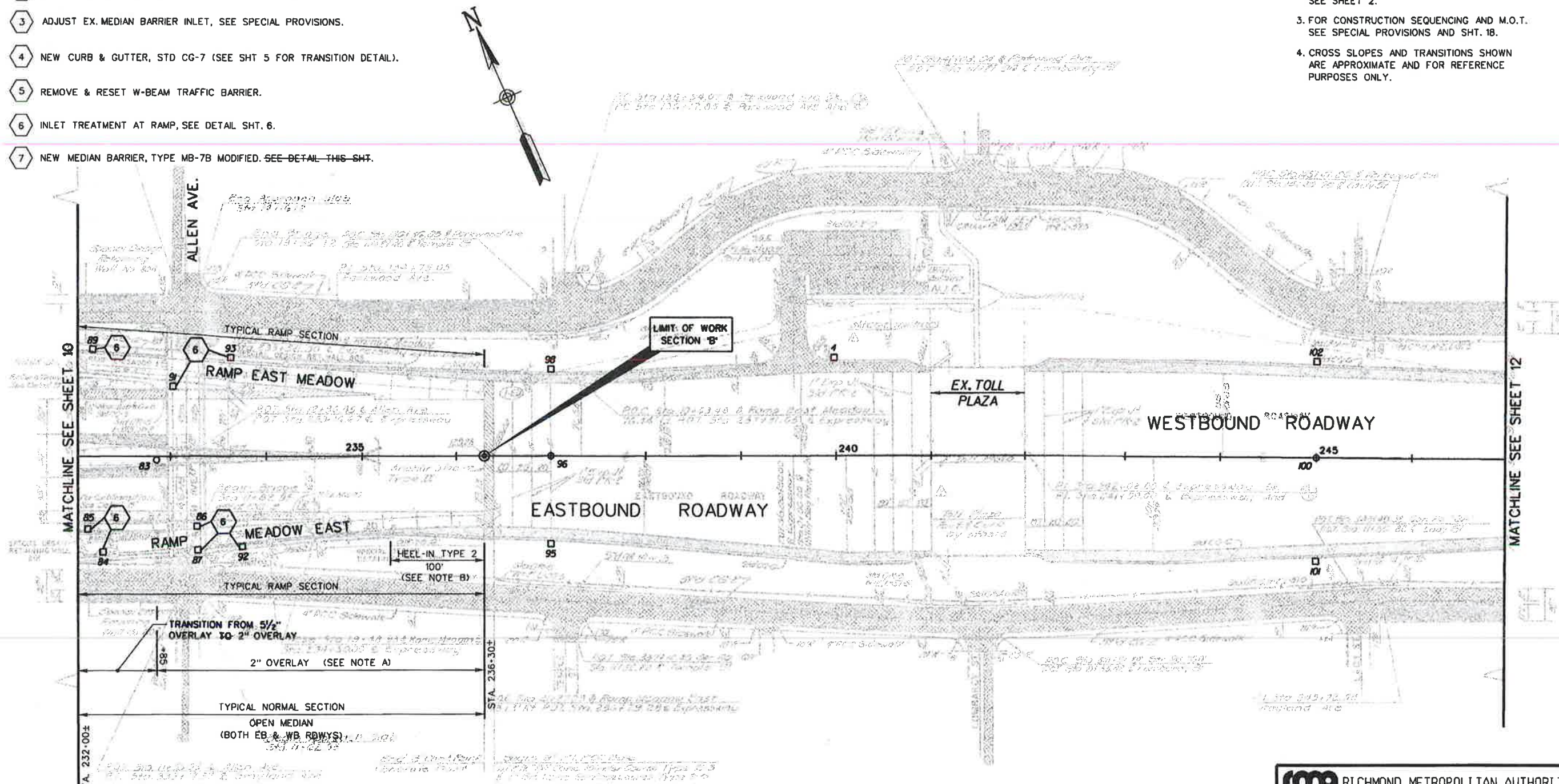
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KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED. SEE DETAIL THIS SHT.

NOTES

- 1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
- 2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
- 3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 18.
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FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

NOTE A: FOR 2" OVERLAY
USE DETAIL 13, SHEET 5.
NOTE B: HEEL-IN APPLIES TO
BOTH MAINLINE AND RAMPS.

richmond metropolitan authority
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

MADE	BY	DATE	NO.	REVISION	BY	DATE
	JM	12/99				
CHECKED	LMM	12/99				
IN CHARGE	GRL					

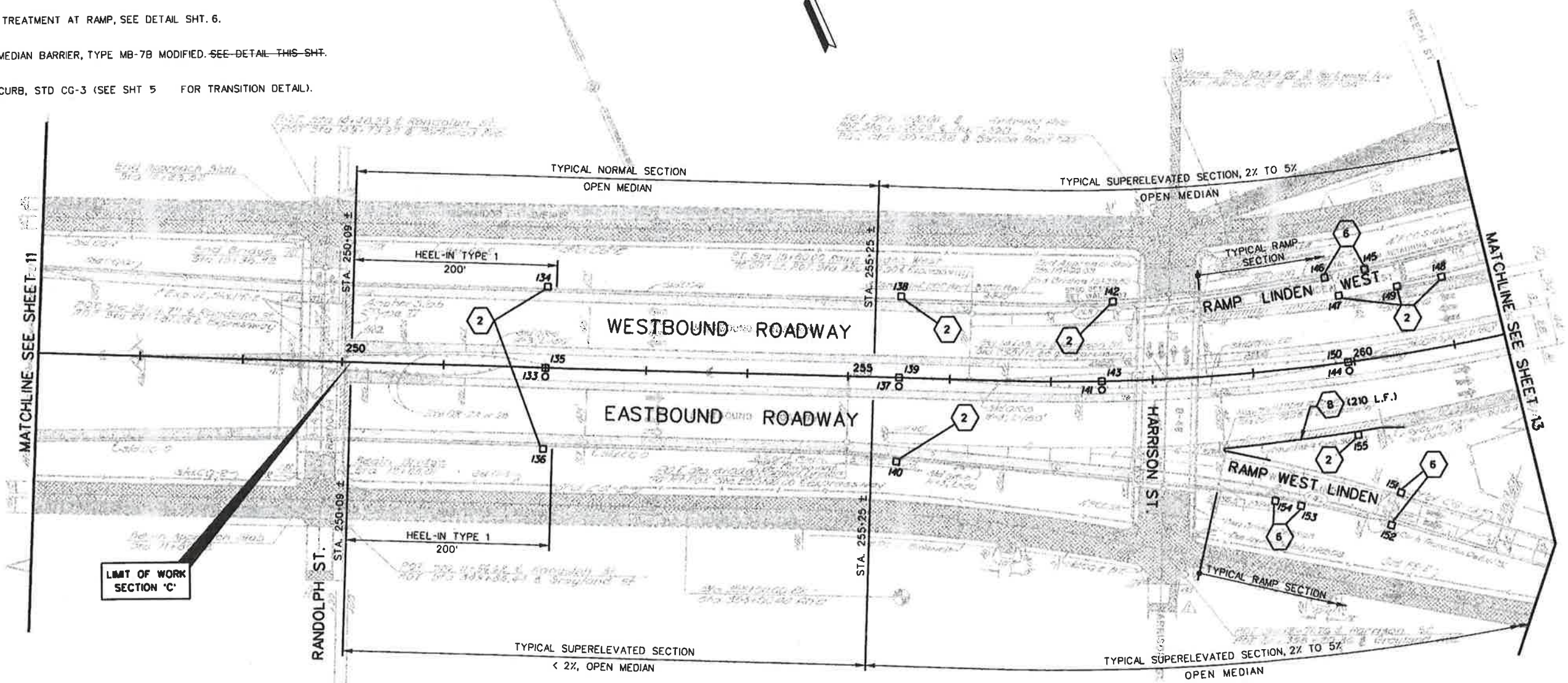
ENTB CORPORATION
Scale: 1"=50'
Date: 12/27/99
Contract No.: DTE-2000
Sheet: 11 of 18

KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED. SEE DETAIL THIS SHT.
- 8 NEW CURB, STD CG-3 (SEE SHT 5 FOR TRANSITION DETAIL).

NOTES

- 1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
- 2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
- 3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 18.
- 4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.



FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

RM RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

MADE	BY	DATE			
	JM	12/99			
CHECKED	LAM	12/99			
IN CHARGE	GKL		NO.	REVISION	BY DATE

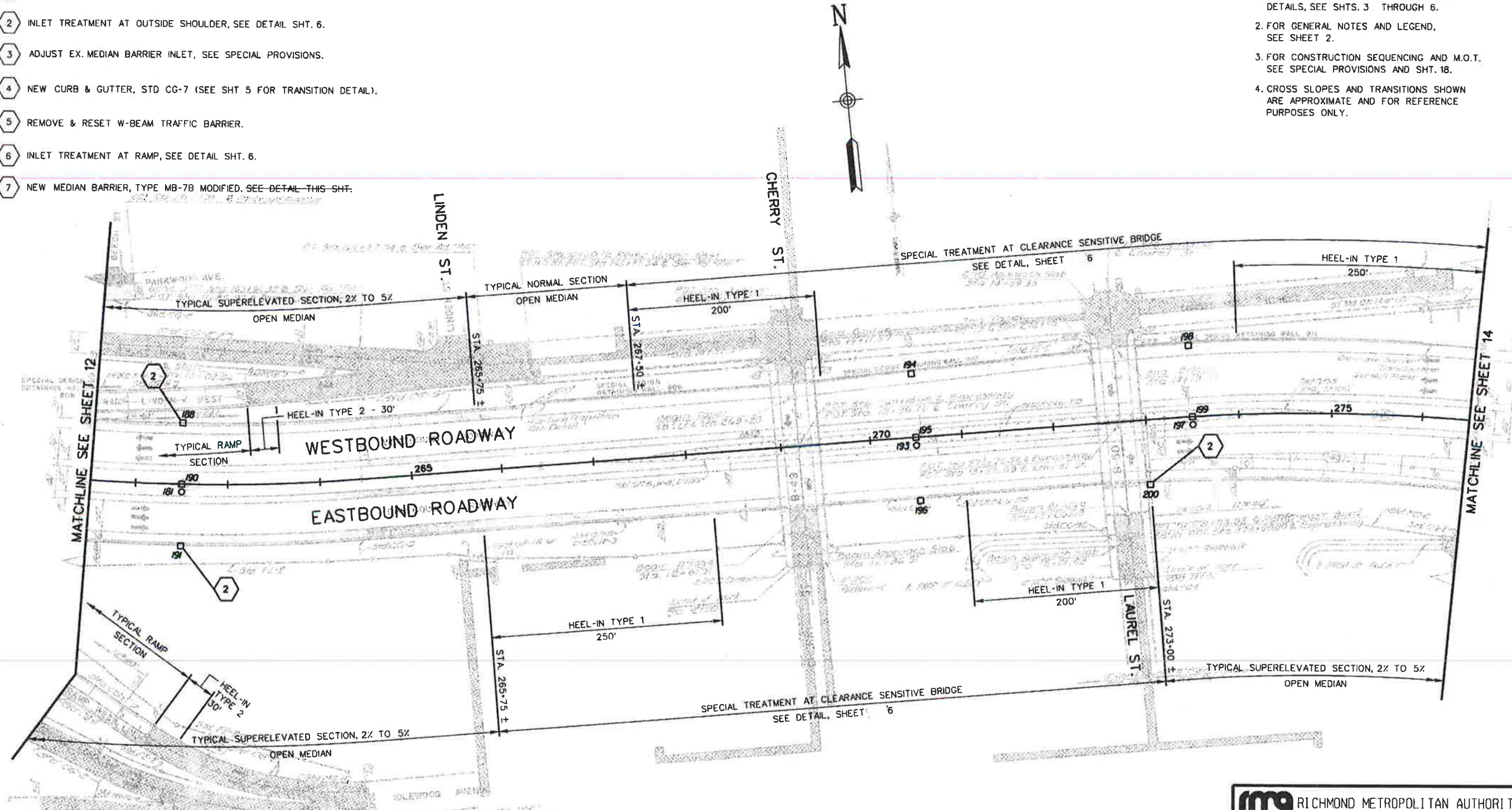
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Scale: 1"=50'	Date: 12/27/99	Contract No.: DTE-2000	Sheet: 12 of 18

KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
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FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

HNTB
CORPORATION

MADE	BY	DATE			
CHECKED	LAM	12/99			
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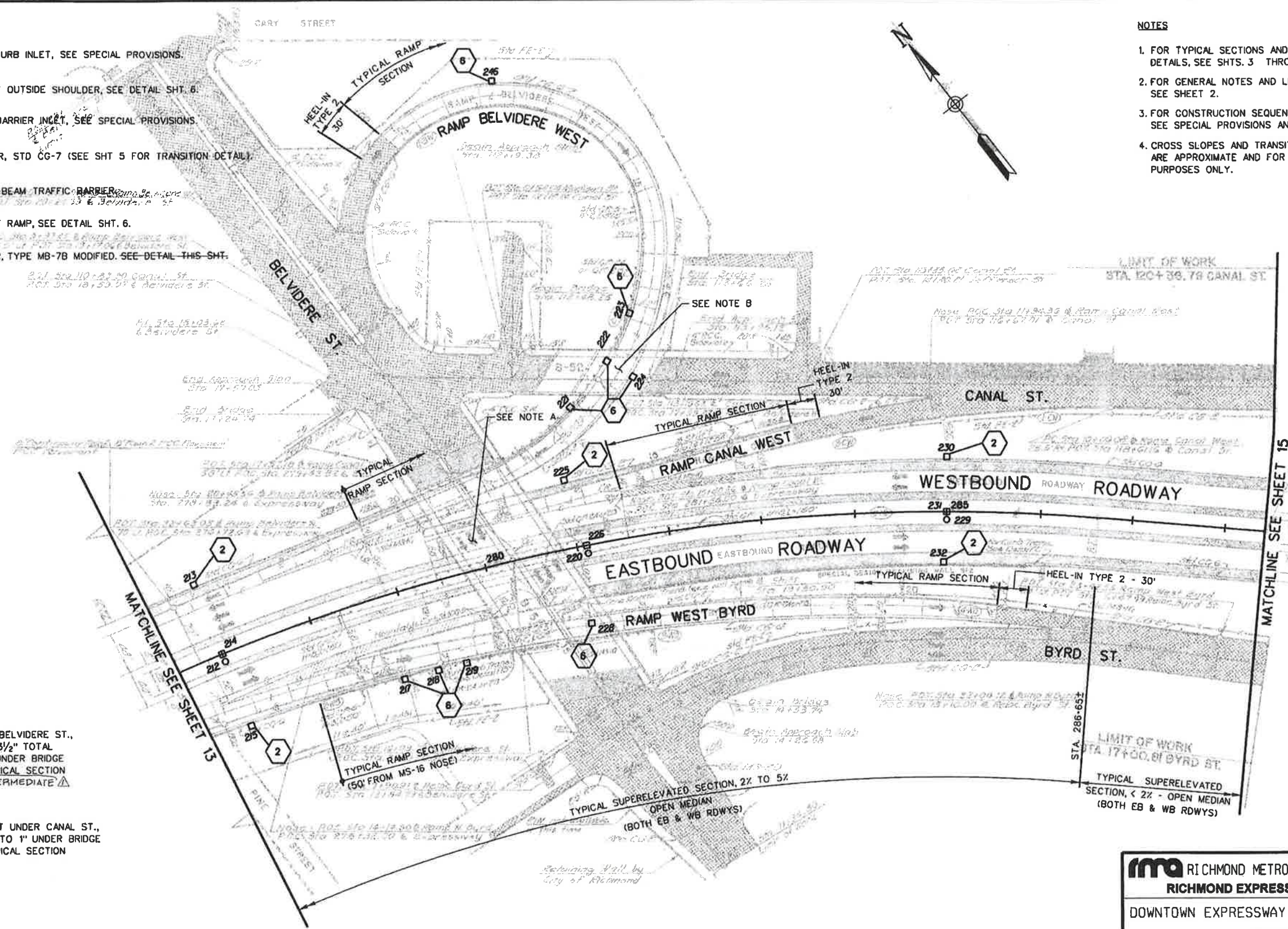
Scale: 1"=50'	Date: 12/27/99	Contract No.: DTE-2000	Sheet: 13 of 18
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KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL)
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED. SEE DETAIL THIS SHT.

NOTES

- 1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
- 2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
- 3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 18.
- 4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.



NOTE A

FOR WB ROADWAY UNDER BELVIDERE ST.,
REDUCE RESURFACING TO 3/2" TOTAL
(1/2" SMA-2 OVER 2" M-1) UNDER BRIDGE
DECK. TRANSITION TO TYPICAL SECTION
IN 50 FEET. SMA INTERMEDIATE Δ
SMA SURFACE Δ

NOTE B

FOR RAMP BELVIDERE WEST UNDER CANAL ST.,
REDUCE SURFACE COURSE TO 1" UNDER BRIDGE
DECK. TRANSITION TO TYPICAL SECTION
IN 25 FEET.

FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

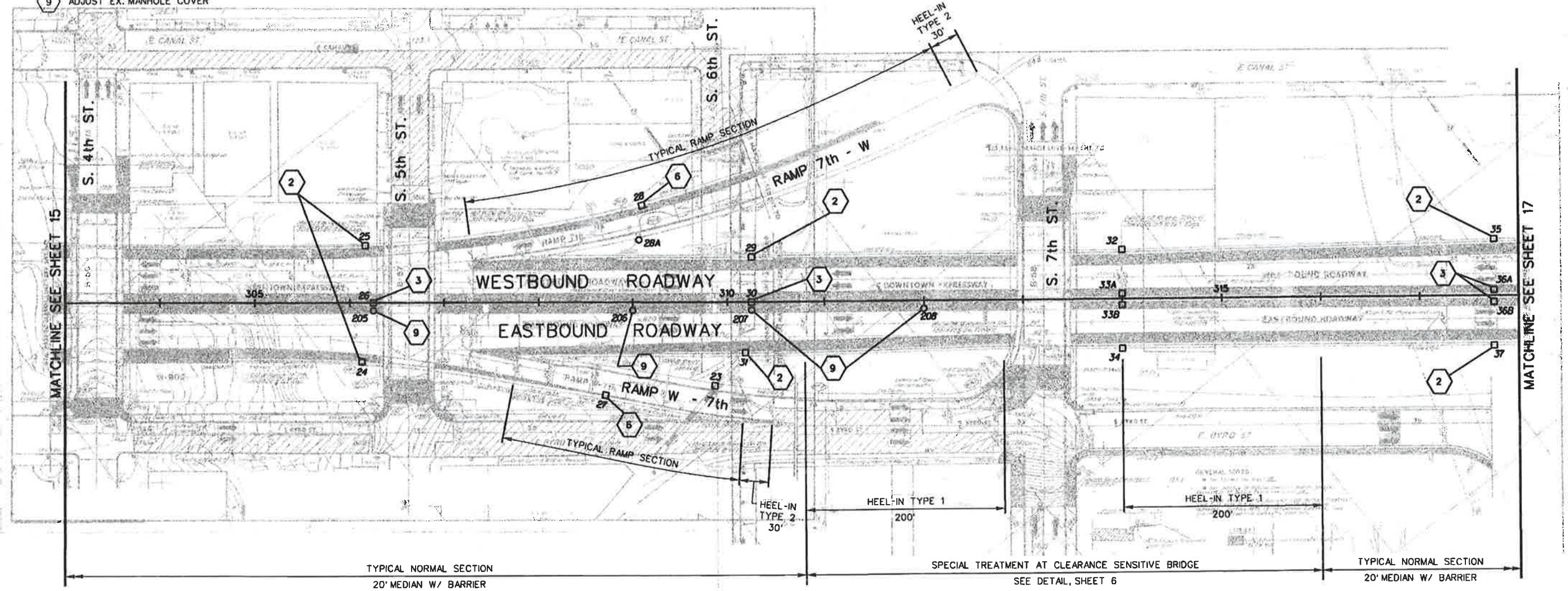
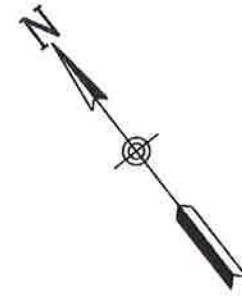
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IN CHARGE	CKL									

KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 9 ADJUST EX. MANHOLE COVER

NOTES

- 1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
- 2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
- 3. FOR CONSTRUCTION SEQUENCING AND M.O.T., SEE SPECIAL PROVISIONS AND SHT. 18.
- 4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.



FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

ma RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

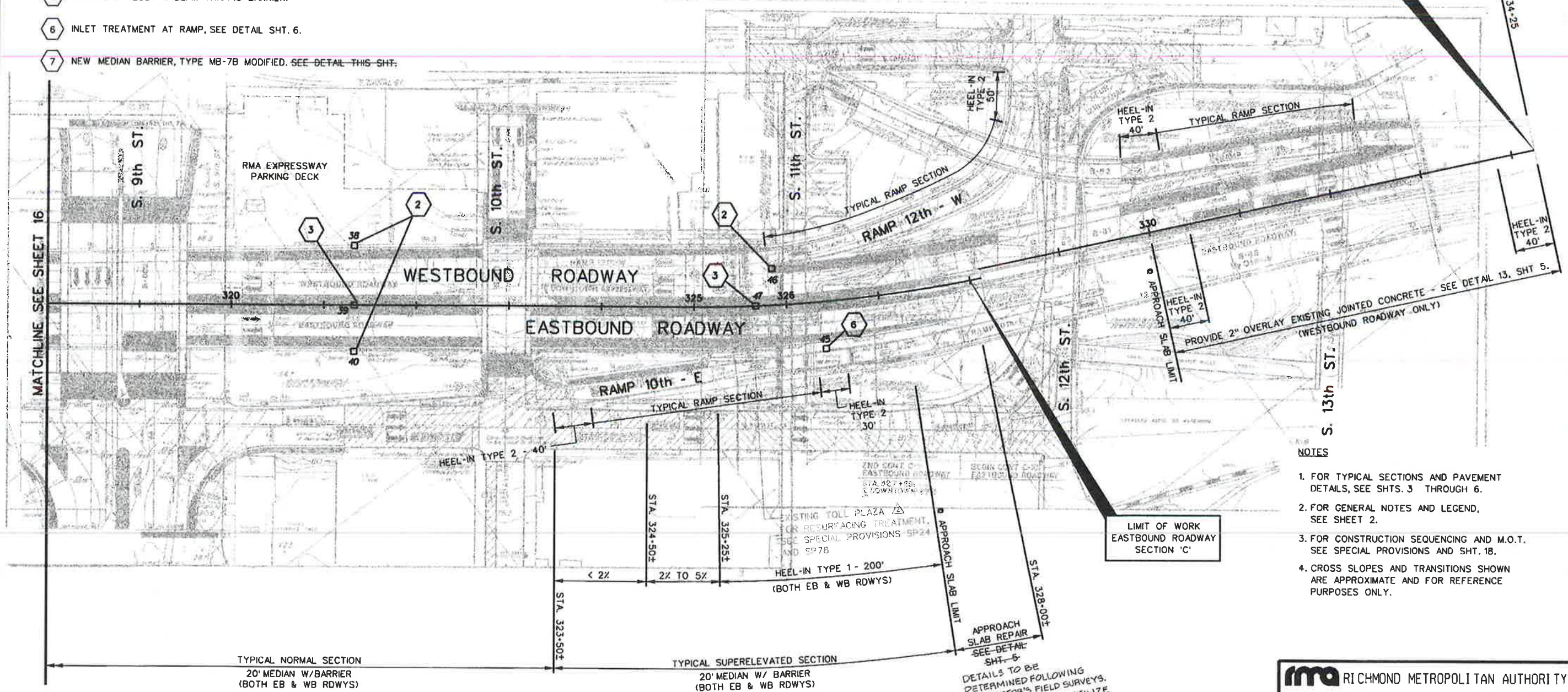
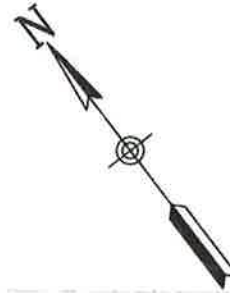
DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

MADE	BY	DATE			
	JAI	12/99			
CHECKED	LMM	12/99			
IN CHARGE	GRL		NO.	REVISION	BY DATE

HINTE CORPORATION	
Scale: 1"=50'	Date: 12/27/99
Contract No.: DTE-2000	Sheet: 16 of 18

KEY

- 1 ADJUST EX. MEDIAN CURB INLET, SEE SPECIAL PROVISIONS.
- 2 INLET TREATMENT AT OUTSIDE SHOULDER, SEE DETAIL SHT. 6.
- 3 ADJUST EX. MEDIAN BARRIER INLET, SEE SPECIAL PROVISIONS.
- 4 NEW CURB & GUTTER, STD CG-7 (SEE SHT 5 FOR TRANSITION DETAIL).
- 5 REMOVE & RESET W-BEAM TRAFFIC BARRIER.
- 6 INLET TREATMENT AT RAMP, SEE DETAIL SHT. 6.
- 7 NEW MEDIAN BARRIER, TYPE MB-7B MODIFIED. SEE DETAIL THIS SHT.



LIMIT OF WORK
WESTBOUND ROADWAY
SECTION 'C'

LIMIT OF WORK
EASTBOUND ROADWAY
SECTION 'C'

NOTES

1. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS, SEE SHTS. 3 THROUGH 6.
2. FOR GENERAL NOTES AND LEGEND, SEE SHEET 2.
3. FOR CONSTRUCTION SEQUENCING AND M.O.T. SEE SPECIAL PROVISIONS AND SHT. 18.
4. CROSS SLOPES AND TRANSITIONS SHOWN ARE APPROXIMATE AND FOR REFERENCE PURPOSES ONLY.

TYPICAL NORMAL SECTION
20' MEDIAN W/BARRIER
(BOTH EB & WB RDWYS)

TYPICAL SUPERELEVATED SECTION
20' MEDIAN W/ BARRIER
(BOTH EB & WB RDWYS)

DETAILS TO BE DETERMINED FOLLOWING CONTRACTOR'S FIELD SURVEYS. REHABILITATION WILL UTILIZE ESTABLISHED ASPHALT AND CONCRETE BID ITEMS IN CONTRACT. ⚠

FOR MILL AND OVELAY LIMITS
SEE RMTA CONTRACT C-7 AND C-15

RM RICHMOND METROPOLITAN AUTHORITY
RES RICHMOND EXPRESSWAY SYSTEM
DOWNTOWN EXPRESSWAY REHABILITATION
PLAN

MADE	BY	DATE	NO.	REVISION	BY	DATE
	JM	12/99	1	ADDED NOTE	LMM	1/13/00
	LMM	12/99	2	REVISED LABEL	LMM	1/10/00

HNTB
CORPORATION

Scale: 1"=50' Date: 12/27/99 Contract No.: DTE-2000 Sheet: 17 of 18

**DOWNTOWN EXPRESSWAY
OPEN ROAD TOLLING PROJECT**

FROM: IDLEWOOD AVENUE RAMP
TO: HARRISON STREET

RECORD PLAN SET (PARTIAL)

RICHMOND METROPOLITAN AUTHORITY

RICHMOND DOWNTOWN EXPRESSWAY
OPEN ROAD TOLLING PROJECT

DOWNTOWN EXPRESSWAY
OPEN ROAD TOLLING PROJECT

FROM: IDLEWOOD AVE. RAMP
TO: HARRISON STREET

LIMITED ACCESS HIGHWAY

RICHMOND DOWNTOWN EXPRESSWAY			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
	DOWNTOWN EXPRESSWAY OPEN ROAD TOLLING	1	

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA

URBAN PRINCIPAL ARTERIAL (FREEWAY)
50 MPH MIN. DESIGN SPEED

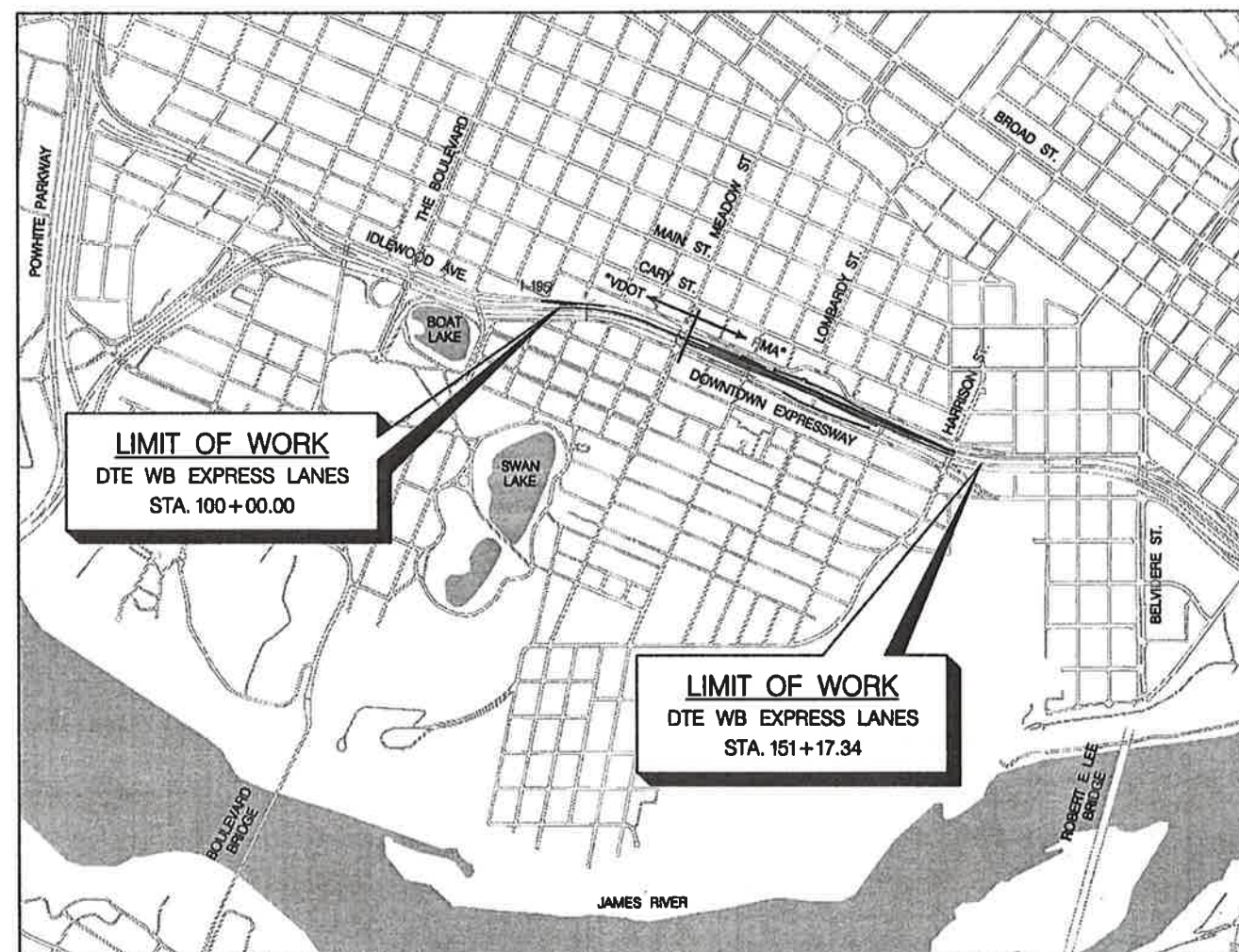
Fr: Idlewood Ave. Ramp To: Meadow St.	
ADT(2010)	42,138
ADT(2032)	58,470
DHV(2025)	6300
D (%)	7030
T (%)	0.5 %
V (MPH)	*

* VARIES, SEE CURVE DATA SHEET

ALL CURVES ARE TO BE SUPERELEVATED IN ACCORDANCE WITH STANDARD TC-5.01 (RURAL)

EXCEPTIONS TO MAINLINE DESIGN SPEED

WB ORT	DESIGN SPEED (MPH)	REASONS FOR EXCEPTION
STA. 130+70 TO 134+20	45	CREST VERTICAL CURVE



LOCATION MAP



THE COMPLETE ELECTRONIC.PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED, INCLUDING ALL SUBSEQUENT REVISIONS WILL BE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE GENERAL NOTES.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE RICHMOND METROPOLITAN AUTHORITY (RMA) AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT).

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE SPECIFICATIONS DATED 2007, THE 2008 ROAD AND BRIDGE STANDARDS, THE 2005 WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC .PDF VERSION OF THE PLAN ASSEMBLY.

* THIS CONTRACT INCLUDES RIGHTS OF WAY FOR BOTH VDOT & RMA ROADWAYS.

CONTRACTOR SHALL NOTIFY
"MISS UTILITY" @ 800-552-7001
48 HOURS IN ADVANCE OF
ANY EXCAVATION ACTIVITY

Contract DTEORT-2011



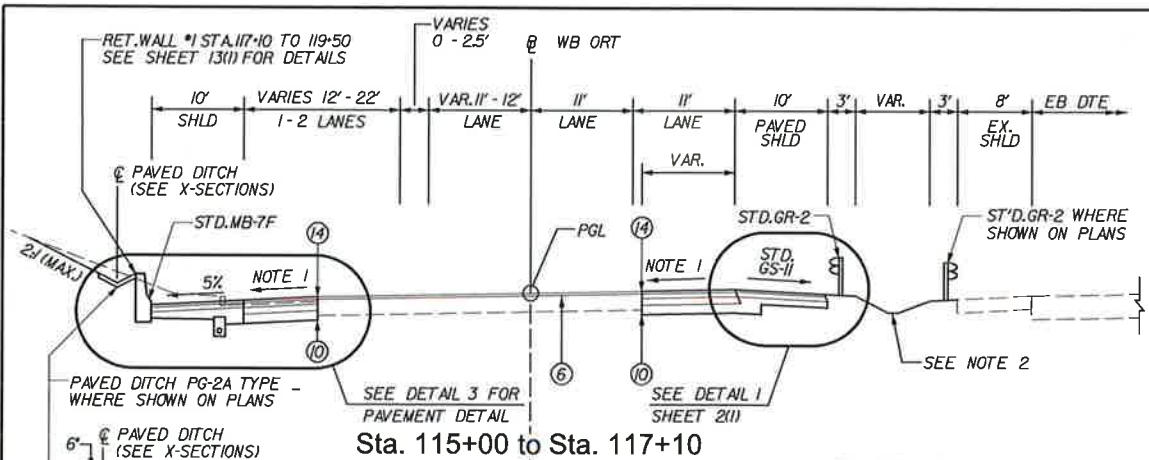
SUBMITTED BY:	
3/15/11	<i>John W. Dresser</i>
DATE	INTB CORPORATION GENERAL ENGINEERING CONSULTANT

RECOMMENDED BY:	
3/16/11	<i>[Signature]</i>
DATE	GENERAL MANAGER RICHMOND METROPOLITAN AUTHORITY

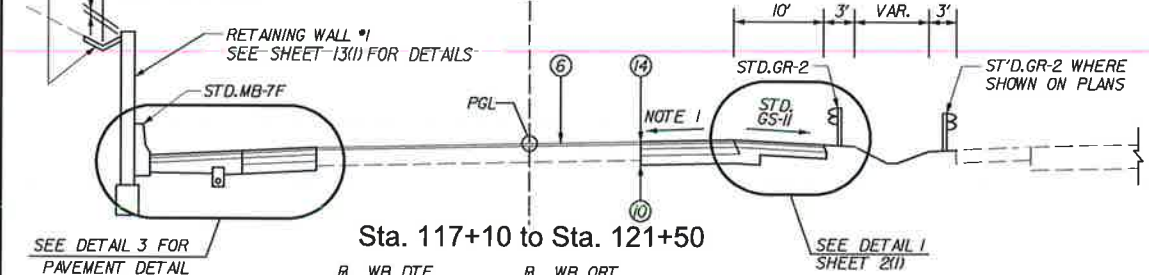
PLANS REVISED	
SHEET NO.	DATE

HNTB
2900 S. QUINCY STREET, SUITE 200
ARLINGTON, VIRGINIA
(703) 824-5100

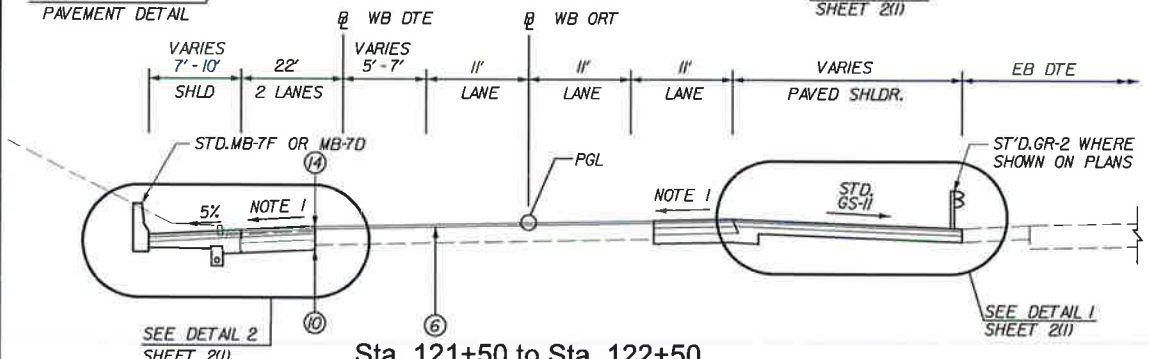
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Tuesday, March 15, 2011



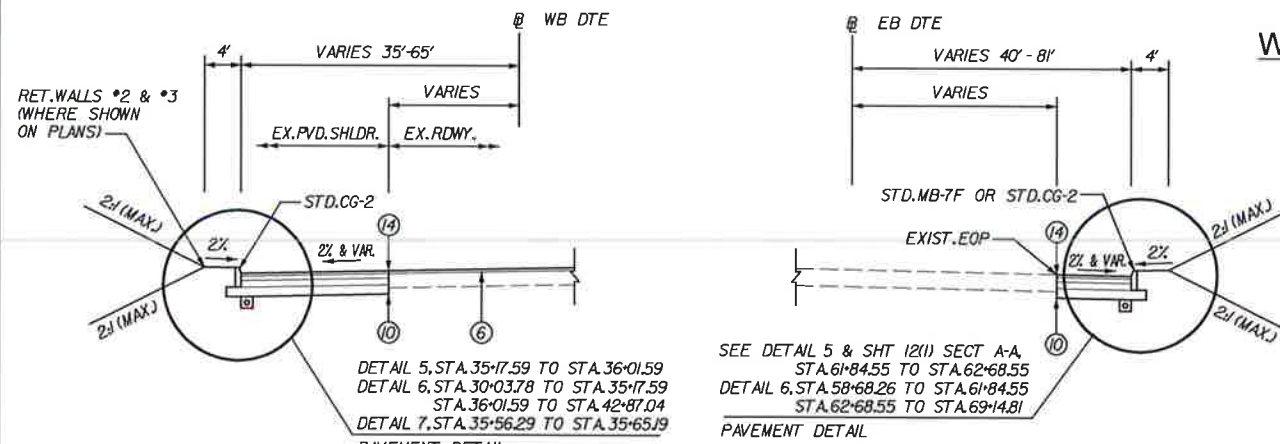
Sta. 115+00 to Sta. 117+10



Sta. 117+10 to Sta. 121+50

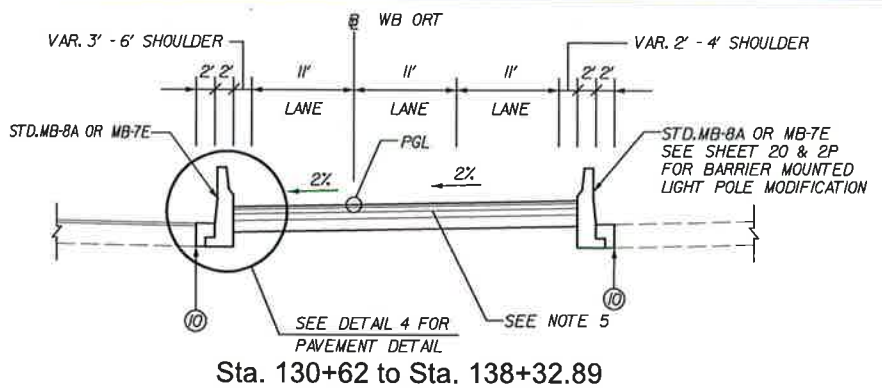


Sta. 121+50 to Sta. 122+50
 WESTBOUND OPEN ROAD TOLLING (ORT)

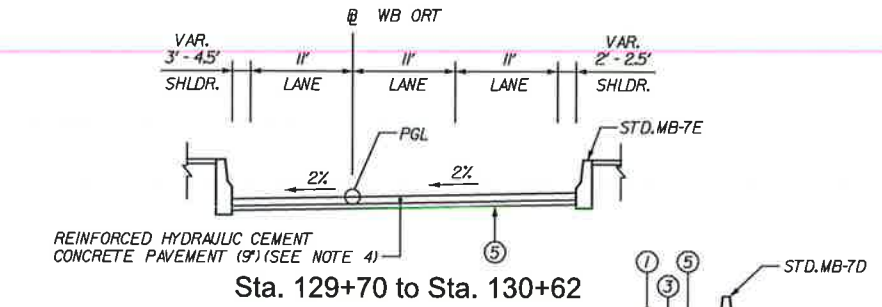


WESTBOUND DOWNTOWN EXPRESSWAY (DTE)
 Sta. 30+03.78 to Sta. 42+87.04

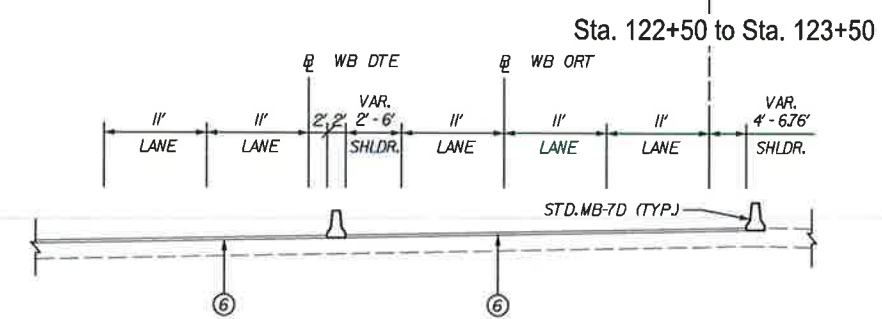
EASTBOUND DOWNTOWN EXPRESSWAY (DTE)
 Sta. 58+68.26 to Sta. 69+14.81



Sta. 130+62 to Sta. 138+32.89

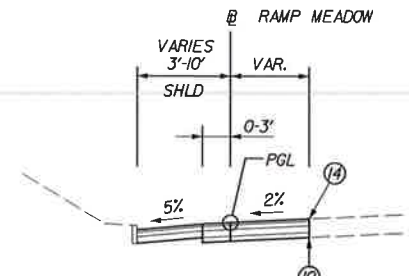


Sta. 129+70 to Sta. 130+62

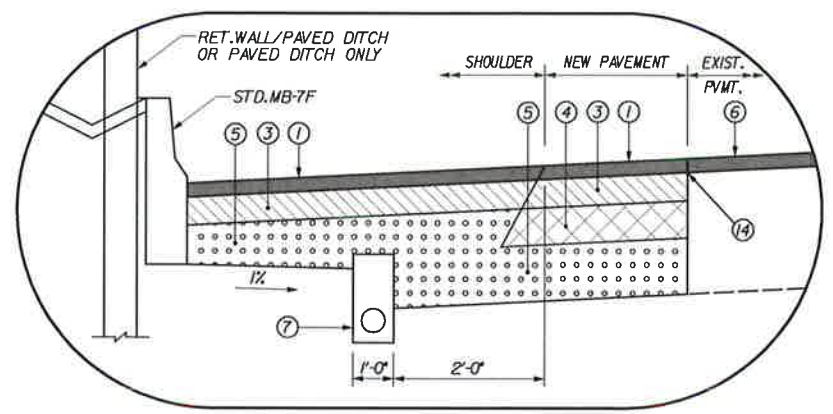


Sta. 122+50 to Sta. 123+50

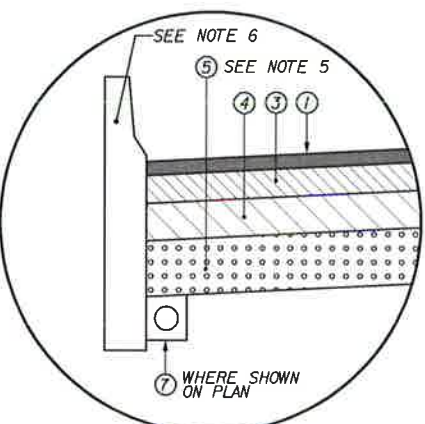
WESTBOUND OPEN ROAD TOLLING (ORT)
 Sta. 122+50 to Sta. 129+70



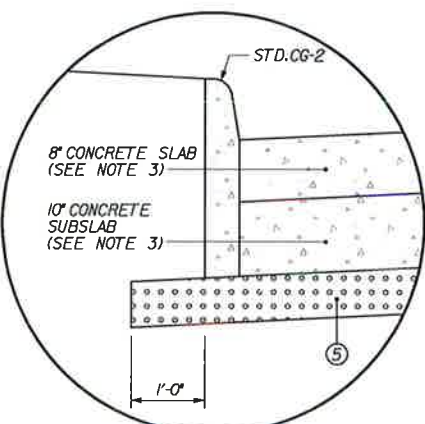
RAMP MEADOW
 Sta. 13+00 to Sta. 15+09



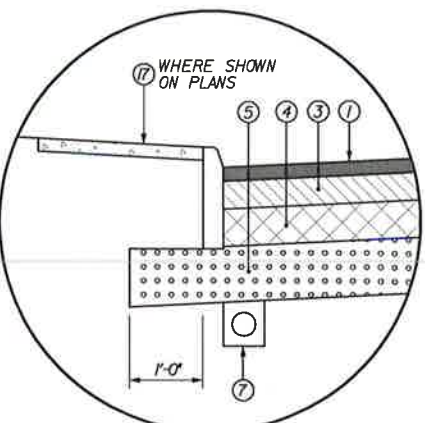
DETAIL 3
 NTS



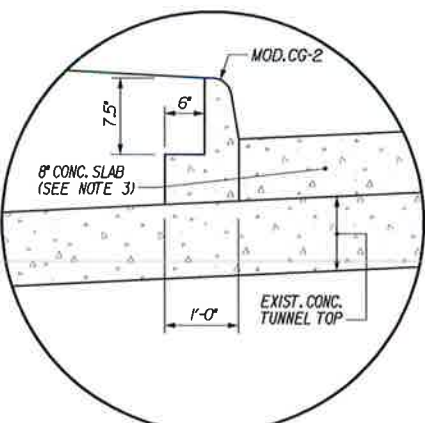
DETAIL 4
 NTS



DETAIL 5
 NTS



DETAIL 6
 NTS



DETAIL 7
 NTS

LEGEND

- 1 SURFACE COURSE, 1 1/2 IN. ASPHALT CONCRETE TYPE SMA-9.5 @ 165 LBS./SY.
- 2 INTERMEDIATE COURSE, 2.0 IN. ASPHALT CONCRETE TYPE IM-90A
- 3 INTERMEDIATE COURSE, 3.0 IN. ASPHALT CONCRETE TYPE SMA-19D
- 4 BASE COURSE, 4.0 IN. ASPHALT CONCRETE TYPE BM-250A
- 5 SUBBASE, 6.0 IN. UNTREATED AGGREGATE MATERIAL TYPE 1, SIZE NO. 21-B
- 6 WILL EXISTING PAVEMENT TO A DEPTH OF 15' AND OVERLAY WITH ASPHALT CONCRETE TYPE SMA-9.5 @ 165 LBS./SY.
- 7 STD.UD-4 UNDERDRAIN REQ'D.
- 8 SUBBASE, VAR. THICKNESS, UNTREATED AGGREGATE MATERIAL TYPE 1, SIZE NO. 21-B
- 9 SUBBASE, 4.0 IN. UNTREATED AGGREGATE MATERIAL TYPE 1, SIZE NO. 21-B
- 10 SAWCUT
- 11 1 1/2 IN. ASPHALT CONCRETE TYPE SM-9.5A @ 165 LBS./SY.
- 12 3 IN. ASPHALT CONCRETE TYPE IM-90A
- 13 LEVELING COURSE, VAR. DEPTH ASPHALT CONCRETE TYPE SMA-19D, 2" MIN.
- 14 REMOVE AND REPLACE EXISTING PAVEMENT ALONG THE EDGE AS SHOWN IN VDOT STD.WP-2. SEE DETAIL 9 SHT 2(3) FOR REPLACED PAVEMENT
- 15 VAR. DEPTH, ASPHALT CONCRETE TYPE BM-250, 3" MIN.
- 16 NOT USED
- 17 HYDRAULIC CEMENT CONCRETE SIDEWALK, 4"
- 18 NOT USED
- 19 SURFACE COURSE, VAR. DEPTH ASPHALT CONCRETE TYPE SMA-9.5, 1 1/2" MIN.

NOTES

1. SEE PROFILES FOR CROSS SLOPES.
2. SEE CROSS SECTIONS FOR DITCH LOCATIONS AND INVERTS.
3. SEE TOLL PLAZA PLANS FOR PAVEMENT DETAILS. 10' SLAB NOT REQ'D. OVER EXISTING TUNNEL.
4. SEE SHEET 2M FOR DETAILS.
5. ASPHALT LAYERS SHALL BE PLACED UPON EXISTING CONCRETE SLAB FROM STATION 130+62 TO 131+47.
6. STD.MB-7 & MB-8A BARRIER SHALL BE DOWELLED TO EXISTING 10" CONG. SLAB STA. 130+62 TO 131+47 IN ACCORDANCE WITH STD.MB-7D. COST FOR DOWELLING SHALL BE INCIDENTAL TO THE COST OF CONG. BARRIER.



ma RICHMOND METROPOLITAN AUTHORITY
 RICHMOND DOWNTOWN EXPRESSWAY

DOWNTOWN EXPRESSWAY OPEN ROAD TOLLING

TYPICAL SECTIONS

HNTB

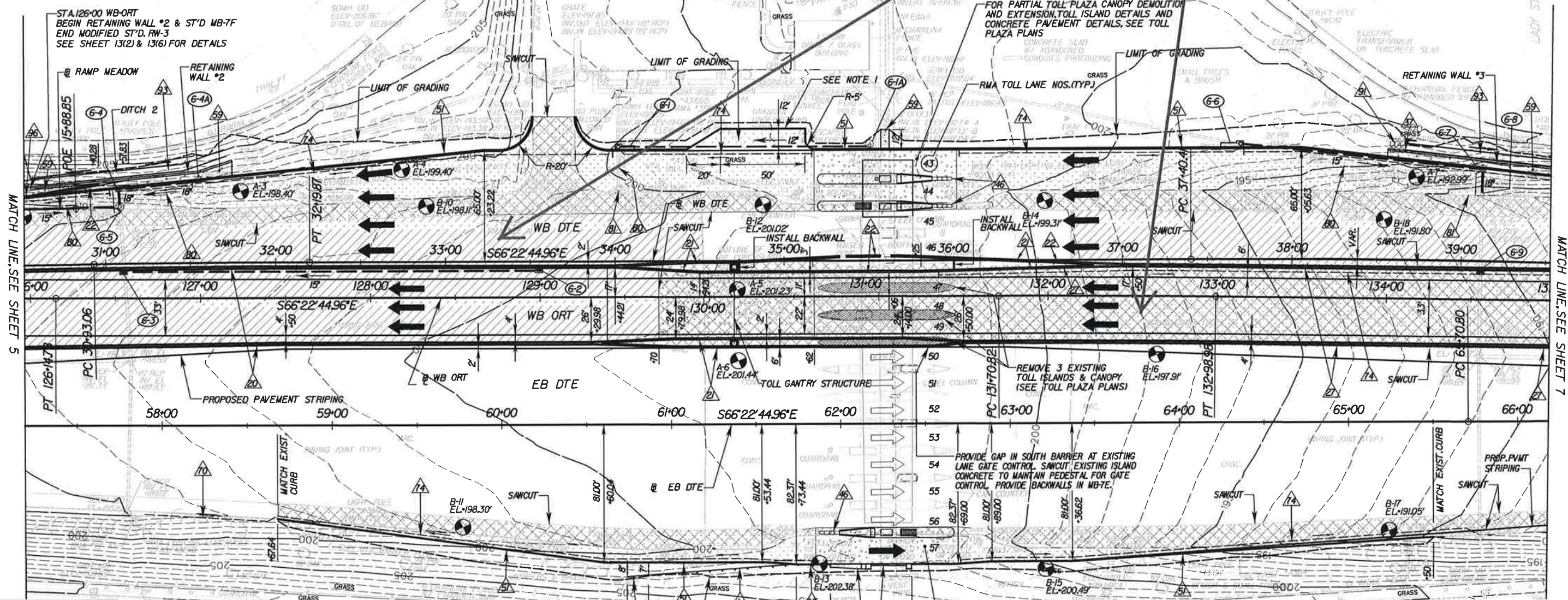
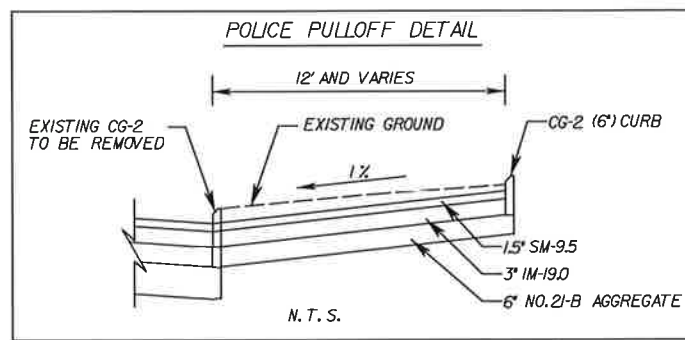
2900 S. QUINCY STREET, SUITE 200
 ARLINGTON, VIRGINIA
 (703) 824-5100

Scale: 1"=10'-0" Date: FEB. 25, 2011 Contract No.: DTEORT-2011 Sheet: 2(2)

D:\4870102(1).cgn Tuesday, September 20, 2011

9-16-11 REVISED WB-DTE & EB-DTE SECTIONS AND NOTE 3. ADDED DETAIL 7.
 REVISIONS

WESTBOUND ROADWAY
NOT IN CONTRACT



REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

LEGEND

IF	10(1)
GEOMETRIC LAYOUT PLAN	2(2)
TYPICAL SECTIONS	6(1)
E&S PLAN - PHASE I	6(2)
E&S PLAN - PHASE II	6A
PROFILE WB-ORT	6B
PROFILE EB-DTE	6C
PROFILE WB-DTE	12(1)-12(4)
TOLL PLAZA PLANS	1K
DRAINAGE TABULATIONS	13(2)
RET. WALLS #2 & #3	20
MEDIAN BARRIER PROFILES	2M2P
MEDIAN BARRIER DETAILS	20(1)
IMPACT ATTENUATOR	

REVISIONS

10-8-12	ADDED POLICE PULLOFF AREA
5-8-12	REVISED BARRIER LT OF WB-ORT BASELINE
12-7-11	REVISED BARRIER TYPES LT. OF WB-ORT BASELINE
11-30-11	REVISED EDGE OF PAVEMENT ALONG EB-DTE
11-8-11	ADDED GR-6 TERMINAL ON EB-DTE STA. 60+65
9-30-11	REVISED RETAINING WALL 2, ADDED WB-7F

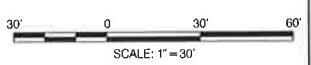
CONSTRUCTION NOTE LEGEND

- ▲ ST'D. GR-2 GUARDRAIL
- ▲ ST'D. GR-6 GUARDRAIL TERMINAL
- ▲ ST'D. FOA-2 FIXED OBJECT ATTACHMENT TYPE 1
- ▲ ST'D. MB-7D - 32" CONCRETE MEDIAN BARRIER
- ▲ ST'D. MB-7E - 32" CONCRETE MEDIAN BARRIER
- ▲ ST'D. MB-7F - 32" CONCRETE MEDIAN BARRIER
- ▲ ST'D. MB-8A - 32" CONCRETE BIFURCATED MEDIAN BARRIER (0 TO 4' BIFURCATED)
- ▲ CAST-IN PLACE RETAINING WALL
- ▲ IMPACT ATTENUATOR (TL-3 >45 MPH DES.SP)
- ▲ IMPACT ATTENUATOR (TL-2 <45 MPH DES.SP)
- ▲ ST'D. CG-2 CURB
- ▲ HYDRAULIC CEMENT CONCRETE SIDEWALK, #
- ▲ NON-PERFORATED OUTLET PIPE
- ▲ ST'D. UD-4 UNDERDRAIN
- ▲ REMOVE EXISTING PIPE
- ▲ REMOVE EXISTING DRAINAGE STRUCTURE
- ▲ CLASS 1 DRY RIPRAP
- ▲ PAVED DITCH PG-2A TYPE E
- ▲ ST'D. FOA-FIXED OBJECT ATTACHMENT TYPE 1

PAVEMENT LEGEND

- PROPOSED ASPHALT SHOULDER
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PLANING & OVERLAY
- DEMOLITION OF PAVEMENT

NOTE:
1. CONTRACTOR SHALL REFER TO POLICE PULLOFF DETAIL.



SEE SHEET 6(3) FOR FURTHER TOLL PLAZA DETAILS

RM RICHMOND METROPOLITAN AUTHORITY
RICHMOND DOWNTOWN EXPRESSWAY

DOWNTOWN EXPRESSWAY OPEN ROAD TOLLING

ROADWAY PLAN
STA. 126+00.00 TO STA. 135+00.00 WB ORT

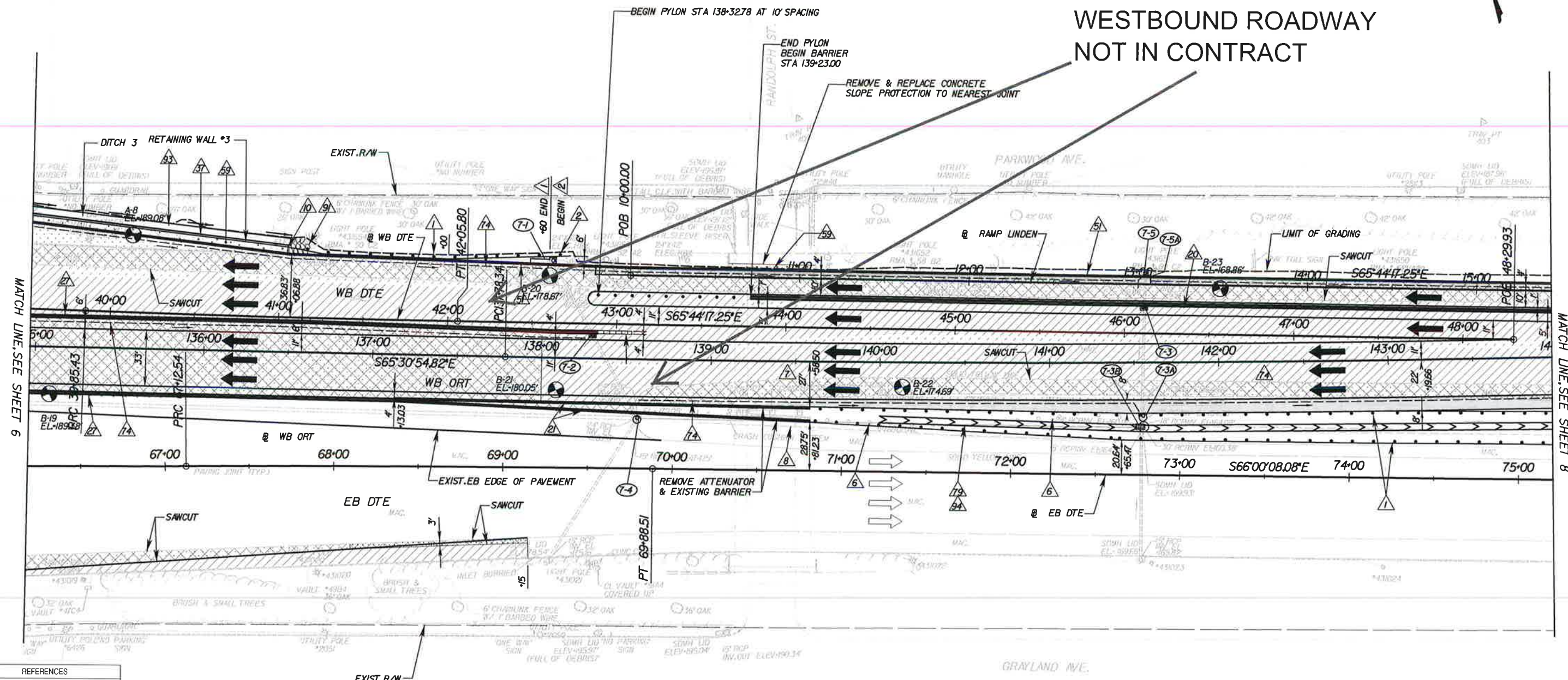
HNTB
2900 S. QUINCY STREET, SUITE 200
ARLINGTON, VIRGINIA
(703) 824-5100

Scale: 1" = 30'-0"	Date: FEB. 25, 2011	Contract No.: DTEORT-2011	Sheet: 6
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D4870106.dgn
Wednesday, October 03, 2012



WESTBOUND ROADWAY
NOT IN CONTRACT



REFERENCES	
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
LEGEND	
GEOMETRIC LAYOUT PLAN	1K(1)
TYPICAL SECTIONS	2(3)
E&S PLAN - PHASE I	7(1)
E&S PLAN - PHASE II	7(2)
PROFILE WB-ORT	7A
PROFILE EB-DTE	7B
PROFILE WB-DTE	7C
PROFILE RAMP LINDEN	7D
DRAINAGE TABULATIONS	1K
RETAINING WALL *3	13(2)
MEDIAN BARRIER PROFILES	20
MEDIAN BARRIER DETAILS	24(2P)
IMPACT ATTENUATOR	20(1)
10-8-12 REVISED BARRIER ON RAMP, ADDED PYLONS 9 REVISED BARRIER RIGHT OF WB-ORT BASELINE	
REVISIONS	

CONSTRUCTION NOTE LEGEND

- 1 ST'D. GR-2 GUARDRAIL
- 2 ST'D. GR-6 GUARDRAIL
- 3 REMOVAL OF EXISTING GUARDRAIL
- 4 ST'D. FOA-2 FIXED OBJECT ATTACHMENT TYPE I
- 5 ST'D. FOA-2 FIXED OBJECT ATTACHMENT TYPE II
- 6 ST'D. FOA-1 FIXED OBJECT ATTACHMENT TYPE I
- 7 ST'D. MB-7D - 32" CONCRETE MEDIAN BARRIER
- 8 ST'D. MB-7E - 32" CONCRETE MEDIAN BARRIER
- 9 ST'D. MB-8A - 32" CONCRETE BIFURCATED MEDIAN BARRIER (0 TO 4 BIFURCATED)
- 10 CONCRETE GRAVITY WALL (RW-3)
- 11 IMPACT ATTENUATOR (TL-3/45mph DESIGN SPEED)
- 12 ST'D. CG-2 CURB
- 13 HYDRAULIC CEMENT CONCRETE SIDEWALK, #
- 14 ST'D. UD-4 UNDERDRAIN
- 15 ST'D. EC-2 PROTECTIVE COVERING
- 16 CLASS 1 DRY RIPRAP
- 17 PAVED DITCH PG-2, TYPE E
- 18 GRADED FLAT BOTTOM DITCH

PAVEMENT LEGEND

- 1 PROPOSED ASPHALT SHOULDER
- 2 PROPOSED ASPHALT PAVEMENT
- 3 PROPOSED CONCRETE PAVEMENT
- 4 PROPOSED ASPHALT PLANING & OVERLAY
- 5 DEMOLITION OF PAVEMENT



HNTB

2900 S. QUINCY STREET, SUITE 200
ARLINGTON, VIRGINIA
(703) 824-5100

RM RICHMOND METROPOLITAN AUTHORITY
RICHMOND DOWNTOWN EXPRESSWAY
DOWNTOWN EXPRESSWAY OPEN ROAD TOLLING

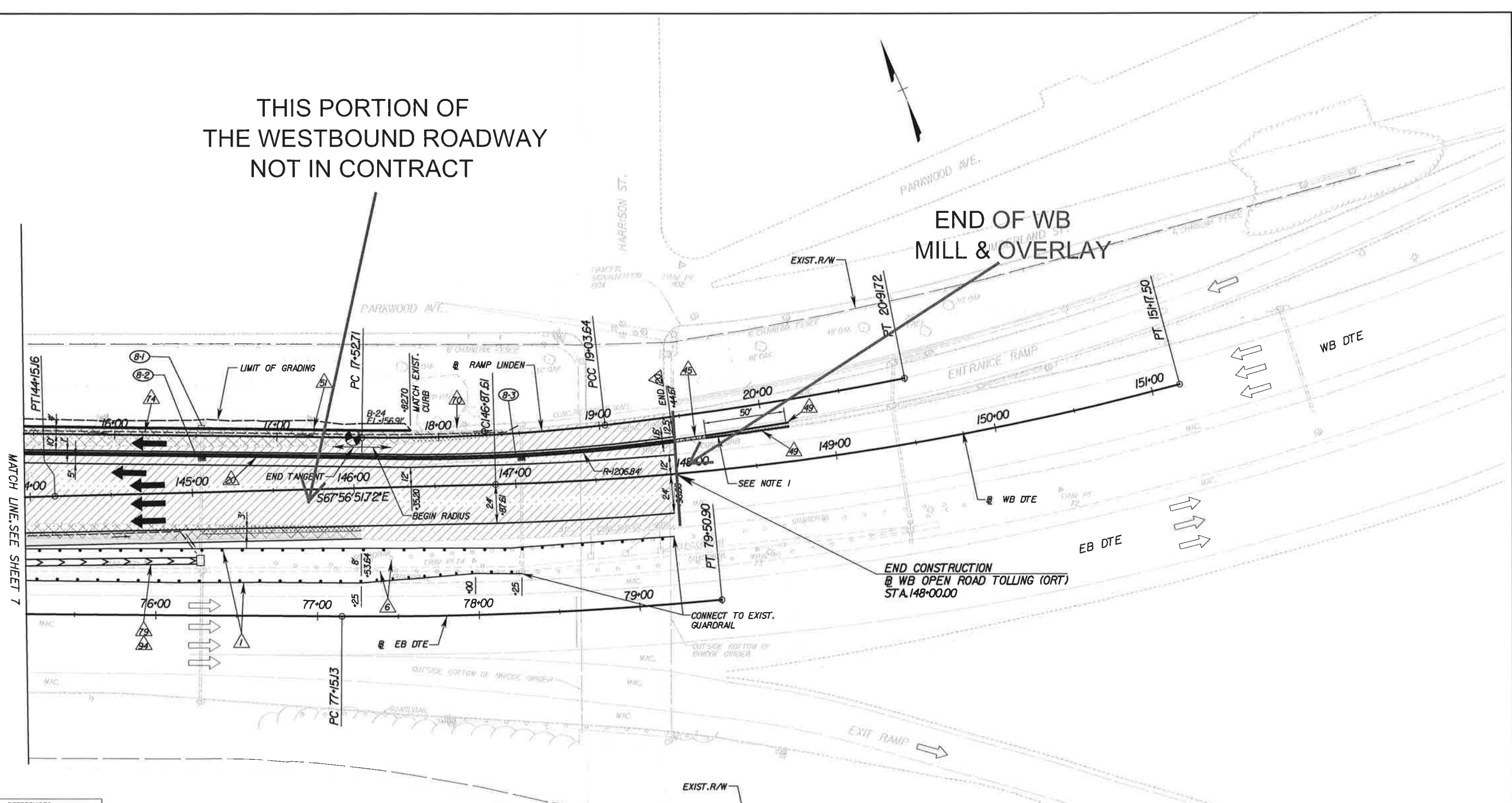
ROADWAY PLAN
STA. 135+00.00 TO STA. 144+00.00 WB ORT

Scale: 1"=30'-0"	Date: FEB. 25, 2011	Contract No.: DTEORT-2011	Sheet: 7
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04870107.dgn
Tuesday, October 02, 2012

Level 1 Check Print Stamp
 Name(Print) _____
 Signature _____
 Date _____
 Originator _____
 Checker _____
 Backchecker _____
 Updater _____
 Validator _____

THIS PORTION OF
 THE WESTBOUND ROADWAY
 NOT IN CONTRACT



REFERENCES	
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
LEGEND	
IF	16(I)
GEOMETRIC LAYOUT PLAN	2(3)
TYPICAL SECTIONS	8(1)
E&S PLAN - PHASE I	8(2)
E&S PLAN - PHASE II	8A
PROFILE WB-ORT	8B
PROFILE RAMP LUNDEN	1K
DRAINAGE TABULATIONS	20(X)
IMPACT ATTENUATOR	

NOTE:
 1. REMOVE EXISTING CONCRETE CURB MEDIAN AND INSTALL CG-3 CURBED MEDIAN.

CONSTRUCTION NOTE LEGEND	
	ST'D. GR-2 GUARDRAIL
	REMOVAL OF EXISTING GUARDRAIL
	ST'D. MB-7D - 32' CONCRETE MEDIAN BARRIER
	IMPACT ATTENUATOR (TL-3>45mph DESIGN SPEED)
	ST'D. CG-3 CURB
	ST'D. CG-2 CURB
	NON-PERFORATED OUTLET PIPE
	ST'D. EW-12 ENDWALL
	ST'D. UD-4 UNDERDRAIN
	ST'D. EC-2 PROTECTIVE COVERING
	PAVED DITCH PG-2A TYPE E
	GRADED FLAT BOTTOM DITCH

PAVEMENT LEGEND	
	PROPOSED ASPHALT SHOULDER
	PROPOSED ASPHALT PAVEMENT
	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PLANING & OVERLAY
	DEMOLITION OF PAVEMENT



HNTB
 2900 S. QUINCY STREET, SUITE 200
 ARLINGTON, VIRGINIA
 (703) 824-5100

richmond metropolitan authority
 RICHMOND DOWNTOWN EXPRESSWAY
 DOWNTOWN EXPRESSWAY OPEN ROAD TOLLING

ROADWAY PLAN
STA. 144+00.00 TO STA. 148+00.00 WB ORT

Scale: 1" = 30'-0"	Date: FEB. 25, 2011	Contract No.: DTEORT-2011	Sheet: 8
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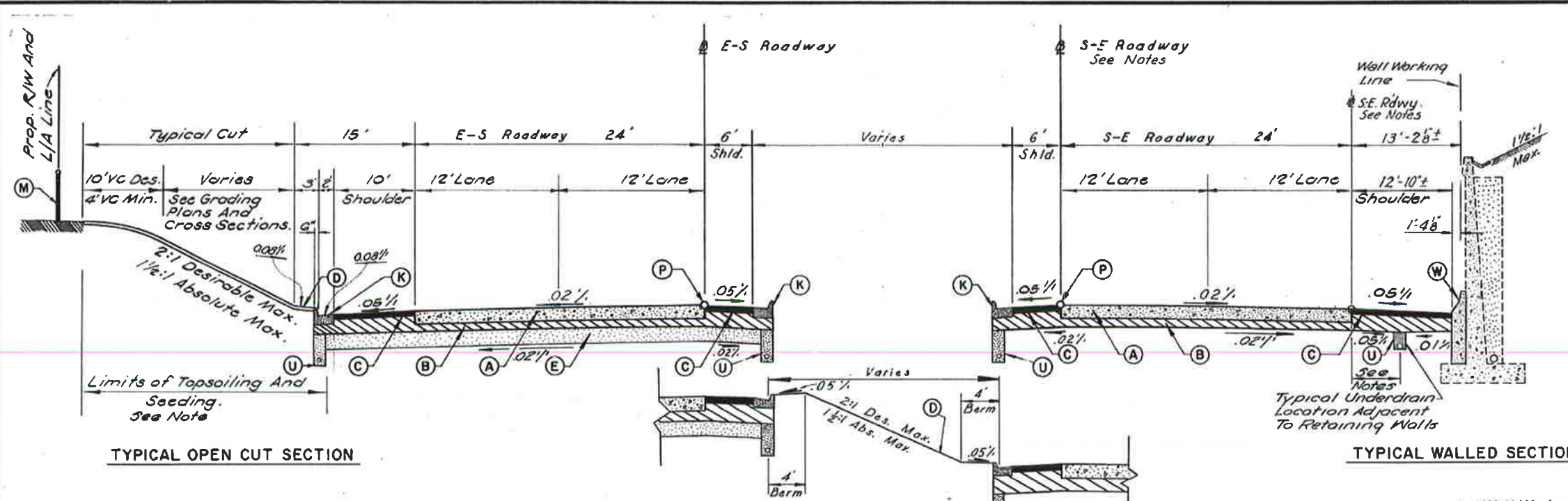
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 Tuesday, October 02, 2012

DOWNTOWN EXPRESSWAY CONNECTOR

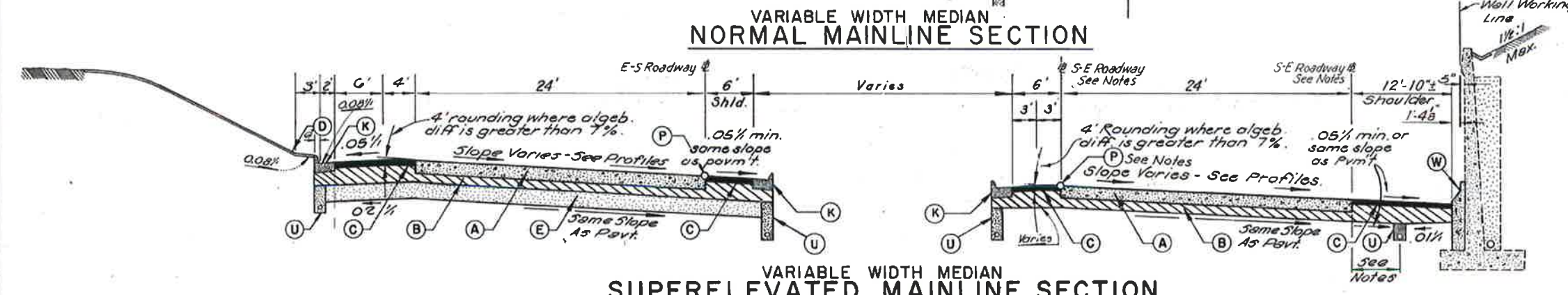
NB DTE CONNECTOR LIMITS: SB POWHITE PKWY GORE TO APPROX. 350' NORTH OF MAPLEWOOD AVE
SB DTE CONNECTOR LIMITS: NB POWHITE PKWY GORE TO APPROX. 350' NORTH OF MAPLEWOOD AVE

RECORD PLAN SET (PARTIAL)

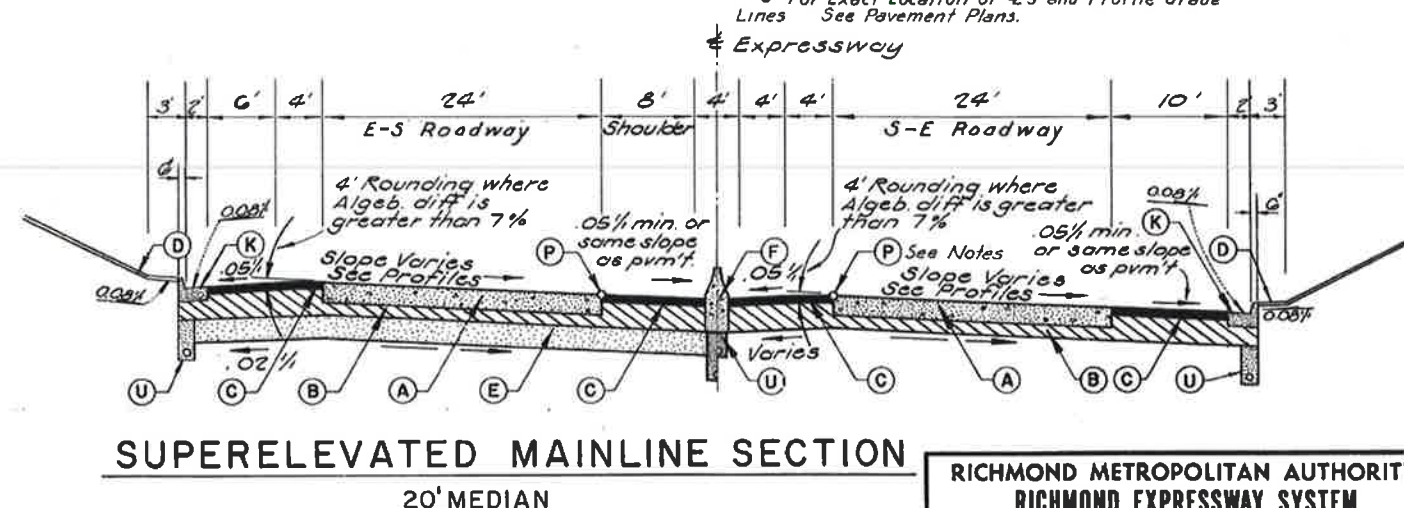
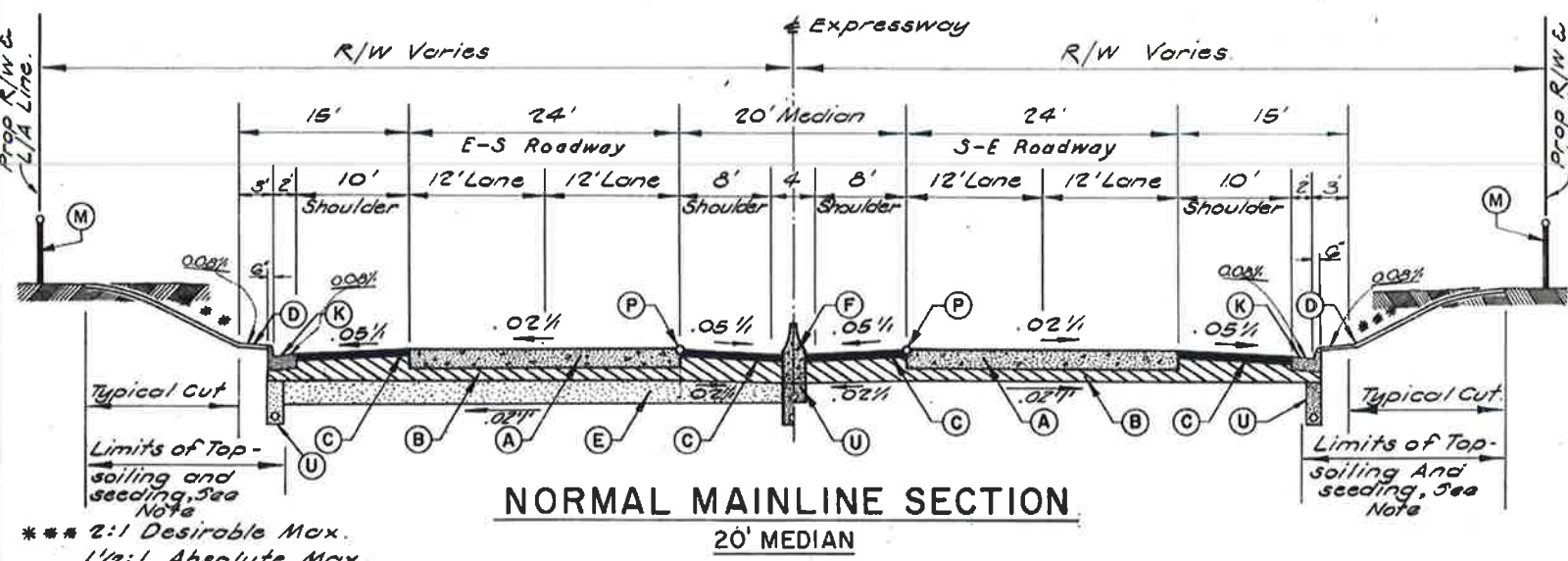
RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTL SHEET
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	10	13



- LEGEND**
- (A) 8" Continuously Reinforced P.C.C. Pavement
 - (B) 6" Subbase Course, Aggregate Size 21 or 21A Cement Stabilized 4% By Weight, Cure With 0.2 Gal/S.Y. Of RC-250 Or AE-2 B Cover With 15 Lbs/S.Y. Grade B Sand Or No. 10 Aggregate.
 - (C) 3" Bituminous Concrete Pavement Type I-2, Prime Subbase With 0.4 Gal./Sq. Yd. MC-70 Or RC-70.
 - (D) 3" Topsoil Class "B" and Seed As Indicated In General Notes.
 - (E) Undercut, Backfill With Select Material, Type I Min. CBR-30. (See Profiles For Location and Depth).
 - (F) Concrete Median Barrier (Std. MB-6A)
 - (G) Steel Beam Guardrail (Std. GR-2A or 2B and GR-1A or 1B) Type and Location See Pavement Plans.
 - (H) 6" Curb (Std. CG-2) For Location See Pavement Plans.
 - (J) 9" Reinforced P.C.C. Pavement.
 - (K) Combination Curb and Gutter (Std. CG-6).
 - (L) P.C.C. Sidewalk (4" Thick).
 - (M) Chain Link Fence (Std. FE-2).
 - (P) Profile Grade Line. (See General Notes)
 - (U) Underdrain (Std. UD-1 or UD-2) For Location See Grading and Drainage Plans, Cross Sections and Underdrain Tabulation.
 - (V) 8" Reinforced P.C.C. Pavement.
 - (W) Concrete Barrier (Std. MB-6B Mod)
 - (X) Paved Ditch (Std. PG-2A) Type I



- GENERAL NOTES:**
- Typical Sections Are Intended To Show The General Features Of The Proposed Construction. For Exact Details At Any Given Location Refer To Pavement Plans.
 - Disturbed Areas Outside The Limits Of Cut And Fill Slopes Shall Be Topsoiled And Seeded As Directed By The Engineer.
 - For Exact Location Of Roadway Underdrain Adjacent To Walls See grading and Drainage and Utility Plans, Miscellaneous Details, Cross Sections and Underdrain Tabulations.
 - For Exact Location of R/W's and Profile Grade Lines See Pavement Plans.



BY	DATE				
MADE	JK	4/67			
CHECKED	WHM	10/67			
IN CHARGE	JRF				
			NO.	REVISION	BY DATE

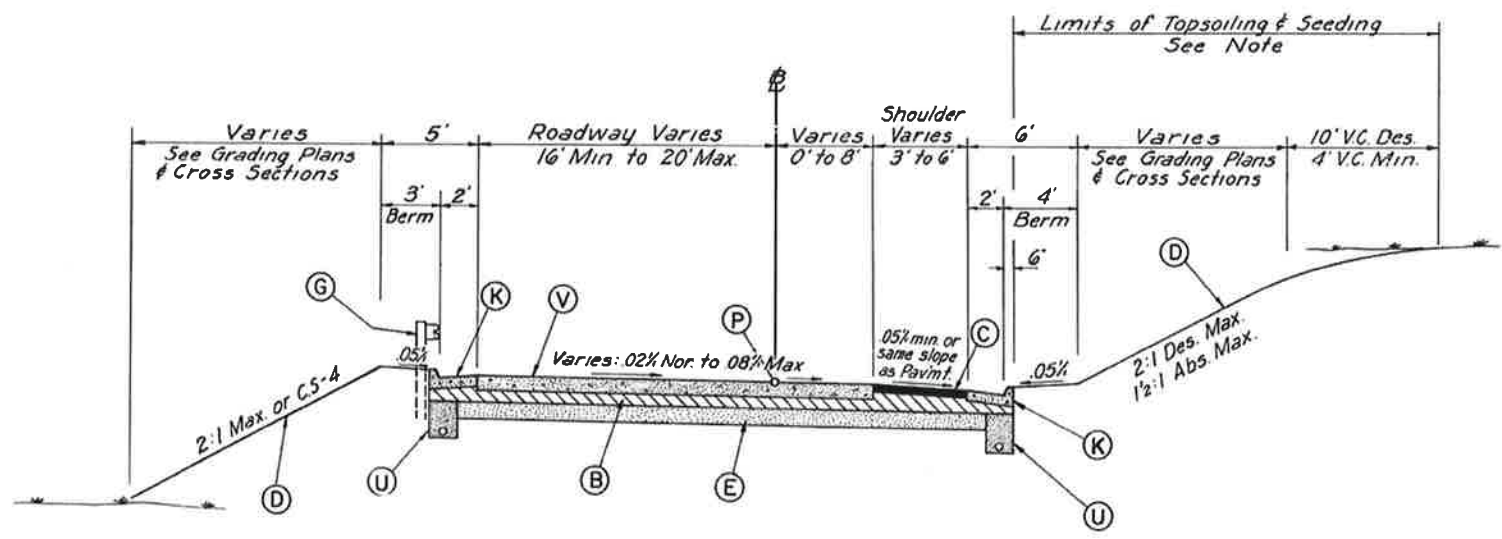
AS BUILT

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

TYPICAL MAINLINE SECTIONS

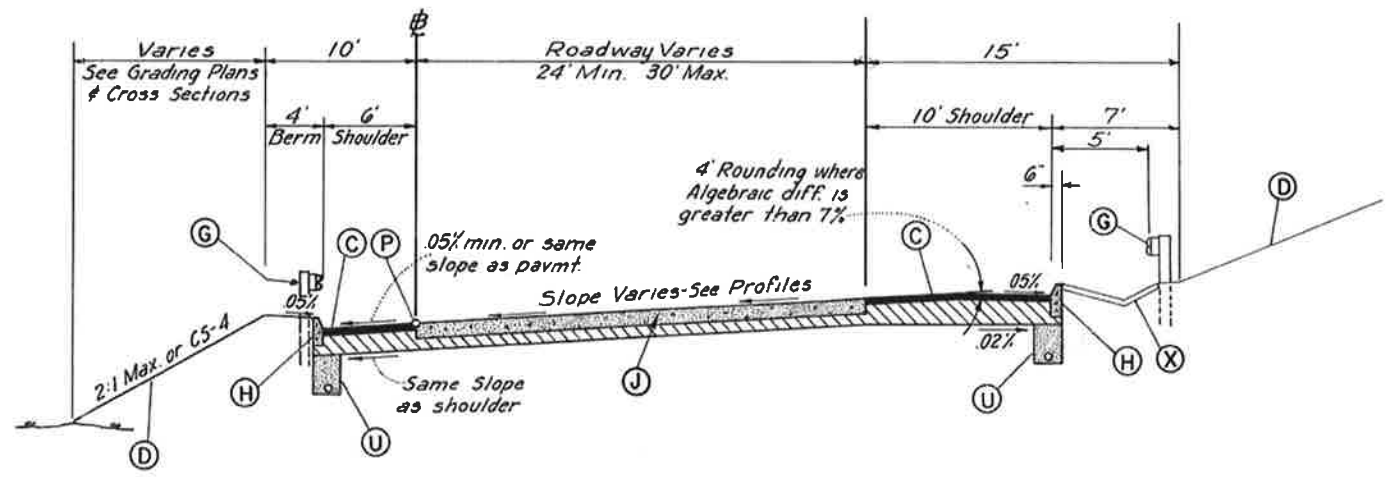
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY

SCALE: ---
CONTRACT NO. C-2
SHEET NO. 10 OF 13

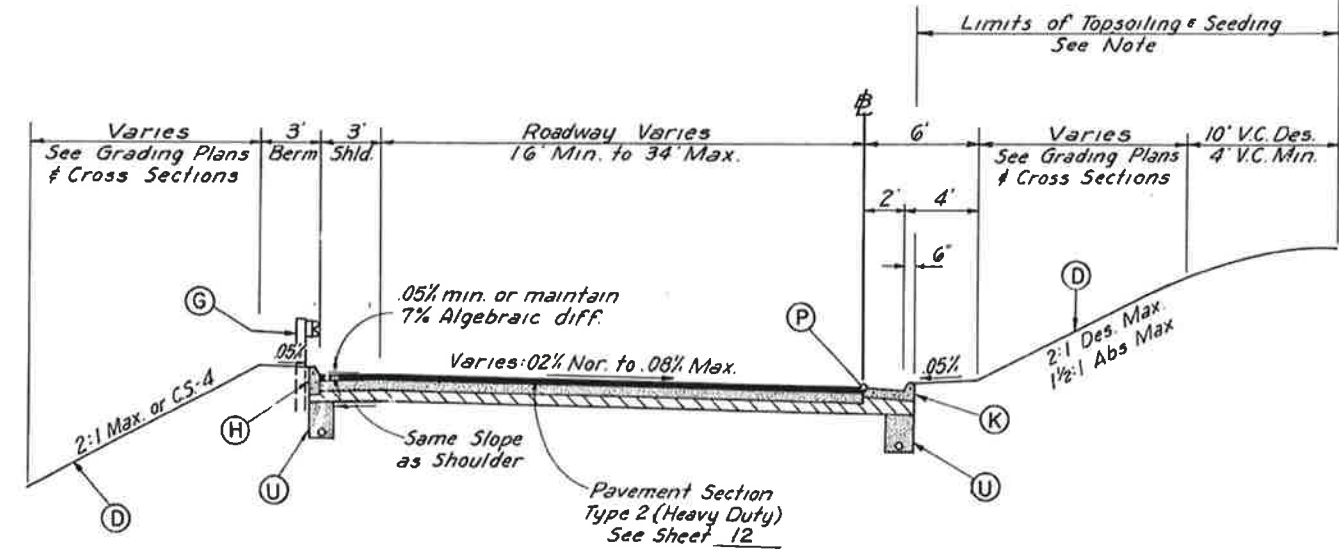


RAMP SECTION

PAVEMENT SECTION 8" REINFORCED P.C.C. PAVEMENT



NORTHBOUND ROADWAY



RAMP SECTION

PAVEMENT SECTION TYPE 2 (HEAVY DUTY)

GENERAL NOTES:

- Typical Sections Are Intended to Show General Features and Materials of the Proposed Construction. For Exact Details at any Given Location See Pavement Plans.
- For Legend Refer to Mainline Typical Sections Drawing.
- Distributed Areas Outside The Limits of Cut and Fill Slopes Shall be Topsoiled and Seeded as Directed By the Engineer.

DESIGNED					
DRAWN					
CHECKED					
IN CHARGE	NO.	REVISION	BY	DATE	

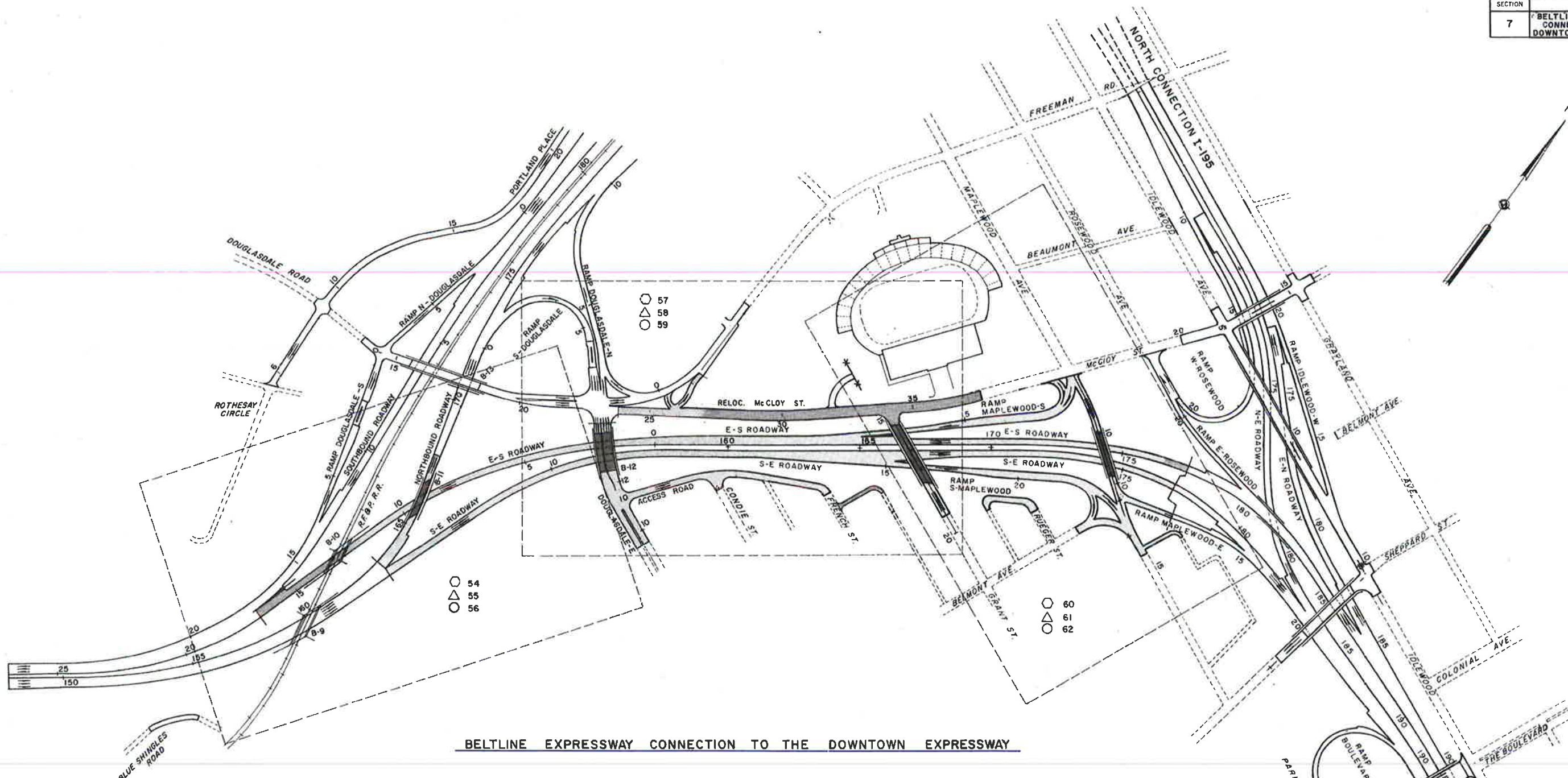
**RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM**

TYPICAL SECTIONS

SCALE		SHEET 11 OF 13
DATE		
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS Alexandria, Virginia		HNTB

AS BUILT

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	30	130



BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY

LEGEND

- PAVEMENT PLANS
- △ GRADING & DRAINAGE PLANS
- UTILITY PLANS
- SHEET OUTLINE
- - - EXISTING STREETS
- PROPOSED ROADWAY & RAMPS
- ▨ PROPOSED ROADWAY & RAMPS (CONTRACT C-7)
- PROPOSED BRIDGES (CONTRACT C-7)

	BY	DATE			
MADE	K				
CHECKED					
IN CHARGE	FJM		NO.	REVISION	BY
					DATE

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

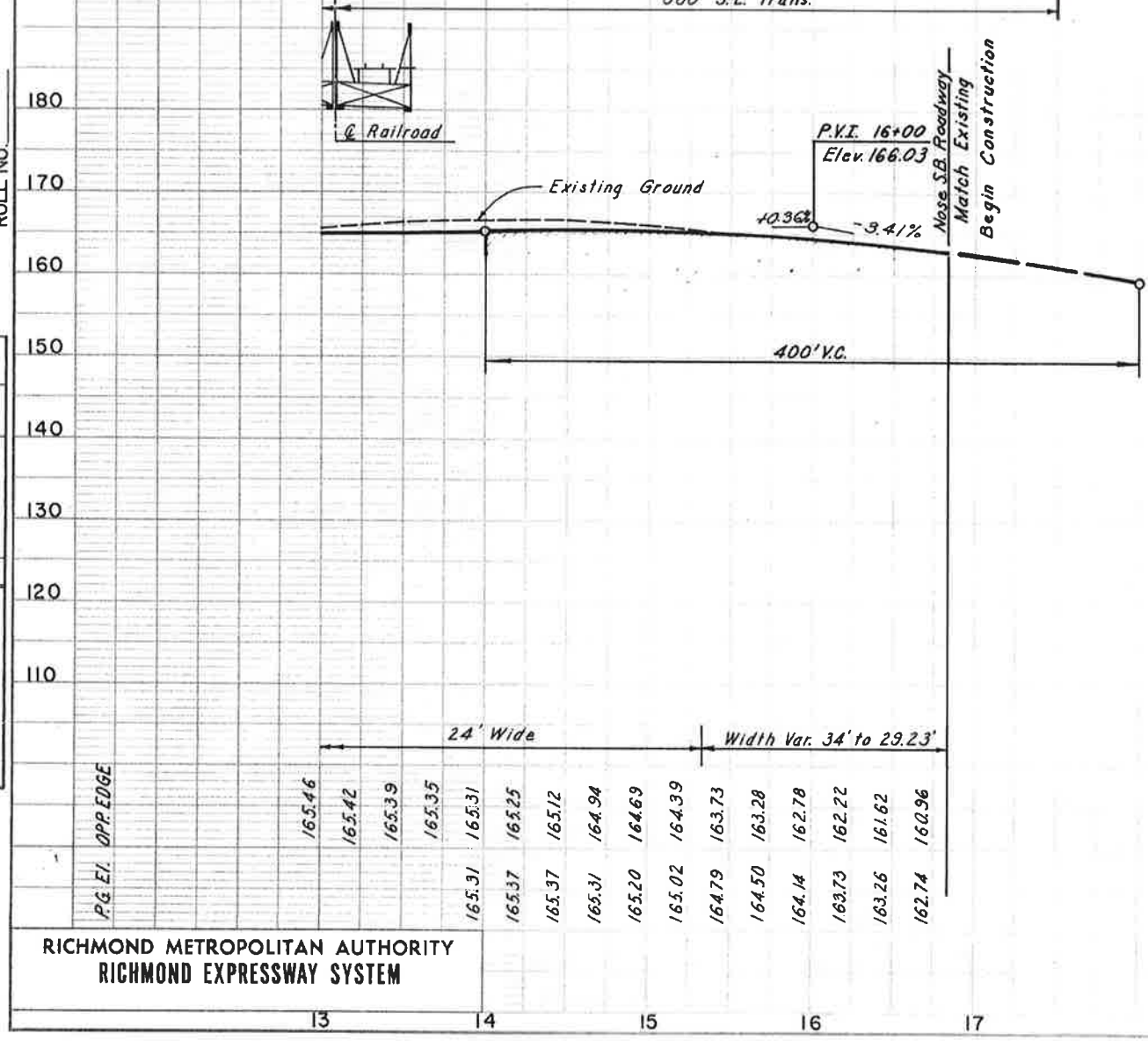
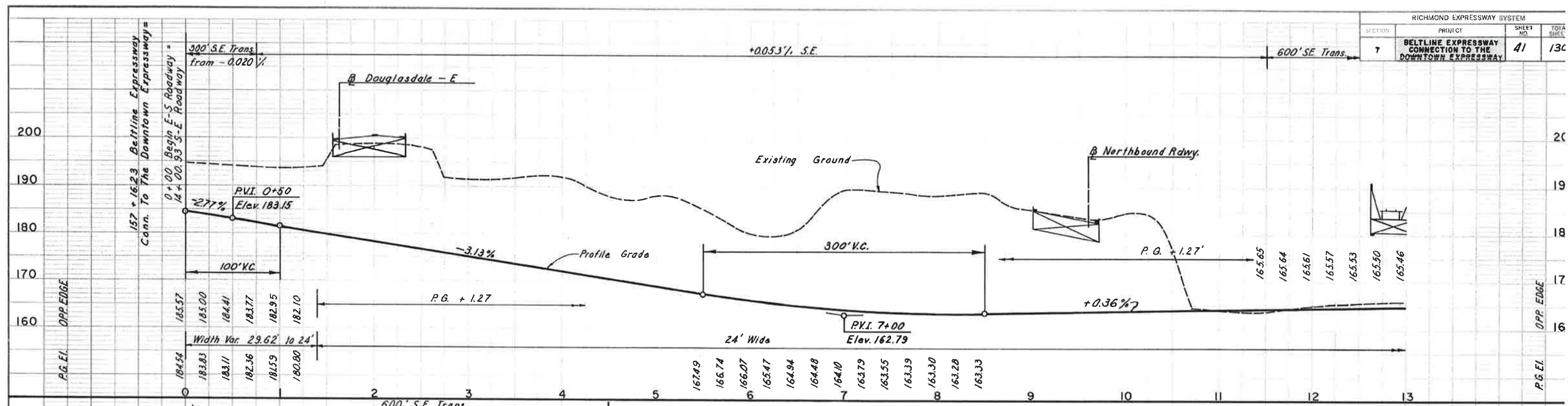
PLAN SHEET INDEX

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY

SCALE: 1" = 200'
CONTRACT NO: C-7
SHEET NO. 30 OF 130

AS BUILT

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	41	130



CHECKED IN CHARGE	NO.	REVISION	BY	DATE

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

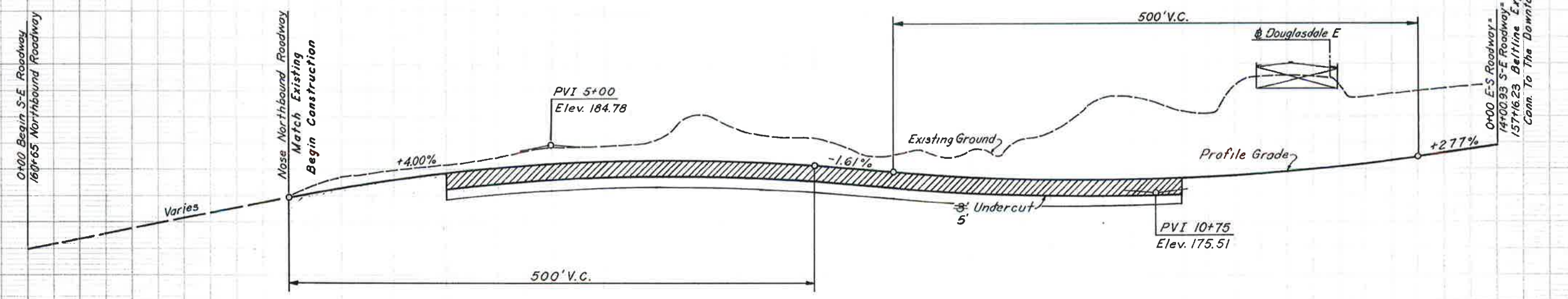
AS BUILT E-S ROADWAY PROFILE

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOT. SHEET
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	42	131



Width Var. 6' to 0' Lt.

174.78
175.77
176.68
177.51
178.26
178.92
179.52



MADE	CHECKED	IN CHARGE	NO.	REVISION	BY	DATE

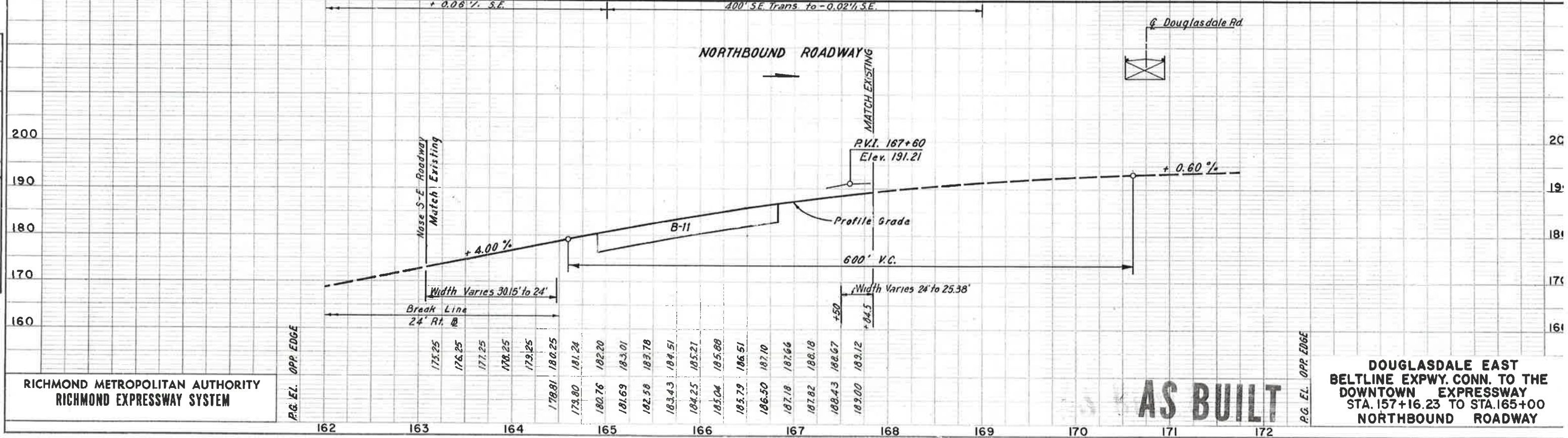
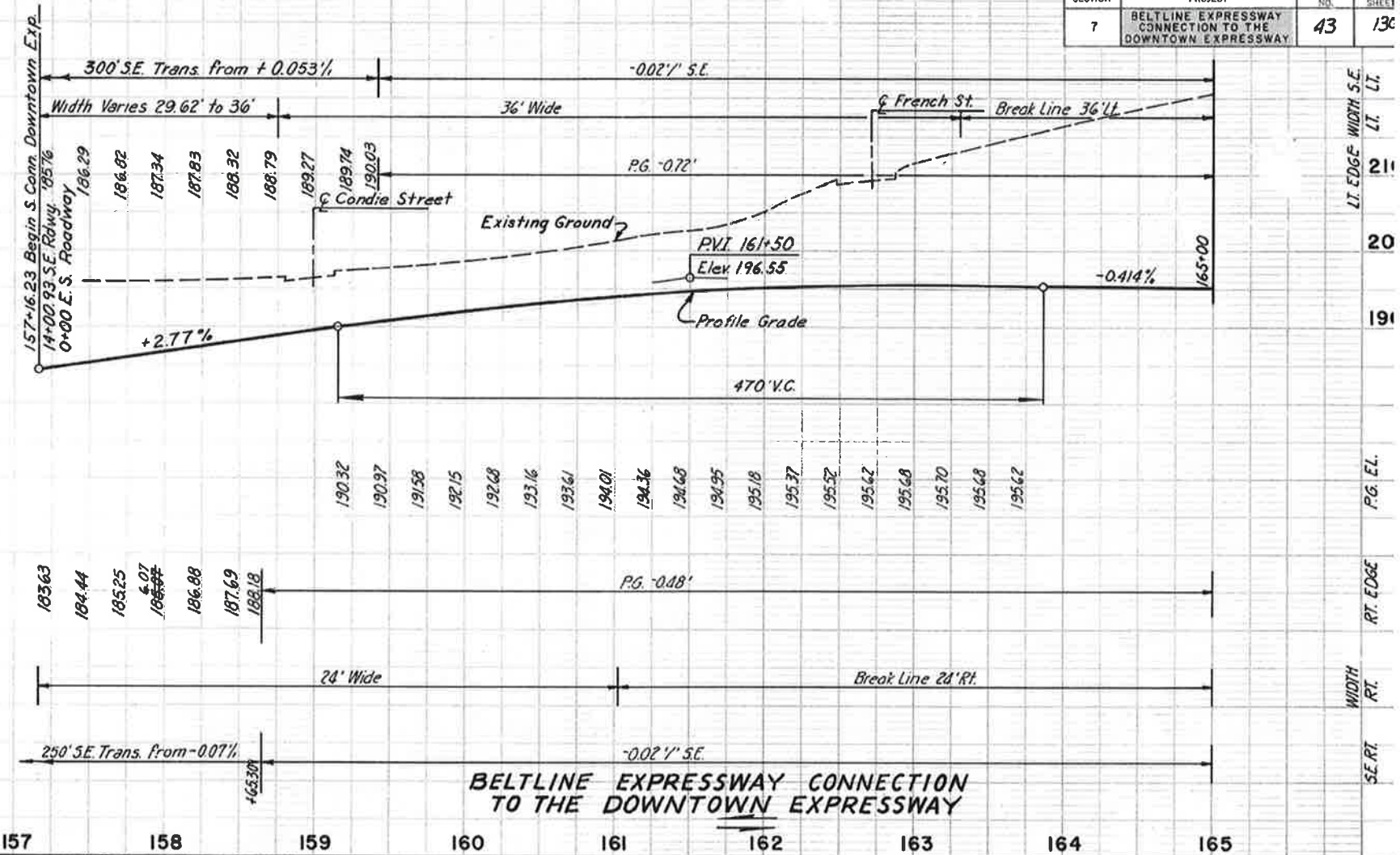
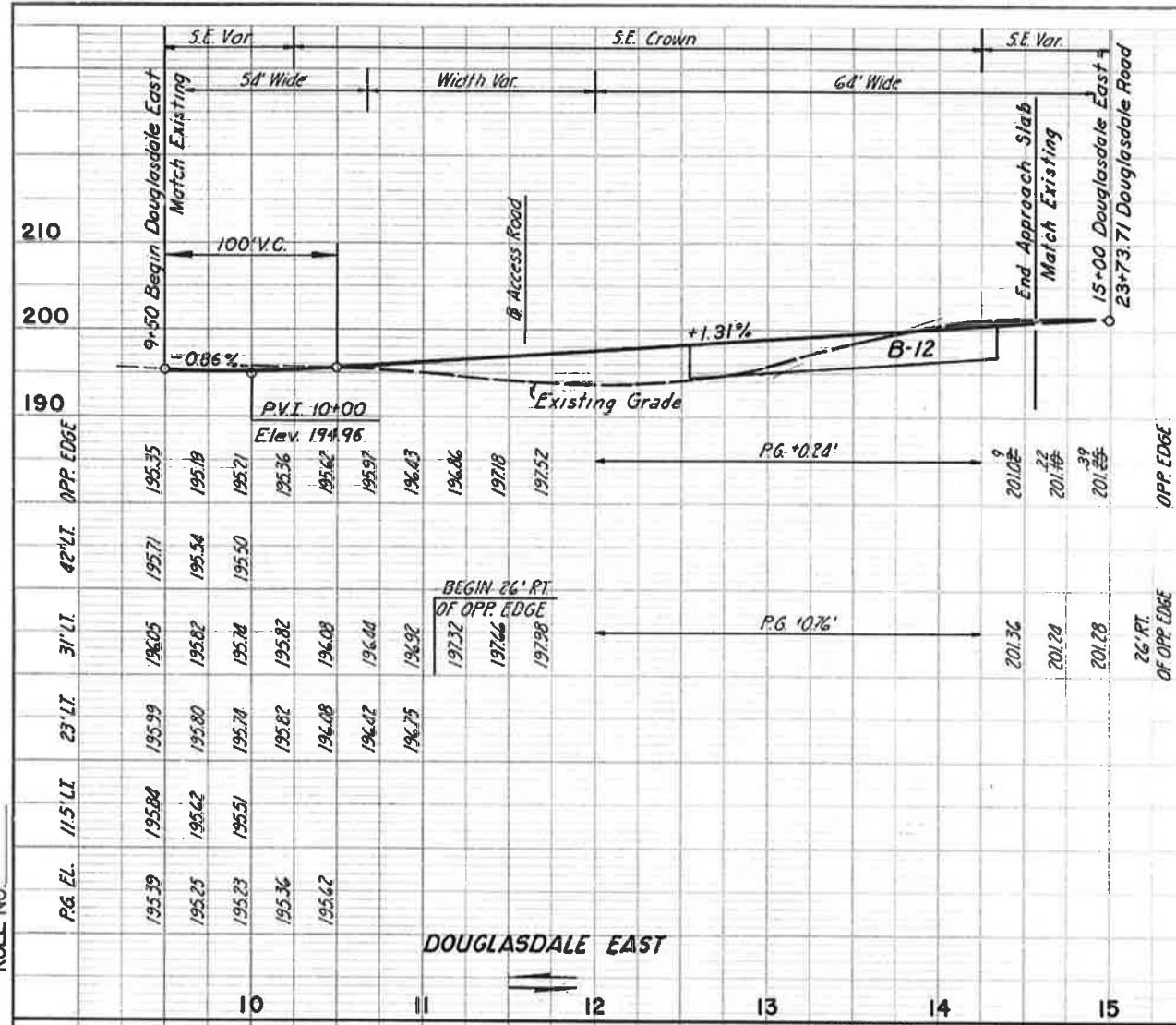
STATION	PG. EL. OPP. EDGE RT.	PG. EL. OPP. EDGE LT.
0	174.78	174.78
1	175.77	175.77
2	176.68	176.68
3	177.51	177.51
4	178.26	178.26
5	178.92	178.92
6	179.52	179.52
7	180.06	180.06
8	180.54	180.54
9	180.94	180.94
10	181.27	181.27
11	181.54	181.54
12	181.73	181.73
13	181.85	181.85
14	181.91	181.91
15	181.89	181.89
16	181.80	181.80
17	181.64	181.64
18	181.42	181.42
19	181.12	181.12
20	180.75	180.75
21	180.31	180.31
22	179.79	179.79
23	179.29	179.29
24	179.54	179.54
25	179.16	179.16
26	178.84	178.84
27	178.58	178.58
28	178.37	178.37
29	178.21	178.21
30	178.11	178.11
31	178.06	178.06
32	178.07	178.07
33	178.13	178.13
34	178.25	178.25
35	178.42	178.42
36	178.65	178.65
37	178.93	178.93
38	179.27	179.27
39	179.66	179.66
40	180.10	180.10
41	180.60	180.60
42	181.16	181.16
43	181.77	181.77
44	182.44	182.44
45	183.16	183.16

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

AS BUILT

S-E ROADWAY PROFILE





CHECKED IN CHARGE	NO.	REVISION	BY	DATE
GAY W-1547	1	As Built	RHT	10-25
R.M.S.				

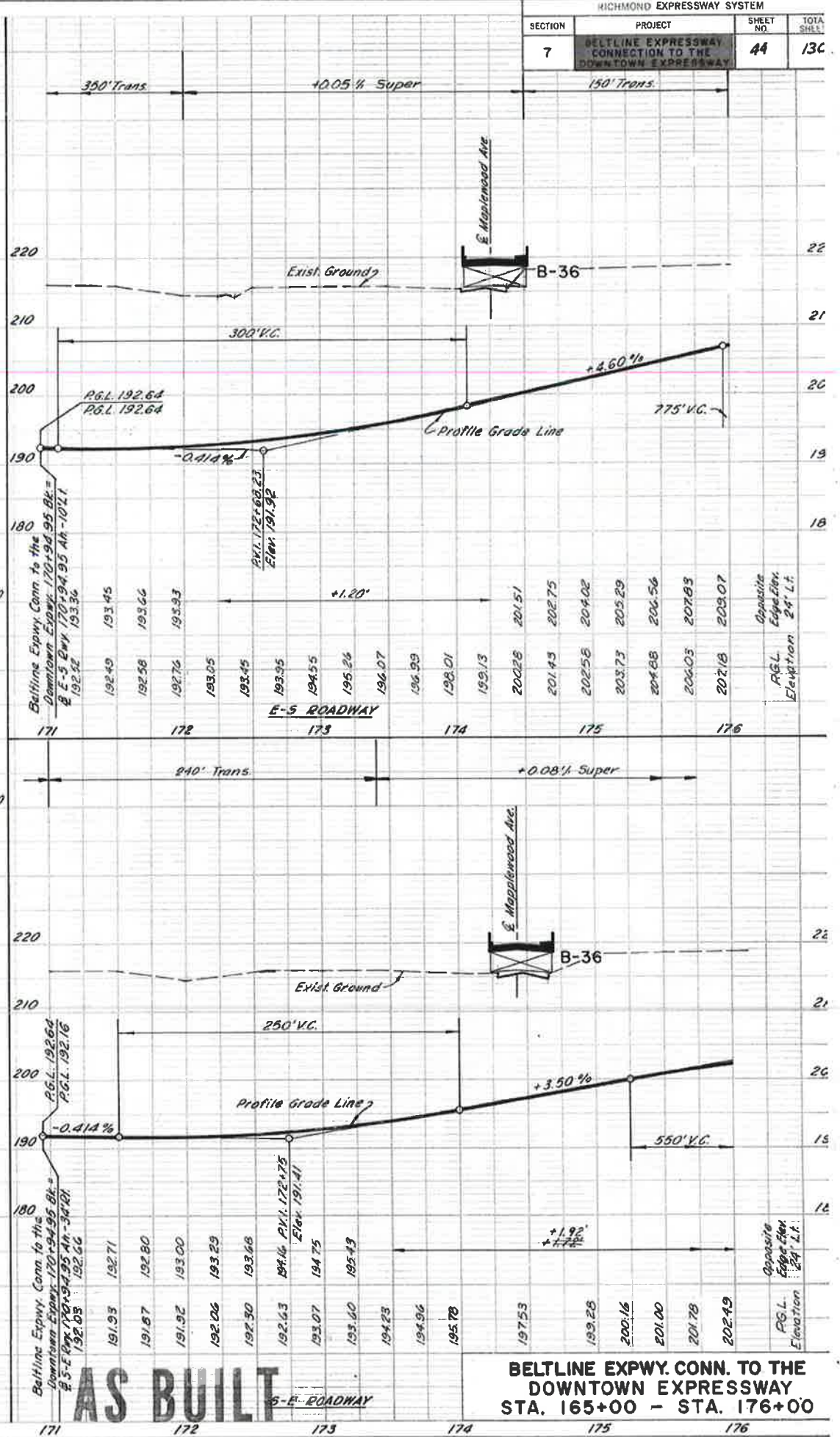
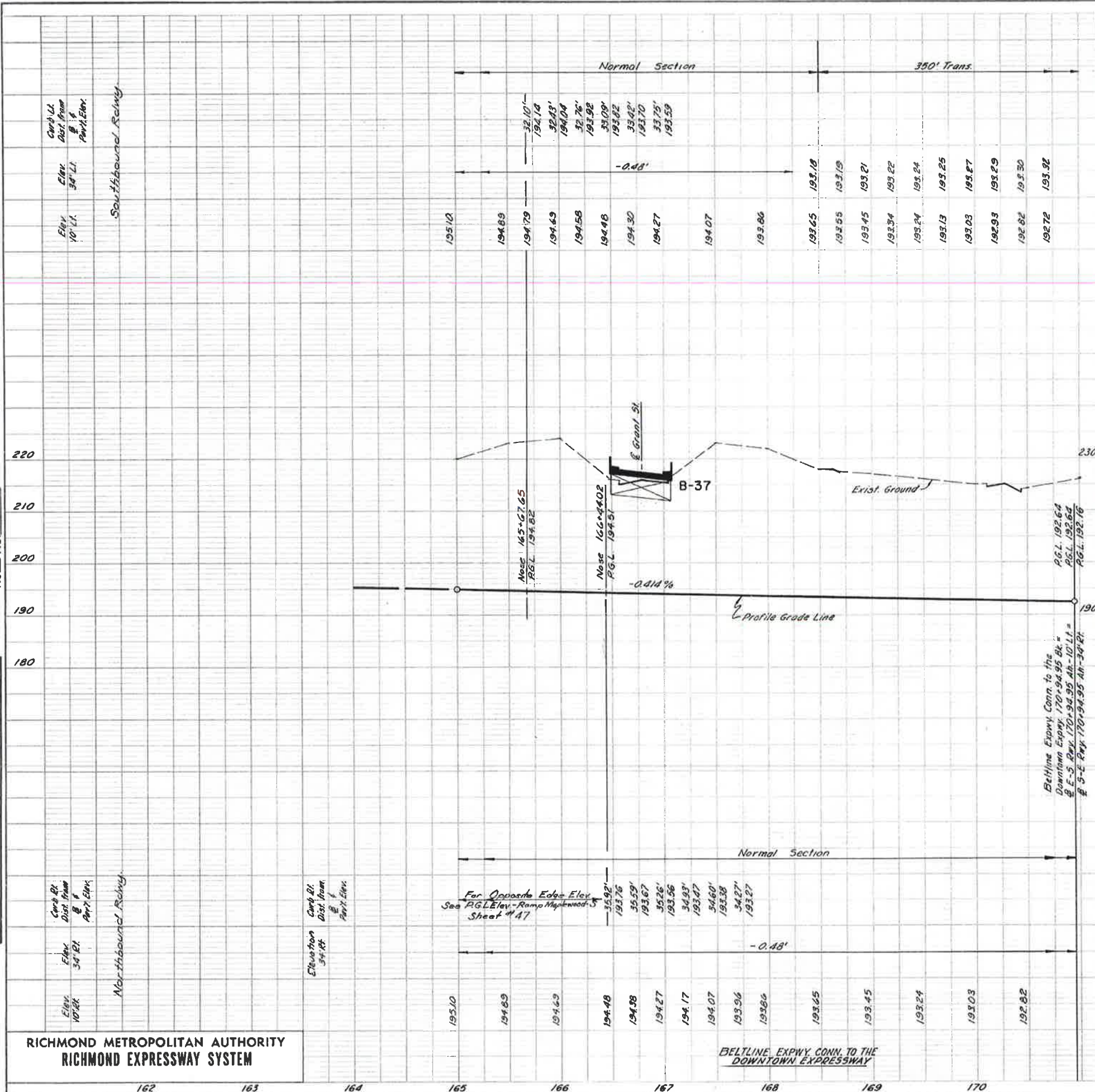
RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

AS BUILT

**DOUGLASDALE EAST
BELTLINE EXPWY. CONN. TO THE
DOWNTOWN EXPRESSWAY
STA. 157+16.23 TO STA. 165+00
NORTHBOUND ROADWAY**

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	44	130

MADE	J/K
CHECKED	
IN CHARGE	F/J/M
NO.	
AS BUILT	
REVISION	
BY	
DATE	



RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

BELTLINE EXPWY. CONN. TO THE
DOWNTOWN EXPRESSWAY

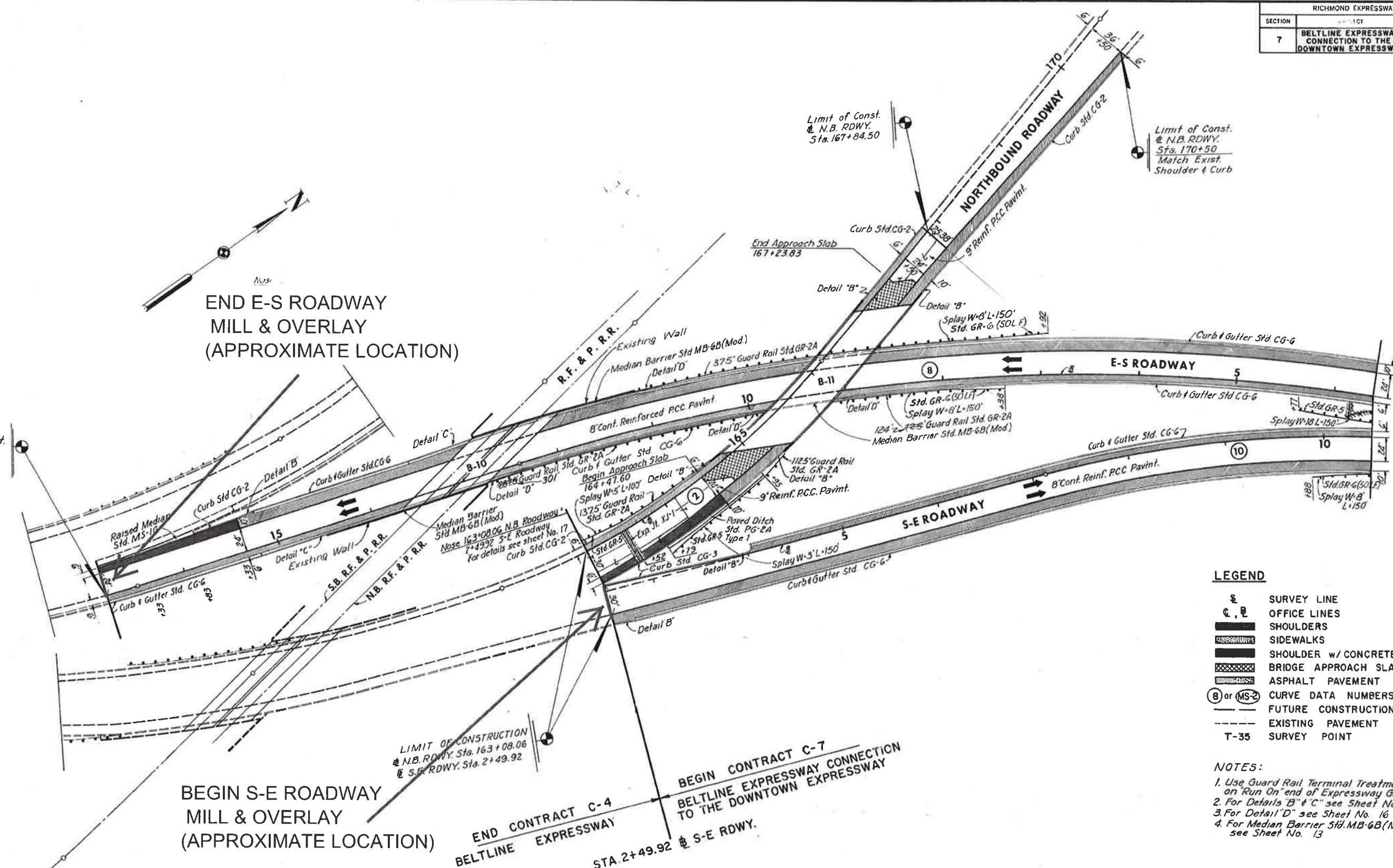
AS BUILT

BELTLINE EXPWY. CONN. TO THE
DOWNTOWN EXPRESSWAY
STA. 165+00 - STA. 176+00

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	54	130

END E-S ROADWAY
MILL & OVERLAY
(APPROXIMATE LOCATION)

BEGIN S-E ROADWAY
MILL & OVERLAY
(APPROXIMATE LOCATION)



LEGEND

	SURVEY LINE
	OFFICE LINES
	SHOULDERS
	SIDEWALKS
	SHOULDER w/ CONCRETE BASE
	BRIDGE APPROACH SLABS
	ASPHALT PAVEMENT
	CURVE DATA NUMBERS
	FUTURE CONSTRUCTION
	EXISTING PAVEMENT
	T-35 SURVEY POINT

- NOTES:**
- Use Guard Rail Terminal Treatment Std. GR-5 on "Run On" end of Expressway Guard Rail
 - For Details "B" & "C" see Sheet No. 13
 - For Detail "D" see Sheet No. 16
 - For Median Barrier Std. MB-6B (Mod.) see Sheet No. 13

BY	DATE				
MADE	R.M.S.	1-17-68			
CHECKED	J.L.C.	2-16-68	1	As Built	P.H.T. 10-75
IN CHARGE	R.M.S.				

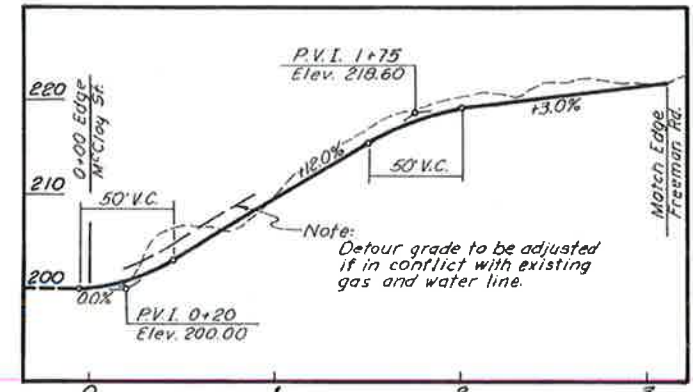
RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

PAVEMENT PLAN
STA. 2+49.92 TO STA. 10+50

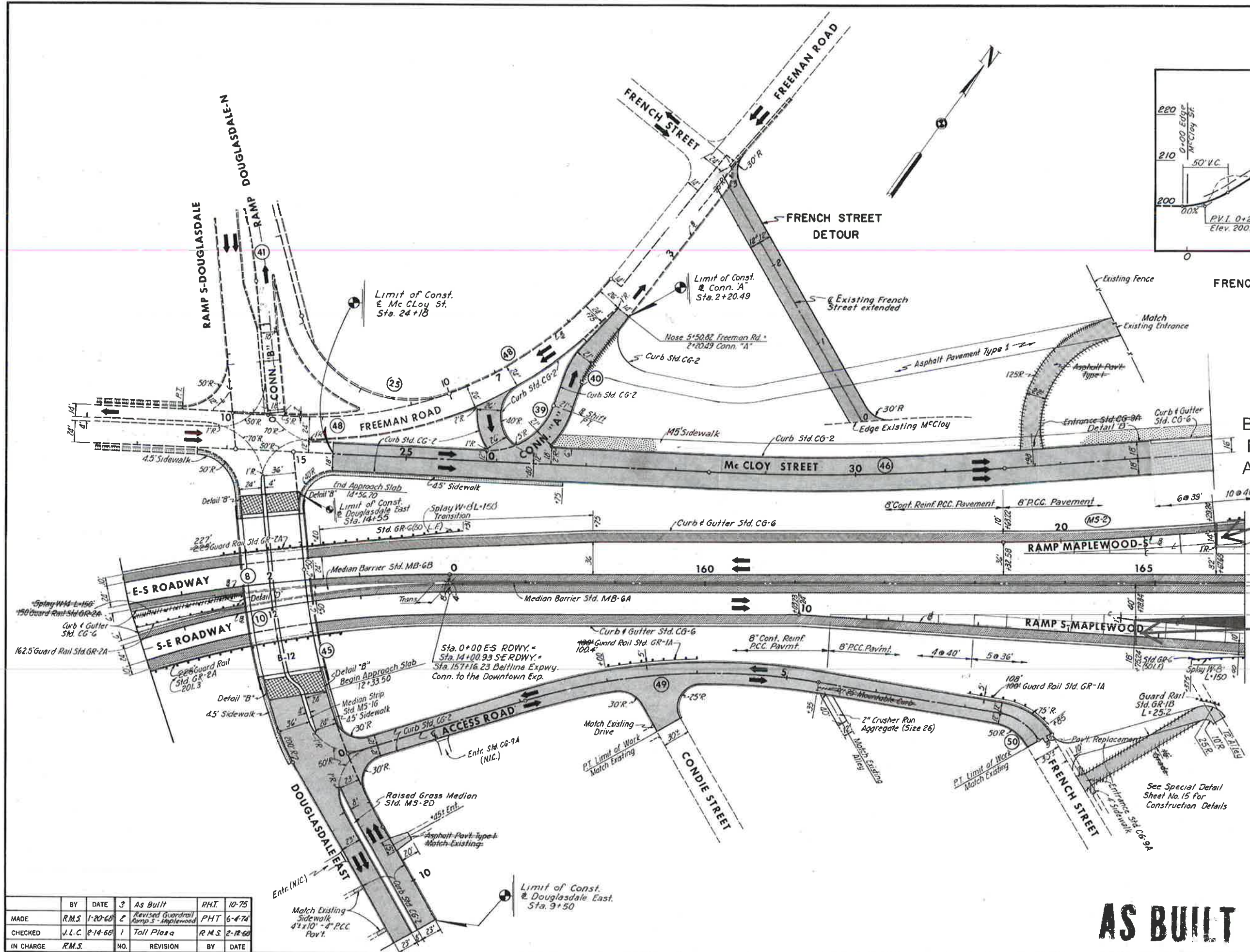
AS BUILT

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY
SCALE: 1" = 50'
CONTRACT NO. C-2
SHEET NO. 54 OF 131

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	57	130



FRENCH STREET DETOUR PROFILE



BEGIN RAMP MAPLEWOOD-S MILL & OVERLAY AT END OF MEDIAN

END OF RAMP S-MAPLEWOOD MILL & OVERLAY

- NOTES:
1. Use Guard Rail Terminal Treatment Std GR-5 on Run On end of Expressway Guard Rail
 2. For Details B' & C' see Sheet No. 13
 3. For Detail D' see Sheet No. 16
 4. For Legend see Sheet No. 54
 5. For French Street Detour Typical Section see Sheet No. 13

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

PAVEMENT PLAN
STA 10+50 TO STA 166+00

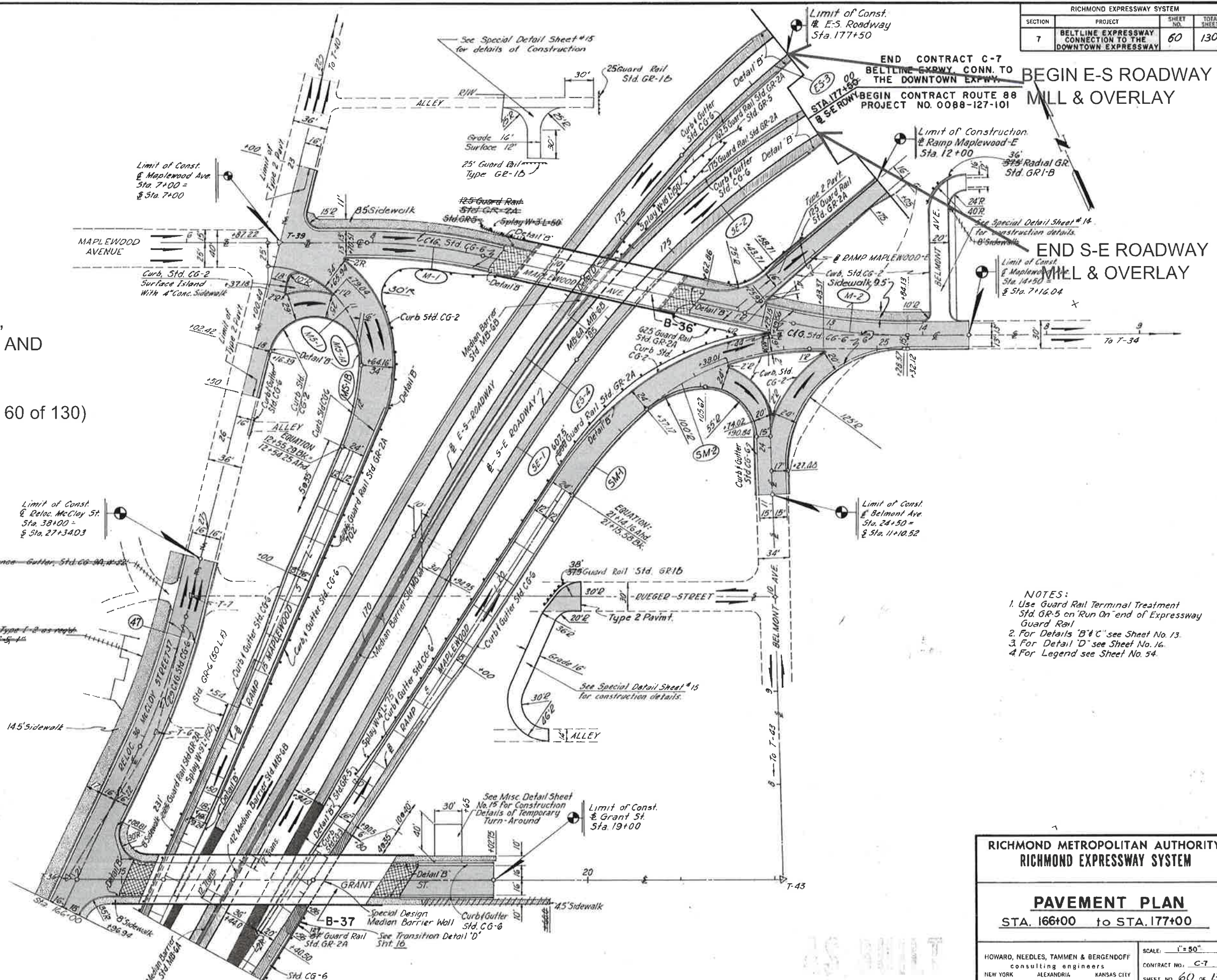
AS BUILT

BY	DATE	NO.	REVISION	BY	DATE
AS BUILT		3		R.H.T.	10-75
MADE	R.M.S.	1-20-68	2	Revised Guardrail Ramp S-Maplewood	P.H.T. 6-4-74
CHECKED	J.L.C.	2-14-68	1	Toll Plaza	R.M.S. 2-12-68
IN CHARGE	R.M.S.				

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY

SCALE: 1" = 50'
CONTRACT NO.: C-2
SHEET NO. 57 OF 130

RICHMOND EXPRESSWAY SYSTEM			
SECTION	PROJECT	SHEET NO.	TOTAL SHEETS
7	BELTLINE EXPRESSWAY CONNECTION TO THE DOWNTOWN EXPRESSWAY	60	130



RAMP MAPLEWOOD-S,
RAMP MAPLEWOOD-S AND
RAMP MAPLEWOOD-E
NOT IN CONTRACT
(AS SHOWN ON SHEET 60 OF 130)

END CONTRACT C-7
BELTLINE EXPWY. CONN. TO
THE DOWNTOWN EXPWY.
BEGIN E-S ROADWAY
MILL & OVERLAY
PROJECT NO. 0088-127-101

END S-E ROADWAY
MILL & OVERLAY

- NOTES:
1. Use Guard Rail Terminal Treatment Std. GR-5 on "Run On" end of Expressway Guard Rail
 2. For Details "B" & "C" see Sheet No. 13
 3. For Detail "D" see Sheet No. 16
 4. For Legend see Sheet No. 54

RICHMOND METROPOLITAN AUTHORITY
RICHMOND EXPRESSWAY SYSTEM

PAVEMENT PLAN
STA. 166+00 to STA. 177+00

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
NEW YORK ALEXANDRIA KANSAS CITY

SCALE: 1" = 50'
CONTRACT NO. C-7
SHEET NO. 60 OF 130

BY	DATE	NO.	REVISION	BY	DATE
MADE	RB	4/68	2	PHT	10-75
CHECKED	WT	4/68	1	PHT	6-4-76
IN CHARGE	FJM			WT	6-4-76

