DGN $REF001 $REF002 $REF003 $REF004 $REF005 $REF006
$DGNLEV $LEV001 $LEV002 $LEV003 $LEV004 $LEV005 $LEV006

FOR INDEX OF SHEETS SEE SHEET 1B

FHWA 534 DATA 2EIII

STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	RSTP-5401( ) (SEE TABULATION BELOW FOR SECTION NUMBERS)	123	(NFO) 0123-151-139 (SEE TABULATION BELOW FOR SECTION NUMBERS)	1

THIS PROJECT WAS DEVELOPED UTILIZING THE DEPARTMENT'S ENGINEERING DESIGN PACKAGE (GEOPAK).
GEOPAK Computer Identification No. 89891

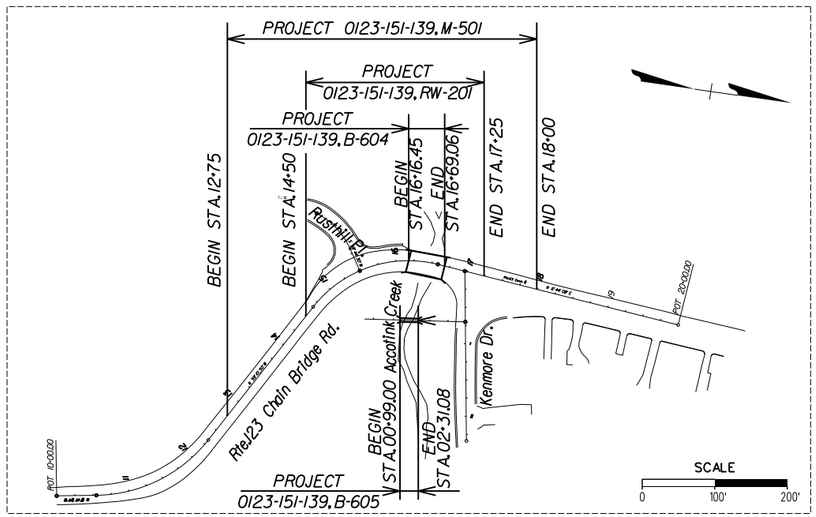
COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

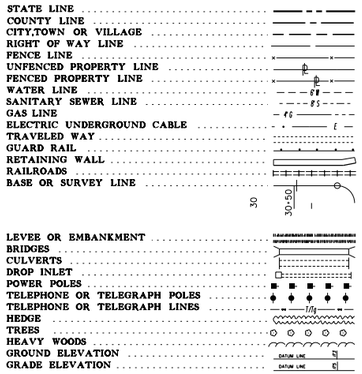
CITY OF FAIRFAX
FROM: 0.07 MI. SOUTH OF ACCOTINK CREEK
TO: 0.03 MI. NORTH OF ACCOTINK CREEK

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
URBAN PRINCIPAL ARTERIAL (OTHER)	
	Fr: Sta. 12+75 To: Sta. 18+00
ADT (2011)	24,500
ADT (2032)	30,000
DHV	2200
D (%) (design hour)	60
T (%) (design hour)	2
V (MPH)	25 MPH



PROJECT MANAGER ..... Peter...Millard...(703).246...6330.....
SURVEYED BY ..... Burgess...& ...Niple...(703).631.9630...Date: April 1, 2010
DESIGN SUPERVISED BY ..... David...Summers...(703)...385...7846.....
DESIGNED BY ..... BAKER / LPA...(703).639...1694.....
SUBSURFACE UTILITY BY: ..... So-Deep, Inc.(703) 361-6005 Date: May. 25, 2010

CONVENTIONAL SIGNS



THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED, HAS BEEN SEALED AND SIGNED USING DIGITAL SIGNATURES AND THE OFFICIAL PLAN ASSEMBLY IN ELECTRONIC FORMAT IS STORED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY, INLCUDING ALL SEBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE THE GENERAL NOTES.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT'S 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2009 MUTCD, 2011 WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY.

ALL CURVES ARE TO BE SUPERELEVATED, TRANSITIONED AND WIDENED IN ACCORDANCE WITH STANDARD TC-5.04.ULS, EXCEPT WHERE OTHERWISE NOTED.

THE ORIGINAL APPROVED TITLE SHEET(S), INCLUDING ORIGINAL SIGNATURES, ARE FILED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY. ANY MISUSE OF ELECTRONIC FILES, INCLUDING SCANNED SIGNATURES, IS ILLEGAL AND ENFORCED TO THE FULL EXTENT OF THE LAW.

Population 22,565 (2010 - Census Bureau)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES FEET	LENGTH INCLUDING BRIDGE(S) FEET	LENGTH INCLUDING BRIDGE(S) MILES	LENGTH EXCLUDING BRIDGE(S) FEET	LENGTH EXCLUDING BRIDGE(S) MILES	BRIDGE PROJECT NO.	TYPE PROJECT	DESCRIPTION
0213-151-139	PE-101	RSTP-5401(944)	PENG	89891		525	0.099	474.39	0.09		PRELIM.ENG.	FROM: 0.07 MI. SOUTH OF ACCOTINK CREEK TO: 0.03 MI. NORTH OF ACCOTINK CREEK
	RW-201	RSTP-5A01(320)	ROWA	89891		275	0.052	224.69	0.043		RIGHT-OF-WAY	FROM: 0.04 MI. SOUTH OF ACCOTINK CREEK TO: 0.02 MI. NORTH OF ACCOTINK CREEK
	B-604	RSTP-5A01(421)	X080	89891		50.61	0.0096				BRIDGE	BRIDGE OVER ACCOTINK CREEK
	B-605	RSTP-5A01(421)	X080	89891		132.08	0.025				PEDESTRIAN BRIDGE	PEDESTRIAN BRIDGE OVER ACCOTINK CREEK
	M-501	RSTP-5A01(421)	I000	89891		525	0.099	474.39	0.09		CONSTRUCTION	FROM: 0.07 MI. SOUTH OF ACCOTINK CREEK TO: 0.03 MI. NORTH OF ACCOTINK CREEK

Project Lengths are based on Rte. 123 Construction Base Line.

FINAL PLANS

REVISED

TIER 1 PROJECT

CITY OF FAIRFAX
RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY ACQUISITION
2/8/13 DATE — DAVID SUMMERS, DIRECTOR OF PUBLIC WORKS

CITY OF FAIRFAX
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
2/8/13 DATE — DAVID SUMMERS, DIRECTOR OF PUBLIC WORKS

RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY ACQUISITION	
5/23/12 DATE	RENEE N. HAMILTON, DISTRICT PLANNING AND INVESTMENT MANAGER
5/25/12 DATE	WILLIAM C. CUTTLER, DISTRICT PROJECT DEVELOPMENT ENGINEER

APPROVED FOR RIGHT OF WAY ACQUISITION	
5/25/12 DATE	GARRETT MOORE, DISTRICT ADMINISTRATOR

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
5/13/13 DATE	RENEE N. HAMILTON, DISTRICT PLANNING AND INVESTMENT MANAGER
5/14/13 DATE	WILLIAM C. CUTTLER, DISTRICT PROJECT DEVELOPMENT ENGINEER

APPROVED FOR CONSTRUCTION	
5/14/13 DATE	HELEN L. CUERVO, DISTRICT ADMINISTRATOR

APPROVED	
DATE	DIVISION ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

$TIME$STAMP$

PROJECT	SHEET NO.
0123-151-139	1

10/5/2012
9:27:55 AM

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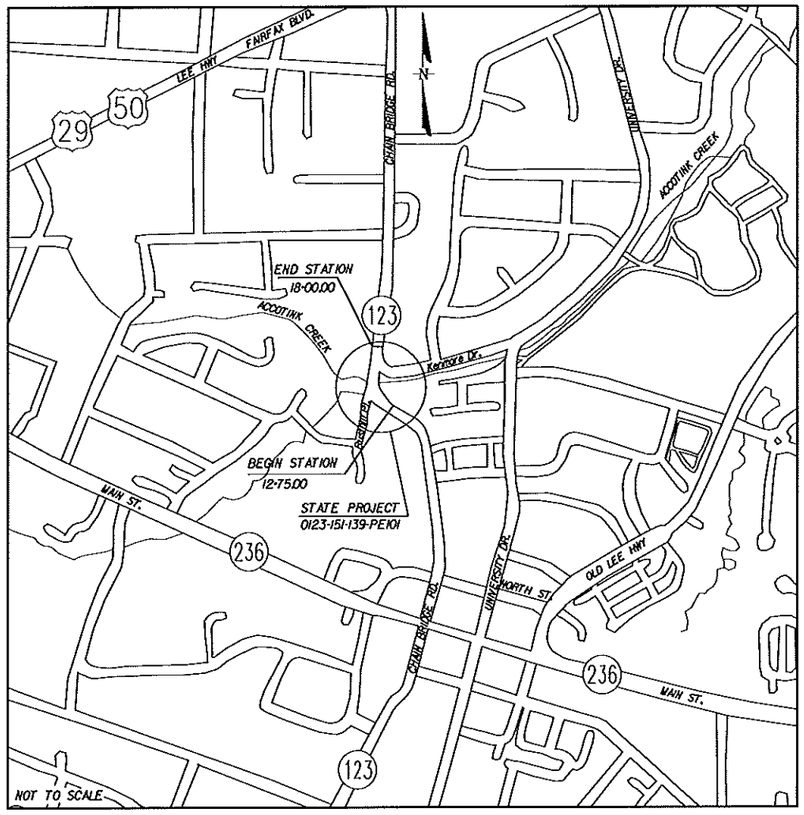
Plotted By: lacoluser

PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burges & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 849 1694

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	1A

PROJECT LOCATION MAP



CITY OF FAIRFAX

	PROJECT	SHEET NO.
	0123-151-139	1A

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Plotted By: loadtuser

PROJECT MANAGER: Peter_Willard (703) 246-6330
SURVEYED BY: Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY: David_Summers (703) 385-7846
DESIGNED BY: The_LPA_Group_Inc (703) 639-1694

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	1B

INDEX OF SHEETS

ROADWAY

SHEET NO.	DESCRIPTION
1	TITLE SHEET
1A	LOCATION MAP
1B	INDEX OF SHEETS
1C	RIGHT OF WAY DATA SHEET
1D	REVISION DATA SHEET
1E	STREAM FLOW HYDROGRAPH SHEET (NOT USED)
1F	SURVEY ALIGNMENT DATA SHEET
1G	CONSTRUCTION ALIGNMENT DATA SHEET
1H	UNDERGROUND UTILITY TEST HOLE INFORMATION (NOT USED)
1J	CADD LEVEL STRUCTURE SHEET
1K(1) thru 1K(_)	SEQUENCE OF CONSTRUCTION (NOT USED)
1L(1) thru 1L(1)	TRAFFIC MANAGEMENT PLAN
1M	METES & BOUNDS (NOT USED)
2	GENERAL NOTES
2A	TYPICAL SECTIONS
	GRADING DIAGRAM AND SUMMARY (NOT USED)
2C(1) thru 2C(3)	SUMMARY SHEETS
	ROADSIDE DEVELOPMENT SHEET (NOT USED)
2E	HYDROLOGIC DATA SHEET
2F(1) thru 2F(11)	INSERTABLE SHEETS
2H(1) thru 2H(2)	STANDARD DRAWINGS
	SPECIAL DESIGN DRAWINGS (NOT USED)
3	PLAN SHEETS
3A	PROFILE SHEETS
3B, 4B, 5B, etc.	DRAINAGE DESCRIPTION SHEETS (NOT USED)
3C, 4C, 5C, 6C	PHASED EROSION AND SEDIMENT CONTROL PLANS
9(1), 9(2), etc.	ENTRANCE PROFILES (NOT USED)
10(1), 10(2), etc.	SIGNING PLANS (NOT USED)
11(1), 11(2), etc.	LIGHTING PLANS (NOT USED)
12(1), 12(2), etc.	SIGNAL PLANS (NOT USED)
13	PAVEMENT MARKING, MARKER AND SIGNING PLANS
14(1) thru 14(4)	UTILITY PLANS
15(1), 15(2), etc.	LANDSCAPE ARCHITECTURE PLANS (NOT USED) (Landscaping, Wetland Mitigation, Bioretention Details)

CROSS SECTION SHEETS

X-1	STATION 12+50.00 TO STATION 13+50.00
X-2	STATION 13+75.00 TO STATION 14+50.00
X-3	STATION 14+75.00 TO STATION 15+25.00
X-4	STATION 15+50.00 TO STATION 16+50.00
X-5	STATION 16+75.00 TO STATION 17+50.00
X-6	STATION 17+75.00 TO STATION 18+50.00

BRIDGE

SHEET NO.	DESCRIPTION
1	GENERAL PLAN, SECTION & GENERAL NOTES
2	ELEVATIONS
3	ESTIMATED QUANTITIES AND INDEX OF SHEETS
4	SUBSTRUCTURE LAYOUT & SLOPE PROTECTION DETAILS
5	SEQUENCE OF CONSTRUCTION - 1
6	SEQUENCE OF CONSTRUCTION - 2
7	ABUTMENT A - PLAN, ELEVATIONS AND SECTIONS
8	ABUTMENT A - FOOTING PLAN & DETAILS
9	ABUTMENT A - WINGWALL 1 DETAILS
10	ABUTMENT A - WINGWALL 2 DETAILS
11	ABUTMENT A DETAILS
12	ABUTMENT B - PLAN, ELEVATION AND SECTIONS
13	ABUTMENT B - FOOTING PLAN & DETAILS
14	ABUTMENT B - WINGWALL 3 DETAILS
15	ABUTMENT B - WINGWALL 4 DETAILS
16	ABUTMENT B DETAILS
17	TRANSVERSE SECTIONS & DETAILS
18	DECK SLAB PLAN & DETAILS
19-21	SUPERSTRUCTURE DETAILS
22	RAPID CURE SILICONE JOINT DETAILS
23-24	EAST CONCRETE RAILING DETAILS
25-26	WEST CONCRETE RAILING DETAILS
27-28	SIDEWALK RAILING DETAILS
29	METAL RAILING DETAILS
30-31	PRECAST CONCRETE SPANDREL WALL DETAILS
32	BRIDGE CONDUIT SYSTEM
33	PEDESTRIAN RAILING DETAILS
34-35	RETAINING WALL - A PLAN, ELEVATION & SECTIONS
36-37	RETAINING WALL - B PLAN, ELEVATION & SECTIONS
38	REINFORCING STEEL SCHEDULE - SUPERSTRUCTURE
39-40	REINFORCING STEEL SCHEDULE - ABUTMENT A
41-43	REINFORCING STEEL SCHEDULE - ABUTMENT B
44-45	REINFORCING STEEL SCHEDULE - RETAINING WALLS
46	APPROACH SLAB DETAILS - ABUTMENT A
47	APPROACH SLAB DETAILS - ABUTMENT B
48-51	ENGINEERING GEOLOGY
52-56	BRIDGE LIGHTING

PEDESTRIAN BRIDGE

SHEET NO.	DESCRIPTION
1	GENERAL PLAN, ELEVATION & GENERAL NOTES
2	ESTIMATED QUANTITIES AND INDEX OF SHEETS
3	PROFILE GRADE - PEDESTRIAN BRIDGE
4	SUBSTRUCTURE LAYOUT & SLOPE PROTECTION DETAILS
5	ABUTMENT A PLAN & SECTIONS
6	ABUTMENT A FOOTING PLAN & DETAILS
7	ABUTMENT A WINGWALL DETAILS
8	ABUTMENT B PLAN & SECTIONS
9	ABUTMENT B FOOTING PLAN & DETAILS
10	ABUTMENT B WINGWALL DETAILS
11	NORTH PEDESTRIAN RAMP PLAN, RAILING ELEVATION & DETAILS
12	SOUTH PEDESTRIAN RAMP PLAN & DETAILS
13	SOUTH PEDESTRIAN RAMP - RAILING ELEVATION & DETAILS
14	WEST PEDESTRIAN RAMP - RAILING ELEVATION & DETAILS
15	PRESTRESSED BEAM BEARING DETAILS
16	TRANSVERSE SECTIONS & DETAILS
17	PEDESTRIAN BRIDGE PLAN, RAILING ELEVATION & DETAILS
18	PRESTRESSED CONCRETE DOUBLE TEE BEAM DETAILS - 1
19	PRESTRESSED CONCRETE DOUBLE TEE BEAM DETAILS - 2
20	PEDESTRIAN RAILING DETAILS - 1
21	PEDESTRIAN RAILING DETAILS - 2
22	EXPANSION JOINT DETAILS
23	BRIDGE CONDUIT SYSTEM
24-28	REINFORCING STEEL SCHEDULE
29	ENGINEERING GEOLOGY
30	BRIDGE LIGHTING LAYOUT PLAN

	PROJECT	SHEET NO.
	0123-151-139	1B

10/12/2012
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Plotted By: localuser

PROJECT MANAGER Peter Millard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc.(703) 639 1694

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	1C

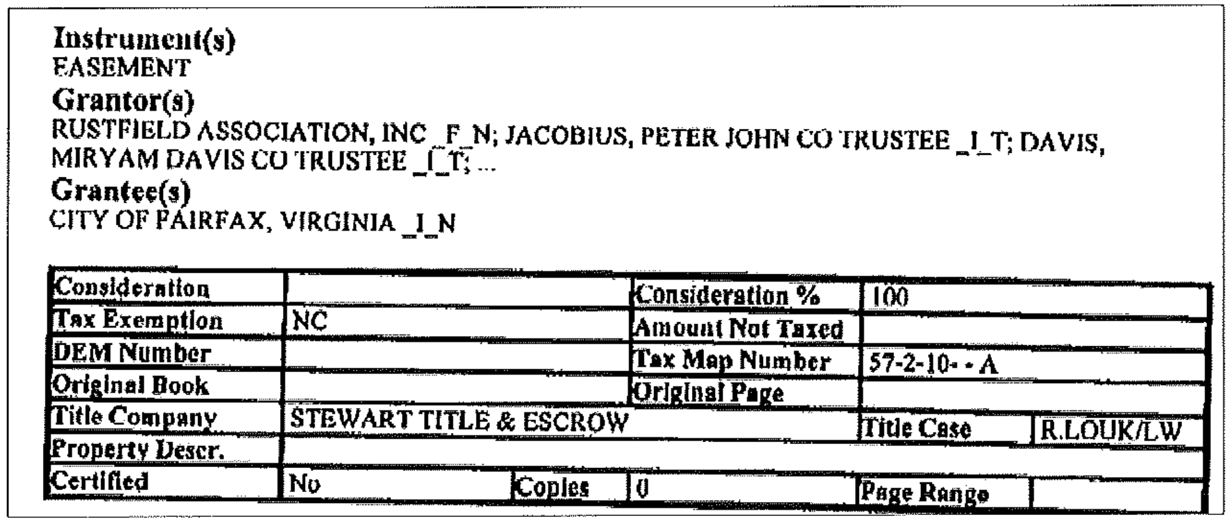
DESIGN FEATURES RELATING TO CONSTRUCTION
OR TO REGULATION AND CONTROL OF TRAFFIC
MAY BE SUBJECT TO CHANGE AS DEEMED
NECESSARY BY THE DEPARTMENT

City/County: City of Fairfax
UPC No.: 89891

RIGHT OF WAY DATA SHEET

NOTE:
No right of way and/or easement is required for this project.
The existing easement Granted by the Rustfield Association to The City of Fairfax for construction, maintenance and utilities (see below) will be adequate for the construction of this project and the maintenance of its relocated utilities.

PARCEL NO.	LANDOWNER	SHEET NO.	AREA													
			TOTAL	FEE TAKING		PRESCRIPTIVE R/W		FEE REMAINDER		EASEMENTS						
										PERMANENT		UTILITY		TEMPORARY		PROFFERS
			SQUARE FEET	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	SQ. FEET	HECTARES	YES / NO



Instrument(s)
EASEMENT
Grantor(s)
RUSTFIELD ASSOCIATION, INC _F_N; JACOBIUS, PETER JOHN CO TRUSTEE _I_T; DAVIS, MIRYAM DAVIS CO TRUSTEE _I_T; ...
Grantee(s)
CITY OF FAIRFAX, VIRGINIA _I_N

Consideration			**Consideration %**	100	
Tax Exemption	NC		**Amount Not Taxed**		
DEM Number			**Tax Map Number**	57-2-10- - A	
Original Book			**Original Page**		
Title Company	STEWART TITLE & ESCROW			**Title Case**	R.LOUK/LW
Property Descr.					
Certified	No	**Copies**	0	**Page Range**	

PROJECT	SHEET NO.
0123-151-139	1C

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Plotted By: local user

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 539 1694

REVISION DATA SHEET

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101; RW-201, M-501, B-604	ID

State Project: 0123-151-139, PE-101
Federal Project: RSTP-5401- (944)
From: 0.07 MI. SOUTH OF ACCOTINK CREEK
To: 0.03 MI. NORTH OF ACCOTINK CREEK
UPC Number: 89891

PROJECT	SHEET NO.
0123-151-139	ID

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Plotted By: locoluser

PROJECT MANAGER_____
SURVEYED BY _____
DESIGN SUPERVISED BY_____
DESIGNED BY _____

SURVEY ALIGNMENT DATA SHEET

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	1F

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TRAVERSE TABULATION

POINT 102 NORTH: 6995024.1289 EAST: 11822764.0889 EL: 362.17

DISTANCE: 302.49' BEARING: N87°25'57"W

POINT 103 NORTH: 6995037.6794 EAST: 11822461.9006 EL: 356.15

DISTANCE: 435.52 BEARING: S48°54'05"E

POINT 104 NORTH: 6994751.3876 EAST: 11822790.0991 EL: 388.59

RTE 123 SURVEY ℄

PI 10+00 NORTH: 6994620.9546 EAST: 11822802.1294

DISTANCE: 54.77' BEARING: N08°14'24"W

PC 10+54.77 NORTH: 6994675.1608 EAST: 11822794.2795

RADIUS: 200.00'
ARC LENGTH: 177.82'
CHORD: 172.02'
CHORD BRG: N33°42'37"W

PT 12+32.59 NORTH: 6994818.2541 EAST: 11822698.8109

DISTANCE: 238.26' BEARING: N59°10'50"W

PC 14+70.85 NORTH: 6994940.3213 EAST: 11822494.1986

RADIUS: 160.00'
ARC LENGTH: 184.07'
CHORD: 174.09'
CHORD BRG: N26°13'21"W

PT 16+54.92 NORTH: 6995096.4928 EAST: 11822417.2762

DISTANCE: 345.08' BEARING: N06°44'08"E

POT 20+00 NORTH: 6995439.1934 EAST: 11822457.7491

STREAM TRAVERSE

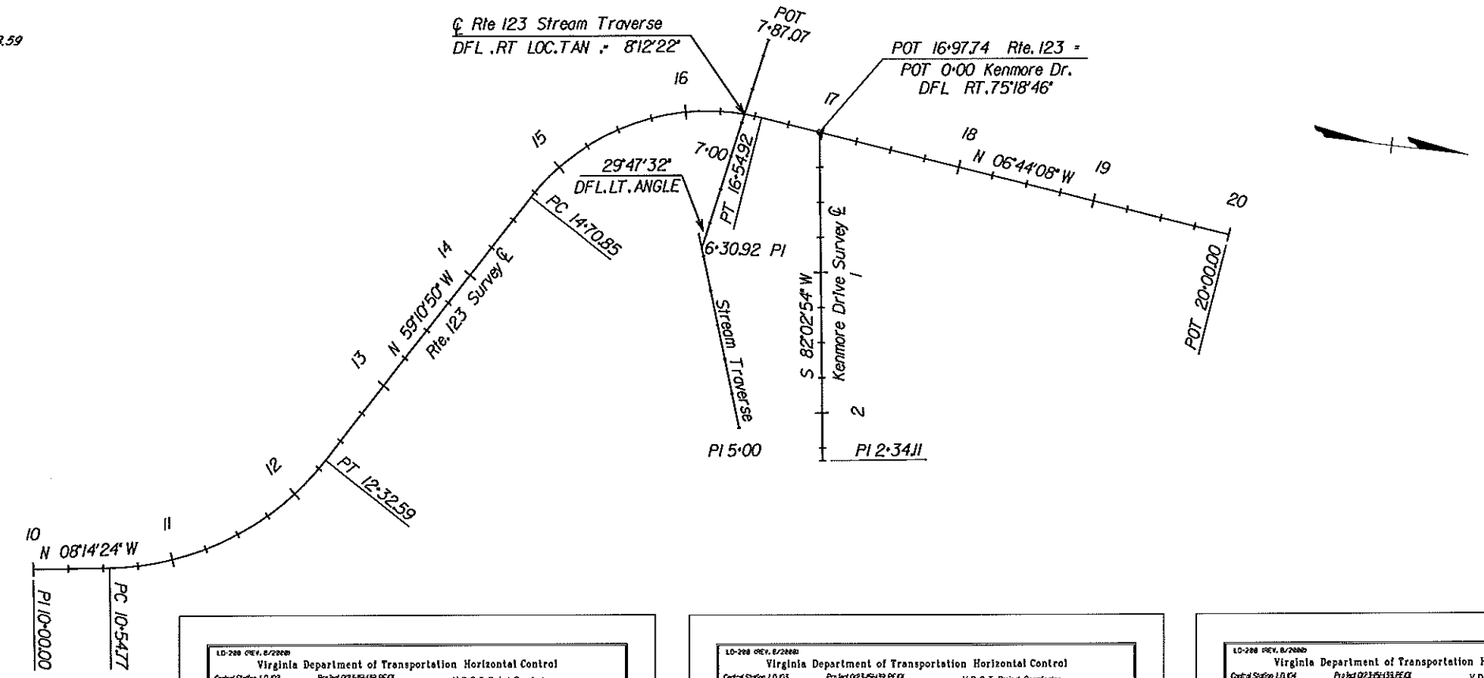
PI 5+00 NORTH: 6995109.0896 EAST: 11822638.6030

DISTANCE: 130.92'' BEARING: S70°42'14"W

PI 6+30.92 NORTH: 6995065.8272 EAST: 11822515.0372

DISTANCE: 156.15' BEARING: N79°30'13"W

POT 7+87.07 NORTH: 6995094.2736 EAST: 11822361.4983



LD-200 (REV. 8/2008)

Virginia Department of Transportation Horizontal Control

Control Station LD 02 Project 0213-151-139, PE 101 V.D.O.T. Project Coordinates
Route 123 County Edit Loc. Date 04-01-2010
Established By B&K
Vertical Datum Based On NAVD 88 Geoid 96 or 99 or 09 (circle one)
Horizontal Datum Based On NAD 83 (2007)
Adjusted to Station 03 Is 927.34'01"
Latitude 36°57'07.0955 N (Selected places)
Longitude 77°18'23.2393 W (Selected places)
Geoid Separation (N) -31.772
Ellipsoid Height (h) = 19.268 (WGS 84)
Control Based on Station (name or PID) LSO or
Project (monument no.) 02 Order: ...
Virginia State Plane Coordinates – NAD 83 English Values
East (X) 3603585.6828 ft
North (Y) 2132227.655 ft
Ortho. Elevation (H) 351.90 ft

East (X) 11822,874.3360 ft.
North (Y) 6995,044.8581 ft.
Elevation 362.17 ft.
Zone (circle one) North South
Horizontal Closure .....

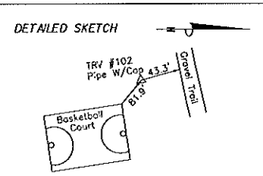
To convert state plane metric units to VDOT project values, use the following formula:

1. Multiply These Values by the U.S. Survey Foot (1.2906333333)
2. Multiply These Values by Combined Scale and Elevation Factor (1.00006 1) for the County.

Reverse This Procedure to Transform VDOT Project Coordinates to NAD 83 Metric Plane Coordinates

« Sketch and Detailed Description on Other Side »

To reach the station from the intersection of Route 123 and Kenmore Drive proceed East on Kenmore Drive 0.06 mile to the station bounds 81.9' from the Northwest corner of a Basketball Court and 43.3' from the edge of a Gravel Trail. The Station Is an Iron Pipe and Cap set flush with the ground.



LD-200 (REV. 8/2008)

Virginia Department of Transportation Horizontal Control

Control Station LD 03 Project 0213-151-139, PE 101 V.D.O.T. Project Coordinates
Route 123 County Edit Loc. Date 04-01-2010
Established By B&K
Vertical Datum Based On NAVD 88 Geoid 96 or 99 or 09 (circle one)
Horizontal Datum Based On NAD 83 (2007)
Adjusted to Station 02 Is 927.34'01"
Latitude 36°57'02.2625 N (Selected places)
Longitude 77°18'21.1382 W (Selected places)
Geoid Separation (N) -31.772
Ellipsoid Height (h) = 15.783 (WGS 84)
Control Based on Station (name or PID) LSO or
Project (monument no.) 03 Order: ...
Virginia State Plane Coordinates – NAD 83 English Values
East (X) 3603451.594 ft
North (Y) 2133139.143 ft
Ortho. Elevation (H) 354.54 ft

East (X) 11,821,762.58 ft.
North (Y) 6995,457.4068 ft.
Elevation 366.5 ft.
Zone (circle one) North South
Horizontal Closure .....

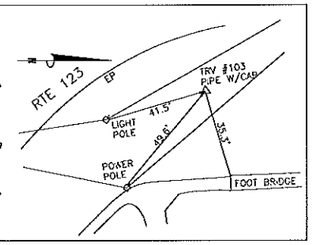
To convert state plane metric units to VDOT project values, use the following formula:

1. Multiply These Values by the U.S. Survey Foot (1.2906333333)
2. Multiply These Values by Combined Scale and Elevation Factor (1.00006 1) for the County.

Reverse This Procedure to Transform VDOT Project Coordinates to NAD 83 Metric Plane Coordinates

« Sketch and Detailed Description on Other Side »

To reach the station from the Intersection of Route 123 and Kenmore Drive proceed South on Route 123 For 90' to the station on the left bounds 41.5' from a Light Pole, 49.6' from a Power Pole and 35.3' from the Southwest corner of a Foot Bridge. The Station Is on Iron Pipe and Cap set flush with the ground.



LD-200 (REV. 8/2008)

Virginia Department of Transportation Horizontal Control

Control Station LD 104 Project 0213-151-139, PE 101 V.D.O.T. Project Coordinates
Route 123 County Edit Loc. Date 04-01-2010
Established By B&K
Vertical Datum Based On NAVD 88 Geoid 96 or 99 or 09 (circle one)
Horizontal Datum Based On NAD 83 (2007)
Adjusted to Station 03 Is 2201.55'
Latitude 36°57'55.1395 N (Selected places)
Longitude 77°18'25.5845 W (Selected places)
Geoid Separation (N) -31.774
Ellipsoid Height (h) = 16.568 (WGS 84)
Control Based on Station (name or PID) LSO or
Project (monument no.) 104 Order: ...
Virginia State Plane Coordinates – NAD 83 English Values
East (X) 3601416.492 ft
North (Y) 2136155.978 ft
Ortho. Elevation (H) 361.442 ft

East (X) 11,822,150.099 ft.
North (Y) 6994,734.382 ft.
Elevation 338.53 ft.
Zone (circle one) North South
Horizontal Closure .....

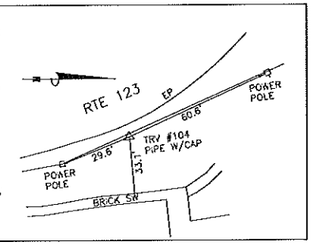
To convert state plane metric units to VDOT project values, use the following formula:

1. Multiply These Values by the U.S. Survey Foot (1.2906333333)
2. Multiply These Values by Combined Scale and Elevation Factor (1.00006 1) for the County.

Reverse This Procedure to Transform VDOT Project Coordinates to NAD 83 Metric Plane Coordinates

« Sketch and Detailed Description on Other Side »

To reach the station from the Intersection of Route 123 and Kenmore Drive proceed South on Route 123 For 0.9 mile to the station on the left bounds 29.6' from a Power Pole, 33.1' from the edge of a Brick Sidewalk and 60.6' from a Power Pole. The Station Is on Iron Pipe and Cap set flush with the ground.



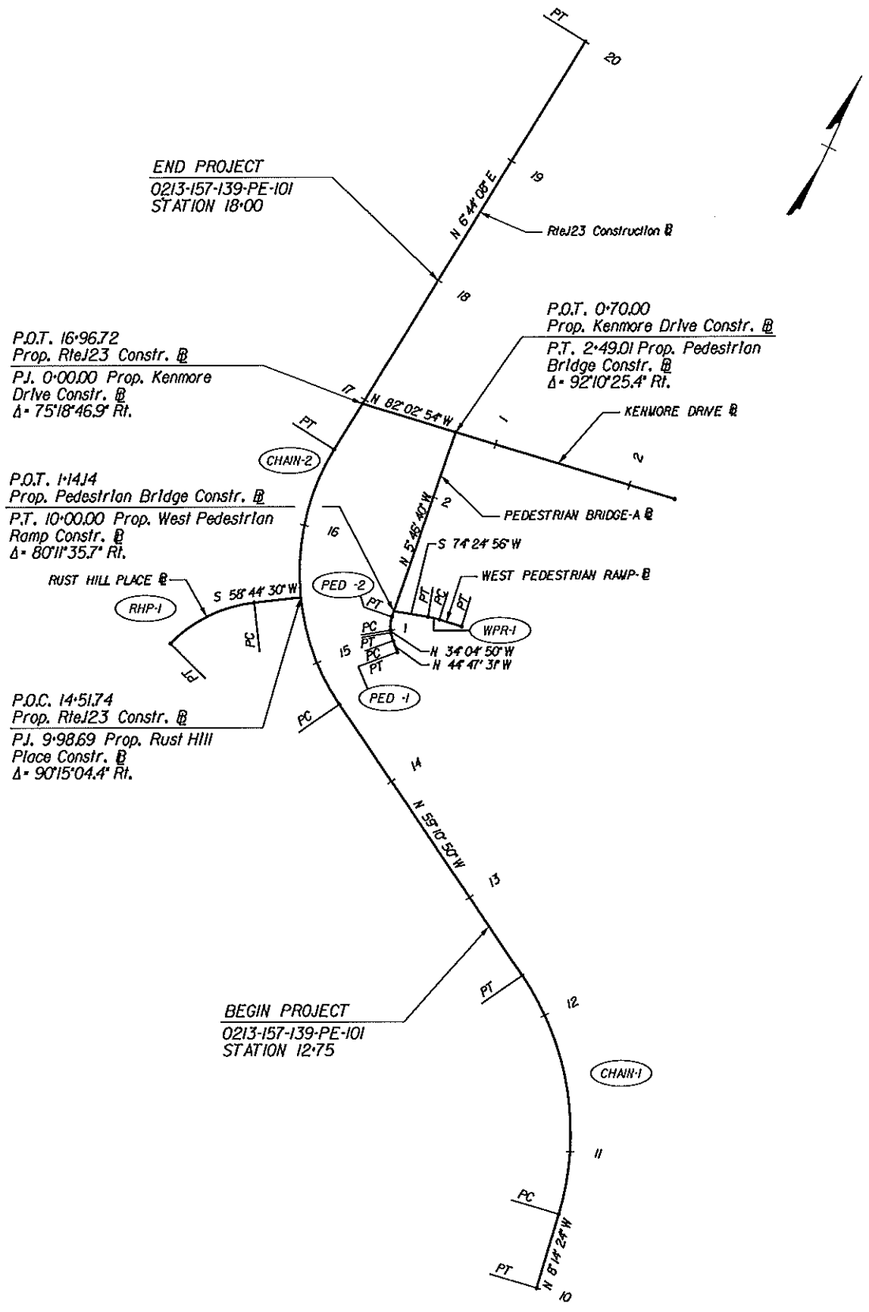
	PROJECT	SHEET NO.
	0213-151-139	1F

11/20/2012
9:18:00 AM

d8989dlg.dgn
Plotted By: localuser

PROJECT MANAGER_Peter Millard (703) 246 6330
SURVEYED BY _Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc (703) 639 1694

CONSTRUCTION ALIGNMENT DATA



PRAKAS T KARATTUKUDY
Lic No. 4925
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.11.20 09:21:07 -05'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	-	0123-151-139, PE-101, RW-201, M-501, B-604	1G

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROPOSED ALIGNMENTS

CURVE ID	POINT ID	STATION	BEARING	PROJECT NORTHING(Y)	PROJECT EASTING(X)
		CHAINBRIDGE ROAD			
	POT	10+00.00	N 8°14'24.05" W	6994620.96	11822802.13
	PC	10+54.77		6994675.16	11822794.28
	PI	11+50.04		6994769.45	11822780.63
CHAIN-1		Delta= 50°56'26.9" LT L= 177.82 DC= 28°38'52.2"	R= 200.00 T= 95.27		
	PT	12+32.59		6994818.26	11822698.81
			N 59°10'50.24" W		
	PC	14+66.31		6994938.00	11822498.10
	PI	15+74.59		6994993.47	11822405.11
CHAIN-2		L= 192.12 Delta= 65°54'57.6" RT DC= 34°18'31.9"	R= 167.00 T= 108.28		
	PT	16+58.43		6995101.00	11822417.81
			N 6°44'04.53" E		
	POT	20+00.00		6995440.21	11822457.87
		RUST HILL PLACE			
	POT	9+98.69		6994995.39	11822440.52
			S 58°44'29.75" W		
	PC	10+31.94		6994978.13	11822412.10
	PI	10+67.35		6994959.76	11822381.83
RHP-1		Delta= 38°59'51.5" LT L= 68.06 DC= 57°17'44.8"	R= 100.00 T= 35.41		
	PT	11+00.00		6994926.43	11822369.87
		KENMORE DRIVE			
	POT	0+00.00		6995171.41	11822651.15
			S 81°56'39.19" W		
	POT	2+31.13		6995139.02	11822422.30
		PEDESTRIAN BRIDGE-B			
	POT	0+84.82		6994989.06	11822519.78
			N 44°47'30.97" W		
	PC	0+93.49		6994995.21	11822513.67
	PI	0+96.49		6994997.34	11822511.56
PED-1		Delta= 10°42'41.5" RT L= 5.98 DC= 179°02'57.5"	R= 32.00 T= 3.00		
	PT	0+99.47		6994999.83	11822509.87
			N 34°04'49.47" W		
	PC	1+01.16		6995001.22	11822508.93
	PI	1+06.16		6995005.36	11822506.13
PED-2		Delta= 28°18'09.3" RT L= 9.80 DC= 288°53'12.4"	R= 19.83 T= 5.00		
	PT	1+10.95		6995010.34	11822505.63
			N 5°46'40.17" W		
	POT	2+53.33		6995151.99	11822491.29
		PEDESTRIAN RAMP			
	POT	9+50.00		6995025.16	11822553.95
			S 82°11'33.94" W		
	PC	9+66.56		6995022.94	11822537.53
	PI	9+70.75		6995022.38	11822533.39
WPR-1		Delta= 7°52'38.4" LT L= 8.36 DC= 94°15'07.0"	R= 60.79 T= 4.19		
	PT	9+74.93		6995021.25	11822529.35
			S 74°24'55.52" W		
	POT	10+00.00		6995014.52	11822505.20

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Mainline Profile	3A
Drainage Descr.	

	PROJECT	SHEET NO.
	0123-151-139	1G

10/5/2012
9:41:16 AM

d8989101.dgn
Plotted By: locklusar

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group, Inc (703) 639-1694

'95 CADD LEVEL STRUCTURE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	1J

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SURVEY

LEVEL 1	CENTERLINE, TRAVERSE, CONTROL STATION
LEVEL 2	BRIDGES
LEVEL 3	EDGE OF PAVEMENT, GRAVEL, CONCRETE, ASPHALT PARKING LOT
LEVEL 4	CURB AND GUTTER
LEVEL 5	CURB & CONCRETE ISLANDS
LEVEL 6	PAVED & GRAVEL SHOULDER
LEVEL 7	SIDEWALK (ALONG ROADS) & WHEELCHAIR RAMPS
LEVEL 8	BUILDINGS, PORCHES, DECKS, PATIOS & SWIMMING POOLS
LEVEL 9	WALKS (AROUND HOUSES & BUILDINGS)
LEVEL 10	STEPS
LEVEL 11	FENCES & GATES
LEVEL 12	WOOD LINE, TREES, SHRUBS, HEDGEROWS
LEVEL 13	RETAINING WALLS
LEVEL 14	CONCRETE SLABS, BALLARDS, COLUMNS, SIGNS, POSTS, GAS ISLANDS & PLAYSETS
LEVEL 15	ABOVE GROUND TANKS, DUMPSTERS, PROPANE TANKS
LEVEL 16	GUARDRAIL & JERSEY BARRIER
LEVEL 17	BODIES OF WATER, STREAMS, LAKES, ETC.
LEVEL 18	PAVED DITCHES, RIPRAP
LEVEL 19	DRAINAGE ITEMS DAMS, ENDWALLS & ENDSECTIONS CATCH BASINS, DROP INLETS & DI MANHOLES CULVERT PIPES
LEVEL 20	ALL RAILROAD ITEMS, RAILROAD TIES
LEVEL 21	SEPTIC TANKS, DRAIN FIELDS, WELLS
LEVEL 22	CEMETERY LOCATION & GRAVES
LEVEL 23	RIGHT OF WAY AND RIGHT OF WAY MONUMENTS
LEVEL 24	PROPERTY LINES, TEMPORARY EASEMENT, PERMANENT EASEMENT, PROPERTY PINS
LEVEL 25	STATE, COUNTY AND CITY BOUNDARY LINES
LEVEL 26	UTILITY EASEMENTS
LEVEL 27	WELANDS
LEVEL 28	GAS PUMPS, GAS TANKS, FILLER CAPS, MONITORING WELLS, VENT PIPES, ETC.
LEVEL 29	WIRE INFORMATION
LEVEL 30	EXISTING NOISE BARRIER WALLS
LEVEL 31-60	ANNOTATION FOR LEVELS 1-30
LEVEL 61	TRAFFIC SIGNES IN R/W, BASE PLAN SHEET, NORTH ARROW, SCALE BAR, ETC.
LEVEL 62	GRID AND LABELS; ELEVATION TICKS, PROJECT NOTES
LEVEL 63	NOT ASSIGNED

NOTE: Survey Utility Information will be in a separate file. Digital Terrain Model information will be in separate files.

DESIGN

LEVEL 1	BASELINE & SUB-TANGENTS
LEVEL 2	BRIDGES
LEVEL 3	EDGE OF PAVEMENT & PRIVATE ENTRANCES
LEVEL 4	CURB AND GUTTER
LEVEL 5	CURB
LEVEL 6	PAVED SHOULDER
LEVEL 7	SIDEWALK AND/OR BICYCLE TRAIL
LEVEL 8	NOT ASSIGNED
LEVEL 9	NOT ASSIGNED
LEVEL 10	STEPS
LEVEL 11	FENCES
LEVEL 12	DIRECTIONAL ARROWS, PAVEMENT STRIPING & FLUSH MEDIAN DELINEATION
LEVEL 13	RETAINING WALLS
LEVEL 14	CONCRETE SLABS, COLUMNS, SIGNS, POSTS
LEVEL 15	NOT ASSIGNED
LEVEL 16	GUARDRAIL & JERSEY BARRIER
LEVEL 17	NOT ASSIGNED
LEVEL 18	PAVED DITCHES
LEVEL 19	RESERVED FOR MISC. DRAIN. ITEMS TO BE PLACED BY ROAD DESIGNERS
LEVEL 20	RAILROADS, ETC.
LEVEL 21	NOT ASSIGNED
LEVEL 22	LIMITS OF CONSTRUCTION
LEVEL 23	RIGHT-OF-WAY, TEMP. & PERM. EASEMENTS
LEVEL 24	NOT ASSIGNED
LEVEL 25-29	NOT ASSIGNED
LEVEL 30	PROPOSED NOISE BARRIER WALLS & ANNOTATION
LEVEL 31-54	ANNOTATION FOR LEVELS 1-24
LEVEL 55-60	NOT ASSIGNED
LEVEL 61	BASE PLAN SHEET, SCALE BAR, NORTH ARROW, MATCH LINES, SEALING & SIGNING BLOCKS
LEVEL 62	NOT ASSIGNED
LEVEL 63	NOT ASSIGNED

HYDRAULICS - DRAINAGE

LEVEL 1	PIPES FROM 4" TO 42" (CUSTOM LINE STYLES)
LEVEL 2	PIPES 48" AND LARGER (CUSTOM LINE STYLE)
LEVEL 3	STANDARD BOX CULVERTS LC-0, WT-5
LEVEL 4	ENDWALLS (CELLS)
LEVEL 5	END SECTIONS (CELLS)
LEVEL 6	DITCHES AND FLUMES WT-4, LC-0 (CUSTOM LINE STYLE)
LEVEL 7	ENERGY DISSIPATORS, PIPE SPILLOUT AND SPRING BOXES (CELLS)
LEVEL 8	MANHOLES AND JUNCTION BOXES (CELLS)
LEVEL 9	DROP INLETS DI-1, DI-5 AND DI-9 SERIES (CELLS)
LEVEL 10	DROP INLETS DI-2 SERIES (CELLS)
LEVEL 11	DROP INLETS DI-3 SERIES (CELLS)
LEVEL 12	DROP INLETS DI-4 SERIES (CELLS)
LEVEL 13	DROP INLETS DI-7 SERIES (CELLS)
LEVEL 14	DROP INLETS DI-10 SERIES (CELLS)
LEVEL 15	DROP INLETS DI-11 AND DI-13 SERIES (CELLS)
LEVEL 16	DROP INLETS DI-12 SERIES (CELLS)
LEVEL 17	DROP INLETS DI-14 SERIES (CELLS)
LEVEL 18	SPECIAL DESIGN ITEMS (ENDWALLS, INLETS, ETC.)
LEVEL 19	UNDERDRAINS (CD-1 & 2, UD-1, UD-2, ETC.) (CUSTOM LINE STYLE)
LEVEL 20	UNDERDRAIN OUTLET PIPE AND EW-12 ENDSECTIONS (CUSTOM LINE STYLE & CELLS)
LEVEL 21	STONE & OUTLET PROTECTION (EC-1, RIPRAP CHANNEL, ETC.) (CELLS)
LEVEL 22	SWM BASIN ITEMS (BASIN, RISERS, WEIRS, ETC.)
LEVEL 23	SWM BASIN (BASELINE/ALIGNMENT)
LEVEL 24	SWM BASIN (PLAN VIEW/CONTOURS)
LEVEL 25	SWM BASIN (MISCELLANEOUS/ITEMS)
LEVEL 26	SWM BASIN (DESCRIPTIONS/NOTES)
LEVEL 27	TYPICAL DITCH DETAILS
LEVEL 28-30	NOT ASSIGNED
LEVEL 31-60	ANNOTATION FOR LEVELS 1-30 NOTE: ALL DRAINAGE STRUCTURE LABELS ON LEVEL 31
LEVEL 61	BASE PLAN SHEET, SCALE BAR, NORTH ARROW, MATCH LINES, ETC. WT-5, LC-0
LEVEL 62	NOT ASSIGNED
LEVEL 63	PROJECT NOTES

EROSION & SEDIMENT CONTROL

LEVEL 1	PHASE I - EROSION CONTROL ITEMS (TFB, TSF, TURB. CURTAIN) (CUSTOM LINE STYLE)
LEVEL 2	PHASE I - EROSION CONTROL DITCH ITEMS (EC-2, EC-3, ETC.)(CUSTOM LINE STYLE)
LEVEL 3	PHASE I - EROSION CONTROL STONE (EC-1, RIPRAP, CHECK DAMS) (CELLS)
LEVEL 4	PHASE I - EROSION CONTROL ITEMS (SEDIMENT TRAPS & BASINS)
LEVEL 5	PHASE I - EROSION CONTROL ITEMS (DIVERSION DIKES & DITCHES) (CUSTOM LINE STYLE)
LEVEL 6	PHASE I - EROSION CONTROL ITEMS (TEMPORARY DIVERSION CHANNELS) (CUSTOM LINE STYLE)
LEVEL 7	PHASE I - EROSION CONTROL ITEMS (MISCELLANEOUS DIVERSION ITEMS)
LEVEL 8	PHASE I - EROSION CONTROL ITEMS (BRUSH BARRIERS, LEVEL SPREADERS, ETC.)
LEVEL 9	PHASE I - MISCELLANEOUS EROSION CONTROL ITEMS
LEVEL 10	PHASE I - TEMPORARY DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 11	PHASE I - PROPOSED DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 12	PHASE I - PROPOSED DRAINAGE (SWM)
LEVEL 13	PHASE I - EXISTING CONTOURS (LC-1, WT-1)
LEVEL 14	PHASE I - PROPOSED CONTOURS
LEVEL 15	PHASE I - SYMBOLS, LEGEND AND NOTES
LEVEL 16	PHASE II - EROSION CONTROL ITEMS (TFB, TSF, TURB. CURTAIN) (CUSTOM LINE STYLE)
LEVEL 17	PHASE II - EROSION CONTROL DITCH ITEMS (EC-2, EC-3, ETC.)(CUSTOM LINE STYLE)
LEVEL 18	PHASE II - EROSION CONTROL STONE (EC-1, RIPRAP, CHECK DAMS) (CELLS)
LEVEL 19	PHASE II - EROSION CONTROL ITEMS (SEDIMENT TRAPS & BASINS)
LEVEL 20	PHASE II - EROSION CONTROL ITEMS (DIVERSION DIKES & DITCHES) (CUSTOM LINE STYLE)
LEVEL 21	PHASE II - EROSION CONTROL ITEMS (TEMPORARY DIVERSION CHANNELS) (CUSTOM LINE STYLE)
LEVEL 22	PHASE II - EROSION CONTROL ITEMS (MISCELLANEOUS DIVERSION ITEMS)
LEVEL 23	PHASE II - EROSION CONTROL ITEMS (BRUSH BARRIERS, LEVEL SPREADERS, ETC.)
LEVEL 24	PHASE II - MISCELLANEOUS EROSION CONTROL ITEMS
LEVEL 25	PHASE II - TEMPORARY DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 26	PHASE II - PROPOSED DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 27	PHASE II - PROPOSED DRAINAGE (SWM)
LEVEL 28	PHASE II - EXISTING CONTOURS (LC-1, WT-1)
LEVEL 29	PHASE II - PROPOSED CONTOURS
LEVEL 30	PHASE II - SYMBOLS, LEGEND AND NOTES
LEVEL 31-60	ANNOTATION FOR LEVELS 1-30
LEVEL 61	BASE PLAN SHEET, SCALE BAR, NORTH ARROW, ETC. WT-5, LC-0
LEVEL 62	NOT ASSIGNED
LEVEL 63	PROJECT NOTES

TRAFFIC ENGINEERING

LEVEL 1	PROPOSED AND EXISTING SIGNAL FACES & NUMBERS SIGN FACES & NUMBERS (Legend)
LEVEL 2	PROPOSED UNDERGROUND SIGNAL EQUIPMENT CONDUIT, JUNCTION BOXES, MANHOLES
LEVEL 3	UNDERGROUND EQUIPMENT LABELS CONDUIT, WIRE, JUNCTION BOXES
LEVEL 4	PROPOSED ABOVE GROUND MINOR SIGNAL EQUIPMENT SIGNS ON SPANWIRE, MAST ARMS, POLES, SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, ETC.
LEVEL 5	ABOVE GROUND EQUIPMENT LABELS SIGNAL POLE LABELS SIGNAL HEAD LABELS, SIGN LABELS, PHASE INFO, SIGNAL POLE DETAIL
LEVEL 6	PROPOSED LOOPS/VIDEO DETECTION ZONES LOOPS, VIDEO DETECTION ZONES, MICROLOOP PROBE
LEVEL 7	SIGNAL CHARTS COLOR SEQUENCE CHART, PHASING DIAGRAM, PREEMPTION DIAGRAM, TIMING CHART
LEVEL 8	OVERHEAD UTILITY HEIGHT INFORMATION
LEVEL 9	EXISTING UNDERGROUND SIGNAL EQUIPMENT CONDUIT, JUNCTION BOXES, MANHOLES
LEVEL 10	EXISTING ABOVE GROUND MINOR SIGNAL EQUIPMENT POLE, MAST ARM, SPAN WIRE, SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, CONTROLLER/CABINET & FOUNDATION, ETC.
LEVEL 11	EXISTING LOOPS/VIDEO DETECTION ZONES LOOPS, VIDEO DETECTION ZONES, MICROLOOP PROBES
LEVEL 12	EXISTING PAVEMENT MARKINGS (LONGITUDINAL)
LEVEL 13	EXISTING TRANSVERSE MARKINGS (STOP BARS & CROSSWALKS)
LEVEL 14	EXISTING HATCHING
LEVEL 15	EXISTING LETTERS/ARROWS/SYMBOLS
LEVEL 16	GUARDRAIL AND JERSEY BARRIER
LEVEL 17	PROPOSED PAVEMENT MARKINGS (LONGITUDINAL)
LEVEL 18	PROPOSED TRANSVERSE MARKINGS (STOP BARS & CROSSWALKS)
LEVEL 19	PROPOSED HATCHING
LEVEL 20	PROPOSED LETTERS/ARROWS/SYMBOLS
LEVEL 21	PAVEMENT MARKINGS LABELS
LEVEL 22	DIRECTIONAL ARROWS (LANE ARRANGEMENTS ARROWS)
LEVEL 23	EXISTING AND PROPOSED ROW PROPOSED R/W FOR TCD's, LABELS AND LEADERS
LEVEL 24	EXISTING SIGN LOCATIONS INCLUDING STRUCTURES (SYMBOLS)
LEVEL 25	EXISTING SIGN FACES & LEADERS EXISTING SIGN FACES, EXISTING SIGN LEADERS, 'X' FOR EXISTING SIGNS TO BE REMOVED
LEVEL 26	PROPOSED SIGN LOCATIONS, INCLUDING STRUCTURES (SYMBOLS)
LEVEL 27	PROPOSED SIGN FACES & LEADERS, PROPOSED SIGN FACES, PROPOSED SIGN LEADERS
LEVEL 28	SIGN NUMBER/CALL-OUTS PROPOSED SIGN CALL-OUT, EXISTING SIGN CALL-OUT
LEVEL 29	SIGN DETAIL SHEET
LEVEL 30	SIGN SCHEDULE SHEET
LEVEL 31	OVERHEAD SIGN SUPPORT DATA SUMMARY & NOTES
LEVEL 32	VA AND VIA STRUCTURE SHEET
LEVEL 33	PROPOSED ABOVE GROUND EQUIPMENT POLES, LUMINAIRES, ARMS, ELECTRICAL SERVICE, CONTROL CENTER
LEVEL 34	PROPOSED UNDERGROUND EQUIPMENT CONDUIT, JUNCTION BOXES, FOUNDATIONS, DUCT CABLE
LEVEL 35	PROPOSED UNDER BRIDGE LIGHTING
LEVEL 36	LIGHTING LABELS POLE LOCATION LABEL, LUMINAIRE LABEL, CONDUIT/CABLE IDENTIFIER LABEL, EXIST. CONDUIT/CABLE IDENTIFIER LABLE
LEVEL 37	EXISTING ABOVE GROUND EQUIPMENT - LIGHTING LUMINAIRES (INCLUDING UNDER BRIDGE), POLES, CONTROL CENTER, ELECTRICAL SERVICE, ARMS
LEVEL 38	EXISTING UNDERGROUND EQUIPMENT - LIGHTING CONDUIT, JUNCTION BOXES, DUCT CABLE
LEVEL 39	SIGNAL LEGEND
LEVEL 40	SIGNAL POLE LEGEND
LEVEL 41	SIGNING LEGEND
LEVEL 42	PAVEMENT MARKING LEGEND
LEVEL 43	LIGHTING LEGEND
LEVEL 44	SUMMARY OF QUANTITIES
LEVEL 45	GENERAL NOTES & PLAN NOTES
LEVEL 46	LOCATION INFORMATION ROADWAY NAMES, BASELINE NAME, DIRECTIONAL ARROWS, DIRECTIONAL ARROW TEXT
LEVEL 47	DIMENSIONS, TERMINATORS
LEVEL 48	PROP. ABOVE GROUND MAJOR SIGNAL EQUIPMENT POLE - MAST ARM, COMBO MAST ARM, STRAIN, COMBO STRAIN, PF-2, PF-3 MAST ARM, SPAN WIRE, CONTROLLER/ CABINET & FOUNDATION, UTILITY POLES
LEVEL 49	EXIST. ABOVE GROUND MAJOR SIGNAL EQUIPMENT POLE - MAST ARM, COMBO MAST ARM, STRAIN, COMBO STRAIN, PF-2, PF-3 MAST ARM, SPAN WIRE, CONTROLLER/ CABINET & FOUNDATION, UTILITY POLES
LEVEL 50	"CUP MASK" BOUNDARIES
LEVEL 51	"CUP BOUNDARY" BOUNDARIES
LEVEL 52	PROPOSED SIGNAL POLES FOUNDATIONS
LEVEL 53	CLEARZONE TEMPLATES FOR SIGNAL/LIGHT POLES
LEVEL 54	SIGNAL HEAD SIGHT LINES - NB
LEVEL 55	SIGNAL HEAD SIGHT LINES - SB
LEVEL 56	SIGNAL HEAD SIGHT LINES - EB
LEVEL 57	SIGNAL HEAD SIGHT LINES - WB
LEVEL 58	SIGNAL DESIGNER WORKING LEVEL PAVEMENT MARKING LAYOUTS, SIGNAL WORKING LEVEL, LIGHTING WORKING LEVEL, SIGNING WORKING LEVEL
LEVEL 59	STAGING AREAS DIRECTIONAL BORE STAGING AREA, JACKING PIT - 20' PIPE SLEEVE JACKING PIT - 10' PIPE SLEEVE
LEVEL 60	BORDER TEXT - FILL-IN PRELIMINARY PLANS TITLE
LEVEL 61	SHEET INFORMATION NORTH ARROW, SCALE BAR, MATCHLINES, BORDER, STANDARD BORDER TEXT, VDOT LOGO, CONSULTANT LOGO
LEVEL 62	BORDER SNAP LOCATIONS
LEVEL 63	PRINT BOUNDARY

	PROJECT	SHEET NO.
	0213-151-139	1J

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

TRANSPORTATION MANAGEMENT PLAN

Notes for Transportation Management Plan (TMP):

1. Contractor shall submit to the Department four sets of all relevant information involved in all proposed traffic switches (including traffic switches addressed in the plans) and truck detour if needed at least 30 days before the actual traffic switch date or implementation of the detour. The Department will then perform a thorough review and offer comments. A pre-activity meeting with the Contractor will be held by the timeline. As part of this pre-activity meeting, the Engineer will enlist the input of all outside entities that will participate in, or be affected by the traffic switch and detour. These parties include: VDOT and City of Fairfax to review the plan, signage, and striping requirements; VDOT's STC to aid in alerting the public as well as offer alternate routing.

2. The Department will begin the public outreach effort following the successful completion of the pre-activity meeting concerning a scheduled traffic switch (See item 1 above). The public outreach information will include, but not limited to, lane and shoulder closing, reduced lanes, detours, new traffic patterns, traffic delay and available traffic alternatives. Such information will be provided before and during work zone deployment as required. Methods to communicate work zone information may include, but not limited to, direct mail, public meetings, newsletters, flyers, portable message signs, 511 system, project web site, and/or media.

3. Following the implementation of the traffic switch, the following shall occur: (1) the Engineer will monitor any complaints and/or comments received by Public Affairs office, and (2) the Engineer and Regional Traffic Engineer will review observations, complaints, and comments to examine if additional measures are warranted.

4. The Contact list of local emergency response agencies include:

   Virginia State Police (703-771-2533)
   Fairfax County Sheriff (703-691-2131)
   Fairfax County Department of Fire, Rescue, and Emergency Management (703-246-2126)
   VDOT's STC (703-383-2600)

5. The Engineer and Contractor will immediately inform the following entities in case of an incident occurring within the project limits, in order to inform the public and assist responders in restoring normal project traffic operations:

   Virginia State Police, Fairfax County Sheriff, Fairfax County Fire Department, VDOT's STC and Public Affairs to aid in alerting the public as well as offer alternate routing, VDOT Safety Services to assist with traffic control, response, recovery and restoration.

6. An on-site review of the project's work zone traffic control by the Engineer, Regional Traffic Engineer, and Contractor shall be conducted within 48 hours of any fatal incident/crash within the work zone.

7. Periodic work zone reviews are to be conducted jointly by the Engineer and Contractor.

8. When Traffic Barrier Sevice Parapet is placed within two feet of a trenching operation four feet or greater in depth it must be anchored. Barrier shall be anchored in other areas as determined by the Engineer.

9. Temporary concrete barrier shall be installed and removed so as not to present any blunt end or hazard to the motoring public. The placement and removal of the traffic barrier service and barricades are to be coordinated by the project safety officer.

Chain Bridge Road (NB) Detour:

1. During construction of Stages 1 and 2 the NB traffic will be detoured as depicted in the Detour Plan.

2. It is estimated that two portable, changeable message signs will be required for the detour.

3. The detour route is depicted in the diagram. In short, the proposed detour utilizes White Head Street, University Drive and Kenmore Dive.

4. Utilities shown on the plans are not guaranteed to be complete and accurate. The Contractor shall be responsible for insuring that all utilities within the project limits are identified and located before beginning work.

5. Resident, business, and emergency access within the project limits shall be maintained at all times during construction.

6. The Contractor shall notify the Engineer at least 72 hours prior to the commencement of work.

7. Nighttime and weekend work will only be permitted with prior approval from the Engineer.

8. During the construction of pedestrian bridge, detour the pedestrian traffic as depicted in the Pedestrian Detour Plan - Stage 1.

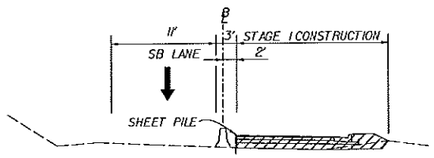
COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic No. 47825
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:41:55 -04'00'

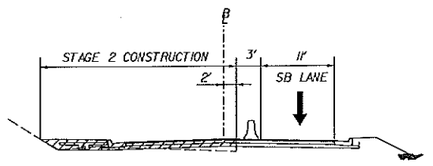
The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE		SHEET NO
		ROUTE	PROJECT	
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	IL(1)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



STAGE 1 CONSTRUCTION (TYP. SECTION)



STAGE 2 CONSTRUCTION (TYP. SECTION)

	PROJECT	SHEET NO.
	0213-151-139	IL(1)

10/5/2012
10:03:53 AM

d8983010112.dgn
Plotted By: local user

PROJECT MANAGER_Peter Willard (703) 246 6330
SURVEYED BY _Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic No. 47621
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:43:24 -04'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	IL(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MAINTENANCE OF TRAFFIC STAGE 1

Stage I Sequence of Construction

Maintenance of Traffic Description:

Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual.
Under Stage I, traffic will be maintained in South direction on the roadway and bridge.
Traffic in the North Bound will be detoured as shown in the detour plan.
Construction will be carried out on the East side of roadway.

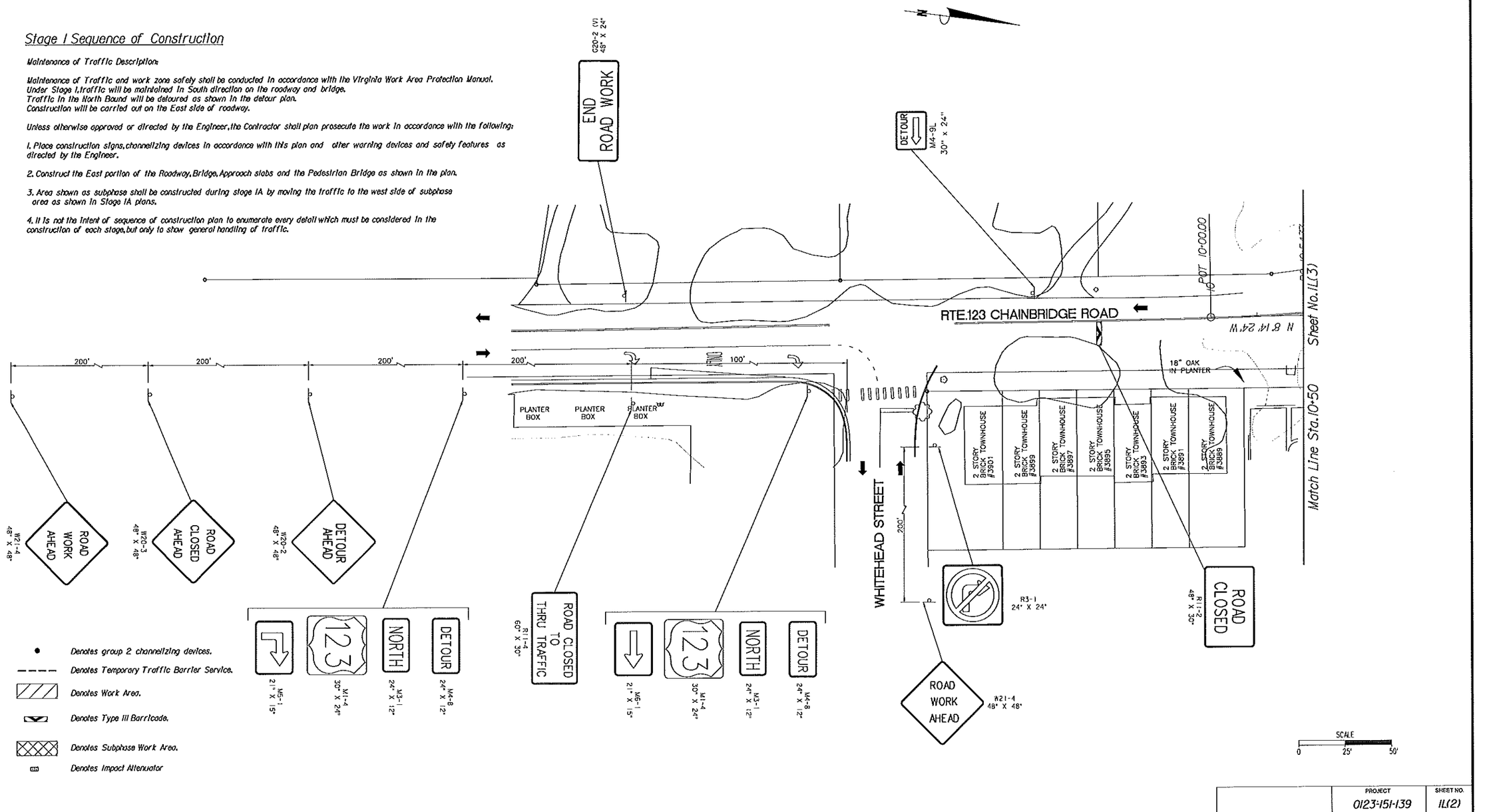
Unless otherwise approved or directed by the Engineer, the Contractor shall plan prosecute the work in accordance with the following:

1. Place construction signs, channelizing devices in accordance with this plan and other warning devices and safety features as directed by the Engineer.

2. Construct the East portion of the Roadway, Bridge, Approach slabs and the Pedestrian Bridge as shown in the plan.

3. Area shown as subphase shall be constructed during stage IA by moving the traffic to the west side of subphase area as shown in Stage IA plans.

4. It is not the intent of sequence of construction plan to enumerate every detail which must be considered in the construction of each stage, but only to show general handling of traffic.



	PROJECT	SHEET NO.
	0123-151-139	IL(2)

10/10/2012
10:08:53 AM

d:\8693011\dgn
Plotted By: tcostner

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group, Inc. (703) 639 1694

MAINTENANCE OF TRAFFIC STAGE 1

Stage I Sequence of Construction

Maintenance of Traffic Description:

Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual. Under Stage I, traffic will be maintained in South direction on the roadway and bridge. Traffic in the North Bound will be detoured as shown in the detour plan. Construction will be carried out on the East side of roadway.

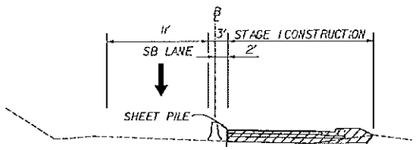
Unless otherwise approved or directed by the Engineer, the Contractor shall plan prosecute the work in accordance with the following:

1. Place construction signs, channelizing devices in accordance with this plan and other warning devices and safety features as directed by the Engineer.

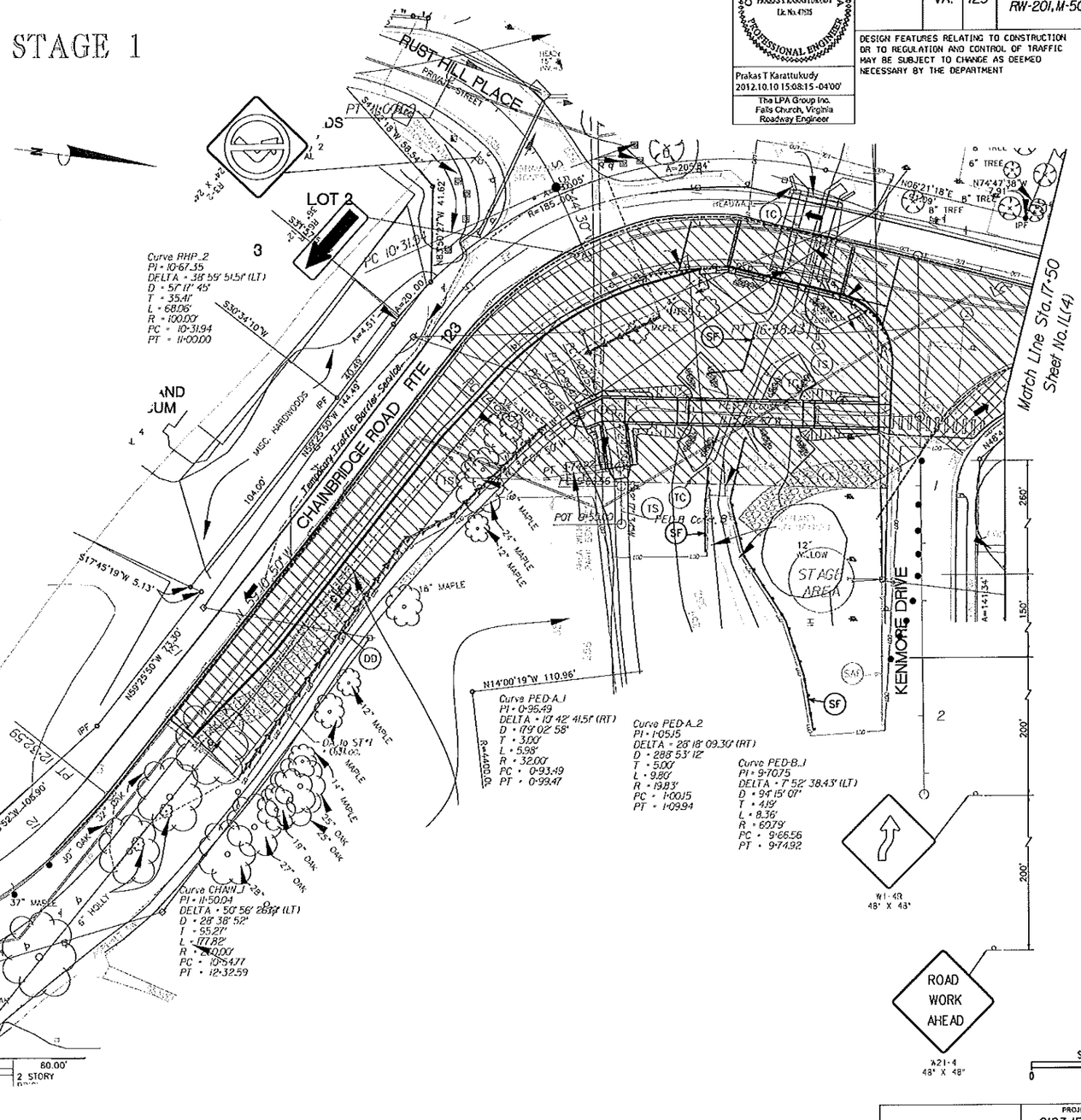
2. Construct the East portion of the Roadway, Bridge, Approach slabs and the Pedestrian Bridge as shown in the plan.

3. Area shown as subphase shall be constructed during stage IA by moving the traffic to the west side of subphase area as shown in Stage IA plans.

4. It is not the intent of sequence of construction plan to enumerate every detail which must be considered in the construction of each stage, but only to show general handling of traffic.



STAGE I CONSTRUCTION (TYP. SECTION)



- Denotes group 2 channelizing devices.
- Denotes Temporary Traffic Barrier Service.
- Denotes Work Area.
- Denotes Type III Barricade.
- Denotes Subphase Work Area.
- Denotes Impact Attenuator

PRAKAS T KARATTUKUDY
Lic. No. 47135
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.10 15:08:15 -04'00'
The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	IL(3)

	PROJECT	SHEET NO
	0123-151-139	IL(3)

10/5/2012
10:25:14 AM

d:\98390\141\dgn
Plotted By: toodusser

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

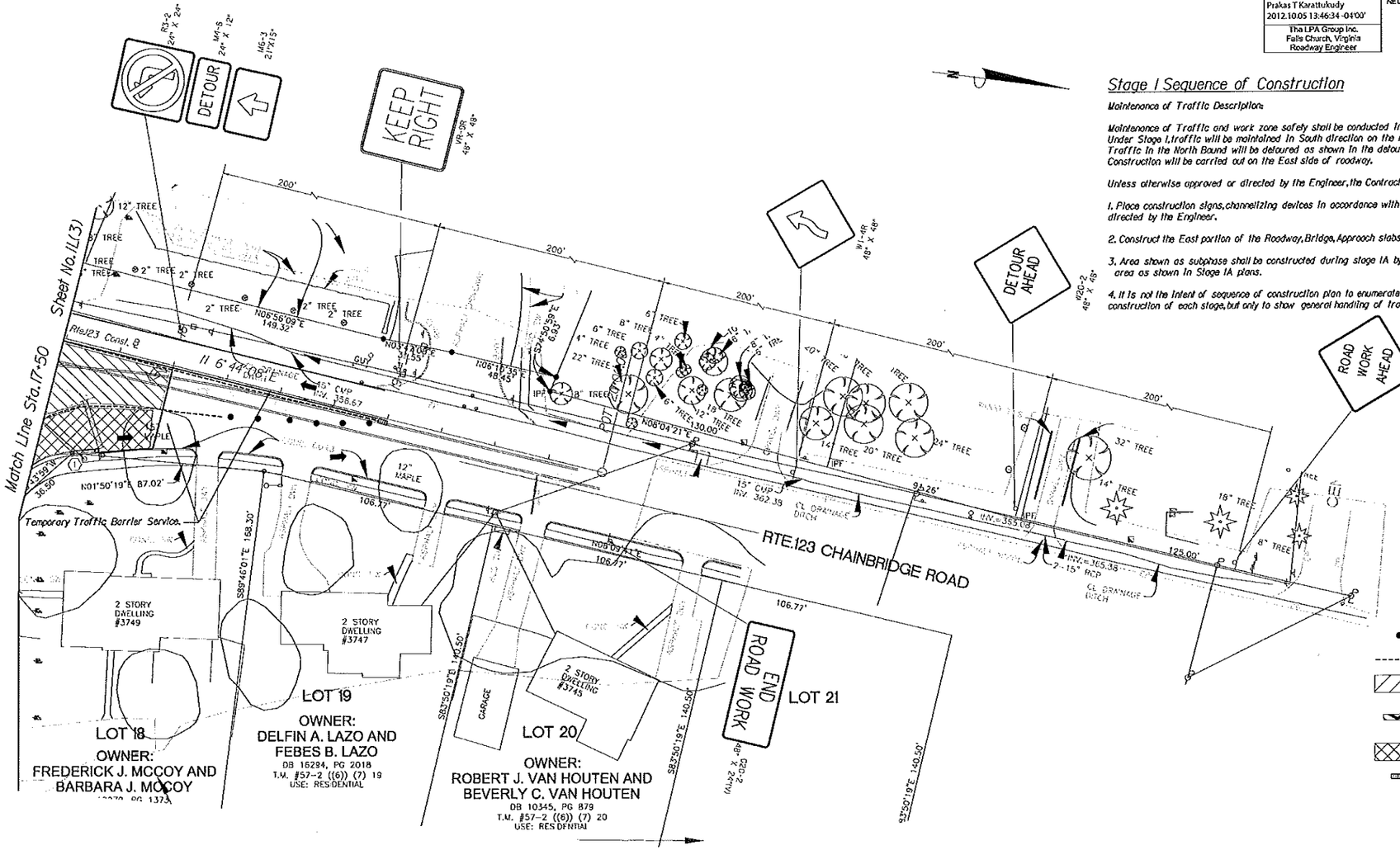
COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
LIC. NO. 47125
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:46:34 -04'00'
The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	IL(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MAINTENANCE OF TRAFFIC STAGE 1



Stage I Sequence of Construction

Maintenance of Traffic Description:

Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual.
Under Stage I, traffic will be maintained in South direction on the roadway and bridge.
Traffic in the North Bound will be detoured as shown in the detour plan.
Construction will be carried out on the East side of roadway.

Unless otherwise approved or directed by the Engineer, the Contractor shall plan prosecute the work in accordance with the following:

1. Place construction signs, channelizing devices in accordance with this plan and other warning devices and safety features as directed by the Engineer.

2. Construct the East portion of the Roadway, Bridge, Approach slabs and the Pedestrian Bridge as shown in the plan.

3. Area shown as subphase shall be constructed during stage IA by moving the traffic to the west side of subphase area as shown in Stage IA plans.

4. It is not the intent of sequence of construction plan to enumerate every detail which must be considered in the construction of each stage, but only to show general handling of traffic.

- *Denotes group 2 channelizing devices.*
- *Denotes Temporary Traffic Barrier Service.*
- *Denotes Work Area.*
- *Denotes Type III Barricade.*
- *Denotes Subphase Work Area.*
- *Denotes Impact Attenuator*

SCALE
0 25' 50'

	PROJECT	SHEET NO.
	0213-151-139	IL(4)

10/5/2012
1:58:46 PM

689690\N51\dgn
Plotted By: loochuser

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: Devin Sumners (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

MAINTENANCE OF TRAFFIC STAGE 1A

Stage 1A Sequence of Construction

Maintenance of Traffic Description:

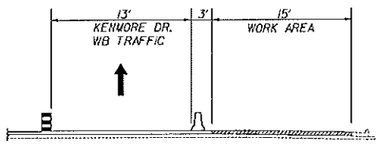
Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual.
Under Stage 1A, traffic will be maintained in South direction on the roadway and bridge.
Traffic in the North Bound will be detoured as shown in the detour plan.
Construction will be carried out on the East side of roadway.

Unless otherwise approved or directed by the Engineer, the Contractor shall plan prosecute the work in accordance with the following:

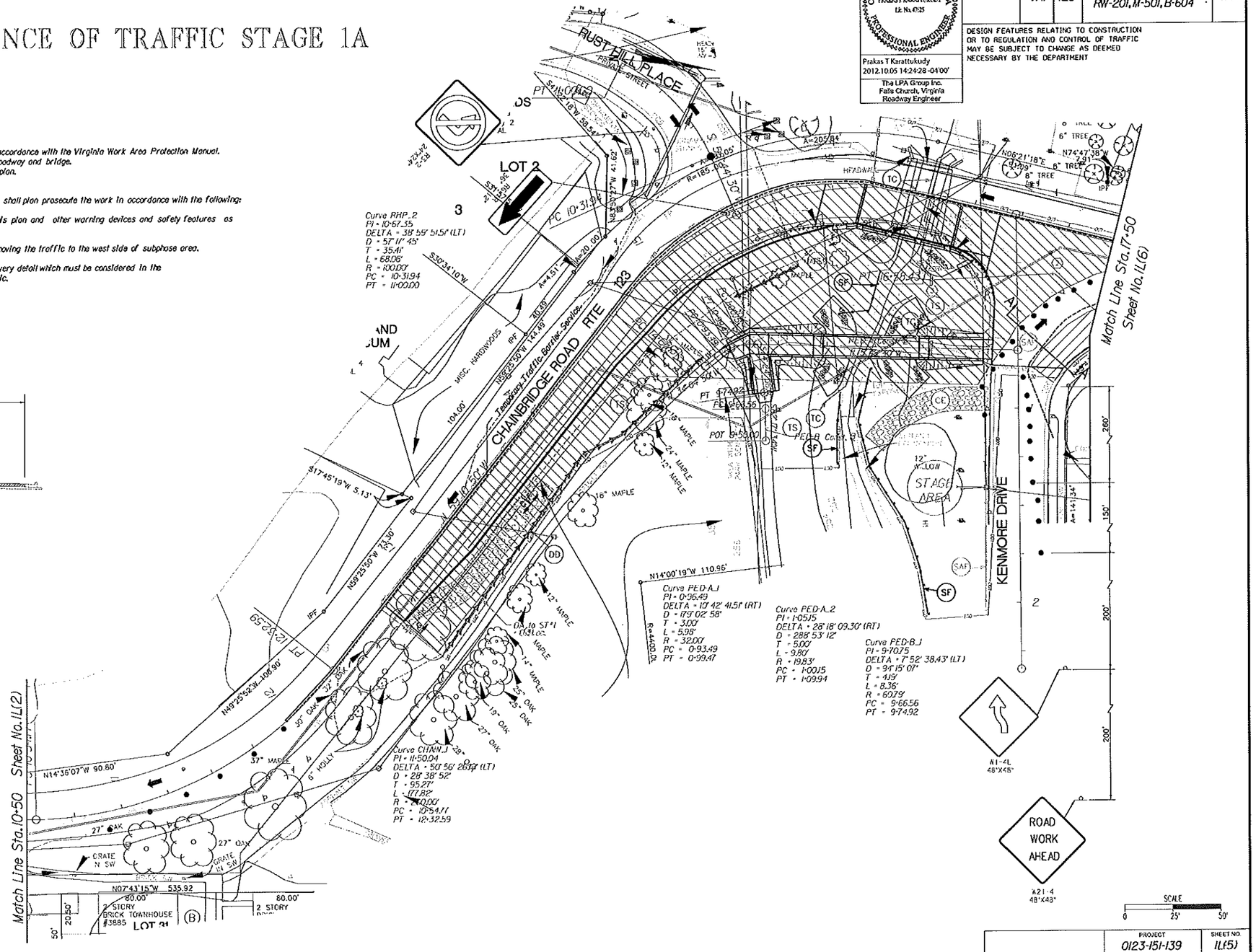
1. Place construction signs, channelizing devices in accordance with this plan and other warning devices and safety features as directed by the Engineer.

2. Construct the subphase area of roadway as shown in the plan by moving the traffic to the west side of subphase area.

3. It is not the intent of sequence of construction plan to enumerate every detail which must be considered in the construction of each stage, but only to show general handling of traffic.



SECTION A-A



PRAKAS T KARATTUKUDY
Lic. No. 0725
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 14:24:28 -04'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	IL(5)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROJECT	SHEET NO.
0123-151-139	IL(5)

10/5/2012
10:34:20 AM

d8989014161.dgn
Plotted By: tcoolbaugh

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 5630
DESIGN SUPERVISED BY: David Sunzeri (703) 385 7846
DESIGNED BY: The LPA Group, Inc. (703) 639 1694

COMMONWEALTH OF VIRGINIA
PRAKAS T. KARATTUKUDY
Lic. No. 4925
PROFESSIONAL ENGINEER

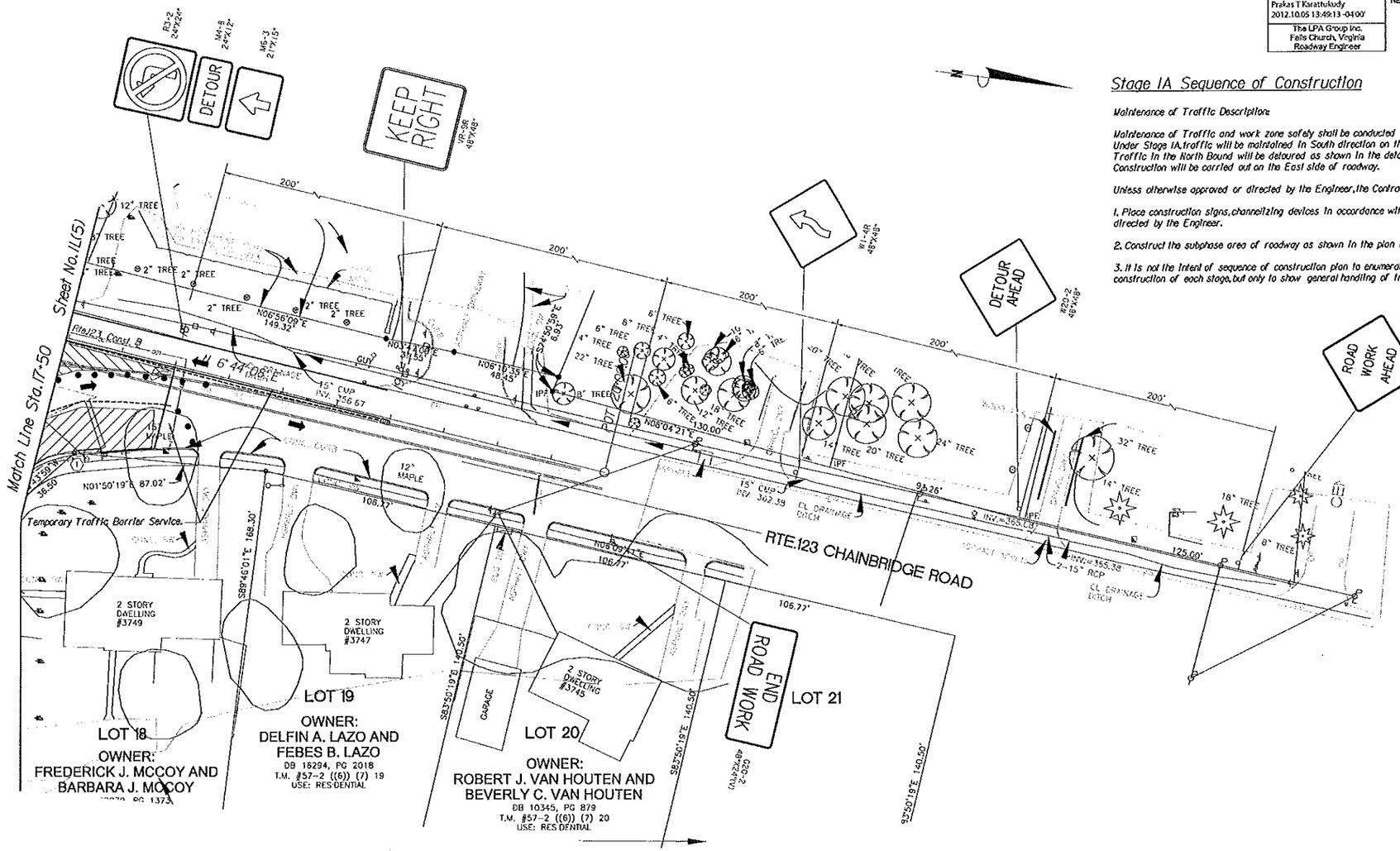
Prakas T Karattukudy
2012.10.05 13:49:13 -04'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	IL(6)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MAINTENANCE OF TRAFFIC STAGE 1A



Stage IA Sequence of Construction

Maintenance of Traffic Description:

Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual.
Under Stage IA, traffic will be maintained in South direction on the roadway and bridge.
Traffic in the North Bound will be detoured as shown in the detour plan.
Construction will be carried out on the East side of roadway.

Unless otherwise approved or directed by the Engineer, the Contractor shall plan prosecute the work in accordance with the following:

1. Place construction signs, channelizing devices in accordance with this plan and other warning devices and safety features as directed by the Engineer.

2. Construct the subphase area of roadway as shown in the plan by moving the traffic to the west side of subphase area.

3. It is not the intent of sequence of construction plan to enumerate every detail which must be considered in the construction of each stage, but only to show general handling of traffic.

- Denotes group 2 channelizing devices.
- Denotes Temporary Traffic Barrier Service.
- Denotes Work Area.
- Denotes Type III Barricade.
- Denotes Subphase Work Area.
- Denotes Impact Attenuator

SCALE
0 25' 50'

	PROJECT	SHEET NO.
	0213-151-139	IL(6)

10/5/2012
10:39:25 AM

d8989101R1.dgn
Plotted By: localuser

PROJECT MANAGER: Peter Millard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Sussex (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic No. 4525
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:51:18 -04'00'
The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	IL(7)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MAINTENANCE OF TRAFFIC STAGE 2

Stage 2 Sequence of Construction

Maintenance of Traffic Description:

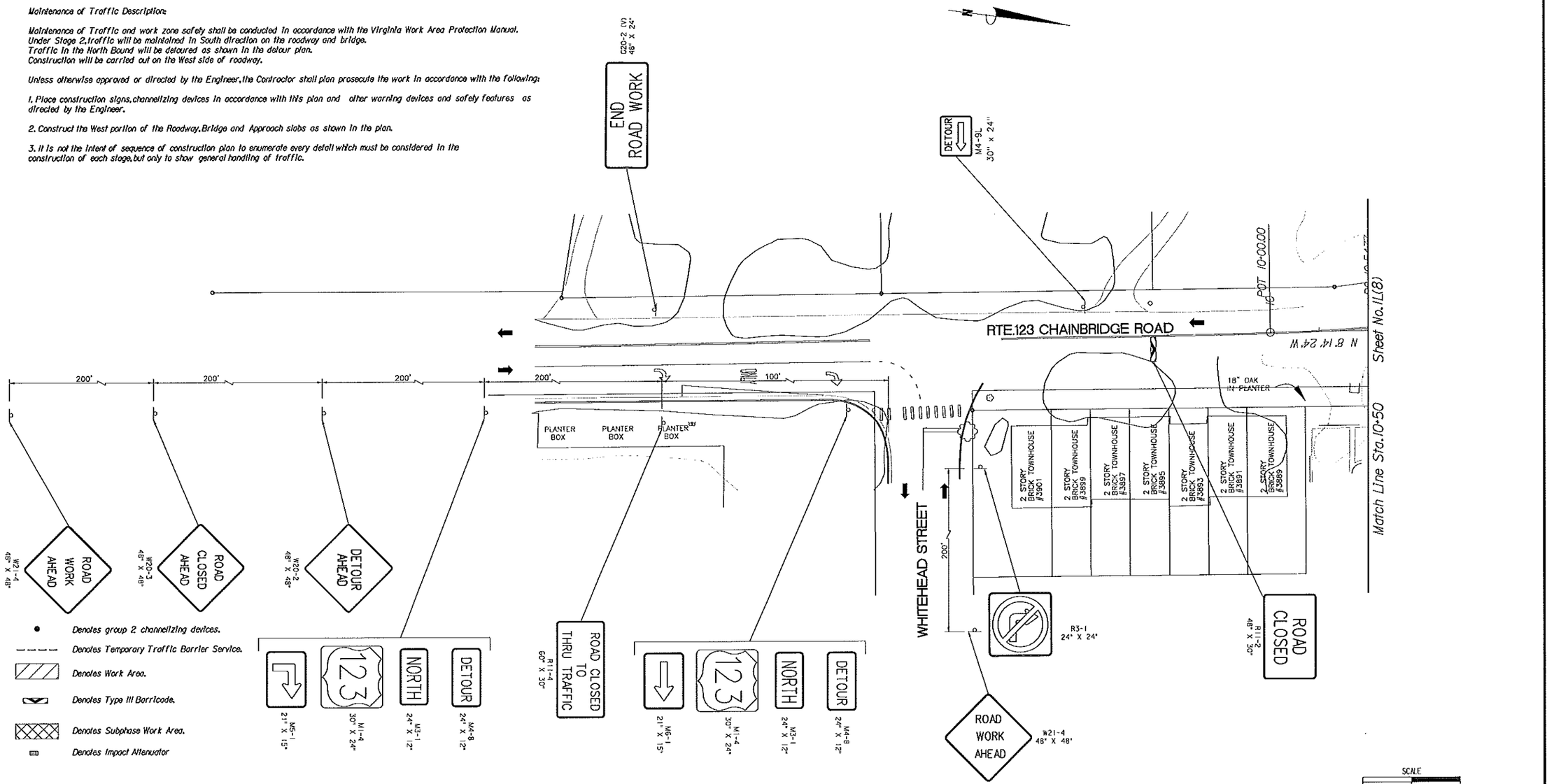
Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual.
Under Stage 2, traffic will be maintained in South direction on the roadway and bridge.
Traffic in the North Bound will be detoured as shown in the detour plan.
Construction will be carried out on the West side of roadway.

Unless otherwise approved or directed by the Engineer, the Contractor shall plan prosecute the work in accordance with the following:

1. Place construction signs, channelizing devices in accordance with this plan and other warning devices and safety features as directed by the Engineer.

2. Construct the West portion of the Roadway, Bridge and Approach slabs as shown in the plan.

3. It is not the intent of sequence of construction plan to enumerate every detail which must be considered in the construction of each stage, but only to show general handling of traffic.



	PROJECT	SHEET NO.
	0123-151-139	IL(7)

10/5/2012
10:53:02 AM

d:\design\ilt8.dgn
Plotted By: toobusar

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

MAINTENANCE OF TRAFFIC STAGE 2

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	IL(8)

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic. No. 41925
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:53:18 -04'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Stage 2 Sequence of Construction

Maintenance of Traffic Description:

Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual. Under Stage 2, traffic will be maintained in South direction on the roadway and bridge. Traffic in the North Bound will be detoured as shown in the detour plan. Construction will be carried out on the West side of roadway.

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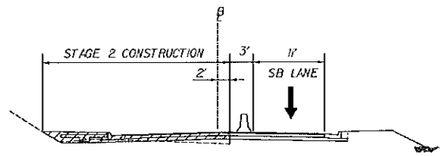
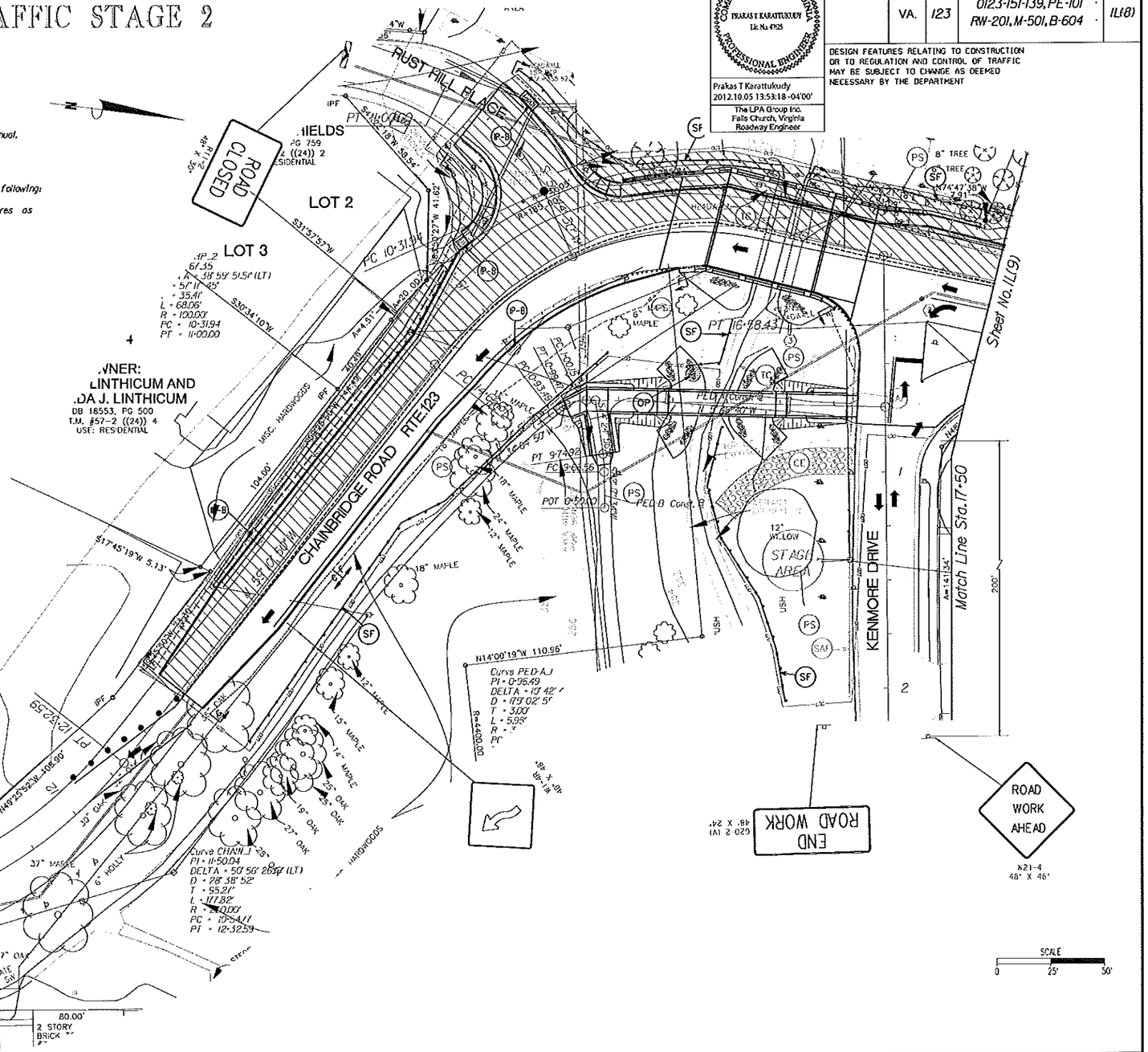


STAGE 2 CONSTRUCTION (TYP. SECTION)



- Denotes group 2 channelizing devices.
- Denotes Temporary Traffic Barrier Service.
- Denotes Work Area.
- Denotes Type III Barricade.
- Denotes Subphase Work Area.
- Denotes Impact Attenuator

PROJECT	SHEET NO
0123-151-139	IL(8)

10/5/2012
10:03:37 AM

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Plotted By: tocelluser

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

MAINTENANCE OF TRAFFIC STAGE 2

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic. No. 4028
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:54:41 -04'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	IL(9)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Stage 2 Sequence of Construction

Maintenance of Traffic Description:

Maintenance of Traffic and work zone safety shall be conducted in accordance with the Virginia Work Area Protection Manual.
Under Stage 2, traffic will be maintained in South direction on the roadway and bridge.
Traffic in the North Bound will be detoured as shown in the detour plan.
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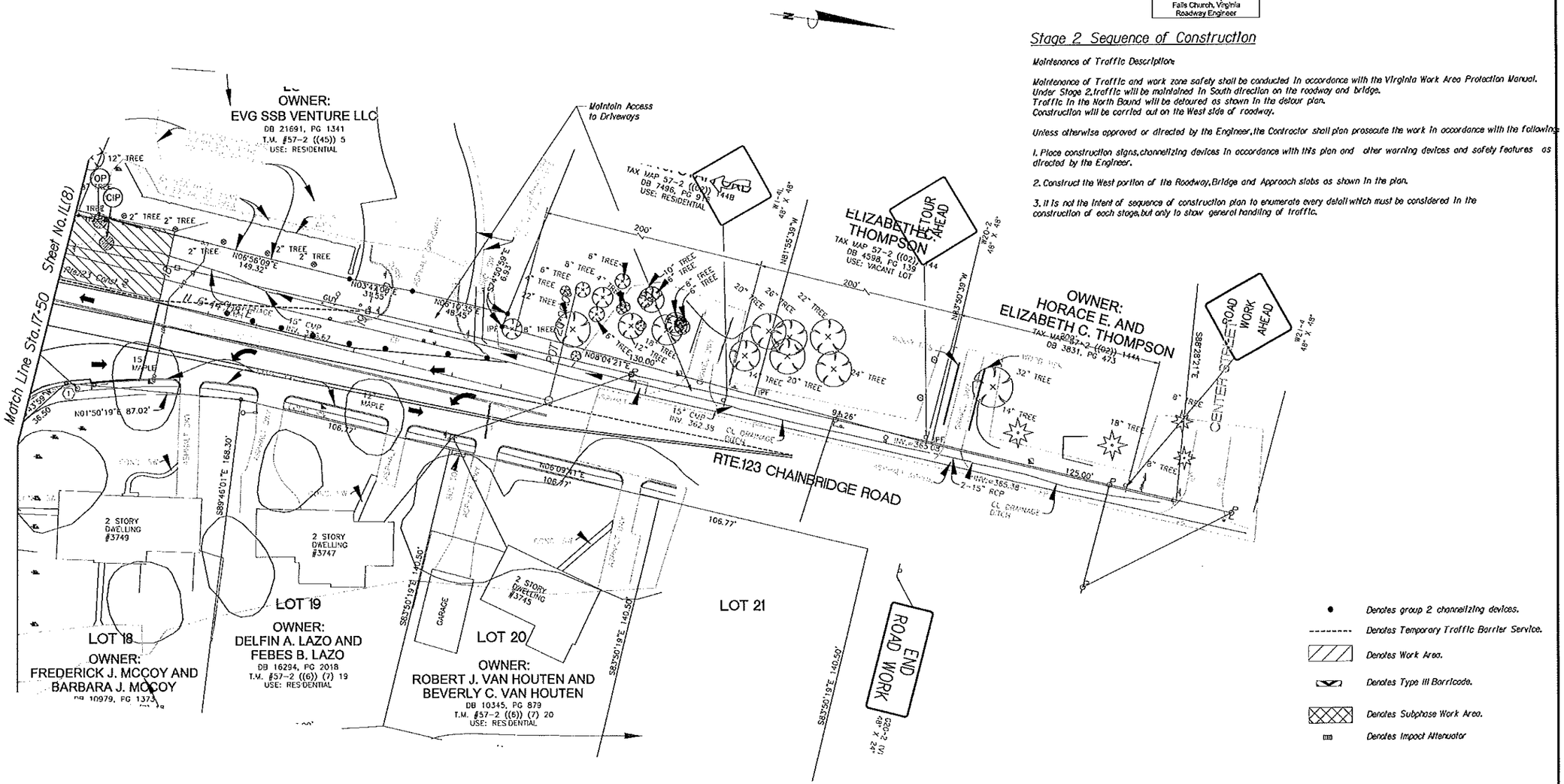

	PROJECT	SHEET NO.
	0123-151-139	IL(9)

10/5/2012
11:20:00 AM

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Plotted By: localuser

PROJECT MANAGER: Peter Millard (703) 245 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

DETOUR PLAN STAGES 1, 1A & 2

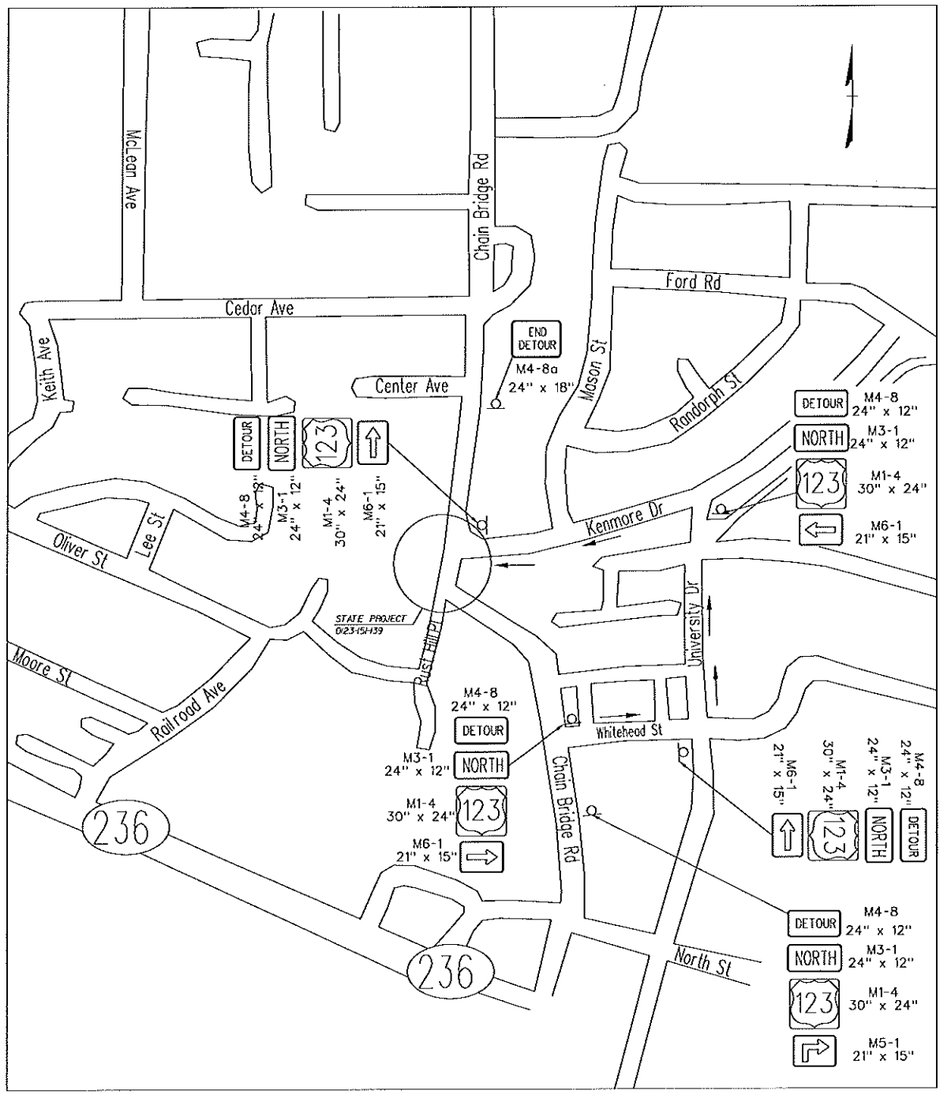
COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic. No. 47825
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:55:37 -04'00'

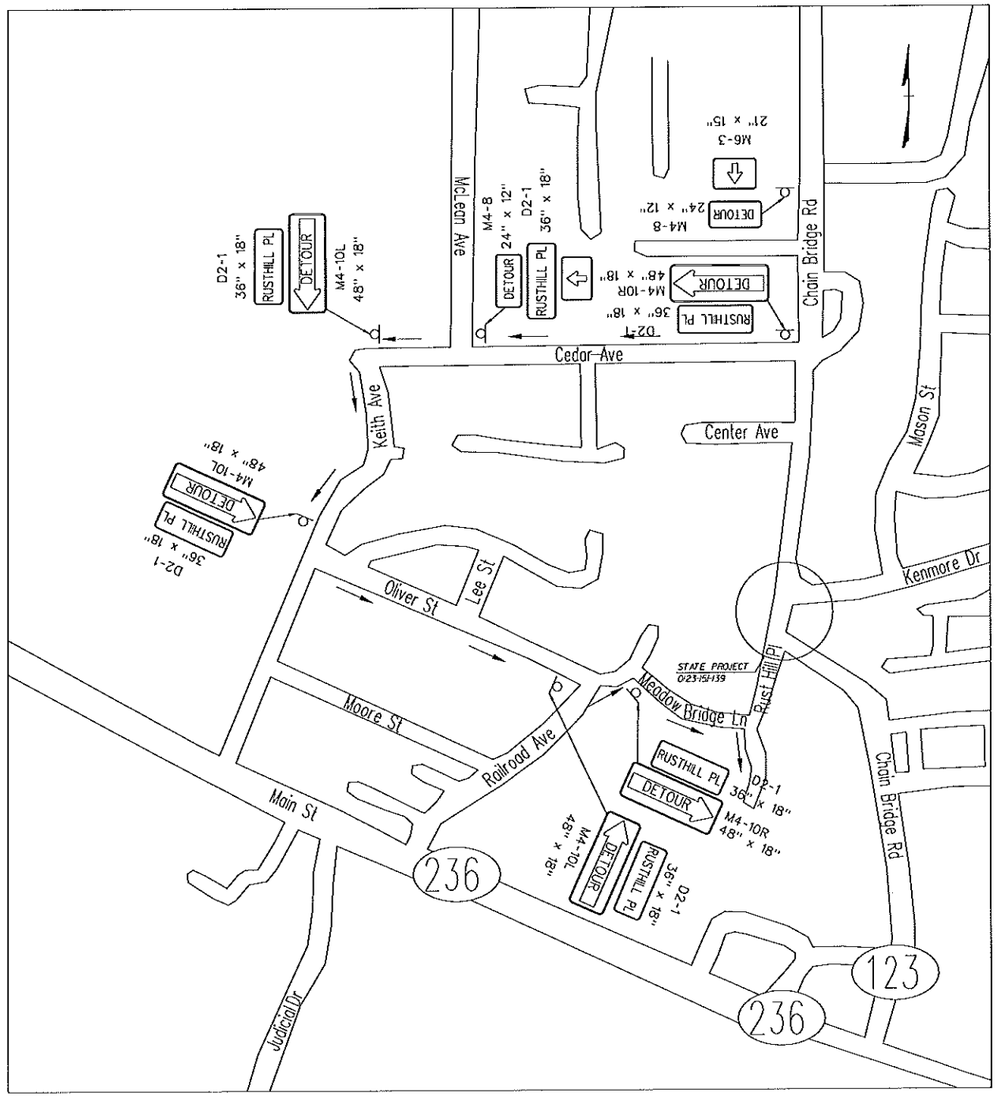
The LPA Group Inc.
Falls Church, Virginia.
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	IL(10)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



DETOUR - NORTH RTE. 123
STAGE 1, 1A AND 2 CONSTRUCTION



DETOUR - RUST HILL PLACE
STAGE 2 CONSTRUCTION

	PROJECT	SHEET NO.
	0123-151-139	IL(10)

10/5/2012
11:21:28 AM

d8989(01111).dgn
Plotted By: localuser

PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

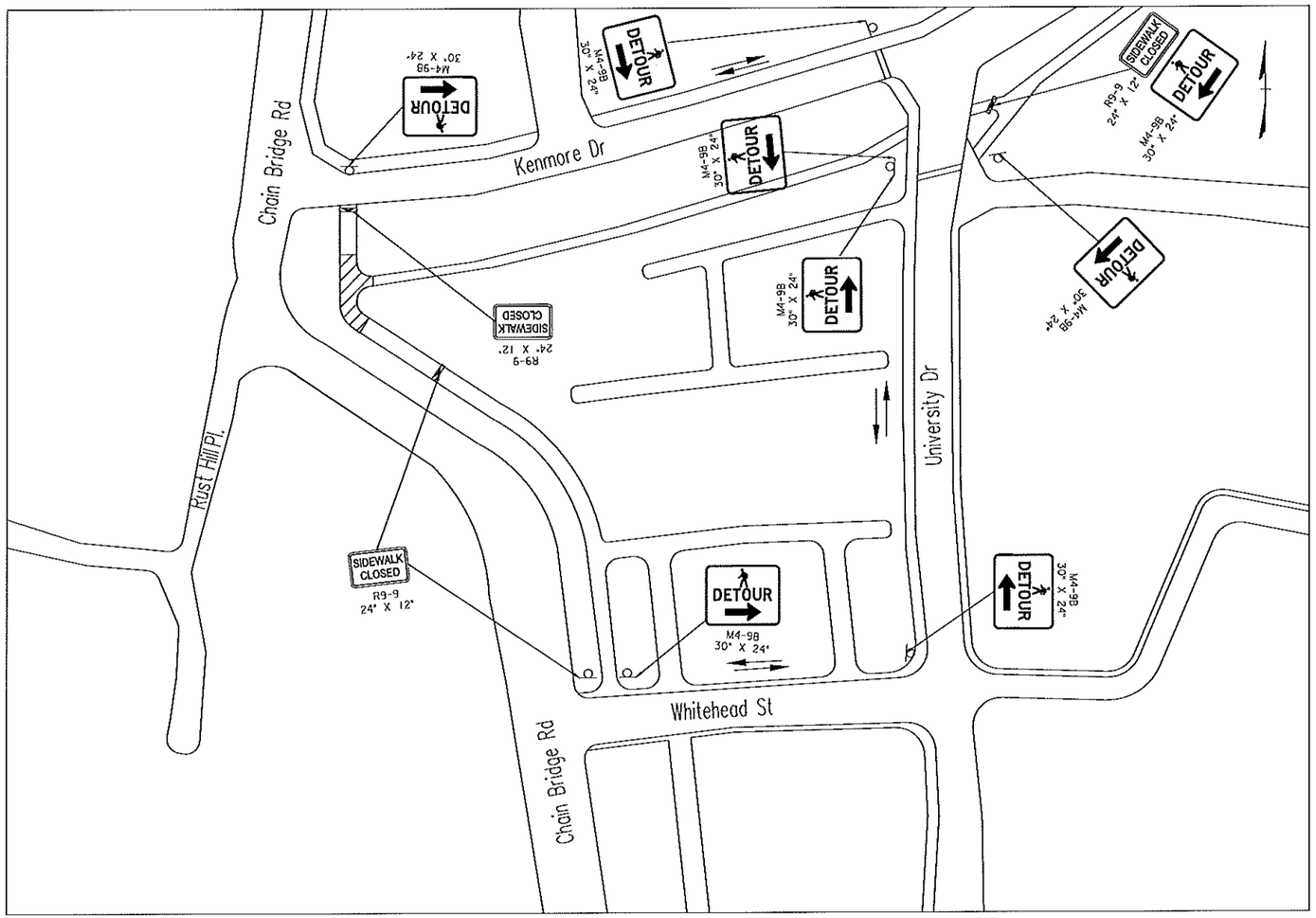
COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic. No. 41825
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.05 13:56:29 -04'00'
The LPA Group Inc.
Falls Church, Virginia.
Roadway Engineer

REVISED	STATE	STATE		SHEET NO
	ROUTE	PROJECT		
	VA.	123	0123-151-139,PE-101, RW-201, M-501, B-604	ILEII)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PEDESTRIAN DETOUR PLAN - STAGE 1



Denotes Work Area.

	PROJECT	SHEET NO.
	0123-151-139	ILEII)

PROJECT MANAGER: Peter Willard (703) 245 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: Todd Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 631 9630

GENERAL NOTES

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	2

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

The LPA Group Inc.
Falls Church, Virginia.
Consultant

GRADING

G-1 The grade line denotes top of finished pavement unless shown otherwise on typical sections or plans.

G-2 Earthwork quantities on this project are based on anticipated settlement and may require adjusting during construction.

G-4 The cost of removal of all existing concrete items located in the area to be graded, including, but not limited to the following, shall be included in the price bid for regular excavation: curb and gutter, storm sewer, pipe and inlets.

G-6 The borrow material for this project shall be a minimum CBR 15 or as approved by the Materials Engineer. All borrow material shall have a liquid limit (LL) value of less than 45 and plasticity index (PI) value less than 20 in their natural state.

PAVEMENT

P-1 If any settlement occurs in concrete pavement adjacent to bridges prior to acceptance of the project by the Department, the contractor shall restore the pavement to the original grade either by the mud jack method or by replacing the pavement. In the event the pavement cracks or becomes damaged, it shall be replaced, if directed by the Engineer.

P-2 The pavement materials on this project will be paid for on a tonnage basis. The weight will vary in accordance with the specific gravity of the aggregates and the asphaltic content of the mix actually used to secure the design depth. The weight of the asphalt concrete is based on 95% of the theoretical maximum density.

INCIDENTALS

I-5 That portion of the right of way lying within the Clear Zone or within a minimum of 10 feet from the edge of pavement or surfacing or within the limits of the construction slopes beyond 10 feet, shall be cleared and grubbed in accordance with the applicable VDOT Road and Bridge Specifications, Section 301, where sufficient right of way or construction easement is provided.

I-6 Certain trees shall be preserved as noted on plans or as directed by the Engineer.

I-7 Where Standard slope roundoffs would damage trees, bushes or other desirable vegetation, they shall be omitted when so ordered by the Engineer.

I-8A Clearing and grubbing shall be confined to those areas needed for construction. No trees or shrubs in ungraded areas shall be cut without the permission of the Engineer. Sta. . . . to Sta. . . .

I-9 When no centerline alignment is shown for a proposed entrance, the entrance shall be constructed in the same location as the existing entrance.

I-10 St'd. RM-1 Right of Way monuments shall be set by the Contractor.

I-14 Salvaged guardrail materials not used in the new construction shall become the property of the Contractor and shall be disposed of at a licensed landfill, recycled or be retained by the Contractor.

I-15 Where Guardrail GR-2 or GR-8 is shown on the plans and in the summaries, either new guardrail or reused guardrail beam shall be used as provided elsewhere in these plans. The total quantities have been proportioned between new and reuse guardrail based on an estimate of the amount of existing beam that is reuseable. The Contractor will be paid for the actual quantities of Guardrail, St'd. GR-2 or St'd. GR-8 or Reuse Guardrail, St'd. GR-2 or St'd. GR-8 as determined by the Engineer.

I-18 All pavement markings and traffic flow arrows shown on the roadway construction plans are schematic only. The actual location and application of pavement markings shall be in accordance with Section 704 of the applicable VDOT Road and Bridge Specifications, MUTCD, sequence of construction/traffic control plans, pavement marking plan sheet and as directed by the Engineer.

I-20 The Official Electronic .pdf Version of the plans will override the paper copies or prints of specific layers.

Portions of this plan assembly have been CADD generated. To assist in the construction of the project electronic files will be available to the prime contractor during bids and after award of the contract.

I-21 All electronic plan assemblies will include the construction plans in two formats: .pdf files and MicroStation format (.dgn) files. Only the .pdf files will be considered as part of the official plan assembly.

The MicroStation format (.dgn) files are furnished only as information for the contractor. These plans are developed in layers (levels) to aid in readability. However, the construction items may or may not be in the proper layering scheme as described in the VDOT CADD Manual. The MicroStation files will only match the scanned files if all levels are turned on. A MicroStation Software license is required to be able to read these files.

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Plotted By: tcadtuser

PROJECT MANAGER Peter Millard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc (703) 642 1694

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic. No. 47625
PROFESSIONAL ENGINEER

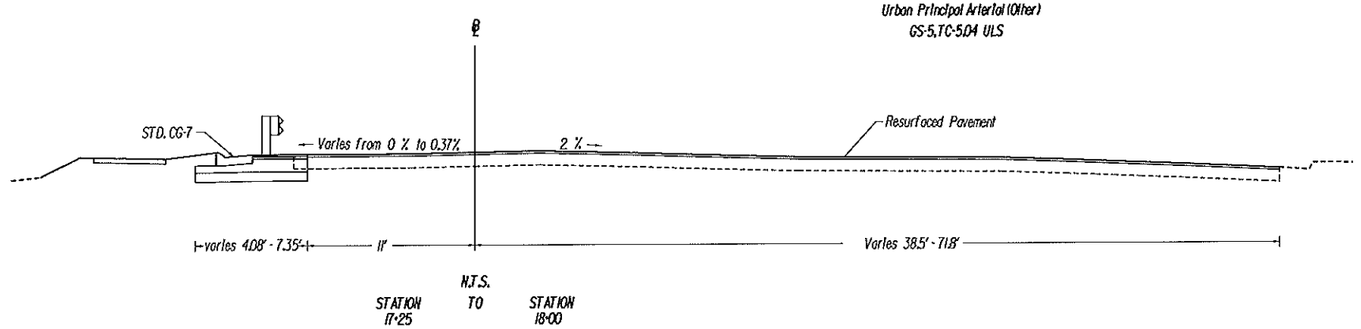
Prakas T Karattukudy
2012.10.10 15:05:56 -04'00'
The LPA Group Inc.
Falls Church, Virginia.
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	2A

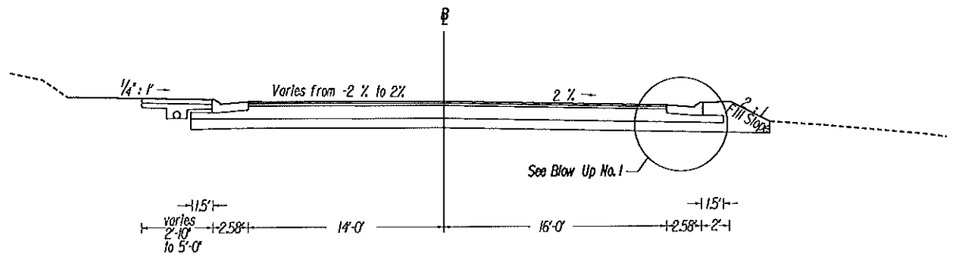
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TYPICAL SECTIONS

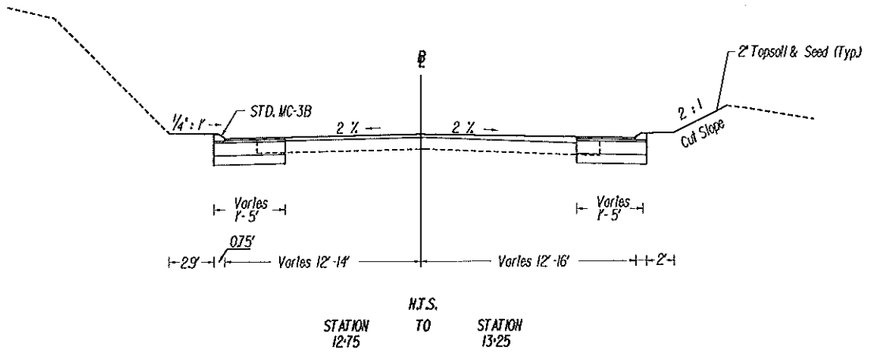
Rte123 Chain Bridge Road
Urban Principal Arterial (Other)
GS-5, TC-5.04 ULS



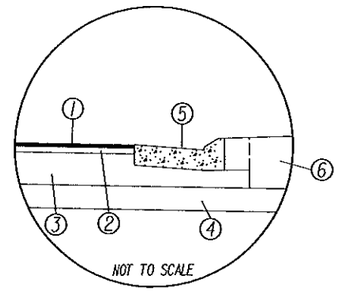
N.T.S.
STATION 17+25 TO STATION 18+00



N.T.S.
STATION 13+25 TO STATION 14+75



N.T.S.
STATION 12+75 TO STATION 13+25



BLOW UP NO. 1

1. 1.5" Asphalt Concrete Surface Course, Type SM-9.5D
2. 2.0" Asphalt Concrete Intermediate Course, Type IM-19.0A
3. 11.0" Asphalt Concrete Base Course, Type BM-25.0A
4. 8.0" Graded Aggregate Subbase
5. Standard CG-7
6. Select Material Type II Minimum CBR-15

	PROJECT	SHEET NO.
	0123-151-139	2A

PROJECT MANAGER Peter Millard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776

COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020688
PROFESSIONAL ENGINEER

Bharat Bhargava
2012.10.08 13:35:03 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE		SHEET NO
	ROUTE	PROJECT		
	VA.	123	0123-151-139, R201	2C(1)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

DRAINAGE SUMMARY

ITEM#			1156	1150	27321	27500	9148	9150	6817	6819	60403	700	
DESCRIPTION	COVER	STRUCTURE HEIGHT	15" STORM SEWER PIPE	15" PIPE	PROTECTIVE COVERING EC-2	GEOTEXTILE FABRIC	EROS.CONTR. STONE CL.A1,EC-1	EROS.CONTR. STONE CL.1,EC-1	DROP INLET DI-3B,L= 4'	DROP INLET DI-3B,L= 8'	CONCRETE CLASS A3	POST INSTALLATION INSPECTION	REMARKS
UNIT	FT	L.F.	L.F.	L.F.	S.Y.	S.Y.	Ton	Ton	Ea	Ea	Cu.Yd.	L.F.	
3-1		5.9								1			
3-2		6.0								1			Modify Ex.Inlet To Grade
3-1 to 3-2	5		162.3									162.3	
3-3		4.9								1			Adjust Ex.Inlet To Grade
3-4		7.8	79						1			79	
3-5											0.5		VDOT Std EW-1,15"
3-4 to 3-5	6					7.6	1.0						
3-6				11.8		7.6	1.0					11.8	Sidewalk Culvert
Ditch					28.1	15.8	7.4	5.8					
TOTAL			241.3	11.8	28.1	31.0	9.5	5.8	1.0	3.0	0.5	253.1	

EROSION CONTROL SUMMARY

ITEM#	NP	21410	27505	27525	27460	27580	27430	NP	23560	
PHASE ID	TEMPORARY DIVERSION DIKE (NONPAY ITEM)	CHECK DAM TYPE I	TEMPORARY SILT FENCE	TURBIDITY CURTAIN, PERVIOUS	DROP INLET PROTECTION TYPE B	TEMPORARY SEDIMENT BASIN EXCAVATION	SILTATION CONTROL EXCAVATION	TEMPORARY CONSTRUCTION ENTRANCE (NONPAY ITEM)	SAFETY FENCE	REMARKS
	L.F.	Ea	L.F.	L.F.	Ea	Cu.Yd.	Cu.Yd.	Ea	L.F.	
Phase I	238.8		371			21.0	16.8	1.0		
Phase 2		1.0	703.8	217.6	4.0		144.4	1.0	141.9	
TOTAL	238.8	1.0	740.9	217.6	4.0	21.0	161.2	2.0	141.9	

UNDERDRAIN SUMMARY

STA.TO STA.	UD-3	REMARKS
	L.F.	
13+25 TO 13+50	25	TO STR.3-1
13+50 TO 15+10	160	TO STR.3-2
TOTAL	185	

	PROJECT	SHEET NO.
	0123-151-139, R201	2C(1)

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DESIGNED BY The LPA Group Inc (703) 639 1694

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	2C(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PAVEMENT SUMMARY

SHEET NO.	LOCATION	STATIONS		PAVEMENT AREA		AGGREGATE MATERIAL NO.21B (USED AS SUBBASE)	BASE COURSE ASPHALT CONCRETE TYPE BM-25.0A	INTERMEDIATE COURSE ASPHALT CONCRETE TYPE IM-19A	SURFACE COURSE ASPHALT CONCRETE TYPE SM-9.5D	AGGREGATE BASE MATERIAL TYPE I NO.21-B (UNDER CURB & GUTTER)	ASPHALT CONC. TYPE BM-25.0D (FOR BUILDUP)	ENTRANCES					
												AGGREGATE BASE MATERIAL TYPE I NO.21-B		ASPHALT CONC. BASE COURSE TYPE BM-25.0D	ASPHALT CONC. SURF. COURSE TYPE SM-12.5D	CONCRETE ENTRANCE PAVEMENT 7" HES	CRUSHER RUN AGGREGATE NO.25 OR 26
						DEPTH	DEPTH	DEPTH	DEPTH	VAR. DEPTH	VAR. DEPTH	DEPTH		DEPTH	@ 165 LBS /SQ.YD.		DEPTH
				PAVEMENT	OVERLAY	8"	11"	2"	@ 165 LBS /SQ.YD.			4"	6"	4"			6"
		FROM	TO	SQ.YD.	SQ.YD.	TON	TON	TON	TON	TON	TON	TON	TON	TON	TON	SQ.YD.	TON
3	CHAINBRIDGE RD.	12+75.00	18+00	1515.00	677.00	649.00	1135.00	180.00	238.00								
TOTAL				1515.00	677.00	649.00	1135.00	180.00	238.00								

	PROJECT	SHEET NO.
	0123-151-139	2C(2)

10/5/2012
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Plotted By locduser

PROJECT MANAGER Peter Willard (703) 246 6330
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DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 632 1694

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	2C(3)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

INCIDENTAL SUMMARY

SHEET NUMBER	MOBILIZATION	CONSTRUCTION SURVEYING	CLEARING & GRUBBING	ST'D. COMB. CURB & GUTTER CG-7 ⊗	CURB CG-3 ⊗	ASPHALT CONCRETE CURB TYPE MC-3B ⊗	GUARDRAIL GR-2	GUARDRAIL TERMINAL GR-11	HYDRAULIC CEMENT CONC. SIDEWALK 4" ⊗	CG-12 DETECTABLE WARNING SURFACE ⊗	DEMOLITION OF PAVEMENT (FLEXIBLE) ⊗	FIELD OFFICE TYPE III	SAW CUT ASPHALT CONCRETE DEPTH 12"
	L.S.	L.S.	L.S.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	SQ.YD.	SQ.YD.	SQ.YD.	MO.	LIN. FT.
3				680	50	100	387	1	321	2	1694	7	325
Total	L.S.	L.S.	L.S.	680	50	100	387	1	321	2	1694	7	325

⊗ Denotes Items to be paid for on basis of plan quantities in accordance with current Road and Bridge Specifications.

PAVEMENT MARKING SUMMARY

PAVEMENT MESSAGE MARKING ELONGATED ARROW SINGLE	TYPE B, CL.I PAVE. LINE MARKING 24"	TYPE B, CL.I PAVE. LINE MARKING 8"	TYPE B, CL.I PAVE. LINE MARKING 4"	SNOW PLOW-RAISED PAVEMENT MARKER	
EA.	LIN.FT.	LIN.FT.	LIN.FT.	EA.	
3	90	183	2100	32	

MAINTENANCE OF TRAFFIC

PROJECT	TYPE III BARRICADE (8 FOOT)	GROUP 2 CHANNELIZING DEVICES	ERADICATION OF EXISTING PAVEMENT MARKING	CONSTR. PAVE. MARKING (TY. F CL.I) 4"	CONSTR. PAVE. MARKING (TY. F CL.I) 8"	CONSTRUCTION SIGNS	PORTABLE CHANGEABLE MESSAGE SIGNS	TRAF. BARR. SER. CONC. SINGLE FACE	TRAF. BARR. SER. CONC. DOUBLE FACE	ELECTRONIC ARROW
	EA.	DAY	LF.	LF.	LF.	SF.	HR.	LF.	LF.	HR.
TOTAL	5	1500	500	2280	200	401	4000		1865	4000

	PROJECT	SHEET NO.
	0123-151-139	2C(3)

PROJECT MANAGER Peter Millard (703) 246-6330
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DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco Inc. (301) 987-8776

Bharat Bhargava
2012.10.08 13:36:37 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	2E

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

HYDROLOGIC DATA

The data presented herein was statistically derived by empirical methods and from field observations. It is presented as an estimate of the hydraulic performance of these facilities during the passage of actual flood events.

1. Estimated 10 year frequency flood data (unless otherwise noted.) This magnitude of flooding may pass through the proposed facility or it may obtain the necessary hydraulic conveyance by partial inundation of roadways and/or partial by pass of the facility.

2. Specified frequency flood data. It is anticipated that this magnitude of flooding will be conveyed through the proposed hydraulic facility under estimated conditions which satisfy the design criteria applicable to the site.

3. This data was obtained from observations by persons familiar with the area and/or official records combined with an evaluation by empirical methods. The reliability of this data is relative to the accuracy of the source. A future flood of the same magnitude may achieve a significantly different stage elevation from that shown due to changes in the physical characteristics of the watershed.

FIELD INSPECTION STAGE [X] FINAL DESIGN STAGE [ ]

					BASE FLOOD 1.		DESIGN FLOOD 2.			OVERTOPPING FLOOD		HISTORICAL DATA 3.		
Sheet No.	Station	Stream Name	Drainage Area	Structure Size	Discharge (C.F.S.)	Stage Elevation (Ft.)	Discharge (C.F.S.)	Estimated Exceedance Probability %	Stage Elevation (Ft.)	Stage Elevation (Ft.)	Estimated Exceedance Probability %	Date	Stage Elevation (Ft.)	Estimated Exceedance Probability %
3	16+50	ACCOTINK CREEK	1.55 SQ.M.	1 SPAN	3,830	360.97	2,260	10%	358.51	361.10	4 %	N.A.	N.A.	N.A.
				50' ARCH										
3	16+25	ACCOTINK CREEK	1.55 SQ.M.	1 SPAN	3,830	358.48	2,260	10%	356.83	357.30	4 %	N.A.	N.A.	N.A.
				50' ARCH										

REMARKS — Source of Information and Other Related Data

THE HYDROLOGIC DATA IS BASED ON THE FLOOD INSURANCE STUDY, CITY OF FAIRFAX, JUNE 2, 2006 BY FEMA

	PROJECT	SHEET NO.
	0123-151-139, R201	2E

PROJECT MANAGER_ Peter Wilford (703) 246 6330
SURVEYED BY _ Burgess & Niple (703) 631 9630
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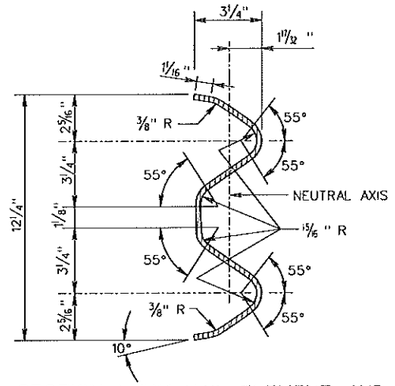
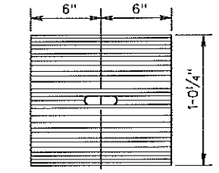
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(1)

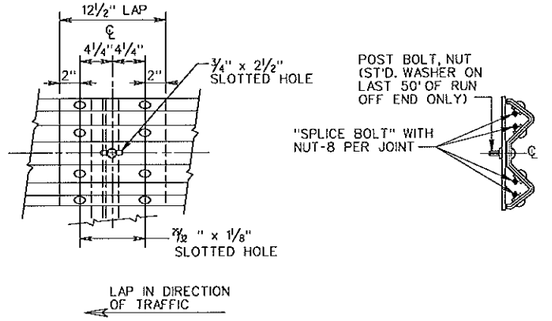
GR-HDW



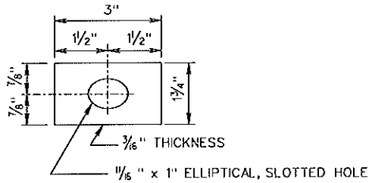
SECTION THRU RAIL ELEMENT AND W BEAM BACK-UP PLATE



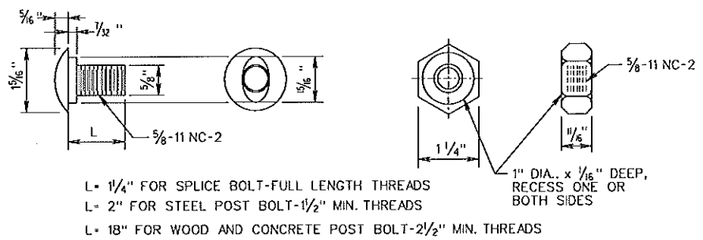
W BEAM BACK - UP PLATE



DETAIL OF SPLICE JOINT



DETAIL OF STANDARD WASHER



L= 1¼" FOR SPLICE BOLT-FULL LENGTH THREADS
L= 2" FOR STEEL POST BOLT-1½" MIN. THREADS
L= 18" FOR WOOD AND CONCRETE POST BOLT-2½" MIN. THREADS
L= 26" FOR MB WOOD OR CONCRETE POST-2" MIN. THREADS

DETAIL OF BUTTON HEAD BOLT AND RECESS NUT

NOTES:

ALL HARDWARE IS TO BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

THE GUARDRAIL AND MEDIAN BARRIER COMPONENTS DEPICTED IN ARTBA TECHNICAL BULLETIN NUMBER 268B MAY BE SUBSTITUTED IF INTERCHANGEABLE WITH THE STANDARDS FOR GUARDRAIL (GR) OR MEDIAN BARRIER (MB) AND APPROVED BY THE ENGINEER.

SPECIFICATION REFERENCE	STANDARD GUARDRAIL HARDWARE	VDOT ROAD AND BRIDGE STANDARDS
221 505	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 4/09 · SHEET 1 OF 3 · 501.01

NEW. 4/09
SPECIAL DESIGN SECTION DRAWING NO. IIS05_04

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(1)

10/5/2012
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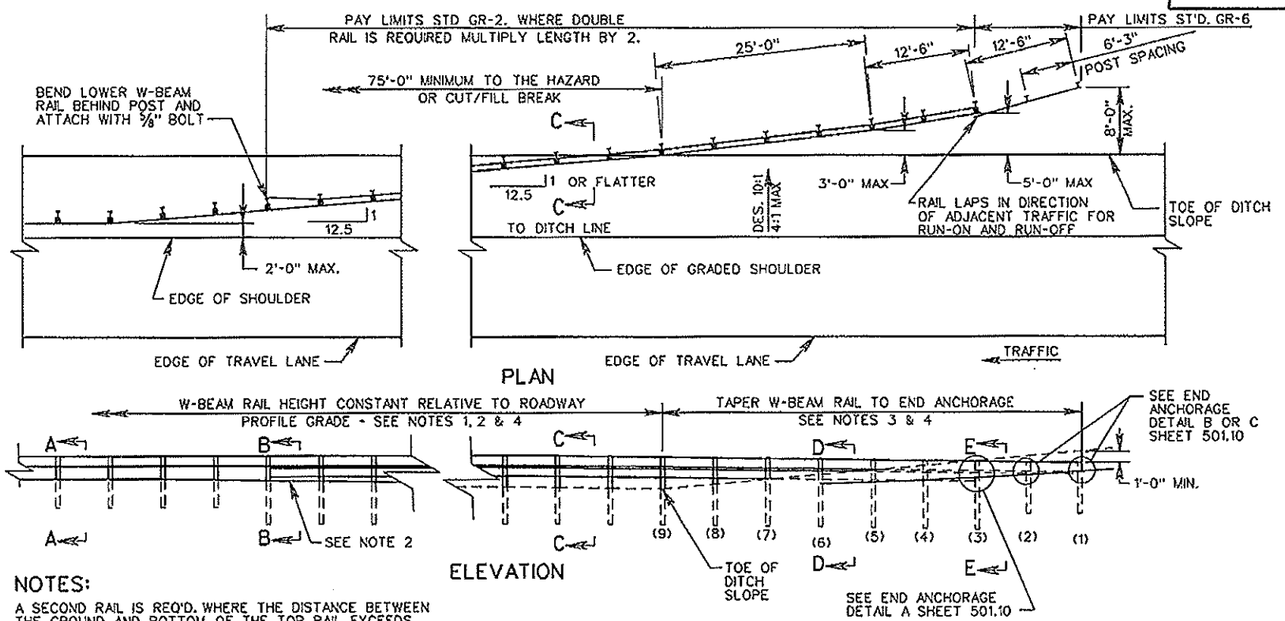
Plotted By: localuser

PROJECT MANAGER: Peter Milford (703) 246 6330
SURVEYED BY: Burgess & Niels (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: Tha LPA Group, Inc (703) 639 1694

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

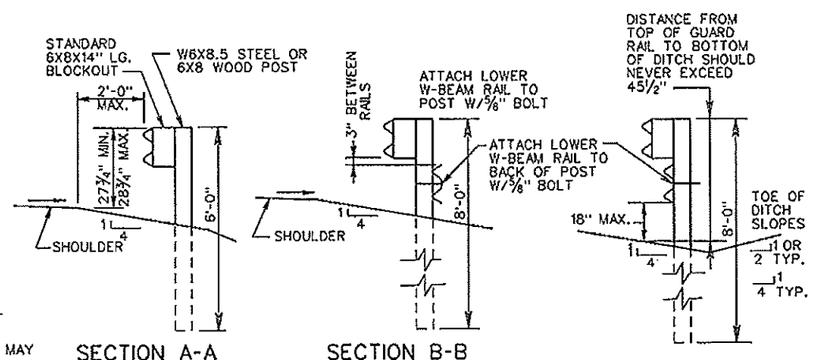
REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(2)

GR-6



NOTES:

1. A SECOND RAIL IS REQ'D. WHERE THE DISTANCE BETWEEN THE GROUND AND BOTTOM OF THE TOP RAIL EXCEEDS 18" (UP TO THE POINT WHERE THE RAIL CROSSES THE DITCH LINE). THE DOUBLE RAIL WILL EXTEND TO POST #3.
2. MAXIMUM DISTANCE BETWEEN BOTTOM OF THE LOWER W-BEAM RAIL AND GROUND LINE IS 18". WHEN DOUBLE RAIL IS REQ'D., TAPER BOTH W-BEAM RAILS TO MAINTAIN THE 18" DISTANCE FROM THE GROUND.
3. BOTH W-BEAM RAILS TO BE 1'-0" BELOW FINISHED GRADE AT POST #1 (8'-0" OFFSET).
4. A 8'-0" LONG POST MUST BE USED WHEN UPPER AND LOWER W-BEAM RAILS ARE REQUIRED. FROM THE BEGINNING OF THE LOWER RAIL THROUGH POST #3.
5. STANDARD GR-6 TERMINAL TREATMENT MAY BE USED AT THE RUN-ON END OF DIVIDED HIGHWAYS (LEFT AND RIGHT OF TRAFFIC) AND AT THE RUN-ON AND RUN-OFF ENDS ON UNDIVIDED HIGHWAYS.
6. ALL POST SPACING 6'-3" C-C UNLESS OTHERWISE NOTED. THE POST MAY BE W6 X 8.5 STEEL OR 6 X 8 WOOD EXCEPT THE LAST 3 TERMINAL POSTS MUST BE W6 X 8.5 STEEL.
7. FOR SECTIONS D-D & E-E, AND END ANCHORAGE DETAILS SEE SHEET 501.10.
8. ALL TERMINAL RUN-ON OR RUN-OFF INSTALLATIONS SHALL BE INSTALLED WITH RAILS LAPPED IN THE DIRECTION OF ADJACENT TRAFFIC.
9. IF THE BACKSLOPE IS ROCK AND 1:1 OR STEEPER, THE W-BEAM MAY BE ANCHORED PER SOLID ROCK CUT INSTALLATION (DETAIL F).



SPECIFICATION REFERENCE	TERMINAL TREATMENT FOR W-BEAM GUARDRAIL	VDOT ROAD AND BRIDGE STANDARDS	
221 505	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 7/11	SHEET 1 OF 2 501.09

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(2)

PROJECT MANAGER_ Peter Ulliord (703) 246 6330
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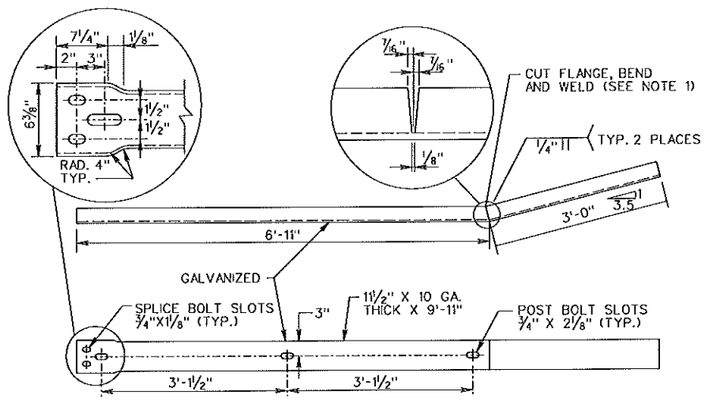
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY _The LPA Group Inc.(703) 639 1694

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

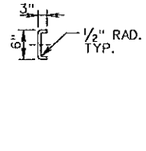
REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(3)

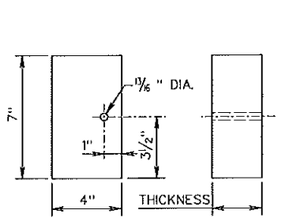
GR-FOA-1



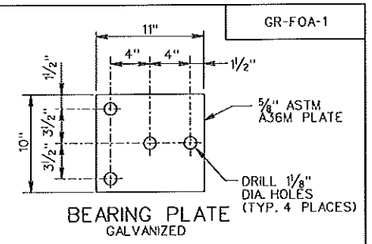
NOTE:
CAN BE FIELD CUT AND BENT USING HEAT. IF SHOP CUT AND BENT, RIGHT HAND OR LEFT HAND MUST BE SPECIFIED DEPENDING ON WHICH SIDE OF THE ROADWAY THE TRANSITION IS USED.

ITEM (7) DETAIL





RUBRAIL BLOCKOUT DETAIL



BEARING PLATE
GALVANIZED

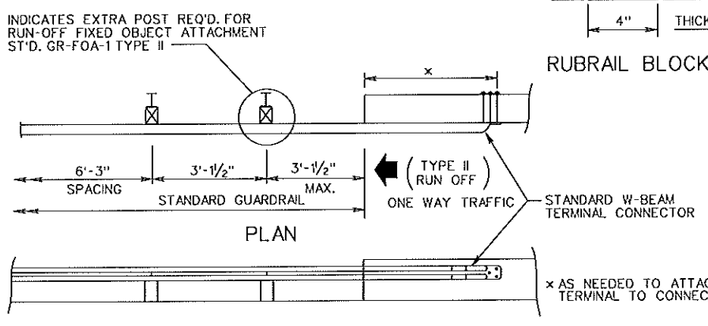
☆ CAN BE FIELD CUT AND BENT USING HEAT.

WOOD POSTS
RUBRAIL BLOCKOUTS
7" X 4" X THICKNESS

POST	THICKNESS
[1]	6⅛"
[2]	4⅝"
[3]	3¼"
[4]	1¾"

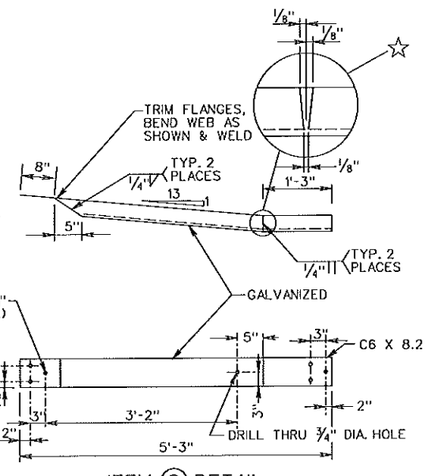
STEEL POSTS
RUBRAIL BLOCKOUTS
7" X 4" X THICKNESS

POST	THICKNESS
[1]	5¾"
[2]	4¼"
[3]	2⅞"
[4]	1⅜"



PLAN

ELEVATION



ITEM (8) DETAIL

SPECIFICATION REFERENCE	W-BEAM GUARDRAIL - FIXED OBJECT ATTACHMENT (RUBRAIL AND HARDWARE DETAILS) VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
505		REVISION DATE 4/09 · SHEET 3 OF 3 · 501.27

NEW, 4/09
SPECIAL DESIGN SECTION
DRAWING NO. IIS05_06

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(3)

10/5/2012
11:32:32 AM

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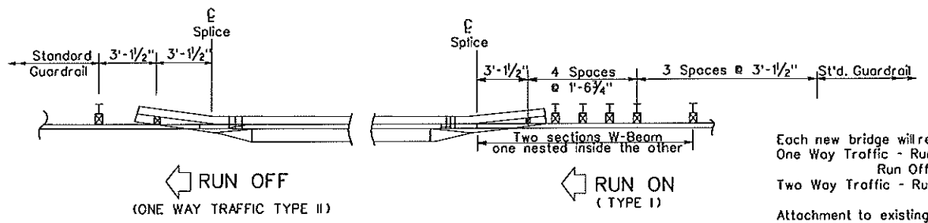
Plotted By: lacclusor

PROJECT MANAGER Peter Millard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

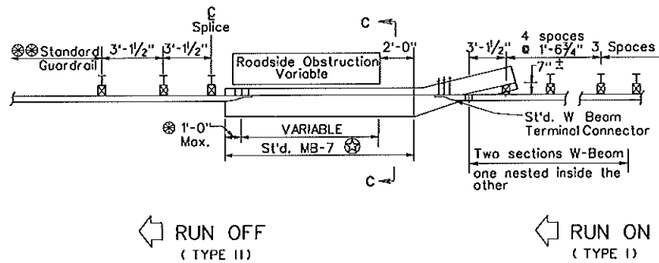
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(4)

GR-FOA-3



DETAIL FOR USE WITH FLARED TERMINAL WALL



Each new bridge will require four fixed object attachments as follows:
One Way Traffic - Run On 2-GR-FOA-3, Type I
Run Off 2-GR-FOA-3, Type II
Two Way Traffic - Run On 4-GR-FOA-3, Type I

Attachment to existing bridges to be in accordance with details shown on plans.

☆ Holes, where shown, shall be formed with sleeves of 1½" dia. nominal pipe.

⊛ Length of Flared Terminal Wall to be included in Lin. Ft. measurement of St'd. MB-7.

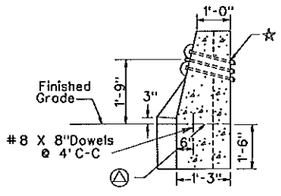
Bolt lengths are to be established by the Contractor and approved by the engineer. All bolts are to be 7/8 Machine bolts with hex heads, beveled washers and self-locking nuts.

⊗ For Two Way Traffic Design, use Run On End Transition, Flared Terminal Wall, and Concrete Barrier.

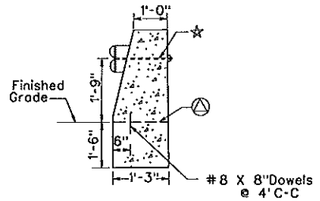
⊛⊛ Run off guardrail to be used only when required for other reasons.

Cost of transition and Flared Terminal Wall to be included in price bid per Lin. Ft. of St'd. MB-7.

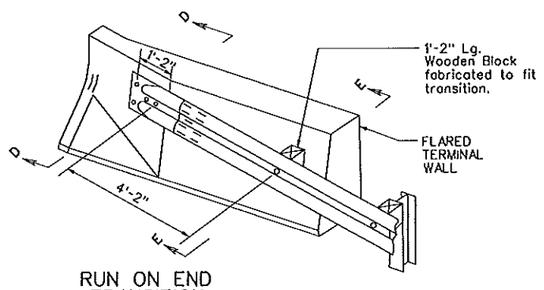
△ Optional Construction Joint.
If pour is monolithic, dowels may be eliminated.



SECTION D-D



SECTION E-E



RUN ON END TRANSITION

SPECIFICATION REFERENCE
505

W BEAM GUARDRAIL INSTALLATION CRITERIA
FIXED OBJECT ATTACHMENT METHODS

VIRGINIA DEPARTMENT OF TRANSPORTATION

REV. 7/98
SPECIAL DESIGN SECTION
DRAWING NO. IISA 47

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(4)

10/5/2012
11:33:42 AM

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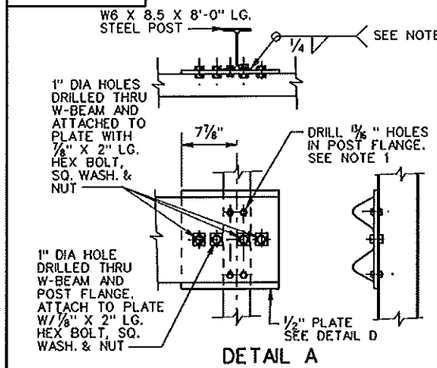
Plotted By: locoluser

PROJECT MANAGER: Peter Willard (703) 246 6330
SURVEYED BY: Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY: David Summers (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

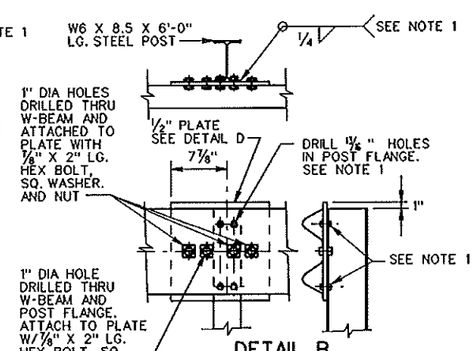
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(5)

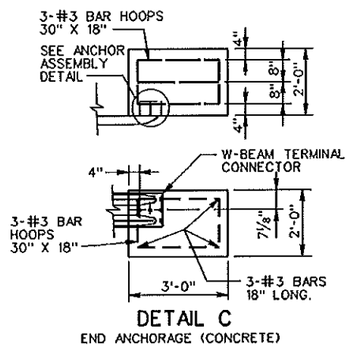
GR-6



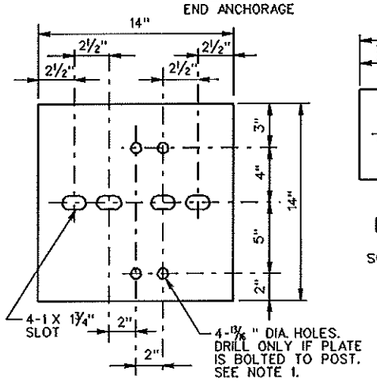
DETAIL A
END ANCHORAGE



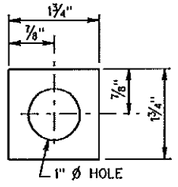
DETAIL B
END ANCHORAGE (POST)



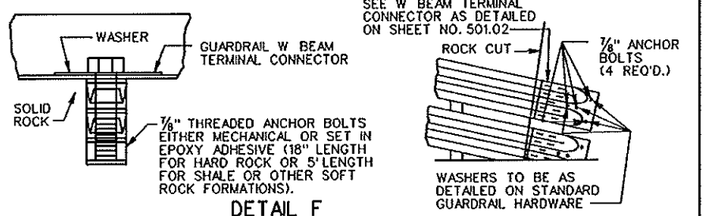
DETAIL C
END ANCHORAGE (CONCRETE)



DETAIL D
1/2" THICK STEEL PLATE



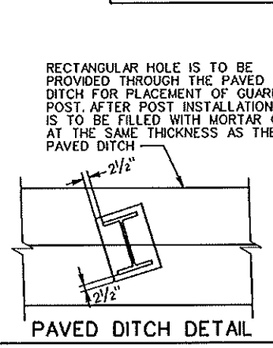
DETAIL E
3/8" THICK SQUARE WASHER



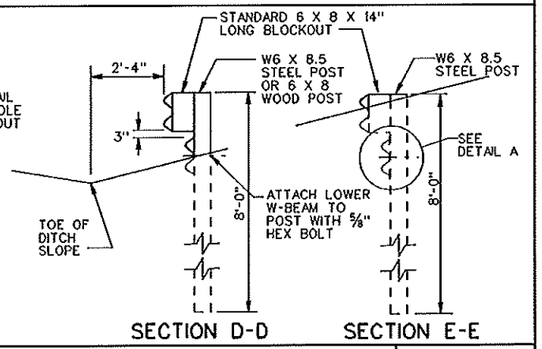
DETAIL F
SOLID ROCK CUT INSTALLATION

NOTE:

1. 1/2" STEEL PLATE MAY BE WELDED OR BOLTED TO POST. IF PLATE IS BOLTED TO POST USE 4 - 5/8" X 1 1/2" LG. HEX HEAD BOLTS W/ HEX NUTS. IF PLATE IS WELDED TO POST DO NOT DRILL 1 1/8" HOLES IN PLATE OR IN POST FLANGES.
2. CONCRETE END ANCHORAGE MAY BE USED IN PLACE OF STEEL POST AT 8'-0" OFFSET.



PAVED DITCH DETAIL



SECTION D-D

SECTION E-E

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 2 OF 2	REVISION DATE
501.10	08/10

TERMINAL TREATMENT FOR W-BEAM GUARDRAIL

VIRGINIA DEPARTMENT OF TRANSPORTATION

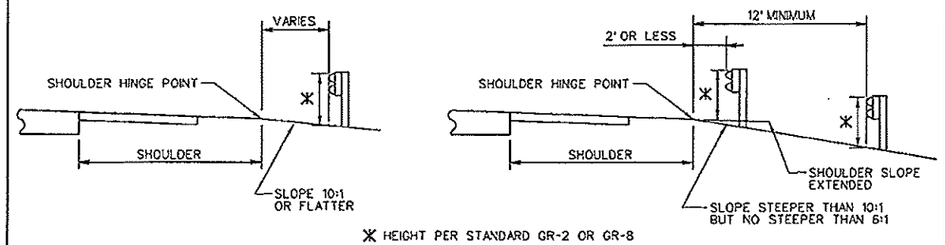
SPECIFICATION REFERENCE
221
505

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(5)

PROJECT MANAGER: Peter Wilcox (703) 246 6330
SURVEYED BY: Burgess & Niels (703) 631 9630
DESIGN SUPERVISED BY: Dodd Sumners (703) 385 7846
DESIGNED BY: The LPA Group Inc. (703) 639 1694

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(6)

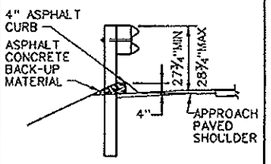


MEASURING GUARDRAIL HEIGHT ON FRONT SLOPE RELATIVE TO SHOULDER HINGE POINT

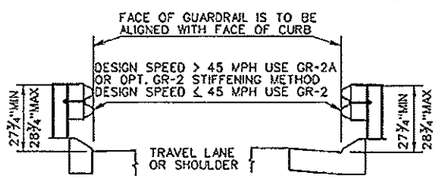
GR-INS

FACE OF GUARDRAIL IS TO BE ALIGNED WITH FACE OF CURB.

DESIGN SPEED > 45 MPH USE GR-2A OR OPTIONAL GR-2 STIFFENING METHOD.
DESIGN SPEED ≤ 45 MPH USE GR-2.



ASPHALT CURB SECTION



GR-2 INSTALLATION WITH CG-3 OR CG-7 CURB

FOR GUARDRAIL DESIGN POLICIES USING CG-2 AND CG-6 OR URBAN DESIGNS WITH SIDEWALK OR SIDEWALK SPACE SEE APPENDIX A OF THE ROAD DESIGN MANUAL

TABLE I

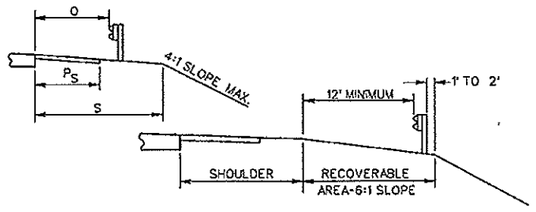
NORMAL GUARDRAIL LOCATION-THROUGH TRAFFIC LANES LEFT OF TRAFFIC

TOTAL SHOULDER WIDTH (S) (PAVED & GRADING)	PAVED SHOULDER WIDTH (P_S)	OFFSET FROM EDGE OF PAVEMENT TO FACE OF GUARDRAIL (O)
17'	12'	14'
15'	3', 4', OR 10'	12'
13'	3'	10'
11'	3'	8'
8' (MED.)	3' or 4'	5'

TABLE II

NORMAL GUARDRAIL LOCATION-THROUGH TRAFFIC LANES RIGHT OF TRAFFIC

TOTAL SHOULDER WIDTH (S) (PAVED & GRADING)	PAVED SHOULDER WIDTH (P_S)	OFFSET FROM EDGE OF PAVEMENT TO FACE OF GUARDRAIL (O)
17'	12'	14'
15'	6' or 10'	12'
13'	8'	10'
11'	0, 3', 4' or 6'	8'
9'	0, 3' or 4'	6'
8'	3'	5'
7'	2'	4'
5'	0	2'



GUARDRAIL LOCATION ON RECOVERABLE SLOPE

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
221 505	W-BEAM GUARDRAIL INSTALLATION CRITERIA VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 7/11 · SHEET 6 OF 9 · 501.39

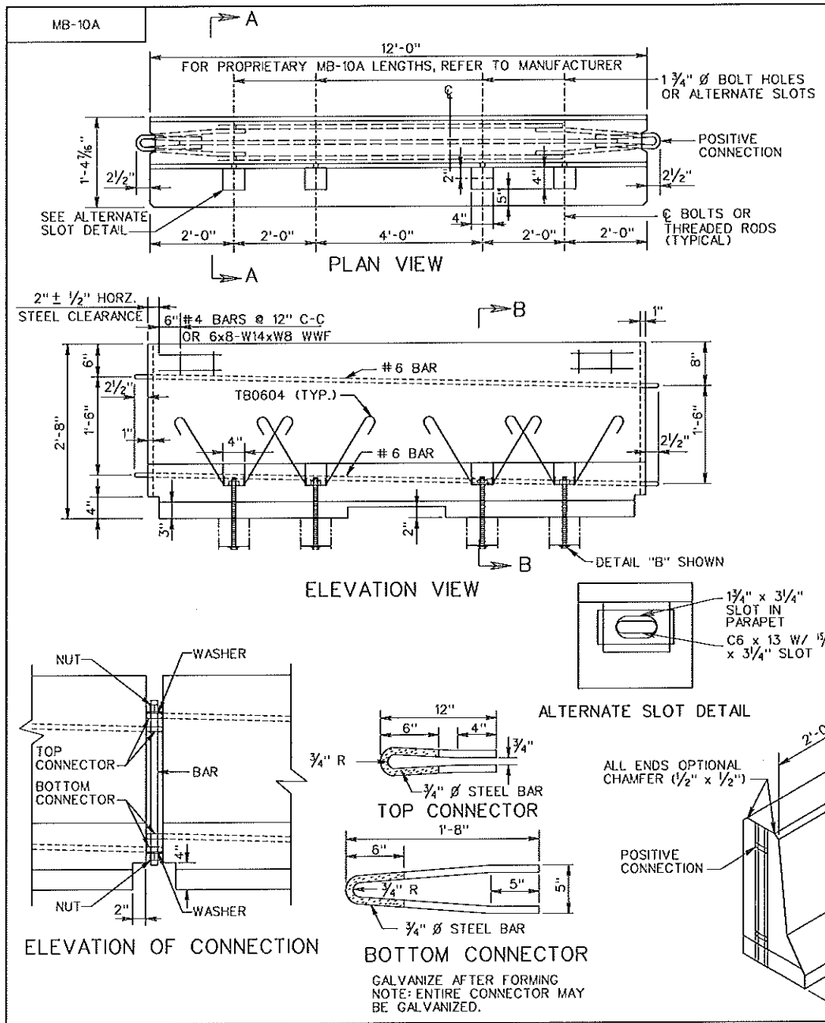
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(6)

PROJECT MANAGER _ Peter Willard (703) 246 6330
SURVEYED BY _ Burgess & Niels (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY Ttc (PA Group, Inc.) (703) 639 1694

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(7)

MB-10A

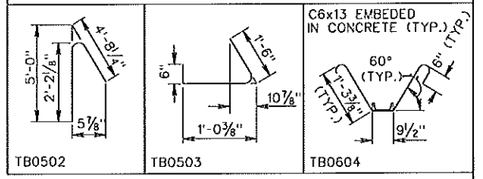


REINFORCING STEEL SCHEDULE

FOR ONE (1) SECTION

MARK	No.	SIZE	LENGTH	PIN Ø	LOCATION
TB0401	8	4	11'-5"	——	TEMP. PARAPET
TB0502	12	5	4'-3"	2 1/2"	"
TB0503	12	5	2'-8"	2 1/2"	"
TB0604	8	6	4'-8"	4 1/2"	"

BENDING DIAGRAM



DIMENSIONS IN BENDING DIAGRAMS ARE OUT-TO-OUT OF BARS, EXCEPT AS SHOWN.
POUNDS OF REINFORCING STEEL = 202
REINFORCING SHEDULE BASED ON 12'-0" UNIT LENGTH.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2	REVISION DATE
502.11	01/09

TRAFFIC BARRIER SERVICE CONCRETE PARAPET (SINGLE FACE)

(FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR)

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
105
502

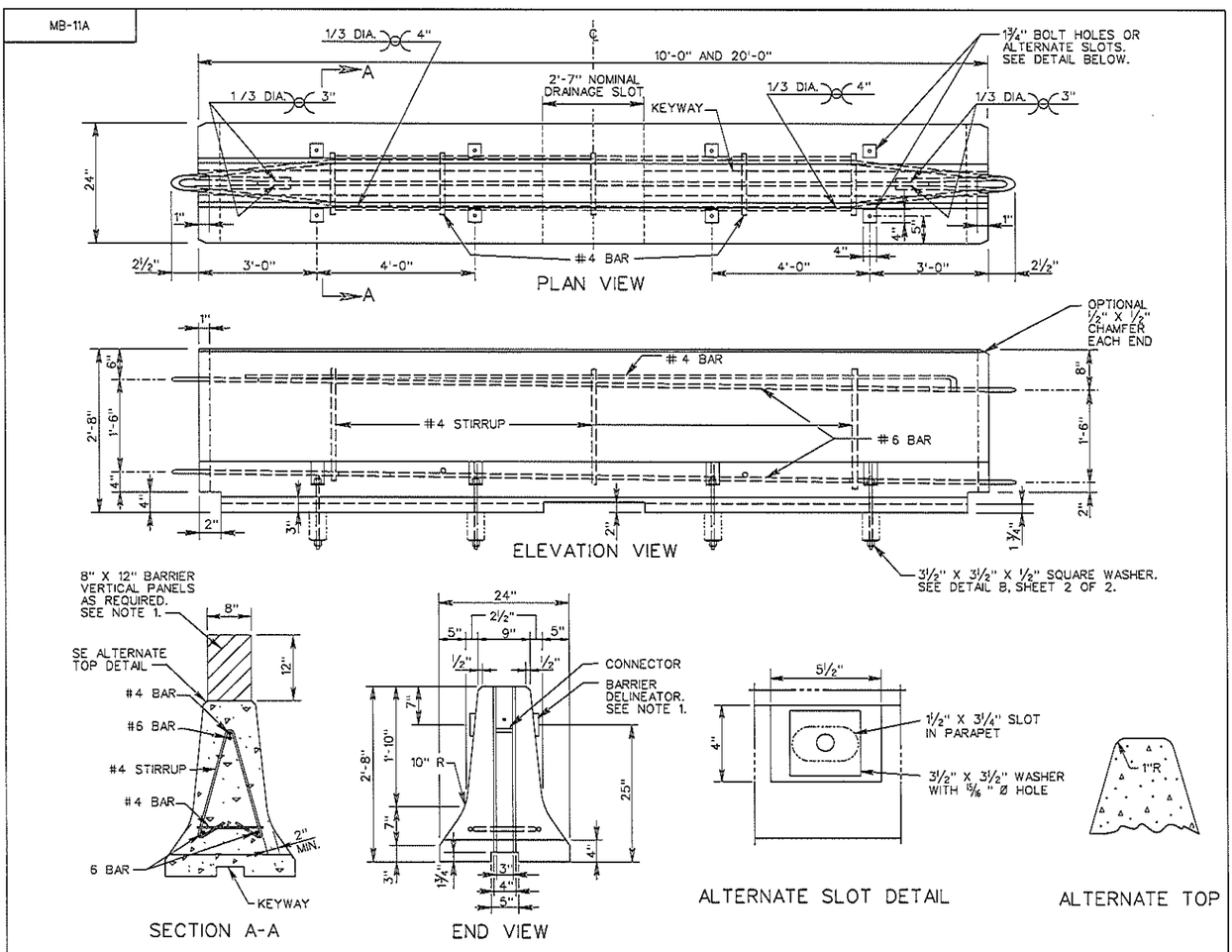
NEW. 1/09
SPECIAL DESIGN SECTION
DRAWING NO. IIS05_01

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(7)

03/5/2012
11:39:51 AM

PROJECT MANAGER: Peter Wilfred (703) 258 6330
SURVEYED BY: Barress & Associates (703) 385 1866
DESIGN SUPERVISED BY: Barress & Associates (703) 385 1866
DESIGNED BY: TRDP 2.1.6292.06/703/1539 .604

MB-11A

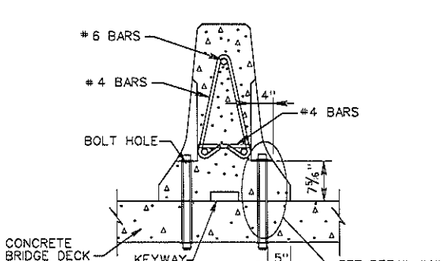


VDOT ROAD AND BRIDGE STANDARDS		TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR) VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 3	REVISION DATE		105
502.13	01/09		512

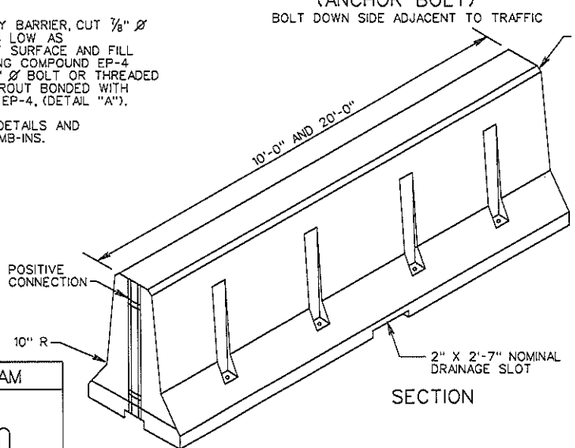
MB-11A

NOTES:

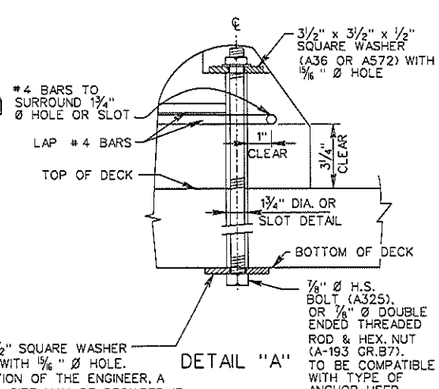
1. BARRIER DELINEATOR IS TO BE SPACED IN ACCORDANCE WITH SECTION 702 OF THE ROAD AND BRIDGE SPECIFICATIONS AND THE BARRIER VERTICAL PANELS ARE TO BE SPACED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.
2. REFLECTIVE SURFACE, IN ALL INSTANCES, ARE TO BE FACING ONCOMING TRAFFIC.
3. COST OF BARRIER DELINEATOR AND BARRIER VERTICAL PANELS ARE TO BE INCLUDED IN PRICE BID PER LINEAR FOOT OF BARRIER SERVICE.
4. ANCHOR BOLTS SHALL BE INSTALLED ON TRAFFIC SIDE.
5. CONCRETE 4000 PSI. (MIN.)
6. WELDED WIRE FABRIC MAY BE ONE SHEET BENT TO FIT CONFIGURATION OR TWO SEPARATE SHEETS, ONE ON EACH FACE.
7. AFTER REMOVING TEMPORARY BARRIER, CUT ⅞" Ø BOLT OR THREADED ROD AS LOW AS PRACTICAL BELOW ROADWAY SURFACE AND FILL RECESS WITH EPOXY BONDING COMPOUND EP-4 (DETAIL "A") OR REMOVE ⅞" Ø BOLT OR THREADED ROD AND FILL HOLE WITH GROUT BONDED WITH EPOXY BONDING COMPOUND EP-4, (DETAIL "A").
8. FOR POSITIVE CONNECTION DETAILS AND DIMENSIONS SEE STANDARD MB-1NS.



SECTION B-B
(ANCHOR BOLT)
BOLT DOWN SIDE ADJACENT TO TRAFFIC

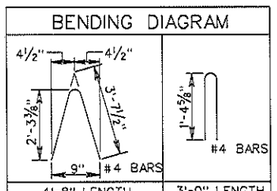


SECTION



DETAIL "A"

BENDING DIAGRAM



4'-8" LENGTH 2½" PIN Ø	3'-0" LENGTH 4½" PIN Ø

DIMENSIONS IN BENDING DIAGRAMS ARE OUT-TO-OUT OF BARS.

SPECIFICATION REFERENCE	TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE) (FOR TEMPORARY INSTALLATION ON BRIDGE DECK EXTERIOR) VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS	
105 512		REVISION DATE 01/09	SHEET 2 OF 3 502.14

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139,PE-101, RW-201,M-501,B-604	2(18)

SPECIAL DESIGN SECTION DRAWING NO. IIS05_02 NEW 1/09

DRAWING	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2(18)

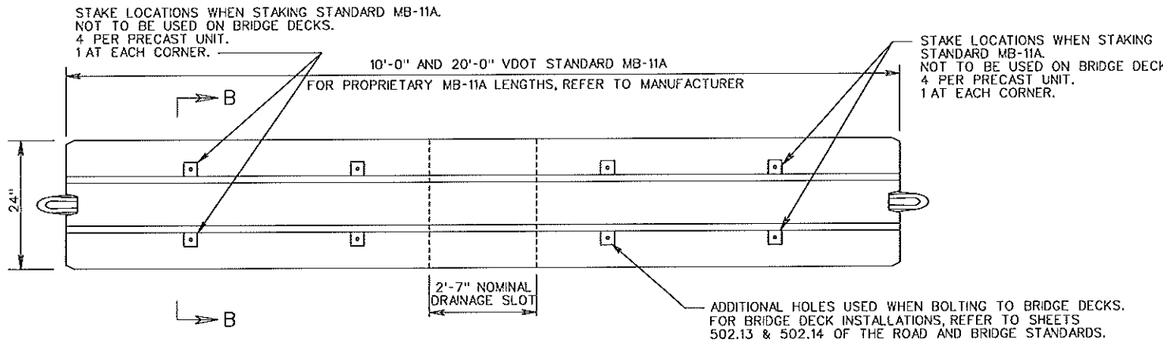
d8989d9f1d6ejn
Plotted By: tocouser

PROJECT MANAGER_Peter Millard (703) 246 6330
SURVEYED BY _Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

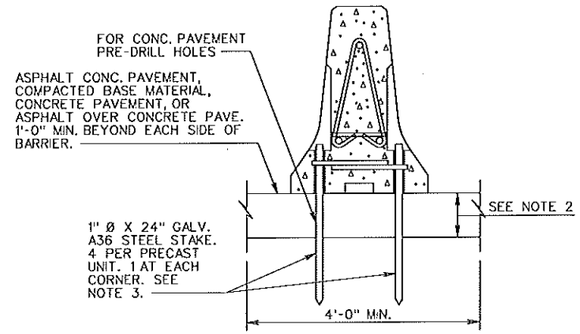
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(9)

MB-11A



PLAN VIEW



SECTION B-B

TEMPORARY INSTALLATION ON ASPHALT CONCRETE PAVEMENT, COMPACTED BASE MATERIAL, CONCRETE PAVEMENT, OR ASPHALT OVER CONCRETE PAVEMENT (NOT TO BE USED ON BRIDGE DECKS)

NOTES:

1. STAKING OF STANDARD MB-11A TO ASPHALT CONCRETE PAVEMENT, COMPACTED BASE MATERIAL, CONCRETE PAVEMENT, OR ASPHALT OVER CONCRETE PAVEMENT IS REQUIRED WHEN TRAFFIC BARRIER SERVICE CONCRETE IS PLACED WITHIN THE TWO (2) FOOT OFFSET OF A TRENCHING OPERATION (4' OR GREATER IN DEPTH) OR WHEN DETERMINED BY THE ENGINEER.
2. 2" MIN. FOR ASPHALT CONCRETE.
   6" MIN. FOR COMPACTED BASE MATERIAL.
3. DRIVE STAKE HEAD BELOW FACE OF BARRIER TO PREVENT SNAGGING.
4. CONTRACTOR TO VERIFY PAVEMENT STRUCTURE PRIOR TO PLACING STAKES.
5. UPON REMOVAL OF THE STAKES AND BARRIERS, REPAIR THE RESULTING HOLES AS FOLLOWS OR AS DIRECTED BY THE ENGINEER. CLEAN AND FILL WITH TYPE EP-4 OR EP-5 EPOXY MORTAR CONFORMING TO THE REQUIREMENTS OF SECTION 243 FOR HYDRAULIC CEMENT CONCRETE PAVEMENT AND ASPHALT CONCRETE PAVEMENT. CARE SHALL BE TAKEN NOT TO TRAP AIR WITHIN OR AT THE BOTTOM OF THE EPOXY MORTAR.

VDOT ROAD AND BRIDGE STANDARDS		TRAFFIC BARRIER SERVICE CONCRETE PARAPET (DOUBLE FACE) (FOR TEMPORARY INSTALLATION ON ROADWAYS) VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 3 OF 3	REVISION DATE		105 512
502.15	01/09		

NEW 1/09
SPECIAL DESIGN SECTION DRAWING NO. IIS05_03

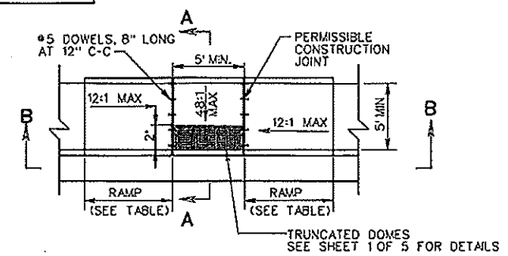
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(9)

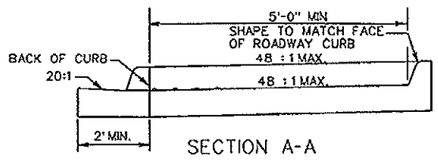
PROJECT MANAGER_ Peter Willard (703) 246 6330
SURVEYED BY _ Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc (703) 639 1694

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(10)

CG-12





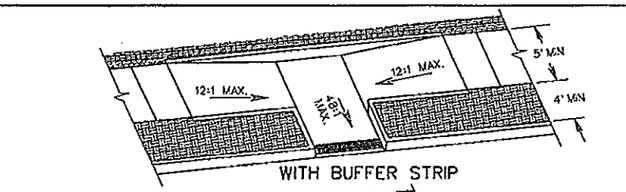
SECTION A-A

SECTION B-B

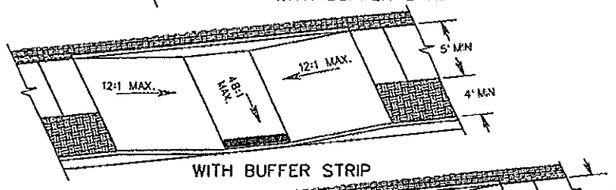
NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

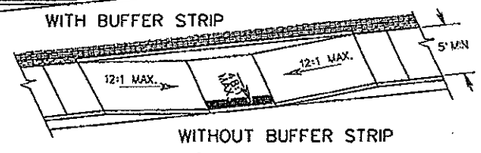
TYPE B - PARALLEL APPLICATION		
ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15



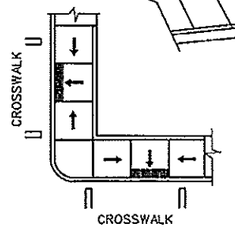
WITH BUFFER STRIP



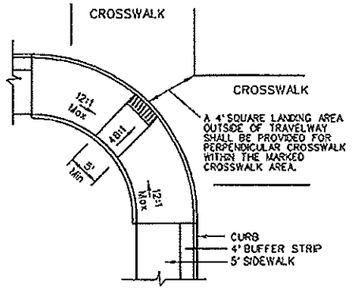
WITH BUFFER STRIP



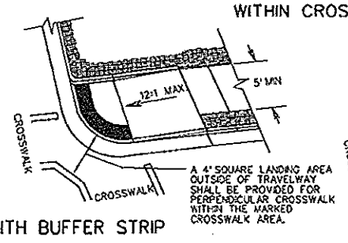
WITHOUT BUFFER STRIP



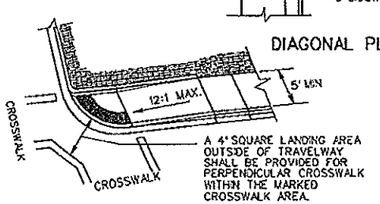
TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK



DIAGONAL PLACEMENT



WITH BUFFER STRIP



VDOT ROAD AND BRIDGE STANDARDS		CG-12 DETECTABLE WARNING SURFACE	SPECIFICATION REFERENCE
SHEET 3 OF 5	REVISION DATE 7/11	TYPE B (PARALLEL) APPLICATION	105 502
203.07		VIRGINIA DEPARTMENT OF TRANSPORTATION	

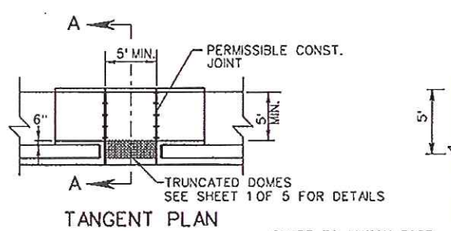
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(10)

PROJECT MANAGER Peter Millard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc (703) 639 1694

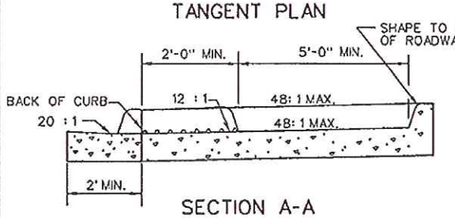
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	RSTP-5401(944)	123	0123-151-139, PE-101, RW-201, M-501, B-604	2f(11)

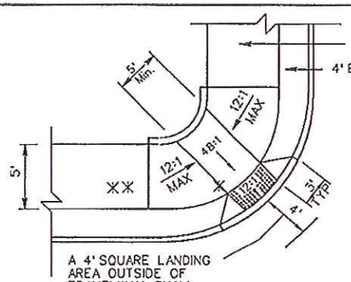
CG-12



TANGENT PLAN

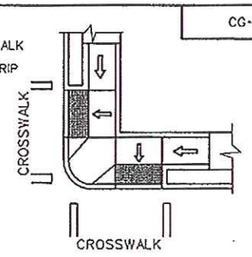


SECTION A-A

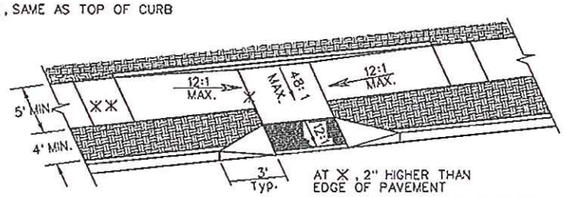


A 4' SQUARE LANDING AREA OUTSIDE OF TRAVELWAY SHALL BE PROVIDED WITHIN THE MARKED CROSSWALK AREA.

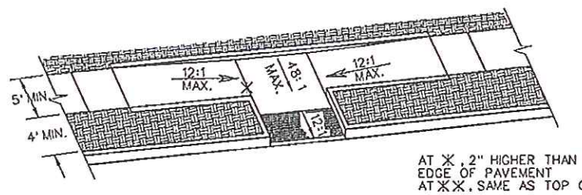
AT X, 2" HIGHER THAN EDGE OF PAVEMENT
AT XX, SAME AS TOP OF CURB



TYPICAL PLACEMENT AT INTERSECTION WITH BUFFER STRIP



AT X, 2" HIGHER THAN EDGE OF PAVEMENT
AT XX, SAME AS TOP OF CURB



AT X, 2" HIGHER THAN EDGE OF PAVEMENT
AT XX, SAME AS TOP OF CURB

TYPE C PARALLEL & PERPENDICULAR APPLICATION		
ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	2	4
1	2	5
2	3	5
3	3	6
4	4	8
5	5	10
6	7	14
7	13	15
8	15	15

THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

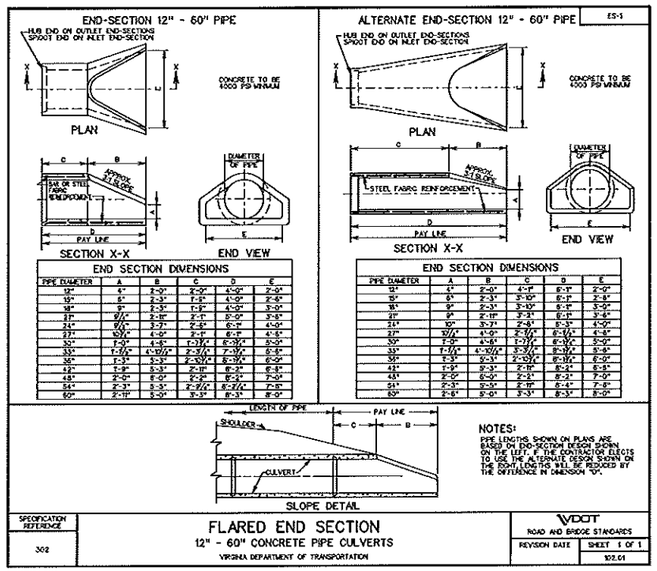
THE SELECTION OF CURB TYPE AND THE CONFIGURATION OF THE BUFFER STRIP MAY VARY TO MEET EXISTING FIELD CONDITIONS AND ROADWAY GEOMETRICS PROVIDING THE DIMENSIONS AND SLOPES ARE AS NOTED.

THIS COMBINED (PARALLEL & PERPENDICULAR) DESIGN CAN BE USED WITH ADJOINING BUFFER STRIP. LANDING AT BOTTOM OF TWO SLOPING SIDES WITH 5' X 5' MIN. DIMENSIONS. THE SHORT PERPENDICULAR RUN TO THE STREET CAN BE PROTECTED BY A LANDSCAPED SETBACK OR CONNECTED TO THE SIDEWALK WITH A WARPED SURFACE.

SPECIFICATION REFERENCE	CG-12 DETECTABLE WARNING SURFACE TYPE C (PARALLEL & PERPENDICULAR) APPLICATION VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS	
105 502		REVISION DATE 7/11	SHEET 4 OF 5 203.08

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0123-151-139		2f(11)

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776



END SECTION DIMENSIONS

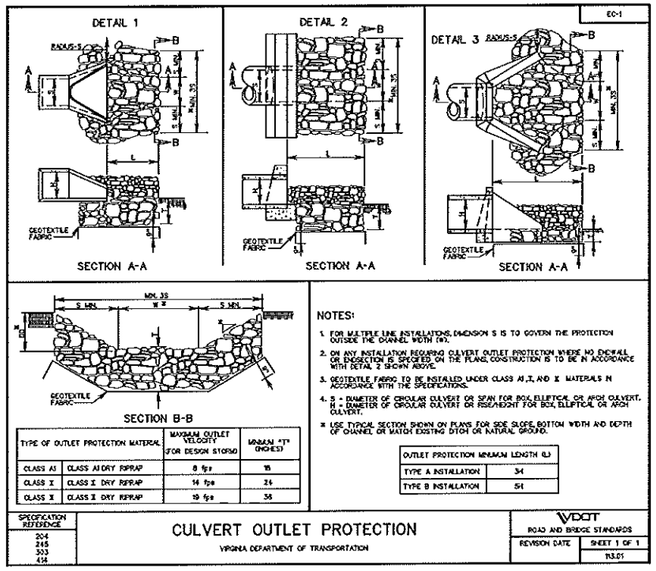
PIPE DIAMETER	A	B	C	D	E
12"	6"	2'-0"	2'-0"	4'-0"	2'-0"
15"	6"	2'-3"	2'-3"	4'-6"	2'-6"
18"	9"	2'-3"	1'-9"	4'-6"	3'-0"
21"	9"	2'-6"	2'-1"	5'-0"	3'-6"
24"	9"	2'-9"	2'-4"	5'-6"	4'-0"
27"	10½"	3'-0"	2'-7"	6'-0"	4'-6"
30"	12"	3'-3"	2'-10"	6'-6"	5'-0"
33"	1'-0"	4'-10½"	2'-3½"	7'-10½"	5'-6"
36"	1'-3"	5'-3"	2'-10½"	8'-10½"	6'-0"
42"	1'-9"	5'-3"	3'-1"	8'-3"	6'-6"
48"	2'-0"	6'-0"	3'-2"	10'-3"	7'-0"
54"	2'-3"	6'-3"	3'-2½"	10'-8½"	7'-6"
60"	2'-11"	8'-3"	3'-5"	11'-5"	8'-0"

END SECTION DIMENSIONS

PIPE DIAMETER	A	B	C	D	E
12"	6"	2'-0"	4'-1"	6'-1"	2'-0"
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	9"	2'-11"	3'-3"	6'-1"	3'-6"
24"	9"	3'-7"	2'-8"	6'-3"	4'-0"
27"	10½"	4'-0"	2'-10½"	6'-1½"	4'-6"
30"	12"	4'-6"	2'-10½"	6'-10½"	5'-0"
33"	1'-1½"	4'-10½"	3'-3½"	8'-10½"	5'-6"
36"	1'-3"	5'-3"	2'-10½"	8'-10½"	6'-0"
42"	1'-9"	5'-3"	3'-1"	8'-3"	6'-6"
48"	2'-0"	6'-0"	3'-2"	8'-3"	7'-0"
54"	2'-3"	6'-3"	3'-2½"	8'-8½"	7'-6"
60"	2'-11"	8'-3"	3'-5"	8'-5"	8'-0"

NOTES:
PIPE LENGTHS SHOWN ON PLANS ARE BASED ON END-SECTION DESIGN SHOWN ON THE LEFT. IF THE CONTRACTOR ELECTS TO USE THE ALTERNATE DESIGN SHOWN ON THE RIGHT, LENGTHS WILL BE REDUCED BY THE DIFFERENCE IN DIMENSION "D".

SPECIFICATION REFERENCE	FLARED END SECTION 12" - 60" CONCRETE PIPE CULVERTS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS REVISION DATE / SHEET 1 OF 1
302		102.01

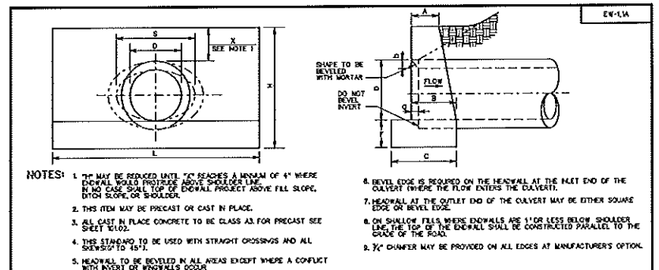


NOTES:
1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR EXCAVATION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDER CLASS A1, A3, AND K MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
4. D = DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT. H = DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.
5. USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

TYPE OF OUTLET PROTECTION MATERIAL		MAXIMUM OUTLET VELOCITY (FOR DESIGN STORM)	MINIMUM "T" (INCHES)
CLASS A1	CLASS A1 DRY RIPRAP	8 fps	15
CLASS I	CLASS I DRY RIPRAP	14 fps	24
CLASS II	CLASS II DRY RIPRAP	19 fps	36

OUTLET PROTECTION MINIMUM LENGTH (L)	
TYPE A INSTALLATION	34
TYPE B INSTALLATION	54

SPECIFICATION REFERENCE	CULVERT OUTLET PROTECTION VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS REVISION DATE / SHEET 1 OF 1
204 245 303 414		113.01



NOTES:
1. "H" MAY BE REDUCED UNTIL "C" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET W.I.03.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSWINGS AND ALL SKEWS UP TO 45°.
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR.
6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT WHERE THE FLOW ENTERS THE CULVERT.
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS WHERE ENDWALLS ARE 1'-0" OR LESS BELOW SHOULDER LINE, THE TOP OF THE END-WALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

EW-1

ENDWALL FOR CIRCULAR PIPE

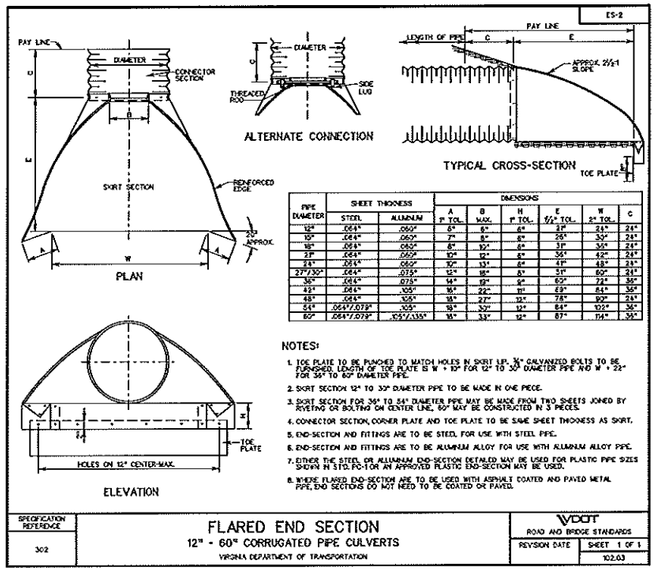
	DIAMETER OF PIPE CULVERT					
	12"	15"	18" OR 24"	27" OR 30"	33" OR 36"	
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-11"	1'-1"	1'-3"	1'-5"	1'-7"	2'-0"
C	1'-4"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-3"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	4'-0"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
a	0'-1½"	0'-1½"	0'-2"	0'-2½"	0'-3½"	0'-3½"
b	0'-1"	0'-1½"	0'-1½"	0'-2"	0'-2½"	0'-3"
CUBIC YARDS OF CONCRETE						
CONC. PIPE	0.241	0.402	0.627	1.310	2.047	2.847
C.M. PIPE	0.257	0.521	0.759	1.595	2.198	3.145

EW-1A

ENDWALL FOR ELLIPTICAL PIPE

	SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)						
	23"x14"	30"x19"	34"x22"	38"x24"	42"x27"	45"x29"	49"x32"	53"x34"
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-11"	4'-0"	4'-3"	4'-5"	4'-7"
L	5'-5"	7'-2"	8'-8"	9'-11"	11'-2"	12'-7"	13'-11"	15'-1"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-5"	3'-9"	4'-1"	4'-5"
a	0'-3½"	0'-3½"	0'-3½"	0'-4"	0'-4½"	0'-4½"	0'-5"	0'-5½"
b	0'-2"	0'-2½"	0'-3"	0'-3½"	0'-3½"	0'-3¾"	0'-4"	0'-4½"
CUBIC YARDS OF CONCRETE								
CONC.PIPE	0.502	0.855	1.238	1.500	1.815	2.101	2.512	2.801

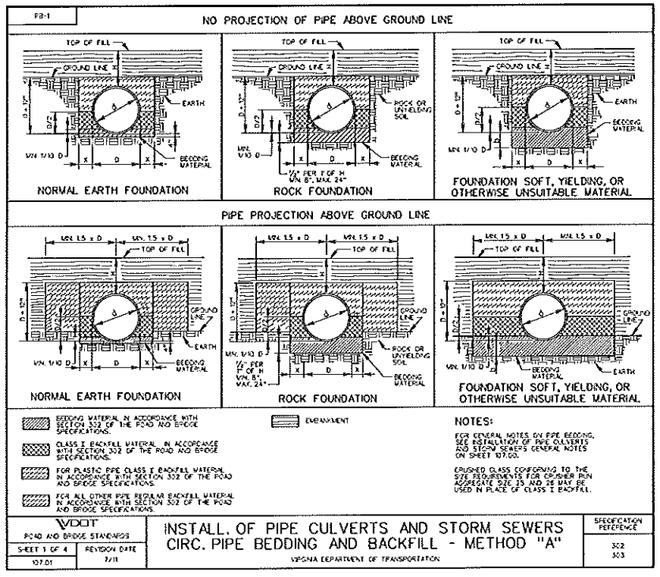
SPECIFICATION REFERENCE	STANDARD ENDWALL FOR PIPE CULVERTS 12" - 36" CIRCULAR AND 23" x 14" - 53" x 34" ELLIPTICAL PIPES VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS REVISION DATE / SHEET 1 OF 1
105 302		104.01



PIPE DIAMETER	SHEET THICKNESS STEEL	SHEET THICKNESS ALUMINUM	DIMENSIONS A ± TOL.	B MAX.	H ± TOL.	E 5% TOL.	W ± 1" TOL.	C
12"	.064"	.060"	6"	6"	6"	21"	24"	24"
15"	.064"	.060"	7"	8"	6"	26"	30"	24"
18"	.064"	.060"	8"	10"	6"	31"	36"	24"
21"	.064"	.060"	10"	12"	6"	36"	42"	24"
24"	.064"	.060"	10"	13"	6"	41"	48"	24"
27"/30"	.064"	.075"	12"	16"	6"	51"	60"	24"
36"	.064"	.075"	14"	19"	6"	62"	72"	36"
42"	.064"	.105"	16"	22"	11"	73"	84"	36"
48"	.064"	.105"	18"	27"	11"	78"	90"	24"
54"	.064"/.079"	.105"	18"	30"	11"	84"	102"	36"
60"	.064"/.079"	.105"/.135"	18"	33"	12"	87"	114"	36"

NOTES:
1. TOE PLATE TO BE PUNCHED TO MATCH HOLES IN SKIRT 1/8" ¾" GALVANIZED BOLTS TO BE PLANISHED. LENGTH OF TOE PLATE IS W + 12" FOR 12" TO 30" DIAMETER PIPE AND W + 22" FOR 36" TO 60" DIAMETER PIPE.
2. SKIRT SECTION 12" TO 30" DIAMETER PIPE TO BE MADE IN ONE PIECE.
3. SKIRT SECTION FOR 36" TO 54" DIAMETER PIPE MAY BE MADE FROM TWO SHEETS JOINED BY RIVETING OR BOLTING ON CENTER LINE, 60" MAY BE CONSTRUCTED IN 3 PIECES.
4. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME SHEET THICKNESS AS SKIRT.
5. END-SECTION AND FITTINGS ARE TO BE STEEL FOR USE WITH STEEL PIPE.
6. END-SECTION AND FITTINGS ARE TO BE ALUMINUM ALLOY FOR USE WITH ALUMINUM ALLOY PIPE.
7. EITHER THE STEEL OR ALUMINUM END-SECTION DETAILED MAY BE USED FOR PLASTIC PIPE SIZES SHOWN IN STD.PC-1 OR AN APPROVED PLASTIC END-SECTION MAY BE USED.
8. WHERE FLARED END-SECTION ARE TO BE USED WITH ASPHALT COATED AND PAVED METAL PIPE, END SECTIONS DO NOT NEED TO BE COATED OR PAVED.

SPECIFICATION REFERENCE	FLARED END SECTION 12" - 60" CORRUGATED PIPE CULVERTS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS REVISION DATE / SHEET 1 OF 1
302		102.03



BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS E BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

FOR PLASTIC PIPE CLASS E BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

FOR ALL OTHER PIPE REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

NOTES:
FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.02.

CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR GRADER RUN AGGREGATE SIZE 23 AND 26 MAY BE USED IN PLACE OF CLASS E BACKFILL.

VDOT ROAD AND BRIDGE STANDARDS	INSTALL. OF PIPE CULVERTS AND STORM SEWERS CIRC. PIPE BEDDING AND BACKFILL - METHOD "A" VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 4 / REVISION DATE 7/11 107.01		302 303

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	2H(1)

COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020686
PROFESSIONAL ENGINEER

Bharat Bhargava
2012.10.08 13:37:40 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

	PROJECT	SHEET NO.
	0123-151-139, R201	2H(1)

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	2H(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PB-1

GENERAL

1. METHOD "A" PIPE BEDDING SHALL BE USED FOR ALL TYPES OF PIPE CULVERTS WITHIN THE APPLICABLE HEIGHT OF COVER RANGE NOTED IN THE STANDARD PC-1 TABLES UNLESS OTHERWISE NOTED ON THE PLANS.
2. H = HEIGHT OF COVER MEASURED FROM TOP OF CULVERT TO FINISHED GRADE.
3. b = EXCAVATION DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.

CIRCULAR PIPE

1. D = OUTSIDE DIAMETER OF PIPE.
2. d = INSIDE DIAMETER OF PIPE.
3. X = WIDTH OF CLASS I BACKFILL MATERIAL BEYOND THE EXTREMITY OF THE PIPE.
   X = 12" WHERE D IS LESS THAN 36".
   X = 18" WHERE D IS 36" AND GREATER.
4. WHERE DIRECTED BY THE ENGINEER BEDDING MATERIAL MAY BE ELIMINATED FOR NORMAL EARTH FOUNDATIONS UNDER ROUTINE ENTRANCE PIPE, EXCEPT PLASTIC PIPED 30" AND LESS IN DIAMETER WITH HEIGHT OF COVER 15' OR LESS.
5. REGULAR BACKFILL MATERIAL MAY BE USED IN LIEU OF CLASS I BACKFILL MATERIAL FOR ALL FOUNDATION TYPES FOR ROUTINE ENTRANCE PIPE, EXCEPT PLASTIC PIPED 30" AND LESS IN DIAMETER WITH HEIGHT OF COVER 10' OR LESS.
6. BEDDING MATERIAL AND CLASS I BACKFILL MATERIAL MAY BE ELIMINATED FOR SHOULDER SLOT INLET (SB-1.11) OUTLET PIPES INSTALLATIONS.

ELLIPTICAL PIPE

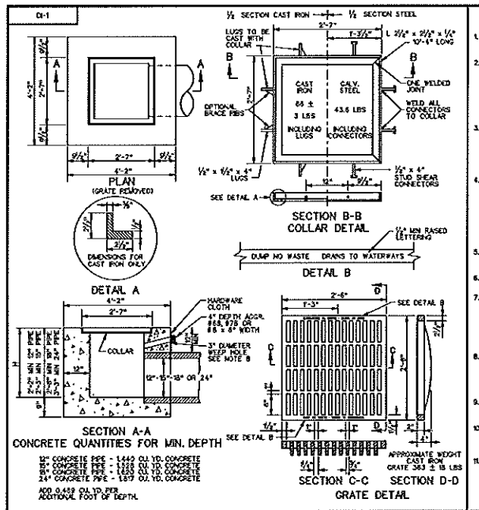
1. S_1 = OUTSIDE SPAN DIMENSION OF PIPE.
2. S_2 = INSIDE SPAN DIMENSION OF PIPE.
3. R = OUTSIDE RISE DIMENSION OF PIPE.
4. X = WIDTH OF CLASS I BACKFILL MATERIAL BEYOND THE EXTREMITY OF THE PIPE.
   X = 12" WHERE S_2 IS LESS THAN 36".
   X = 18" WHERE S_2 IS 36" AND GREATER.
5. WHERE DIRECTED BY THE ENGINEER BEDDING MATERIAL MAY BE ELIMINATED FOR NORMAL EARTH FOUNDATIONS UNDER ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.
6. REGULAR BACKFILL MATERIAL MAY BE USED IN LIEU OF CLASS I BACKFILL MATERIAL FOR ALL FOUNDATION TYPES FOR ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.

PIPE ARCH

1. S = SPAN DIMENSION OF PIPE.
2. R = RISE DIMENSION OF PIPE.
3. B = SEE PC-1 TABLE FOR APPLICABLE PIPE MATERIAL
4. x = WIDTH OF CLASS I BACKFILL MATERIAL BEYOND THE EXTREMITY OF THE PIPE.
   x = 12" WHERE S_2 IS LESS THAN 36".
   x = 18" WHERE S_2 IS 36" AND GREATER.
5. WHERE DIRECTED BY THE ENGINEER BEDDING MATERIAL MAY BE ELIMINATED FOR NORMAL EARTH FOUNDATIONS UNDER ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.
6. REGULAR BACKFILL MATERIAL MAY BE USED IN LIEU OF CLASS I BACKFILL MATERIAL FOR ALL FOUNDATION TYPES FOR ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.

SPECIFICATION REFERENCE	INSTALLATION OF PIPE CULVERTS & STORM SEWERS GENERAL NOTES	VDOT ROAD AND BRIDGE STANDARDS
303 303	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: — SHEET 1 OF 1: 107.03

DI-1

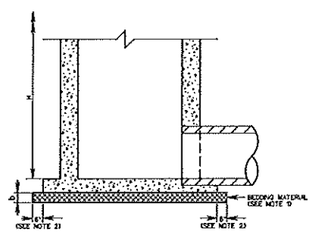


NOTES

1. DEPTH OF INLET D-3 TO BE SHOWN ON PLANS FOR DEPTH GREATER THAN 10' USE STANDARD DI-1A.
2. THE TYP. DIMENSION SHOWN ON THE STANDARDS AND SHOWED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD SB-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS BELOW ON THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED SO AS TO ELIMINATE STANDING WATER OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THIS SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 7'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
7. #4 X 8' SMOOTH DOWELS AT APPROXIMATELY 12"-2"-12" TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT IN LIEU OF DOWELS A 2"x4" NOTCH MAY BE PROVIDED. SEE STANDARD T.C.-3.4 FOR ALTERNATE DESIGN.
8. 3" DIAMETER WEEP HOLE WITH 12"x12" PLASTIC HARDWARE CLOTH, 1/2" MESH OR GALVANIZED STEEL WOVEN WIRE (NOMINAL WIRE DIAMETER .0331, NUMBER 4 MESH OPENING, 0.185" AS SPECIFIED) AFFIXED TO THE OUTSIDE OF THE STRUCTURE.
9. CAST IN PLACE CONCRETE IS TO BE CLASS A1 (3000 PSI). PRECAST CONCRETE IS TO BE 4,000 PSI.
10. ANY ALTERNATE METHODS OF ANCHORAGE MEETING THE APPROVAL OF THE ENGINEER MAY BE SUBSTITUTED FOR THE CAST IRON LUGS AS SHOWN HEREON.
11. DUMP NO WASTE DRAINS TO WATERWAY LETTERING IS REQUIRED ON ALL DI-1 GRATES. LOCATION OF LETTERING MAY VARY BY MANUFACTURER.

VDOT ROAD AND BRIDGE STANDARDS	STANDARD DROP INLET 12" - 24" PIPE: MAXIMUM DEPTH (H) = 10'	SPECIFICATION REFERENCE
SHEET 1 OF 1 — REVISION DATE: 104.01	VIRGINIA DEPARTMENT OF TRANSPORTATION	233 302

DSB-1



SECTIONAL ELEVATION

NOTES

1. BEDDING MATERIAL IS TO BE AGGREGATE SIZE 25 OR 26. IF FOUNDATION HAS STANDING OR RUNNING WATER PRESENT, THEN AGGREGATE NO. 57 SHALL BE USED FOR THE DEPTH SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER, CAPPED WITH 4 INCHES OF AGGREGATE NO. 23 OR 25.
2. WIDTH OF BEDDING MATERIAL SHALL EXTEND A MINIMUM OF 6" BEYOND THE BASE OF THE STRUCTURE ON ALL SIDES.
3. HEIGHT OF STRUCTURE, D0 IS MEASURED FROM THE INVERT OF THE STRUCTURE TO THE TOP OF THE FRAME AND COVER OR CONCRETE DEPENDING ON STRUCTURE TYPE. SEE APPLICABLE DRAINAGE STRUCTURE STANDARD FOR DETAIL.

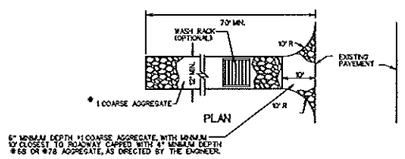
BEDDING THICKNESS TABLE

FOUNDATION TYPE	BEDDING THICKNESS (b)
NORMAL EARTH	4" FOR H < 10' 8" FOR H ≥ 10'
ROCK	1" PER FOOT OF H, MAX. 8"
SOFT & YIELDING	AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER

SPECIFICATION REFERENCE	DRAINAGE STRUCTURE BEDDING FOR DROP INLET, MANHOLE, AND JUNCTION BOX	VDOT ROAD AND BRIDGE STANDARDS
302	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: — SHEET 1 OF 1: 108.15

EC-1

MINIMUM REQUIREMENTS FOR STABILIZED CONSTRUCTION ENTRANCE



1. SURFACE WATER SHALL BE PIPED UNDER THE CONSTRUCTION ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY SHALL BE REMOVED IMMEDIATELY.
3. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER HEAVY USE AND EACH RAIN.

SPECIFICATION REFERENCE	STABILIZED CONSTRUCTION ENTRANCE	VDOT ROAD AND BRIDGE STANDARDS
107 303		REVISION DATE: — SHEET 1 OF 1

	PROJECT	SHEET NO.
	0123-151-139, R201	2H(2)

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Plotted By: lockehusse

PROJECT MANAGER: Peter Willard (703) 246-6330
SURVEYED BY: Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY: David Summers (703) 385-7846
DESIGNED BY: The LPA Group Inc. (703) 639-1694

UTILITY OWNERS

1 - FAIRFAX WATER AUTHORITY
TECH SERVICE DEPARTMENT
8570 EXECUTIVE PARK AVE.
FAIRFAX, VA 22031
MICHAEL JENKINS (703) 698-5600 EX. 6358
MJENKINS@FAIRFAXWATER.ORG

2 - WASHINGTON GAS & LIGHT
6801 INDUSTRIAL DRIVE
SPRINGFIELD, VA 22151
CONTACT: MR. DOUG RYAN
(703) 750-4896

3 - VERIZON VIRGINIA INC.
2980 FAIRVIEW PARK DR. (7TH FL)
FALLS CHURCH, VA 22042
CONTACT: MR. REGINALD LAWSON
(703) 204-7476

4. DOMINION VIRGINIA POWER
111 ELDEN STREET
HERNDON, VA 20170
CONTACT: MR. TESFAYE KONDE
703-375-5930

Denotes Proposed Pavement
Denotes Resurfaced Pavement
Denotes Proposed Sidewalk
C Denotes Construction Limits In Cuts
F Denotes Construction Limits In Fills

RUSTFIELD SUBDIVISION
DB 5441, PG 642
TAX MAP 57-2 ((24))
USE: RESIDENTIAL TOWNHOUSES

OWNER: SUSAN M. SHIELDS
DB 15287, PG 759
T.M. #57-2 ((24)) 2
USE: RESIDENTIAL

OWNER: JOHN W. O'DONNELL AND PATRICIA G. O'DONNELL
DB 10601, PG 1015
T.M. #57-2 ((24)) 3
USE: RESIDENTIAL

LOT 2

LOT 3

LOT 4

OWNER: J. DAVID LINTHICUM AND BRENDA J. LINTHICUM
DB 18553, PG 500
T.M. #57-2 ((24)) 4
USE: RESIDENTIAL

OWN. RUSTFIELD ASSC
DB 5441, PG
T.M. #57-2 ((

SUBDIVISION
DB 19178, PG 1913

LOT 5
OWNER: EVG SSB VENTURE LLC
DB 21691, PG 1341
T.M. #57-2 ((45)) 5
USE: RESIDENTIAL

OWNER: LASZLO TABA AND SUSAN ELIZABETH T
DB 20259, PG 799
T.M. #57-2 ((45)) 1
USE: RESIDENTIAL

LOT 1

BEGIN BRIDGE
STATION 16+16.45

END BRIDGE
STATION 16+69.06

END PROJECT
0213-157-139-PE-101
STATION 18+00

BEGIN PROJECT
0213-157-139-PE-101
STATION 12+75

PARCEL A

RUST HILL PLACE

CHAINBRIDGE ROAD

KENMORE DRIVE

Curve CHAIN_2
PI = 15+74.59
DELTA = 65° 54' 57.76" (RT)
D = 34° 18' 32"
T = 108.28'
L = 192.12'
R = 167.00'
PC = 14+66.31
PT = 16+58.43

Curve RHP_2
PI = 10+67.35
DELTA = 38° 59' 51.51" (LT)
D = 57° 17' 45"
T = 35.41'
L = 68.06'
R = 100.00'
PC = 10+31.94
PT = 11+00.00

Curve PED-1
PI = 0+96.49
DELTA = 10° 42' 41.51" (RT)
D = 179° 02' 58"
T = 3.00'
L = 5.98'
R = 32.00'
PC = 0+93.49
PT = 0+99.47

Curve PED-2
PI = 1+05.15
DELTA = 28° 18' 09.30" (RT)
D = 288° 53' 12"
T = 5.00'
L = 9.80'
R = 19.83'
PC = 1+00.15
PT = 1+09.94

Curve WPR-1
PI = 9+70.75
DELTA = 7° 52' 38.43" (LT)
D = 94° 15' 07"
T = 4.19'
L = 8.36'
R = 60.79'
PC = 9+66.56
PT = 9+74.92

NOTE:
THE DRY UTILITY RELOCATION SHOWN IS BASED ON THE SCHEME PLANNED BY THE CITY OF FAIRFAX AT THE TIME OF THE BRIDGE AND ROADWAY PLANS WERE BEING PREPARED. CONTRACTOR SHALL CONTACT THE CITY OF FAIRFAX, PRIOR TO BEGINNING OF CONSTRUCTION, FOR AS-BUILT DRY UTILITY RELOCATION PLANS, IN CASE THERE MAY BE CHANGES.

DITCH TYPICAL
NOT TO SCALE
EX. GROUND
PROP. GRADE
3:1
3:1
ST'D. EC-2

EXISTING DRAINAGE DESCRIPTION

(1) STORM MH
TOP=356.71
STUCTURE FULL OF SILT

(2) STORM MH
TOP=357.03
STRUCTURE FULL OF SILT

(3) END SECTION W/STONE HEADWALL
15" INV.=350.80

(4) CURB INLET
TOP=361.44
15" RCP OUT=357.59

(5) CURB INLET
TOP=360.85
15" RCP IN (SOUTH)=356.84
15" RCP IN (EAST)=356.52
18" RCP OUT=356.23

DRAINAGE DESCRIPTION

(3-1) Std DI-3B Req'd
L=8', H=5.9' Inv. 363.00
Connect UD-3 To DI

(3-1) TO (3-2) 162'-15" Storm Sewer Pipe Req'd (4' Cover)
INV.(IN) 363.00 INV.(OUT) 359.60

(3-2) Modify Existing Drop Inlet
Adjust To Grade, Raise 2.2'
Proposed DI-3B L=8' Top El. 363.62
Modify To Accept 15" Conc. Pipe
Connect UD-3 To DI

(3-3) Adjust Existing Drop Inlet
Adjust To Grade, Raise 0.2'
Proposed DI-3B L=8' Top El. 361.08

(3-4) Std DI-3B Req'd
L=4', H=7.8' Inv. 355.25

(3-4) TO (3-5) 79'-15" Storm Sewer Pipe Req'd (6' Cover)
INV.(IN) 355.25 INV.(OUT) 354.40
1 Std. EW-1 Req'd.
1 Cu.Yd. Std EC-1 Class 1A Req'd. Lt. Type A Installation

(3-6) 11.8'-15" Pipe Req'd (1' Cover)
INV.(IN) 355.60 INV.(OUT) 355.54

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

Mainline Profile	3A
Drainage Descr.	

SCALE
0 25' 50'

REVISED	STATE	ROUTE	PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	3

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic No. 4053
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.12.28 13:07:09 -05'00'
The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROJECT	SHEET NO.
0123-151-139	3

10/9/2012
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Plotted By: tooluser

PROJECT MANAGER: Peter_Willard (703) 246-6330
SURVEYED BY: Burgess & Niple (703) 631-9630
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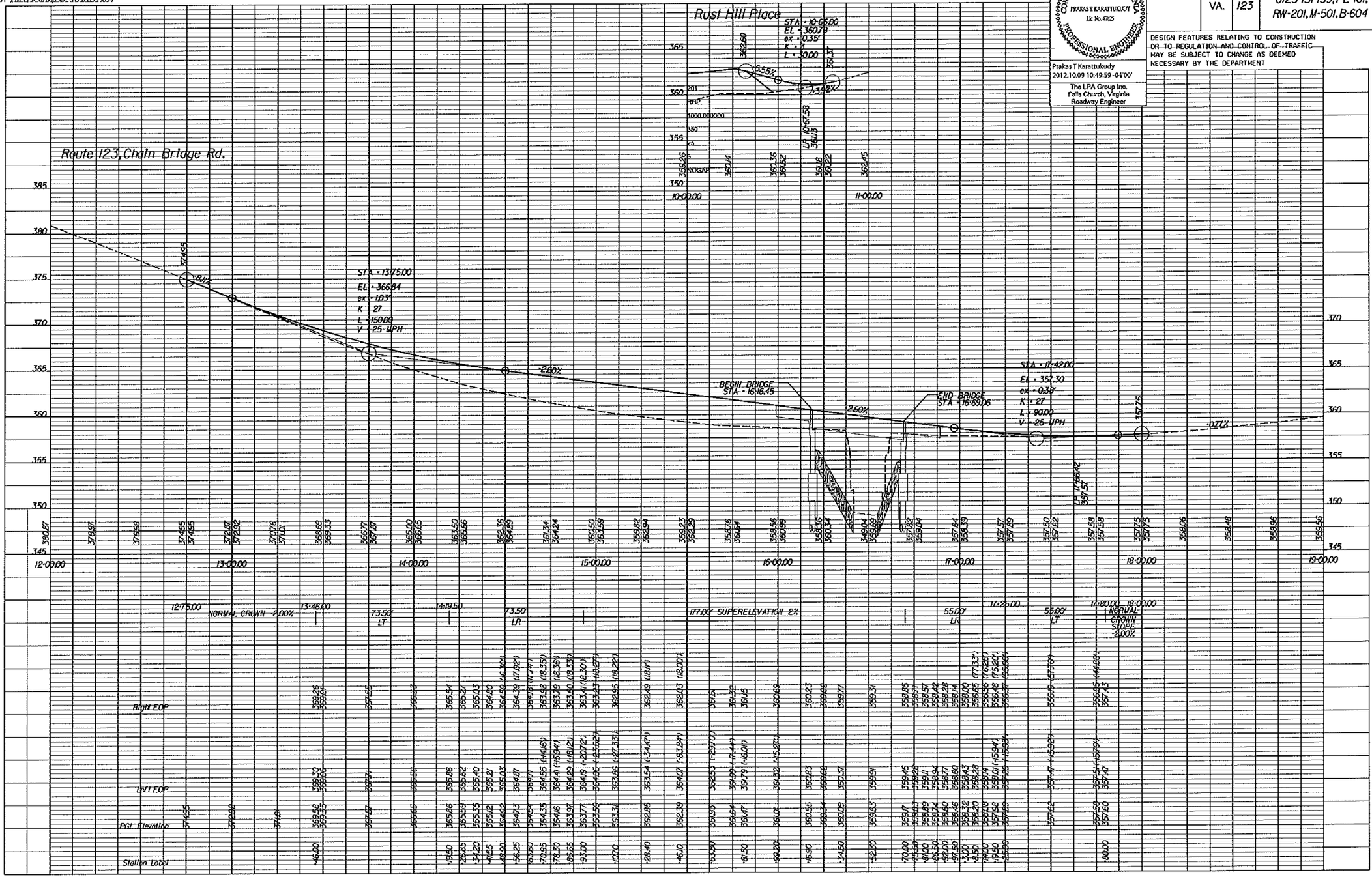
DESIGNED BY: The LPA Group Inc (703) 639-1694

COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic No. 0825
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.09 10:49:59 -04'00'
The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101, RW-201, M-501, B-604	3A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



PROJECT	SHEET NO.
0123-151-139	3A

PROJECT MANAGER Peter Willford (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776

CITY OF FAIRFAX EROSION AND SEDIMENT CONTROL PLAN NOTES

COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020656
PROFESSIONAL ENGINEER

Bharat Bhargava
2012.10.08 13:41:21 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	3C

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SUGGESTED EROSION AND SEDIMENT CONTROL PHASING

THE FOLLOWING PHASING IS TO BE WORKED WITH THE SEQUENCE OF CONSTRUCTION PLAN SHEETS. UNLESS OTHERWISE APPROVED OR DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PLAN AND PROSECUTE THE WORK IN ACCORDANCE WITH THE FOLLOWING PLAN. IT IS NOT INTENDED TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED IN THE EROSION AND SEDIMENT CONTROL (E&SC) OF EACH STAGE, BUT ONLY TO SHOW THE GENERAL HANDLING OF E&SC AND STREAM DIVERSION. THE CONTRACTOR SHALL ENSURE THAT ALL E&SC PROCEDURES ARE IN PLACE BEFORE COMMENCING EACH PHASE OF CONSTRUCTION.

PHASE 1
1. PROVIDE PERIMETER CONTROL AS SHOWN ON THE PLAN SHEET 5C.
2. CONSTRUCT SEDIMENT TRAP.
3. OBTAIN APPROVAL FROM THE CITY SITE INSPECTOR.
4. CONSTRUCT PROPOSED 6" WATERLINE FROM STATION 0+93 TO 1+43 USING JACK AND BORE.
5. CONSTRUCT THE NORTHBOUND SIDE OF THE CHAIN BRIDGE ROAD AND PEDESTRIAN BRIDGE, INCLUDING PROPOSED STORM SEWER SYSTEM AND SCOUR PROTECTION FOR THE BRIDGES.

PHASE 2
1. INSTALL AND REMOVE PERIMETER CONTROLS AS SHOWN ON THE PLAN SHEET 6C.
2. CONSTRUCT SOUTHBOUND SIDE OF THE CHAIN BRIDGE ROAD, INCLUDING PROPOSED DRAINAGE SYSTEM.
3. OBTAIN APPROVAL FROM THE CITY SITE INSPECTOR PRIOR REMOVING ANY EROSION AND SEDIMENT CONTROL MEASURES.

ENVIRONMENTAL

1. ALL EROSION SILTATION CONTROL TO BE INSTALLED PRIOR TO STARTING PROJECT TO CONFORM TO THE CURRENT VIRGINIA EROSION AND SEDIMENT CONTROL MANUAL.

2. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING THE CITY OF FAIRFAX RIGHTS-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS AND ALLAY DUST AND TO TAKE WHATEVER MEASURES NECESSARY TO ENSURE THAT THE ROAD IS MAINTAINED IN A CLEAN AND DUST-FREE CONDITION AT ALL TIMES.

4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE WORK IN SUCH A MANNER TO PREVENT THE WASHING OF ANY TOPSOIL, SILT, OR DEBRIS ONTO ADJACENT PROPERTIES.

5. IF THE PRESENCE OF ASBESTOS IS SUSPECTED IN THE SOIL, THE CONTRACTOR MUST CONTACT THE AIR POLLUTION CONTROL DIVISION OF THE FAIRFAX COUNTY HEALTH DEPARTMENT AT 246-2541.

6. ONSITE STORAGE OF FUEL SHALL BE LIMITED TO DIESEL FUEL TANKS NOT OVER 660 GALLONS CAPACITY. TANKS SHALL BE OF A LISTED TYPE AND SHALL BE PROVIDED WITH APPROVED SECONDARY CONTAINMENT, IMPACT PROTECTION AND PLACARDING. A MINIMUM 2A-40BC FIRE EXTINGUISHER SHALL BE PROVIDED IN THE VICINITY OF THE REFUELING AREA. A PERMIT FOR COMBUSTIBLE LIQUID STORAGE SHALL BE OBTAINED FROM THE OFFICE OF CODE ADMINISTRATION, 385-7830. FUEL SHALL NOT BE PLACED IN ONSITE STORAGE TANKS UNTIL THE INSTALLATION HAS BEEN INSPECTED AND APPROVED.

7. ONSITE REPAIR OF VEHICLES AND EQUIPMENT SHALL BE LIMITED TO REPLACEMENT OF DAMAGED BELTS, HOSES AND TIRES. ANY SPILL OF FUEL, OIL, HYDRAULIC FLUID OR ANTI-FREEZE GREATER THAN ONE GALLON MUST BE REPORTED TO THE OFFICE OF CODE ADMINISTRATION AT 385-7830. ALL SPILLS MUST BE CLEANED UP PROMPTLY AND IN AN APPROVED MANNER.

8. THE OWNER SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH CITY CODE SECTIONS REGARDING HEALTH AND SAFETY MENACES, INCLUDING ACCUMULATIONS OF WATER, STORAGE OF MATERIAL, CONSTRUCTION DEBRIS AND SECURITY OF THE SITE.

9. THE LINK TO THE ASBESTOS INFORMATION AND MAP ON THE FAIRFAX COUNTY WEBSITE HTTP://WWW.FAIRFAXCOUNTY.GOV/HD/ASB/

10. PRIOR TO THE START OF ANY SITE GRADING WORK, THE DEVELOPER OR OWNER SHALL PROVIDE THE CITY OF FAIRFAX PUBLIC WORKS FACILITIES INSPECTOR WITH DOCUMENTATION THAT A VSMP PERMIT HAS BEEN ISSUED BY THE VA DEPARTMENT OF CONSERVATION AND RECREATION.

EROSION AND SEDIMENT CONTROL NARRATIVES

PROJECT DESCRIPTION: THE PROJECT PROPOSES AN IMPROVEMENT OF ROADWAY INTERSECTION OF CHAIN BRIDGE ROAD, RUST HILL PLACE, AND KENMORE DRIVE. THE IMPROVEMENT INCLUDES ROADWAY AND PEDESTRIAN BRIDGES AND WATERLINE RELOCATION. CURB AND GUTTER SECTIONS ARE PROPOSED TO THIS IMPROVEMENT. THE TOTAL DISTURBED AREA IS 1.47 ACRES WITH A NEW PERVIOUS OF 0.13 ACRES.

EXISTING SITE CONDITIONS: THE SITE IS LOCATED IN AREA RANGES FROM STEEP SLOPE TO RELATIVELY FLAT OF PAVED AREA. THERE IS SOME ESTABLISHED GRASS AREA ALONG THE ROADWAY. UNDER EXISTING CONDITION, STORM WATER DRAINS EAST TO THE BRIDGE AND ULTIMATELY TO THE TRIBUTARY TO ACCOTINK CREEK.

ADJACENT AREAS: THE PROJECT IS ADJACENT TO RESIDENTIAL AREAS OVER THE TRIBUTARY TO ACCOTINK CREEK.

OFFSITE AREAS: THERE IS NOT OFF-SITE DISTURBANCE.

SOILS: SEE SOILS MAP AND TABLE SHEET 4C

CRITICAL AREAS: THE PROJECT PROPOSES A CONSTRUCTION OF BRIDGES OVER THE EXISTING LIVE STREAM. ANY CONSTRUCTION ACTIVITIES BEYOND EROSION AND SEDIMENT PERIMETER CONTROLS ARE PROHIBIT. CONTRACTORS MUST WORK CAREFULLY NEAR THE EXISTING LIVE STREAM.

EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VESCH HANDBOOK AND VDOT ROAD AND BRIDGE SPECIFICATIONS. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY CONTRACT SPECIAL PROVISION.

TEMPORARY DIVERSION DIKE AND SEDIMENT TRAP: A SYSTEM OF TEMPORARY DIVERSION DIKES, TO DIRECT FLOW INTO SEDIMENT TRAP, WILL BE INSTALLED BELOW MAJOR GRADED AREAS AS SHOWN ON SHEET 5C. SEDIMENT TRAP SPECIFICATIONS ARE SHOWN ON SHEET 4C.

OUTLET PROTECTION: RIP RAP IS TO BE PROVIDED AT THE OUTLET OF ALL PIPES AS SHOWN IN EROSION AND SEDIMENT CONTROL PHASES 1 AND 2 ON SHEET 5C AND 6C.

SILT FENCE BARRIER: SILT FENCES ARE PROVIDED AT THE BOTTOM OF THE SLOPE TO FILTER SEDIMENT DEBRIS FROM SHEET FLOW.

TEMPORARY CONSTRUCTION ENTRANCE: TEMPORARY CONSTRUCTION ENTRANCES WITH WASH RACK ARE PROVIDED TO ACCESS THE CONSTRUCTION AND STAGING AREAS. CONTRACTORS ARE RESPONSIBLE TO PROVIDE WATER SUPPLY TO THESE CONSTRUCTION ENTRANCES FROM EITHER EXISTING NEARBY FIRE HYDRANT OR WATER TANK.
INLET PROTECTION: ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION.

TEMPORARY SEEDING: ALL DENUDED AREAS WHICH WILL BE LEFT UNDISTURBED FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

PERMANENT STABILIZATION: ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE ACCORDING TO STANDARDS AND SPECIFICATIONS 3.32 PERMANENT SEEDING OF THE VESCH HANDBOOK.

STORMWATER RUNOFF CONSIDERATIONS: CALCULATION OF RUNOFF INDICATES A NEGLIGIBLE NET INCREASE IN PEAK RUNOFF. ACCORDING MS-19 CRITERIA, THE OUTFALL IS ADEQUATE BECAUSE OF THE PROJECT RUNOFF IS LESS THAN ONE PERCENT OF THE TOTAL CONTRIBUTING DRAINAGE AREA TO THE STREAM. EROSION AND SEDIMENT CONTROL MEASURES ARE PROVIDED TO STABILIZE THE PROJECT AREA FROM ERODING.

CALCULATIONS: DETAILED CALCULATIONS FOR STORMWATER MANAGEMENT IS PROVIDED UNDER SEPARATE COVER.

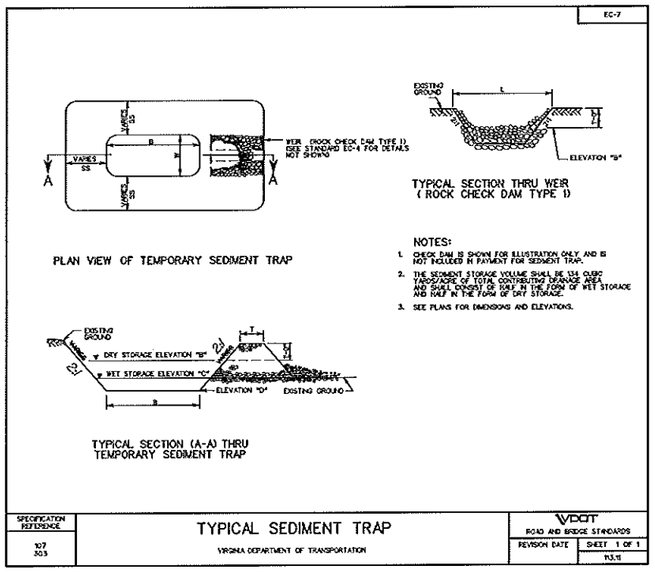
MANAGEMENT STRATEGIES: SEE SUGGESTED EROSION AND SEDIMENT CONTROL PHASING THIS SHEET.

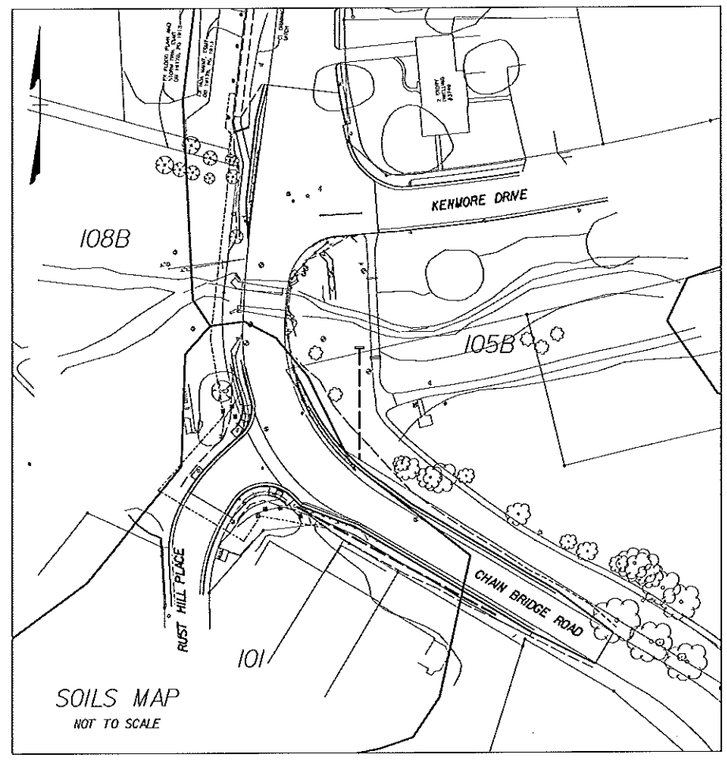
	PROJECT	SHEET NO.
	0123-151-139, R201	3C

PROJECT MANAGER Peter Millord (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776

SEDIMENT TRAP COMPUTATION AND SOILS DATA

SEDIMENT TRAP NUMBER	STATION	BOTTOM FOOTPRINT		SEDIMENT TRAP CONSTRUCTION CHART					SILTATION CONTROL EXCAVATION (CY)	REGULAR EXCAVATION (CY)	REMARKS
		B (FT)	W (FT)	ELEV. "B"	ELEV. "C"	ELEV. "D"	T (FT)	L (FT)			
ST #1	15+25 LT	28	10	359.0	357.5	355.5	2.5	2	10.5	21.0	





SOILS TABLE

SOIL ID.	SOIL NAME	SOIL PROBLEM CLASS	SOIL HYDROLOGIC GROUP	SUBSOIL PERMEABILITY RATE	SOIL DRAINAGE	SUITABILITY FOR SEPTIC DRAINFIELDS	EROSION POTENTIAL	FOUNDATION SUPPORT
101	URBAN LAND - WHEATON COMPLEX	IVB	D	0.06-0.2	FAIR - S	POOR - S	MEDIUM	FAIR - C,B
105B	URBAN LAND - WHEATON COMPLEX	IVB	D	0.06-0.2	GOOD	GOOD	HIGH	GOOD
108B	WHEATON - SUMERDUCK COMPLEX	III	D	0.06-0.6	POOR - W,S	POOR - W,S	MEDIUM	MARGINAL - W,B

Note:
Soils map is taken from the USGS Soil Map
(http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm)

BHARAT BHARGAVA
Lic. No. 020686
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER
Bharat Bhargava
2012.10.08 13:42:22 -04'00'
ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	4C

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

10/8/2012
1:24:03 PM

0123_151_139-5C.dgn
Plotted By: localuser

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8116

COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020686
PROFESSIONAL ENGINEER

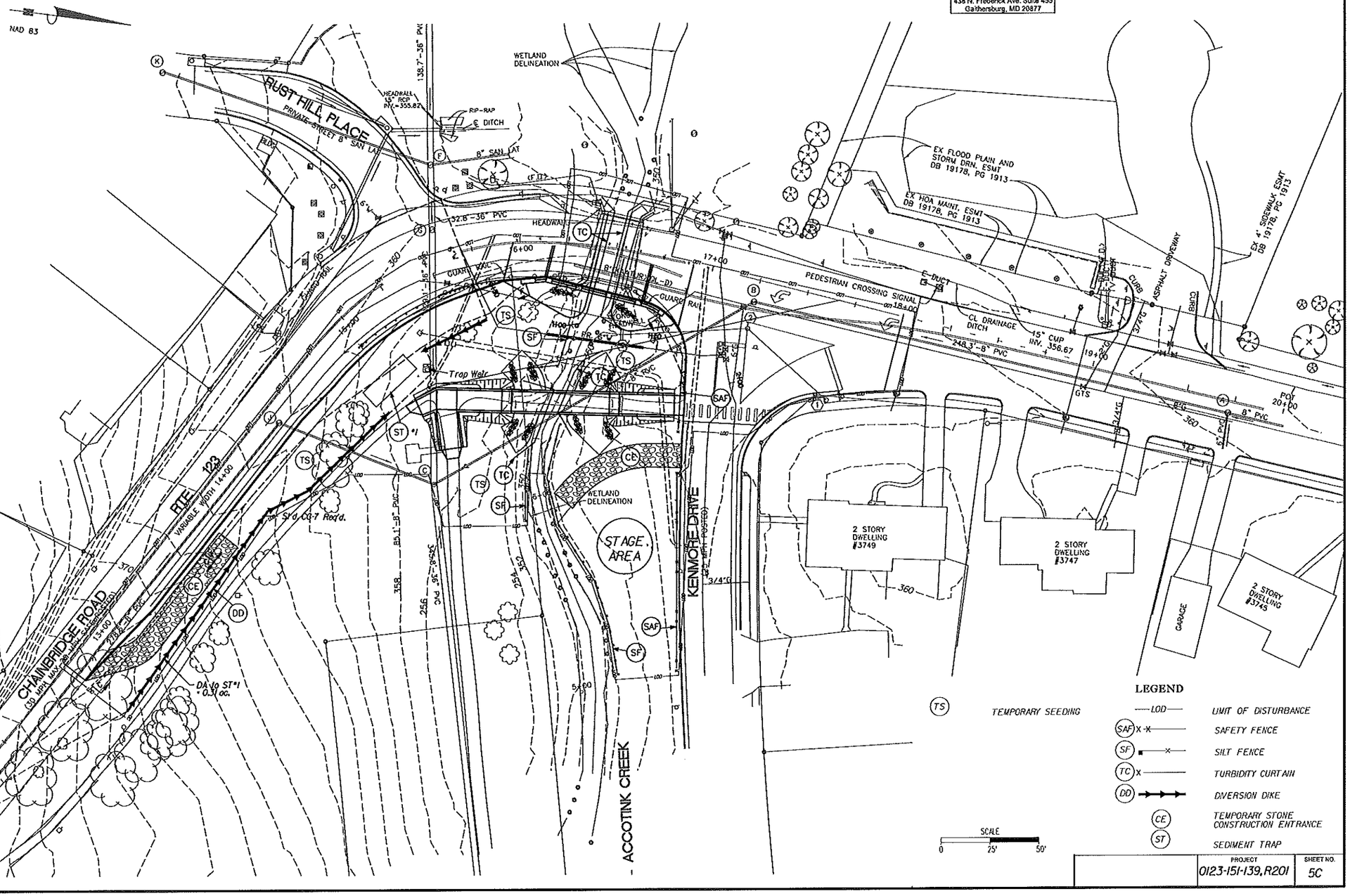
Bharat Bhargava
2012.10.08 13:43:55 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	5C

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

EROSION AND SEDIMENT CONTROL PLANS - PHASE 1



LEGEND

TS	TEMPORARY SEEDING
LOD	LIMIT OF DISTURBANCE
SAF	SAFETY FENCE
SF	SILT FENCE
TC	TURBIDITY CURTAIN
DD	DIVERSION DIKE
CE	TEMPORARY STONE CONSTRUCTION ENTRANCE
ST	SEDIMENT TRAP

SCALE
0 25' 50'

PROJECT	SHEET NO.
0123-151-139, R201	5C

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Plotted By: lockhuser

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776

EROSION AND SEDIMENT CONTROL PLANS - PHASE 2

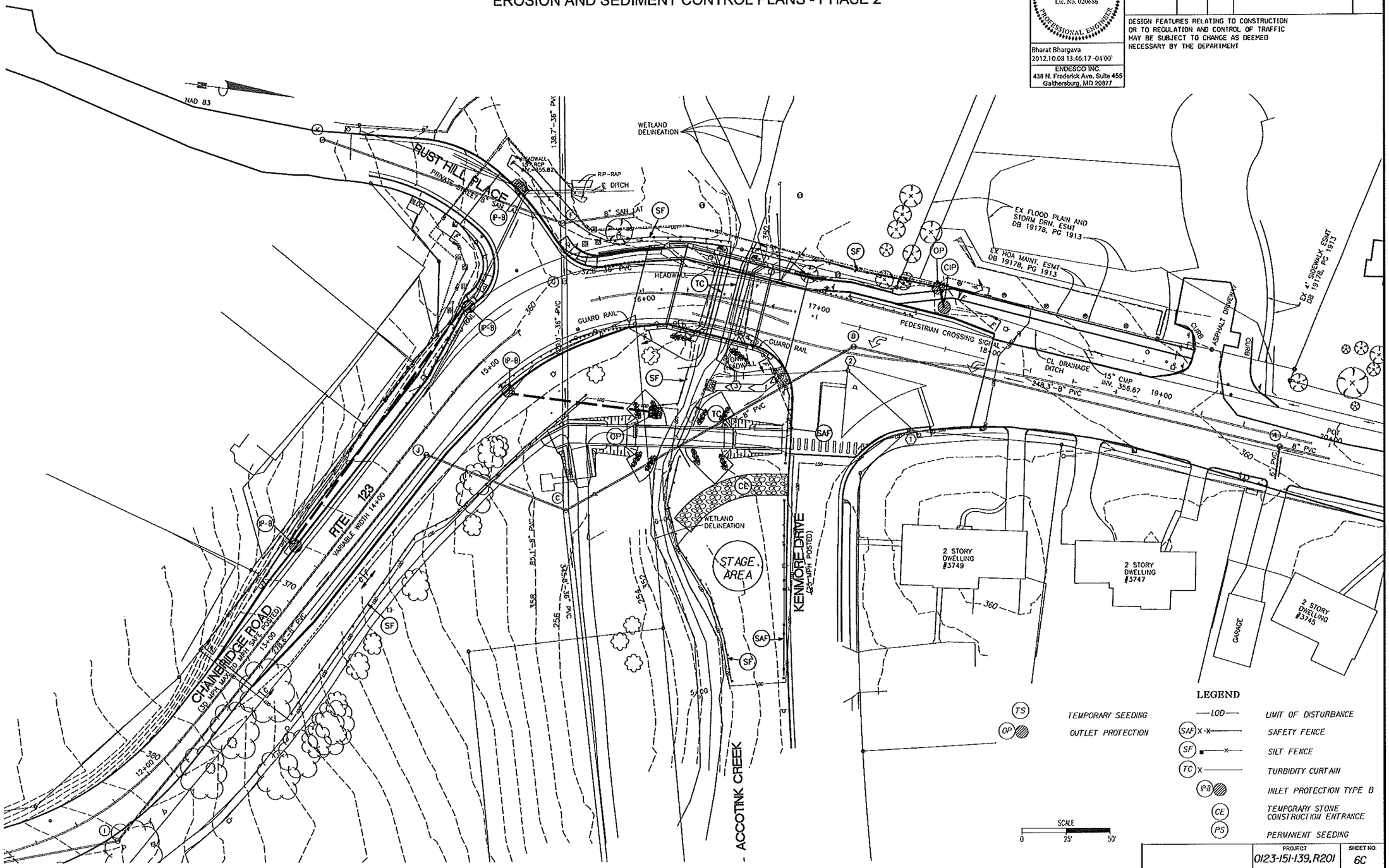
COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020686
PROFESSIONAL ENGINEER

Bharat Bhargava
2012.10.08 13:46:17 -04'00'

ENDESCO INC.
438 N. Frederick Ave, Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE		SHEET NO
	ROUTE	PROJECT		
	VA.	123	0123-151-139, R201	6C

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



LEGEND

TS	TEMPORARY SEEDING	LOD	LIMIT OF DISTURBANCE
OP	OUTLET PROTECTION	SAF	SAFETY FENCE
		SF	SILT FENCE
		TC	TURBIDITY CURTAIN
		IP-B	INLET PROTECTION TYPE B
		CE	TEMPORARY STONE CONSTRUCTION ENTRANCE
		PS	PERMANENT SEEDING

PROJECT	SHEET NO.
0123-151-139, R201	6C

10/12/2012
8:40:28 AM

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Plotted By: locclusser

PROJECT MANAGER_Peter Willard (703) 246 6330
SURVEYED BY _Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

PAVEMENT MARKING & SIGNING PLAN

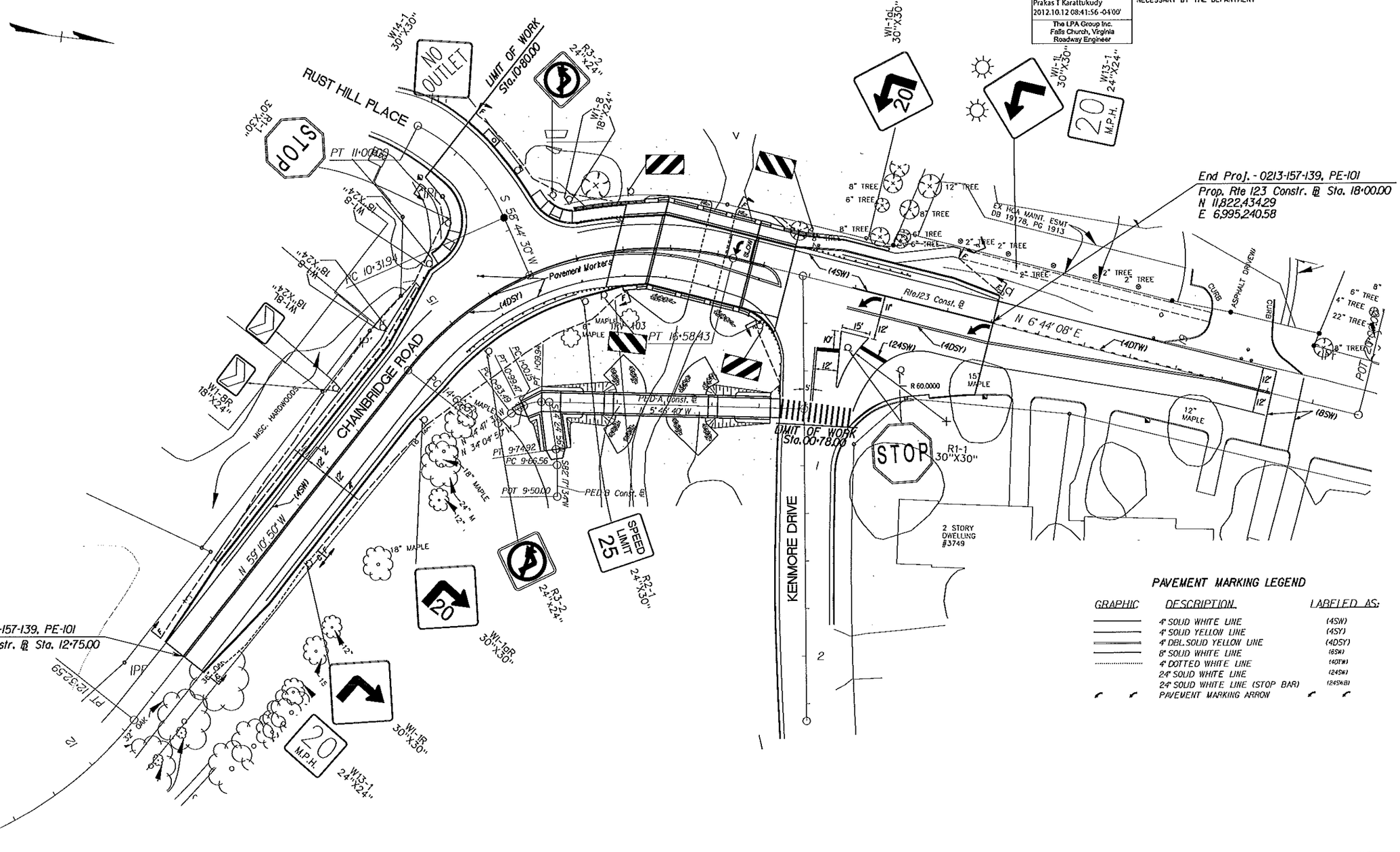
COMMONWEALTH OF VIRGINIA
PRAKAS T KARATTUKUDY
Lic. No. 47523
PROFESSIONAL ENGINEER

Prakas T Karattukudy
2012.10.12 08:41:56 -04'00'

The LPA Group Inc.
Falls Church, Virginia
Roadway Engineer

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 · RW-201, M-501, B-604 ·	13

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



PAVEMENT MARKING LEGEND

GRAPHIC	DESCRIPTION	LABELED AS:
	4" SOLID WHITE LINE	(4SW)
	4" SOLID YELLOW LINE	(4SY)
	4" DBL. SOLID YELLOW LINE	(4DSY)
	8" SOLID WHITE LINE	(8SW)
	4" DOTTED WHITE LINE	(4DTW)
	24" SOLID WHITE LINE	(24SW)
	24" SOLID WHITE LINE (STOP BAR)	(24SWB)
	PAVEMENT MARKING ARROW	

NOTE: ONLY TRAFFIC CONTROL SIGNS ARE SHOWN IN THE PLAN. ANY OTHER SIGNS REMOVED DURING CONSTRUCTION SHALL BE REINSTALLED AS PER THE DIRECTION OF THE ENGINEER.

	PROJECT	SHEET NO.
	0123-151-139	13

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7845
DESIGNED BY Endesco, Inc. (301) 987-8776

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WHERE APPLICABLE TO THE CURRENT CITY OF FAIRFAX PUBLIC FACILITIES MANUAL.

2. ALL CONCRETE SHALL BE CLASS A3 IF CAST-IN-PLACE AND CLASS A4 IF PRECAST.

3. THE EXISTING UTILITIES SHOWN ARE FROM AVAILABLE RECORDS AND FIELD SURVEYS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS OWN SATISFACTION.

4. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AND AT NO EXPENSE TO THE DEPARTMENT. ANY DAMAGES OR INTERRUPTION OF SERVICE SHALL BE REPORTED IMMEDIATELY TO CITY OF FAIRFAX UTILITIES DEPARTMENT, MR. CHRIS FINNEY AT 1-703-385-7815.

5. PLAN LOCATION AND DIMENSIONS SHALL BE ADHERED TO.

6. ALL PIPE ELEVATIONS SHOWN ARE INVERT UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.

7. THE CONTRACTOR SHALL CONTACT THE CITY OF FAIRFAX UTILITIES DEPARTMENT ENGINEER, MR. CHRIS FINNEY, AT 1-703-385-7815 AT LEAST FIVE (5) WORKING DAYS PRIOR TO COMMENCING UTILITY RELOCATION WORK.

8. NO LATER THAN 30 DAYS AFTER THE NOTICE TO PROCEED, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW BY THE CITY OF DEPARTMENT ENGINEER, A SCHEDULE OF OPERATIONS, AND PROPOSED METHODS AND TECHNIQUES INTENDED TO MINIMIZE DOWN-TIME OF THE EXISTING UTILITIES. THE SERVICE AUTHORITY RESERVES THE RIGHT TO LIMIT SHUT-DOWNS TO NON-BUSINESS HOURS AND MINIMUM TRAFFIC PERIODS. IN ADDITION, THIRTY (30) DAYS PRIOR TO THE ACTUAL SHUT-OFF OF ANY LINE, THE CONTRACTOR SHALL INFORM THE CITY OF FAIRFAX UTILITIES DEPARTMENT AND ANY AFFECTED UTILITY COMPANY IN WRITING.

9. NO BLASTING IS PERMITTED.

10. FOR WATER CONSTRUCTION DETAILS, REFER TO SHEETS 14(3) AND 14(4).

11. ITEMS DESIGNATED "T.B.A." AND/OR ARE TO BE ABANDONED. // // // // // // // //
ITEMS DESIGNATED "T.B.R." AND/OR ARE TO BE REMOVED. X X X X X

12. THE CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS ON SITE TO BE SUBMITTED TO THE CITY OF FAIRFAX UTILITIES DEPARTMENT PRIOR TO COMPLETION.

13. THE CONTRACTOR SHALL NOTIFY MISS UTILITY OF NORTHERN VIRGINIA AT 1-800-552-7001 FOR UTILITY LOCATION AT LEAST 72 HOURS BEFORE BEGINNING CONSTRUCTION.

WATER CONSTRUCTION NOTES

1. ALLOWABLE MATERIALS FOR USE IN WATER DISTRIBUTION NETWORKS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

   A. PIPE -
   (1) DUCTILE IRON PIPE CLASS 52 (SIZES 12" OR LESS IN DIAMETER)

   PIPE AND FITTINGS SHALL BE CENTRIFUGALLY CAST CONFORMING TO ANSI/AWWA C-150/A21.5 AND ANSI/AWWA C-151/A21.51. PIPE INTERIOR SHALL BE CEMENT-LINED WITH BITUMINOUS SEAL COATING CONFORMING TO ANSI/AWWA C-104/A21.4. JOINTS USED FOR DUCTILE IRON SHALL BE RUBBER GASKET RESTRAINED MECHANICAL JOINT TYPE CONFORMING TO ANSI/AWWA C-110/A21.10. GASKETS SHALL BE PLAIN RUBBER, OF HEAVY SECTION AND HIGH DUROMETER, SINGLE MOLDED. THE LUBRICANT SHALL BE NONTOXIC, TASTELESS, ODORLESS GREASE THAT WILL NOT SUPPORT BACTERIA AND SHALL MEET OR EXCEED AWWA STANDARDS AND/OR THOSE OF THE NATIONAL SANITATION FOUNDATION.

   (2) A MINIMUM OF CLASS 51 SHALL BE USED FOR ALL PIPE GREATER THAN 12" IN DIAMETER.

2. MECHANICAL JOINT RESTRAINT FOR PIPES 24" AND SMALLER SHALL BE MEGA-LUG BY EBAA IRON, GRIP RING BY ROMAC INDUSTRIES, FORD METER BOX CO. SERIES 1400, OR APPROVED EQUAL.

3. RESTRAINED JOINTS FOR 30" AND 36" DUCTILE IRON PIPE SHALL BE FLEX RING PIPE AS MANUFACTURED BY AMERICAN PIPE OR TRFLEX PIPE BY U.S. PIPE. THE COST OF RESTRAINING PIPE JOINTS WILL BE INCLUDED IN THE UNIT PRICE FOR 6" D.I. WATER MAIN.

4. ALL VALVES BETWEEN 4" AND 12" SHALL BE DOUBLE DISC GATE VALVES AS MANUFACTURED BY MUELLER, KENNEDY, PRATT, OR CLOW; OR RESILIENT WEDGE VALVES AS MANUFACTURED BY MUELLER (A-2360), KENNEDY OR U.S. PIPE AND CONFORM TO AWWA SPEC. C-500. THEY SHALL BE IRON BODY, NONRISING STEM AND CAPABLE OF WITHSTANDING 150 P.S.I. WORKING PRESSURE. VALVES LARGER THAN 12" SHALL BE BUTTERFLY VALVES AS MANUFACTURED BY MUELLER OR M&H AND CONFORM TO AWWA SPEC. C-504. ALL VALVES SHALL BE OPERATED COUNTERCLOCK-WISE TO OPEN. VALVES SMALLER THAN 4" SHALL BE AS MANUFACTURED BY MUELLER OR STOCKHAM.

5. VALVE OPERATORS ARE TO BE HOUSED IN VALVE BOXES AND SHALL HAVE A TWO INCH SQUARE OPERATING NUT. VALVE BOXES SHALL BE IN ACCORDANCE WITH VDOT STANDARD VB-1 OR APPROVED EQUAL.

WATER CONSTRUCTION NOTES (CONT'D.)

6. PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT STANDARD DETAIL UB-1, TYPE 2, EXCEPT WHERE NOTED OTHERWISE.

7. ALL NEW WATER MAINS SHALL BE TESTED FOR LEAKAGE, PRESSURE TESTING WATER MAINS AND DISINFECTING SHALL BE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATIONS, DATED JANUARY 1994, SECTIONS 520.04 AND 520.05, RESPECTIVELY. BACTERIOLOGICAL TESTING SHALL BE DONE IN ACCORDANCE WITH THE VIRGINIA STATE DEPARTMENT OF HEALTH (VDH) REQUIREMENTS, WHICH STIPULATE THAT:

   TWO WATER SAMPLES WILL BE COLLECTED AT LEAST 24 HOURS APART AND ANALYZED BY A CERTIFIED LABORATORY; THE RESULTS OF THESE SAMPLES MUST INDICATE NO COLIFORM CONTAMINATION, OTHERWISE THE DISINFECTION PROCEDURE MUST BE REPEATED.

8. AFTER TESTING AND BEFORE FINAL INSPECTION OF THE COMPLETED SYSTEMS, WATER MAINS SHALL BE FLUSHED AT A FLOW VELOCITY OF NOT LESS THAN 32' PER SECOND AND THEN DISINFECTED IN ACCORDANCE WITH VDOT STANDARDS.

9. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 4 FEET.

10. ALL PIPE FITTINGS, SLEEVES, RESTRAINED JOINT MECHANISMS, ETC., FOR WATER MAINS, WHEN NOT IDENTIFIED AS A SEPARATE PAY ITEM, ARE TO BE INCLUDED IN THE WATER MAIN PRICE PER LINEAR FOOT.

11. FIRE HYDRANTS SHALL BE THE MUELLER CENTURION OR THE KENNEDY K 81-A AND SHALL BE IDENTIFIED AND PAID FOR AS FH-1. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE VDOT STANDARD REQUIREMENTS FOR FH-1.

12. 8" SERVICE SHALL BE DUCTILE IRON PIPE. SERVICES SHALL BE CONNECTED TO THE MAIN WITH A GATE VALVE AND A BOX IN A MANNER SIMILAR TO THE VDOT STANDARD FH-1 FOR THE FIRE HYDRANTS.

13. THE COST FOR REMOVAL OF EXISTING FIRE HYDRANTS, VALVES AND VALVE BOXES SHALL BE INCLUDED IN THE UNIT PRICE FOR 6" D.I. WATER MAIN OR FIRE HYDRANT. THIS PRICE SHALL INCLUDE REMOVAL, WITH ALL DUE CARE, AND STORING ON SITE FOR PICK UP BY THE OWNER.

14. THE COSTS FOR INSTALLING, OPERATING, AND REMOVING TEMPORARY PIPING REQUIRED TO MAINTAIN CONTINUOUS WATER SERVICE DURING WATER MAIN TIE-INS, SHALL BE INCLUDED IN THE UNIT PRICE FOR 6" D.I. WATER MAIN.

15. BLOW OFF VALVES ARE IDENTIFIED AND PAID FOR AS BOV-1 AND SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON SHEET 14(4). ALL MATERIAL SHALL MEET OR EXCEED THE VDOT STANDARD REQUIREMENTS FOR BOV-1.

16. VALVES THAT ARE INTENDED FOR USE IN ISOLATING SEGMENTS OF THE ASSOCIATED WATER MAIN DURING EXTENDED OUTAGES SHALL BE RESTRAINED BY AN ANCHOR COLLAR AS DETAILED ON SHEET 14(3). A MINIMUM OF 28 DAYS PRIOR TO LOAD APPLICATION. THE COST OF ANCHORING SHALL BE INCLUDED IN THE UNIT PRICE FOR BUTTERFLY VALVES.

17. PIPE BEING PROTECTED BY A POLY WRAPPED ISOLATION BARRIER SHALL BE COVERED ON SITE WITH A POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH WITH AWWA C105. THE POLYETHYLENE TO BE USED FOR ENCASEMENT SHALL BE A HIGH DENSITY CROSS LAMINATE POLYETHYLENE WITH A MINIMUM THICKNESS OF 4 MILS. THE COST OF THE PROTECTIVE POLY WRAP AND ITS APPLICATION SHALL BE INCLUDED IN THE UNIT PRICE FOR 6" D.I. WATER MAIN.

18. PIPING SHALL BE INSTALLED AS DESCRIBED IN THE PWCSA WATER AND SEWER UTILITY STANDARDS MANUAL. SPECIAL ATTENTION TO THE SEPERATION OF WATER MAINS AND SANITARY SEWERS SECTION 120.04 SHALL BE REQUIRED.

LEGEND

▣	YARD INLET-GRATE
○	STORM MH
⊸	SIGN
○—○	LIGHT POLE
Ⓢ	SANITARY SEWER MANHOLE
◑	WATER VALVE
◪	WATER METER
⊵	STAND PIPE
⊛	GAS VALVE
—OHE&T—	OVERHEAD ELECTRIC & TELEPHONE
—OHE—	OVERHEAD ELECTRIC
—OHT—	OVERHEAD TELEPHONE
EP	EDGE OF PAVEMENT
SW	SIDEWALK
CONC.	CONCRETE
IPF	IRON PIPE FOUND
⊙	BUSH
◇	FIRE HYDRANT

COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020686
PROFESSIONAL ENGINEER

Bharat Bhargava
2012.10.08 13:47:26 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	14(1)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SHEET INDEX

DEPARTMENT OF UTILITIES STANDARD NOTES

GENERAL

1. All water mains and sanitary sewers shall be constructed in accordance with the current City of Fairfax Standards and Specifications.

2. Easements for all sanitary and water mains shall be 10' unless otherwise noted.

3. Sanitary sewers and water mains shall maintain a minimum of 15' horizontal separation from proposed or existing buildings.

4. No landscaping or other utilities (i.e. gas, phone, cable, etc.) are permitted in the water and sewer easements, except at crossings.

5. Contractor shall request pre-construction meeting and inspection by the City of Fairfax Department of Public Works (703-385-7828) three days prior to commencing construction of any water and sewer mains.

6. A permit for installation of sanitary sewers, fire hydrants and water mains shall be obtained from the Department of Public Works.

7. Prior to any water main installation, all required sanitary sewers, including laterals, and storm sewers must be installed and backfilled to 95% compaction.

8. Water and sewer laterals not within an easement require plumbing permits and inspections from the Office of Code Administration. The inclusion of these items does not constitute a permit.

WATER MAIN

1. Water services shall maintain a minimum of 6' horizontal separation from sanitary laterals.

2. All hydrants and meter crocks shall maintain 5' horizontal separation from edge of driveway aprons, when possible.

3. Water mains shall maintain a minimum 2.5' horizontal separation from edge of gutter pan, except at designated crossings.

4. All water mains less than or equal to 12" in diameter shall be class 52 ductile iron pipe with cement lining. All water mains greater than 12" in diameter shall be class 54 ductile iron pipe with cement lining.

5. A 2" detectable marking tape shall be placed 2' above all water mains.

6. Contractor is responsible to install type K Copper with AWWA approved corporation stop and angle valve for all water service lines smaller than or equal to 2", and extend a 5' section (Pig Tail) beyond the meters. Meter boxes, yokes and dual check valves will be provided by the City of Fairfax Department of Utilities.

7. Pressure testing and disinfection of water mains shall be in accordance with AWWA C-600 and AWWA C-601 Standards, respectively.

8. Water valves shall be operated by the Department of Utilities staff only (703-385-7991 or 7920; after hours call 703-385-7924).

9. Water valve box lids shall have the word "Water" or the letter "W" cast in them.

10. Fire line valve box lids, at connection to city water main, shall have the word "Fire" cast in them. Minimum fire valve size is 6".

11. No blasting is permitted within city limits and within 25' of city's transmission main in Fairfax and Loudoun Counties.

12. All water mains shall have a minimum cover of 4'.

UTILITY ADJUSTMENTS

WATER MAINS

ROUTE 123

CITY OF FAIRFAX, VIRGINIA

PREPARED BY:

ENDESCO, INC.

438 NORTH FREDERICK AVENUE, SUITE 455

GAITHERSBURG, MARYLAND 20877

	PROJECT	SHEET NO.
	0123-151-139, R201	14(1)

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776

NOTE 1:
EXISTING UTILITES AND OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CITY DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORAMTION GIVEN. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS SATISFACTION BEFORE COMMENCING WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CHANGE IN DESIGN REQUIRED TO AVOID ANY CONFLICTS WITH EXISTING UTILITIES FOR APPOVAL.

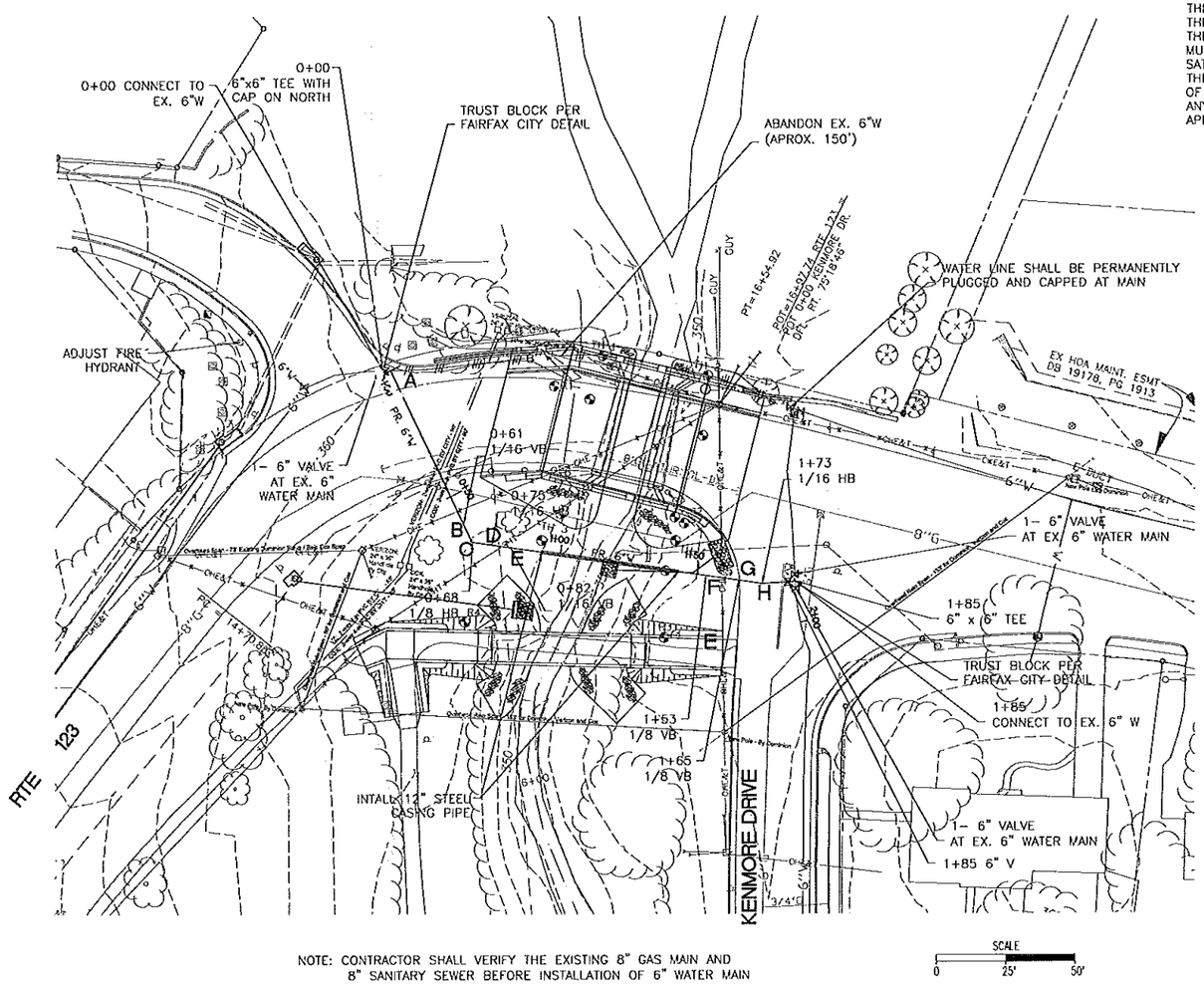
COMMONWEALTH OF VIRGINIA
BHARAT BHARGAVA
Lic. No. 020656
PROFESSIONAL ENGINEER

Bharat Bhargava
2013.01.31 15:55:56 -05'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

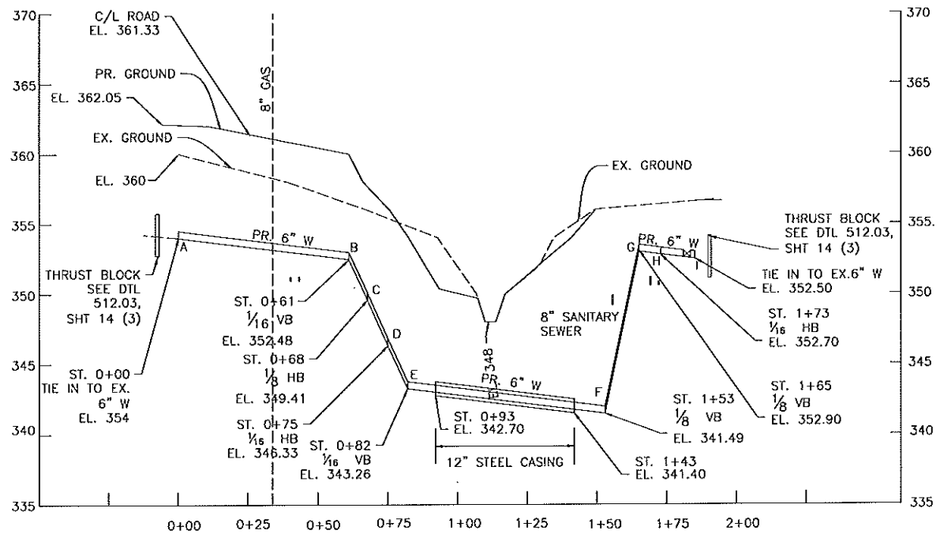
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	123	0123-151-139, R201	14(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



NOTE: CONTRACTOR SHALL VERIFY THE EXISTING 8" GAS MAIN AND 8" SANITARY SEWER BEFORE INSTALLATION OF 6" WATER MAIN

SCALE
0 25' 50'



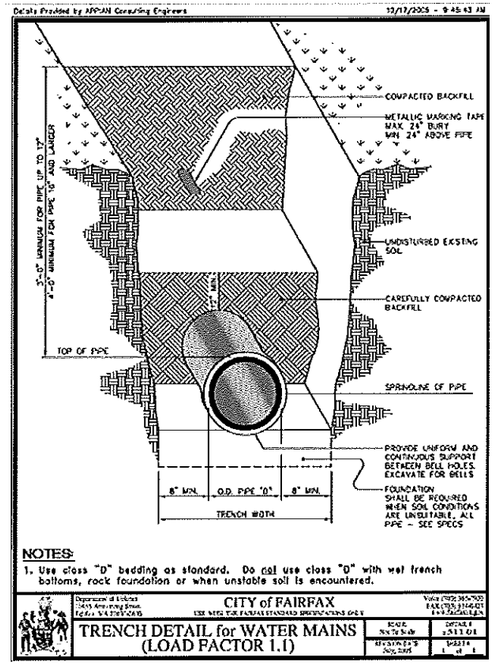
WATERLINE PROFILE
SCALE: H 1:25
V 1:5

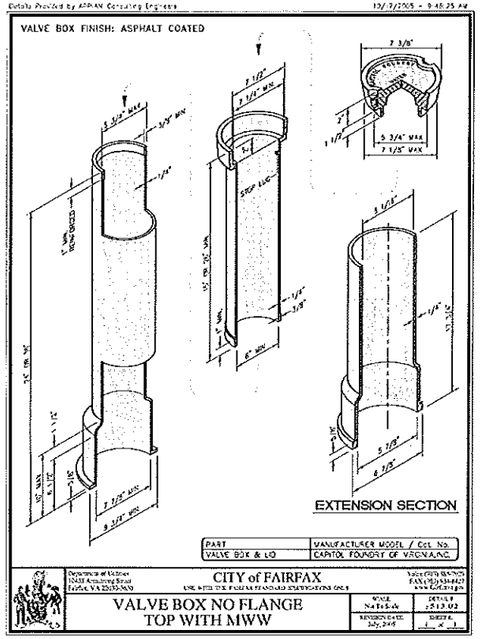
6" W STAKEOUT

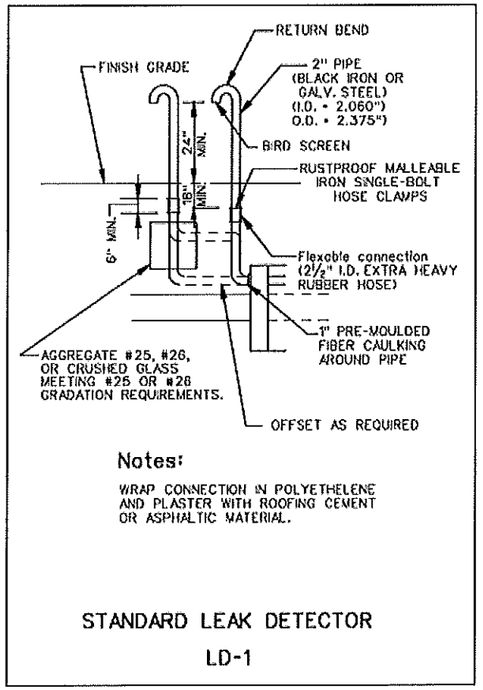
STATION	DESCRIPTION	B/L	OFFSET
0+00	TIE IN TO EX.6"W, 6"x6" TEE	RTE 123	25.25 (L)
0+61	1/16 VB	RTE 123	34.87 (R)
0+68	1/8 HB	RTE 123	41.80 (R)
0+75	1/16 HB	RTE 123	44.16 (R)
0+82	1/16 VB	RTE 123	46.09 (R)
0+93	STEEL CASING	RTE 123	48.38 (R)
1+43	STEEL CASING	RTE 123	47.08 (R)
1+53	1/8 VB	RTE 123	46.03 (R)
1+65	1/8 VB	RTE 123	44.78 (R)
1+73	1/16 HB	RTE 123	43.91 (R)
1+85	TIE IN TO EX.6"W	RTE 123	40.33 (R)

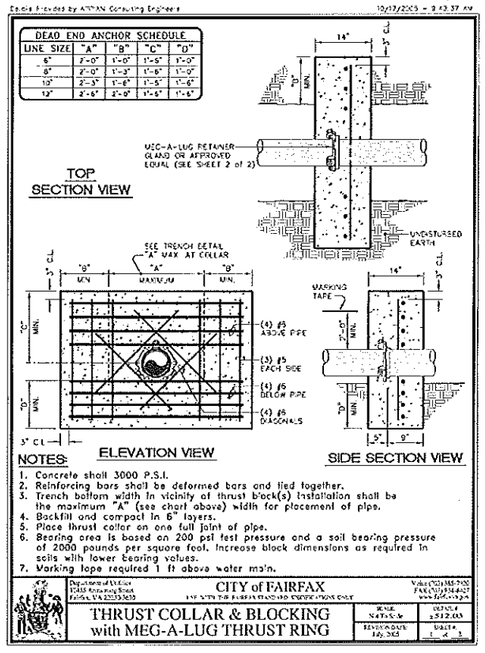
	PROJECT	SHEET NO.
	0123-151-139, R201	14(2)

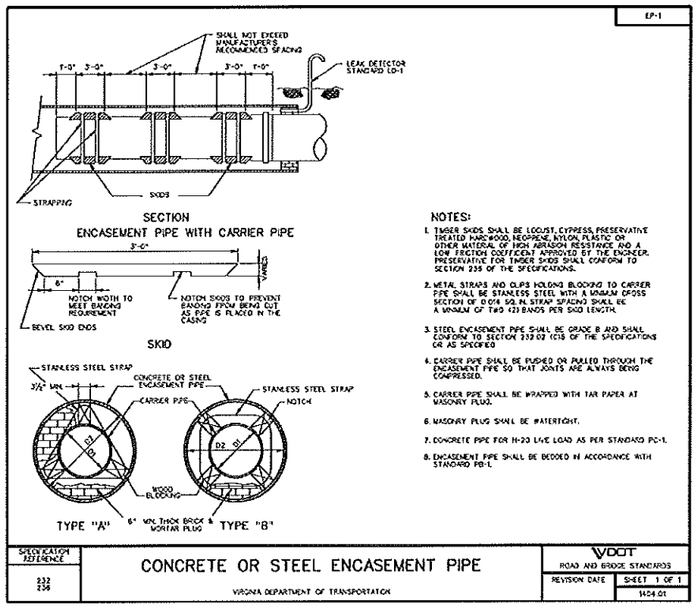
PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco Inc. (301) 987-8716











BHARAT BHARGAVA
Lic. No. 020686
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

Bharat Bhargava
2012.10.08 13:49:25 -04'00'

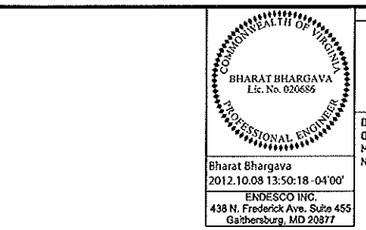
ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139,R201	14(3)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

	PROJECT	SHEET NO.
	0123-151-139,R201	14(3)

PROJECT MANAGER Peter Willard (703) 246-6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385-7846
DESIGNED BY Endesco, Inc. (301) 987-8776



Bharat Bhargava
2012.10.08 13:50:18 -04'00'

ENDESCO INC.
438 N. Frederick Ave. Suite 455
Gaithersburg, MD 20877

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, R201	14(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Details Provided by ArchAN Consulting Engineers 10/17/2008 - 9:44:33 AM

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T" MIN.	VOLUME CONCRETE CU. YD.
6 INCHES	END	2.00	2.00	2.50	0.29
	TEE	2.00	2.00	2.50	0.29
	90°	2.00	2.00	3.00	0.33
	45°	2.00	1.00	2.50	0.16
	22 1/2°	1.00	1.00	2.50	0.09
8 INCHES	END	3.00	2.50	2.50	0.51
	TEE	3.00	2.50	2.50	0.51
	90°	3.00	2.50	3.00	0.59
	45°	2.00	2.00	2.50	0.29
	22 1/2°	2.00	1.00	2.50	0.16
12 INCHES	END	5.00	3.00	2.50	1.00
	TEE	5.00	3.00	2.50	1.00
	90°	5.00	3.00	3.50	1.33
	45°	4.00	2.50	3.00	0.78
	22 1/2°	2.50	2.00	3.00	0.41
16 INCHES	END	8.00	4.50	2.67	1.87
	TEE	8.00	4.50	2.67	1.87
	90°	8.00	4.50	3.50	2.30
	45°	5.00	3.00	3.00	1.15
	22 1/2°	3.00	2.50	3.00	0.59
20 INCHES	END	7.50	5.50	3.00	3.09
	TEE	7.50	5.50	3.00	3.09
	90°	7.50	5.50	4.00	3.85
	45°	5.50	4.00	3.50	1.88
	22 1/2°	4.00	3.00	3.50	1.05
24 INCHES	END	9.50	6.50	3.00	4.61
	TEE	9.50	6.50	3.00	4.61
	90°	9.50	6.50	4.50	6.35
	45°	7.50	4.50	4.00	3.78
	22 1/2°	5.00	3.50	4.00	1.63

WORKING PRESSURE = 125 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T" MIN.	VOLUME CONCRETE CU. YD.
6 INCHES	END	2.50	2.00	2.50	0.35
	TEE	2.50	2.00	2.50	0.35
	90°	2.50	2.00	3.00	0.41
	45°	2.50	1.00	2.50	0.19
	22 1/2°	1.50	1.00	2.50	0.13
8 INCHES	END	4.00	2.00	2.50	0.55
	TEE	4.00	2.00	2.50	0.55
	90°	4.00	2.00	3.00	0.63
	45°	2.50	2.00	2.50	0.35
	22 1/2°	2.50	1.00	2.50	0.19
12 INCHES	END	5.00	4.00	2.50	1.32
	TEE	5.00	4.00	2.50	1.32
	90°	5.00	4.00	3.50	1.71
	45°	4.00	2.50	3.00	0.78
	22 1/2°	2.50	2.00	3.00	0.41
16 INCHES	END	7.50	4.50	2.67	2.32
	TEE	7.50	4.50	2.67	2.32
	90°	7.50	4.50	3.50	2.66
	45°	5.00	3.50	3.00	1.33
	22 1/2°	3.00	3.00	3.00	0.70
20 INCHES	END	8.50	6.00	3.00	3.81
	TEE	8.50	6.00	3.00	3.81
	90°	8.50	6.00	4.00	4.78
	45°	6.00	4.50	3.50	2.39
	22 1/2°	4.50	3.00	3.50	1.17
24 INCHES	END	11.00	6.50	3.00	5.33
	TEE	11.00	6.50	3.00	5.33
	90°	11.00	6.50	4.50	7.35
	45°	7.00	5.50	4.00	3.62
	22 1/2°	5.00	4.00	4.00	1.91

WORKING PRESSURE = 150 P.S.I.

CHART NOTES:

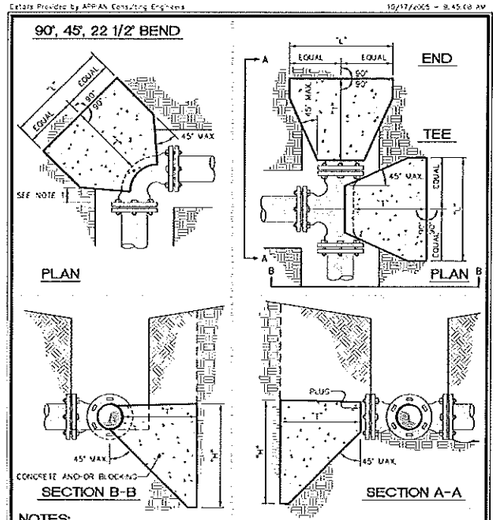
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a VA Licensed Professional Engineer.
2. The above table is based on 2000 psf soil bearing pressure, R=2pA sin θ/2 and for a test pressure = 1.5 x working pressure.
3. This detail is not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.
4. Anchor block design for pipe larger than 24" shall be reviewed on an individual basis by the City Engineer.

Department of Utilities, 10455 Armstrong Street, Fairfax, VA 22030-3630 — CITY of FAIRFAX — USE WITH THE FAIRFAX STANDARD SPECIFICATIONS (FSS) — Voice (703) 385-7930, FAX (703) 934-8427, www.fairfaxva.gov

BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE: Not To Scale | DETAIL #: 512.01 | REVISION DATE: July 2005 | SHEET #: 3 of 4

Details Provided by ARPAN Consulting Engineers 10/17/2008 - 8:45:08 AM



NOTES:

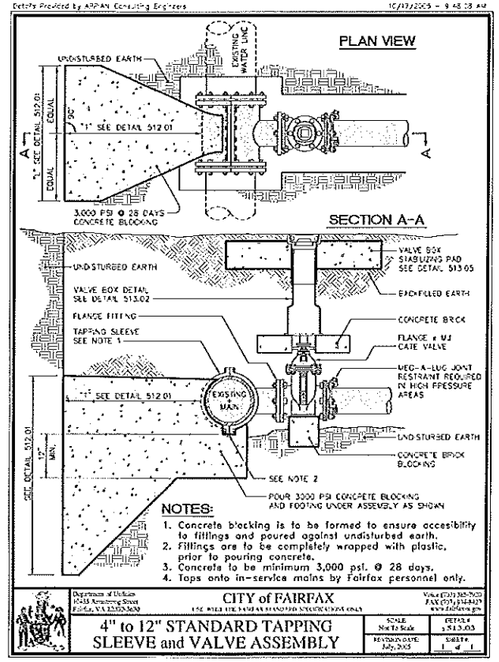
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. All joints to be restrained.

Department of Utilities, 10455 Armstrong Street, Fairfax, VA 22030-3630 — CITY of FAIRFAX — USE WITH THE FAIRFAX STANDARD SPECIFICATIONS (FSS) — Voice (703) 385-7930, FAX (703) 934-8427, www.fairfaxva.gov

BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE: Not To Scale | DETAIL #: 512.01 | REVISION DATE: July 2005 | SHEET #: 1 of 4

Details Provided by ARPAN Consulting Engineers 10/17/2008 - 9:48:38 AM



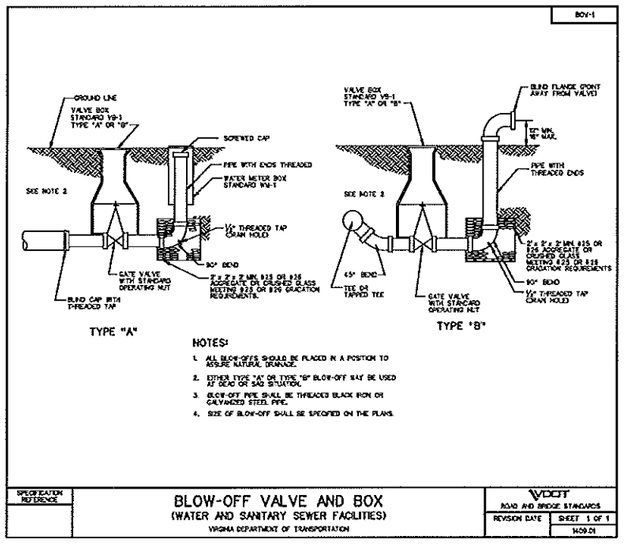
NOTES:

1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. Taps onto in-service mains by Fairfax personnel only.

Department of Utilities, 10455 Armstrong Street, Fairfax, VA 22030-3630 — CITY of FAIRFAX — USE WITH THE FAIRFAX STANDARD SPECIFICATIONS (FSS) — Voice (703) 385-7930, FAX (703) 934-8427, www.fairfaxva.gov

4" to 12" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY

SCALE: Not To Scale | DETAIL #: 513.03 | REVISION DATE: July 2005 | SHEET #: 1 of 1



NOTES:

1. ALL BLOW-OFFS SHOULD BE PLACED IN A POSITION TO ASSURE NATURAL DRAINAGE.
2. EITHER TYPE "A" OR TYPE "B" BLOW-OFF MAY BE USED AT DEAD OR SAG SITUATION.
3. BLOW-OFF PIPE SHALL BE THREADED BLACK IRON OR GALVANIZED STEEL PIPE.
4. SIZE OF BLOW-OFF SHALL BE SPECIFIED ON THE PLANS.

SPECIFICATION REFERENCE

BLOW-OFF VALVE AND BOX
(WATER AND SANITARY SEWER FACILITIES)
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS

REVISION DATE | SHEET 1 OF 1 | M.09.01

	PROJECT	SHEET NO.
	0123-151-139, R201	14(4)

10/15/2012
11:50:44 AM

PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

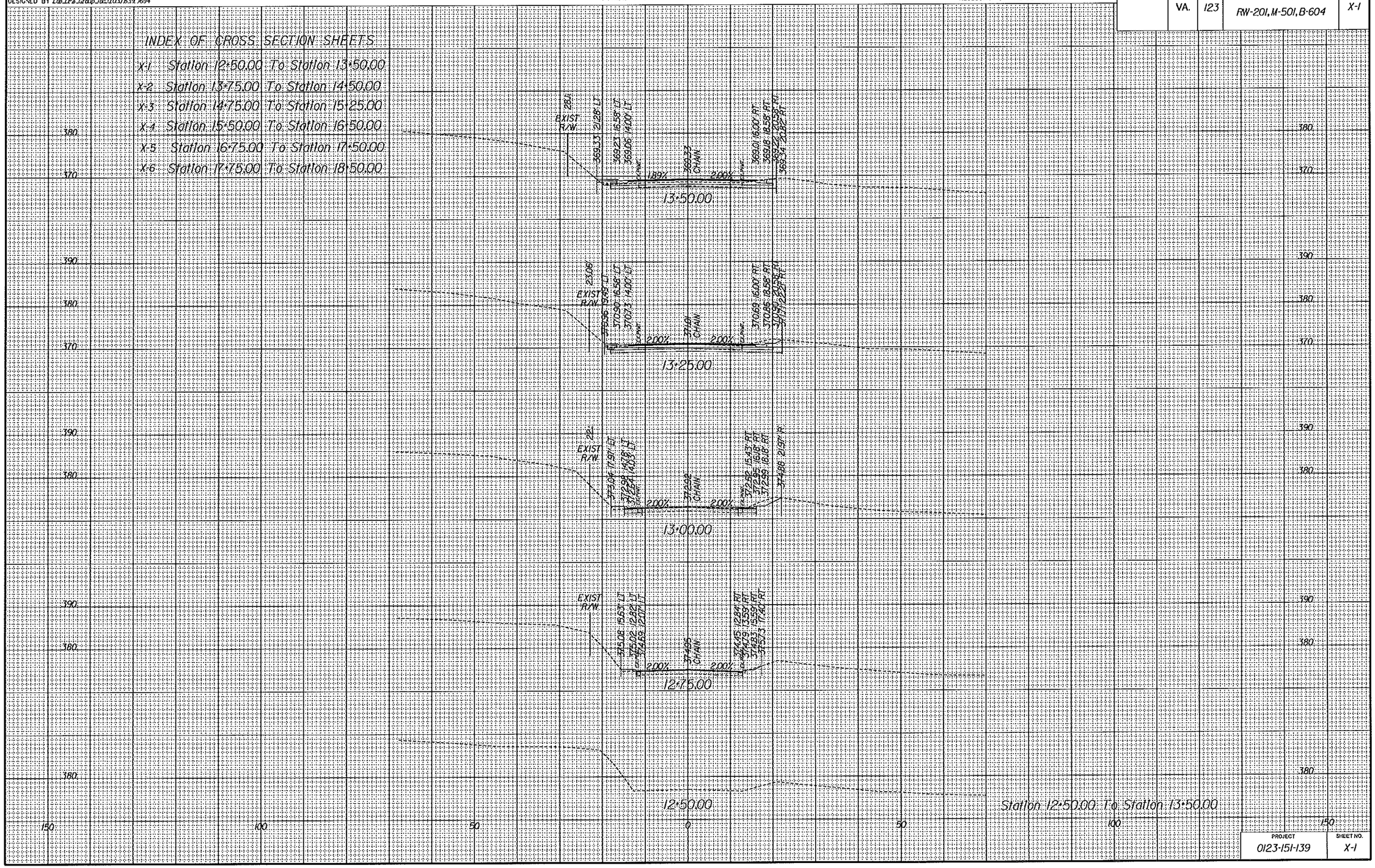
CROSS SECTIONS

SCALE 1 IN. = 10 FT

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 RW-201, M-501, B-604	X-1

INDEX OF CROSS SECTION SHEETS



Station 12+50.00 To Station 13+50.00

PROJECT	SHEET NO.
0123-151-139	X-1

12/5/2012
11:53:30 AM

PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

CROSS SECTIONS

SCALE 1 IN. = 10 FT

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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 RW-201, M-501, B-604	X-2

14+50.00

EXIST R/W 28.6' LT 365.35 27.58' LT 365.27 21.58' LT 365.17 16.58' LT 365.01 14.00' LT
365.89 16.41' RT 365.99 18.99' RT 362.46 25.56' RT
0.83% 200' 364.89 CHAIN

14+25.00

EXIST R/W 28.50' LT 365.05 26.34' LT 365.94 21.58' LT 365.84 16.58' LT 365.68 14.00' LT
365.34 16.00' RT 365.50 18.58' RT 364.44 23.38' RT
0.15% 200' 365.66 CHAIN

14+00.00

EXIST R/W 28.39' 366.89 24.10' LT 366.84 21.58' LT 366.74 16.58' LT 366.59 14.00' LT
366.33 16.00' RT 366.50 18.58' RT 365.82 22.02' RT
0.53% 200' 366.65 CHAIN

13+75.00

EXIST R/W 28.2' 368.01 21.58' LT 367.97 21.58' LT 367.81 16.58' LT 367.71 14.00' LT
367.55 16.00' RT 367.72 18.58' RT 367.28 21.71' RT
1.21% 200' 367.57 CHAIN

Station 13+75.00 To Station 14+50.00

PROJECT	SHEET NO.
0123-151-139	X-2

10/5/202
11:40:00 AM

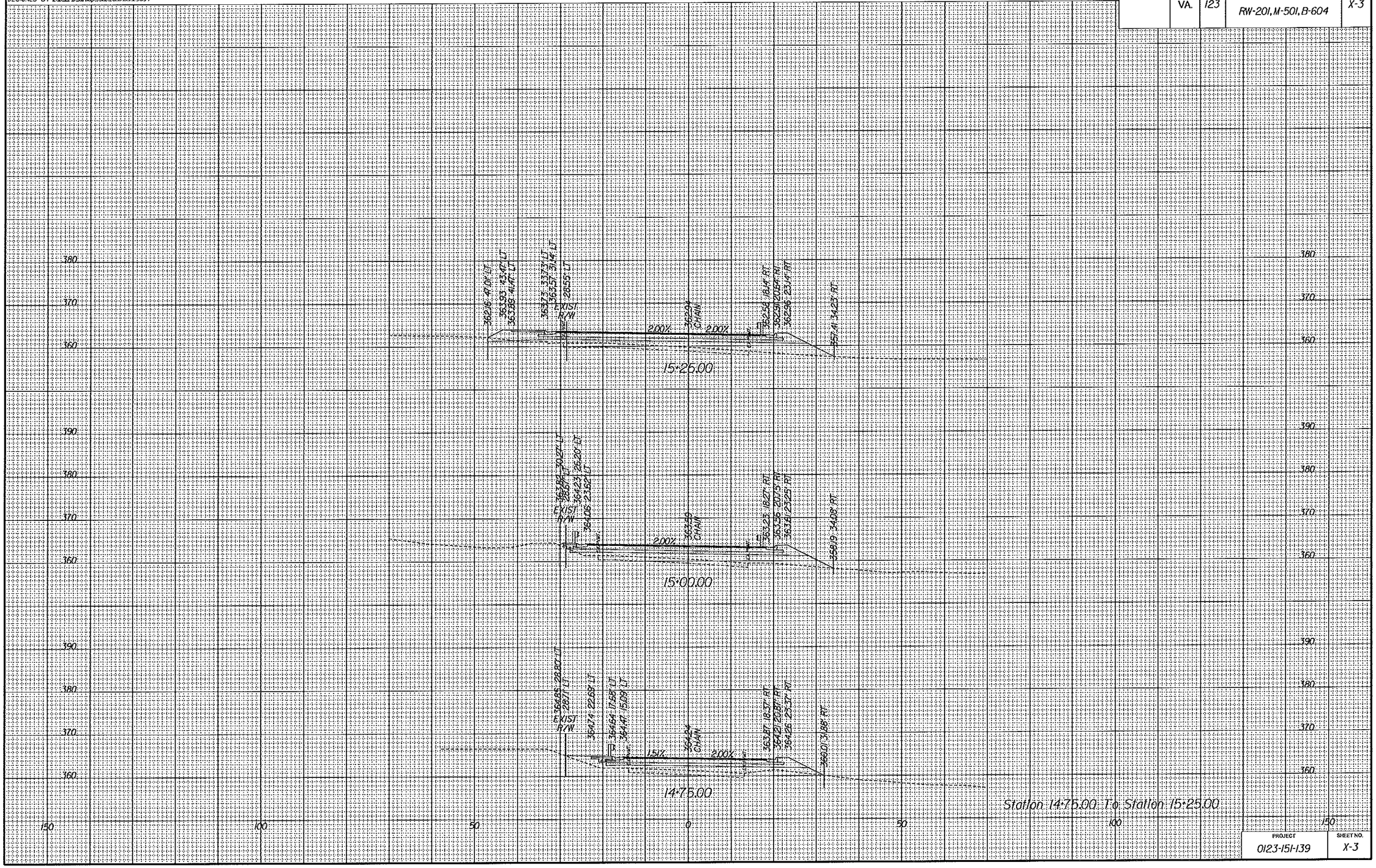
PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burgess & Wilds (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

CROSS SECTIONS

SCALE 1 IN. = 10 FT

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 RW-201, M-501, B-604	X-3



PROJECT	SHEET NO.
0123-151-139	X-3

10/5/202
11:43:31 AM

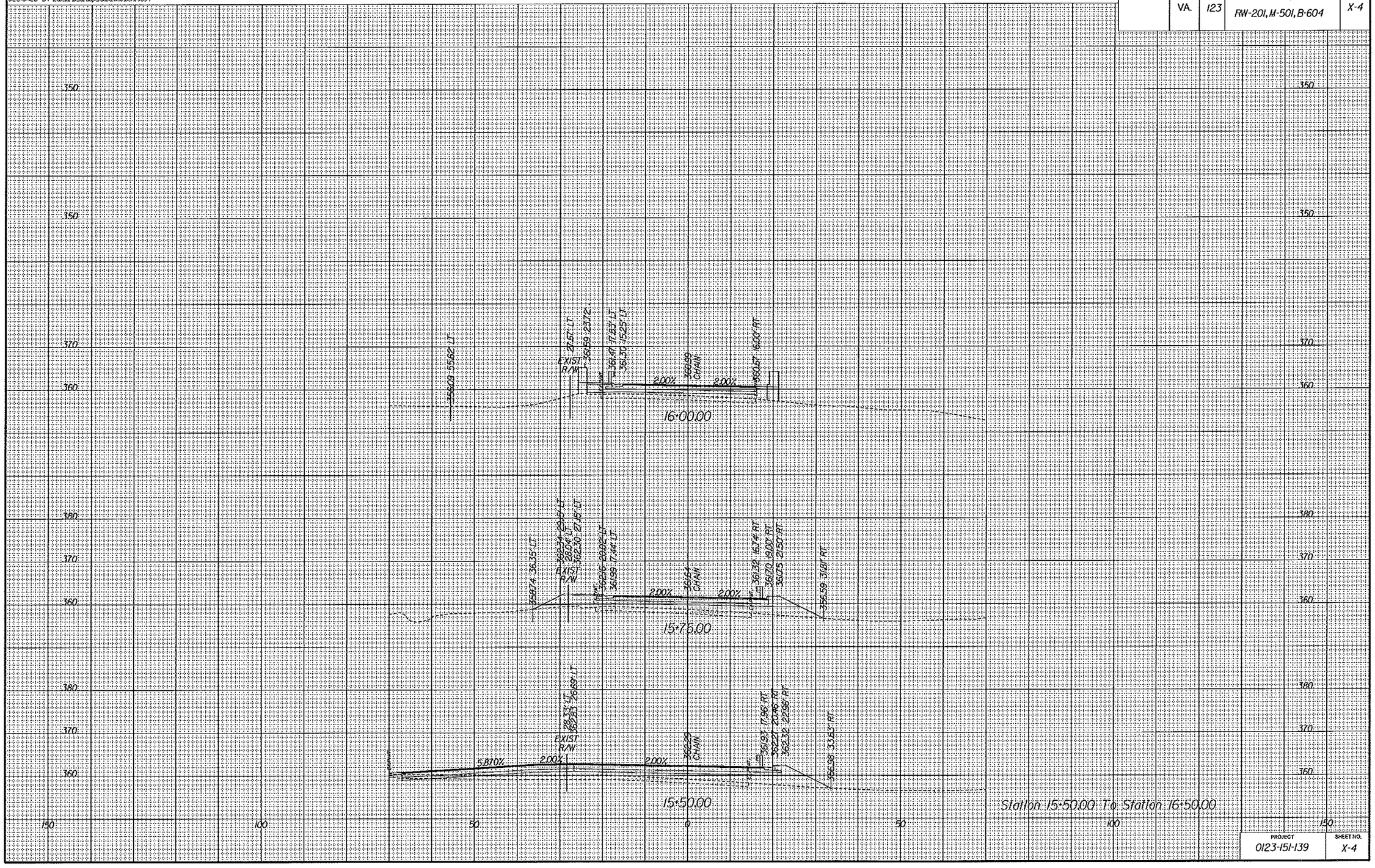
PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631-9630
DESIGN SUPERVISED BY David Summers (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

CROSS SECTIONS

SCALE 1 IN. = 10 FT

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 RW-201, M-501, B-604	X-4



PROJECT	SHEET NO.
0123-151-139	X-4

10/5/202
115436 IM

PROJECT MANAGER Peter Willard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Surnees (703) 385 7846
DESIGNED BY The LPA Group Inc (703) 639 1694

CROSS SECTIONS

SCALE 1 IN. = 10 FT

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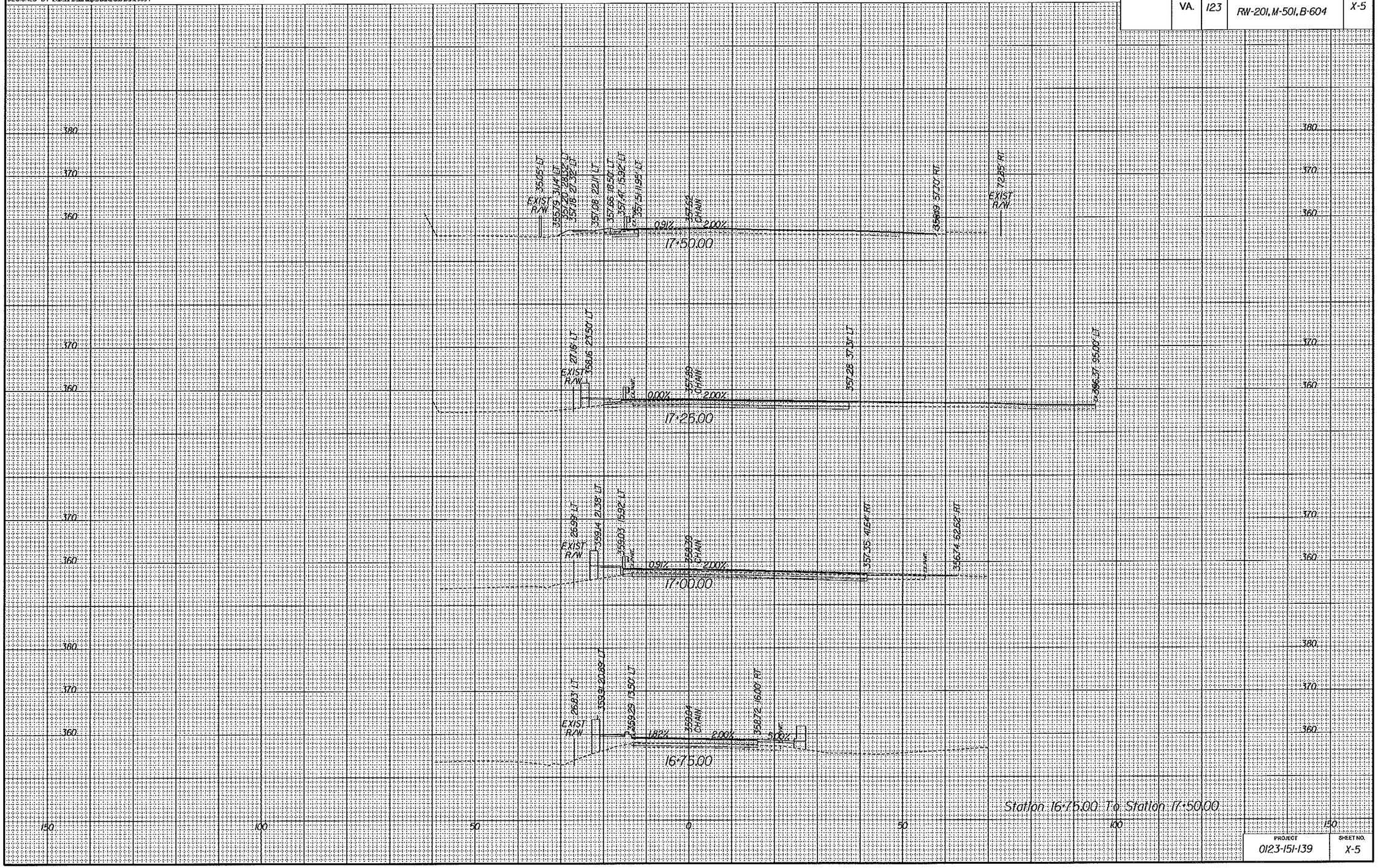
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 RW-201, M-501, B-604	X-5



Station 16+75.00 To Station 17+50.00

PROJECT	SHEET NO.
0123-151-139	X-5

10/5/202
11:55:22 AM

PROJECT MANAGER Peter Millard (703) 246 6330
SURVEYED BY Burgess & Niple (703) 631 9630
DESIGN SUPERVISED BY David Surprenant (703) 385 7846
DESIGNED BY The LPA Group Inc. (703) 639 1694

CROSS SECTIONS

SCALE 1 IN. = 10 FT

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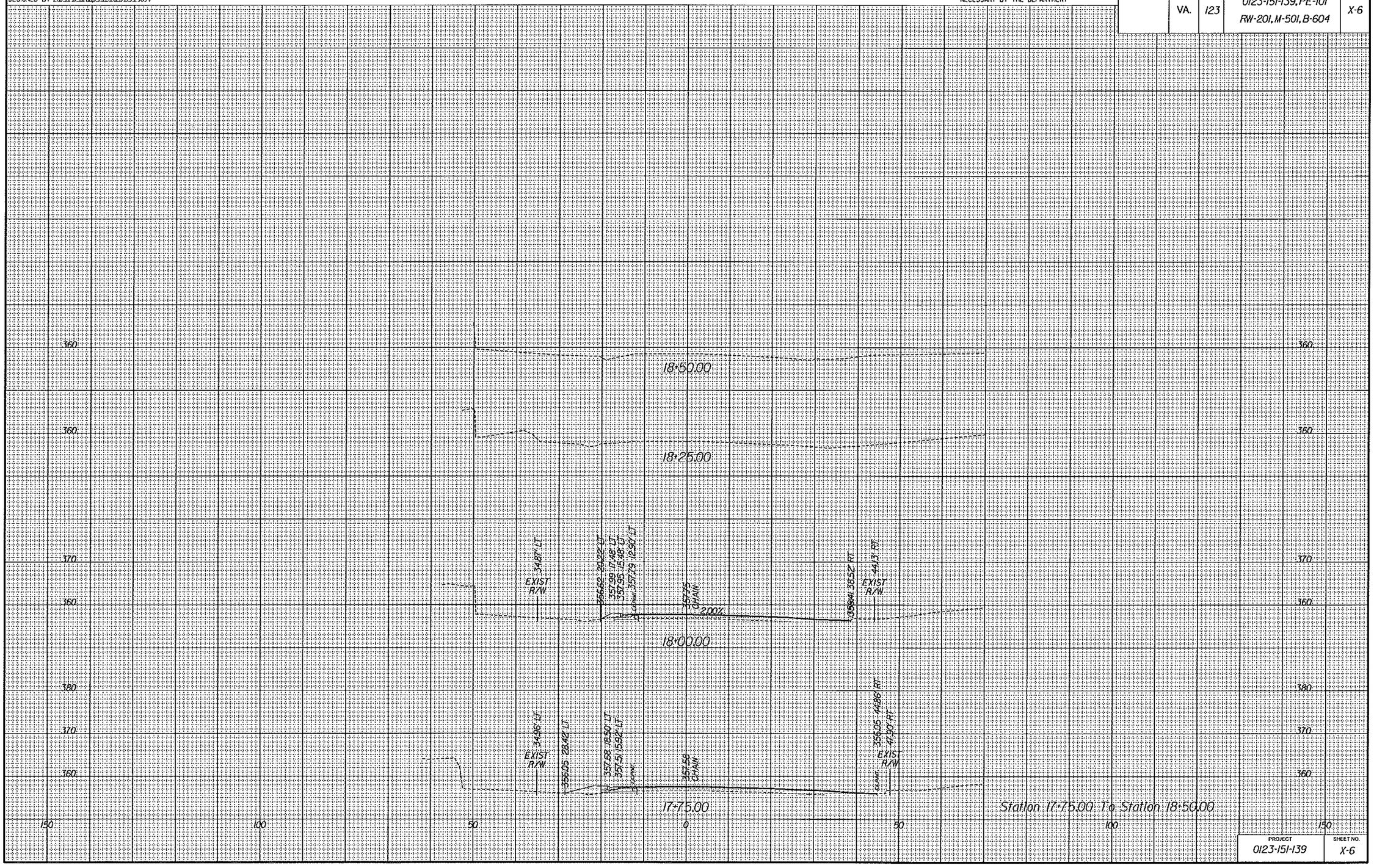
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	123	0123-151-139, PE-101 RW-201, M-501, B-604	X-6



PROJECT	SHEET NO.
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