FOR INDEX OF SHEETS SEE SHEET 1B

THIS PROJECT WAS DEVELOPED UTILIZING THE DEPARTMENT'S ENGINEERING DESIGN PACKAGE (GEOPAK).
GEOPAK Computer Identification No. UPC 90339

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

TOWN OF DUMFRIES
FROM: 0.1 MI. S. OF BRADYS HILL ROAD
TO: 0.2 MI. N. OF ROUTE 234 (DUMFRIES ROAD)

FHWA 534 DATA 2E103

STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	STP-5A01( ) (SEE TABULATION BELOW FOR SECTION NUMBERS)	1	0001-212-249 (SEE TABULATION BELOW FOR SECTION NUMBERS)	1

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
URBAN PRINCIPAL ARTERIAL (GS-5) - ROLLING - 45 MPH MIN. DESIGN SPEED	
	Fr: 0.1 MI. S. OF BRADYS HILL ROAD To: 0.2 MI. N. OF ROUTE 234 (DUMFRIES ROAD)
ADT 2017	28,000
ADT 2042	69,000
DHV	4,620
D (%) (design hour)	55/45
T (%) (design hour)	3%
V (MPH)	45

ADDITIONAL EASEMENTS WILL BE REQUIRED BEYOND THE PROPOSED RIGHT-OF-WAY SHOWN ON THESE PLANS.

PH PLANS

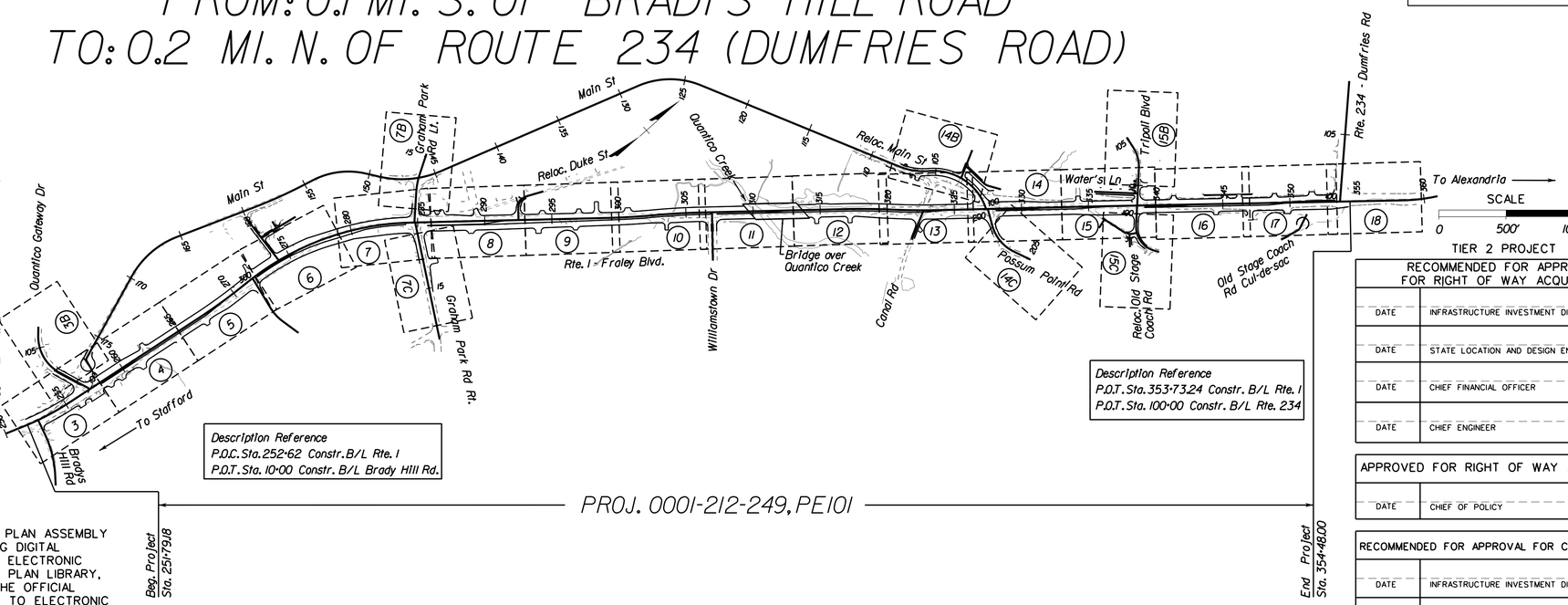
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

PROJECT MANAGER Hong_Nguyen_Ha_P.E.(703)259-2907_NOVA District
SURVEYED BY, DATE Leon E.Trefulle,L.S.(703)259-3224 7/17/13
DESIGN BY Thomas_Aigner,P.E.(804)786-1560 C.O.
SUBSURFACE UTILITY BY, DATE Leon E.Trefulle,L.S.(703)259-3224 7/17/13

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY,TOWN OR VILLAGE
RIGHT OF WAY LINE
FENCE LINE
UNFENCED PROPERTY LINE
FENCED PROPERTY LINE
WATER LINE
SANITARY SEWER LINE
GAS LINE
ELECTRIC UNDERGROUND CABLE
TRAVELED WAY
GUARD RAIL
RETAINING WALL
RAILROADS
BASE OR SURVEY LINE

LEVEE OR EMBANKMENT
BRIDGES
CULVERTS
DROP INLET
POWER POLES
TELEPHONE OR TELEGRAPH POLES
TELEPHONE OR TELEGRAPH LINES
HEDGE
TREES
HEAVY WOODS
GROUND ELEVATION
GRADE ELEVATION



TIER 2 PROJECT

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, INCLUDING ALL SUBSEQUENT 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 2016 ROAD AND BRIDGE SPECIFICATIONS, 2016 ROAD AND BRIDGE STANDARDS, 2009 MUTCD, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA 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 5.11 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.

Town of Dumfries Population 4,961 (2010 Census)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	LENGTH INCLUDING BRIDGE(S) FEET	LENGTH INCLUDING BRIDGE(S) MILES	LENGTH EXCLUDING BRIDGE(S) FEET	LENGTH EXCLUDING BRIDGE(S) MILES	BRIDGE PLAN NO.	TYPE PROJECT	DESCRIPTION
0001-212-249	PE-101	STP-5A01(228)	PE-NG	90339	10,268.82	1.945	9,868.82	1.869		Prel. Engr.	From: 0.1 MI. S. of Brady's Hill Rd
											To: 0.2 MI. N. of Dumfries Rd (Route 224)

Project Lengths are based on Construction Baseline.

RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY ACQUISITION	
DATE	INFRASTRUCTURE INVESTMENT DIRECTOR
DATE	STATE LOCATION AND DESIGN ENGINEER
DATE	CHIEF FINANCIAL OFFICER
DATE	CHIEF ENGINEER

APPROVED FOR RIGHT OF WAY ACQUISITION	
DATE	CHIEF OF POLICY

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	INFRASTRUCTURE INVESTMENT DIRECTOR
DATE	STATE LOCATION AND DESIGN ENGINEER
DATE	STATE STRUCTURE AND BRIDGE ENGINEER
DATE	CHIEF FINANCIAL OFFICER

APPROVED FOR CONSTRUCTION	
DATE	CHIEF ENGINEER

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

REVISED

Copyright 2016, Commonwealth of Virginia

PROJECT MANAGER Hang "Jenny" Ha, P.E. (703)259-2907 NOVA District
SURVEYED BY, DATE Leon. E. Treutle LS (703)259-3224 7/17/13
DESIGN BY Thomas E. Algner P.E. (804)786-1560 Central Office
SUBSURFACE UTILITY BY, DATE Leon E. Treutle LS (703)259-3224 7/17/13

PH PLANS

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

VDOT Location & Design
Richmond, Virginia
ROADWAY ENGINEER

VDOT Materials
Fairfax, Virginia
MATERIALS ENGINEER

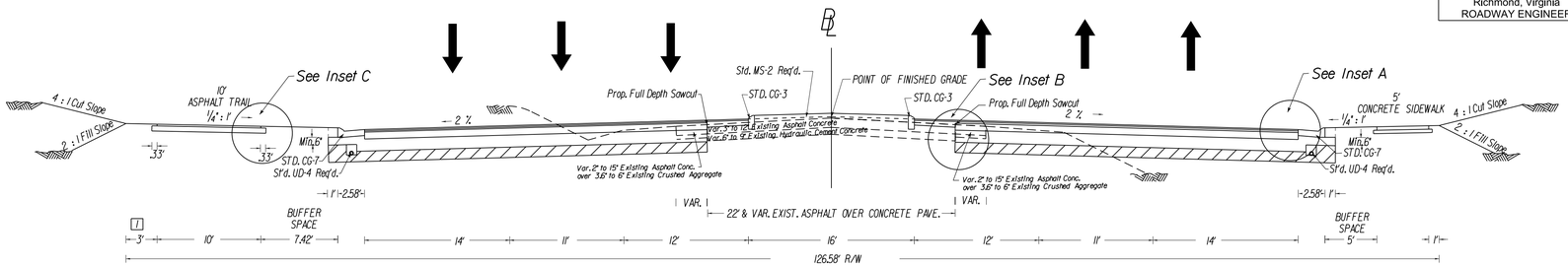
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-212-249, PE-101	2A

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

Route 1 (Fraley Boulevard) - 6 Lane Design Typical
GS-5 - Urban Principal Arterial - 45 MPH Design Speed

Note:
See plans for potential retaining walls at the following locations:
Sta. 259+68 to Sta. 261+25 Left
Sta. 275+00 to Sta. 280+50 Left
Sta. 341+36 to Sta. Sta. 344+00 Right
Sta. 343+62.5 to Sta. 345+00 Left
Sta. 344+75 to Sta. 346+75 Right



Note:
1 Locations where fills are greater that 4' in depth beside a shared use path the greenspace is be 5' wide.

All pavement widening shall be performed in accordance with standard WP-2.

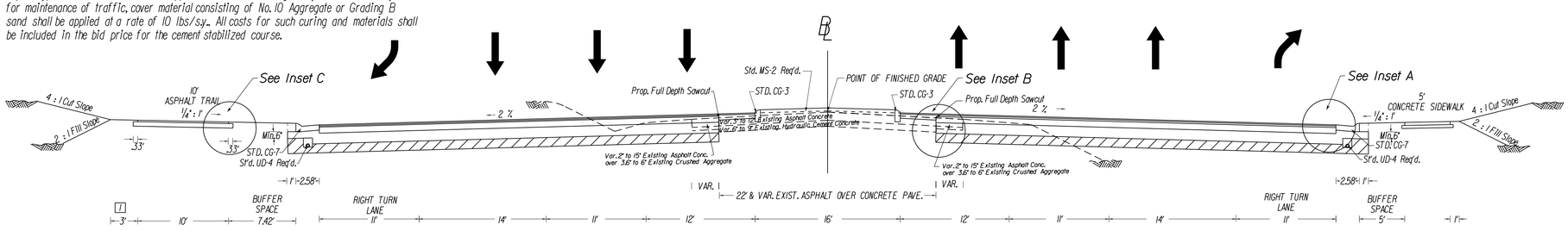
The outside edge of the mainline pavement, existing paved shoulder and turn lanes shall be demolished up to the edge of the existing pavement identified by approximately 3" to 12" of asphalt concrete over approximately 6" to 12" of hydraulic cement concrete pavement and verified by the inspector. This require demolition of the existing paved shoulder/turn lanes and potentially 1.5' to 3' of the existing travel lane on either side.

When liquid asphalt is used for curing of a cement stabilized material, it shall be liquid asphalt type CRS-1, CRS-1h or CMS-2 applied at a rate of 0.2 gals/sy. Where necessary for maintenance of traffic, cover material consisting of No. 10 Aggregate or Grading B sand shall be applied at a rate of 10 lbs/s.y.. All costs for such curing and materials shall be included in the bid price for the cement stabilized course.

STA. 251+79.18 TO STA. 354+48

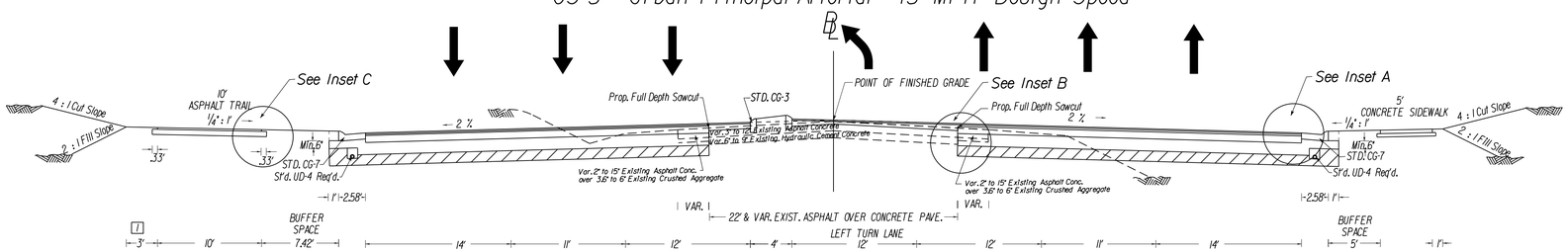
Existing Pavement Designs:
Design 1: 7.3" (average) of asphalt concrete (min. 3.5", max. 12.3") over 7.8 (average) of hydraulic cement concrete (min. 6.5", max. 9.8")
Design 2: 7" (average) of asphalt concrete (min. 2.6", max. 15.1"), over 5" (average) of crushed aggregate (min. 3.6", max. 6").
Existing turn lanes consist of 10.4" to 13.6", average of 11.9, of asphalt concrete over 1.2" to 28.1" average of 9", of crushed aggregate.

Route 1 (Fraley Boulevard) - 6 Lane Design Typical With Right Turn Lane
GS-5 - Urban Principal Arterial - 45 MPH Design Speed



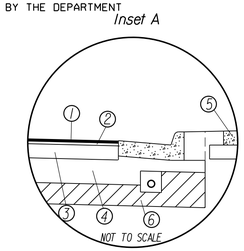
See Plans For Right Turn Lanes Locations

Route 1 (Fraley Boulevard) - 6 Lane Design With Left Turn Typical
GS-5 - Urban Principal Arterial - 45 MPH Design Speed



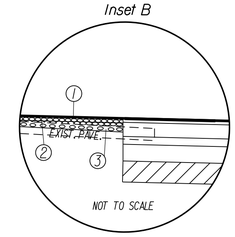
See Plans For Left Turn Lanes Locations

Inset A



1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Intermediate - 2" Asphalt Concrete, Type IM-19.0A estimated at 227 lbs/sy
3. Base - 8" Asphalt Concrete, Type BM-25.0A
4. Subbase - 14" Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter. On the high side of the pavement cross-slope, where the new pavement will drain towards the existing pavement (if any) provide 8" Aggregate Base Material Type I, Size No. 21A, pugmill mixed with 4% hydraulic cement by weight in lieu of 21B.
5. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.
6. Excavate unsuitable material for a depth 12" below the subgrade and replace with Select Material, Type I, minimim CBR 30 wrapped in a geotextile subgrade stabilization fabric throughout the entire length of pavement widening within project limits. All unsuitable materials should be specified for disposal off-site at no additional cost to the Department. Specific locations to be identified with final pavement report.

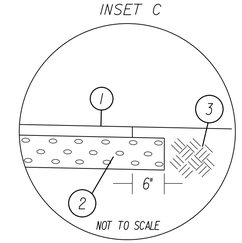
Inset B



1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Intermediate - 3" & Var. Asphalt Concrete, Type IM-19.0A
3. Mill 3" Existing Surface

Note:
Locations where existing pavement is to be utilized is to be determined in the future based on vertical grade and width that can be salvaged.

SHARED USE PATH PAVEMENT STRUCTURE
INSET C



1. 2" ASPHALT CONCRETE SM-9.5A @ approximately 220 lbs./Sq.Yds.
2. 6" AGGREGATE BASE MATERIAL TYPE I SIZE NO 21B
3. REGULAR FILL MATERIAL OR NATIVE SOIL

PROJECT	SHEET NO.
0001-212-249	2A

PROJECT MANAGER Hang "Jenny" Ha, P.E. (703)259-2907 NOVA District
SURVEYED BY, DATE Leon. E. Treutle LS (703)259-3224 7/17/13
DESIGN BY Thomas E. Algner P.E. (804)786-1560 Central Office
SUBSURFACE UTILITY BY, DATE Leon E. Treutle LS (703)259-3224 7/17/13

PH PLANS

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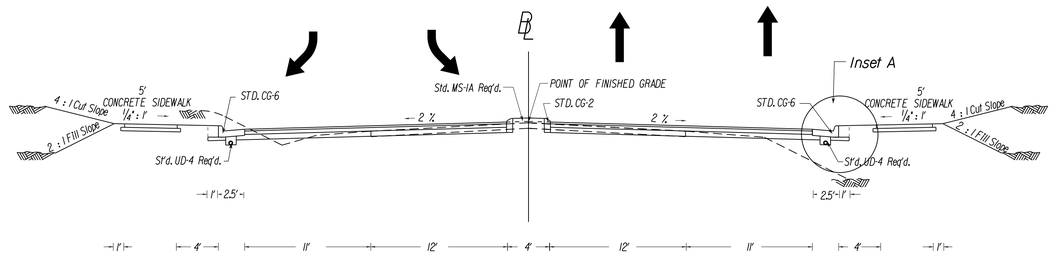
VDOT Location & Design Richmond, Virginia ROADWAY ENGINEER	VDOT Materials Fairfax, Virginia MATERIALS ENGINEER

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-212-249, PE-101	2B

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

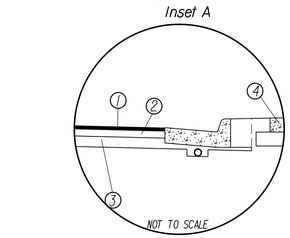
TYPICAL SECTIONS

Quantico Gateway Drive
GS-8 - Urban Local Street - 30 MPH Design Speed



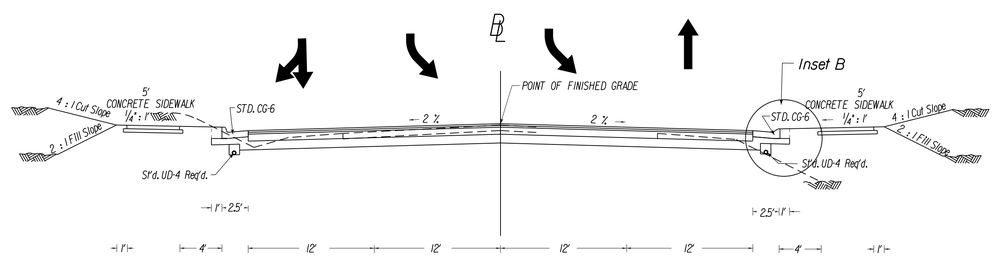
Notes:
All pavement widening shall be performed in accordance with standard WP-2.

STA. 100+63.73 TO STA. 103+00

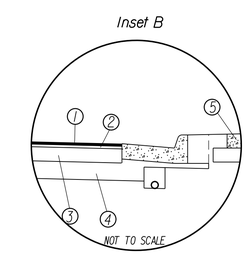


1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Base - 4" Asphalt Concrete, Type BM-25.0A
3. Subbase - 6" or extended to the bottom of existing aggregate, Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter.
4. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.

Main Street North
GS-7 - Urban Collector Street - 40 MPH Design Speed

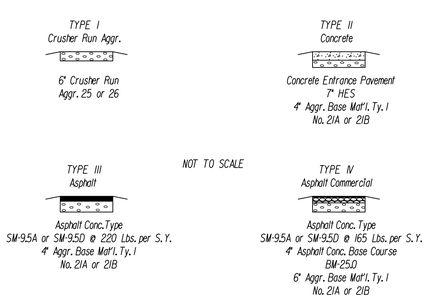


STA. 100+59.92 TO STA. 108+75

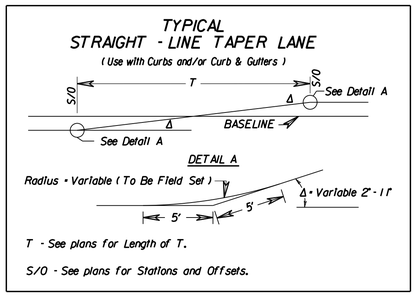


1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Intermediate - 2" Asphalt Concrete, Type IM-19.0A estimated at 227 lbs/sy
3. Base - 8" Asphalt Concrete, Type BM-25.0A
4. Subbase - 10" Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter. On the high side of the pavement cross-slope, where the new pavement will drain towards the existing pavement (if any) provide 8" Aggregate Base Material Type I, Size No. 21A, pugmill mixed with 4% hydraulic cement by weight in lieu of 21B.
5. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.

PRIVATE AND COMMERCIAL ENTRANCES



The type of entrance (I, II, III, IV) to be constructed will be determined by the existing condition at the time of construction.



PROJECT	SHEET NO.
0001-212-249	2B

PROJECT MANAGER Hang "Jenny" Ha, P.E. (703)259-2907 NOVA District
SURVEYED BY, DATE Leon. E. Treutle LS (703)259-3224 7/17/13
DESIGN BY Thomas E. Algner P.E. (804)786-1560 Central Office
SUBSURFACE UTILITY BY, DATE Leon E. Treutle LS (703)259-3224 7/17/13

PH PLANS

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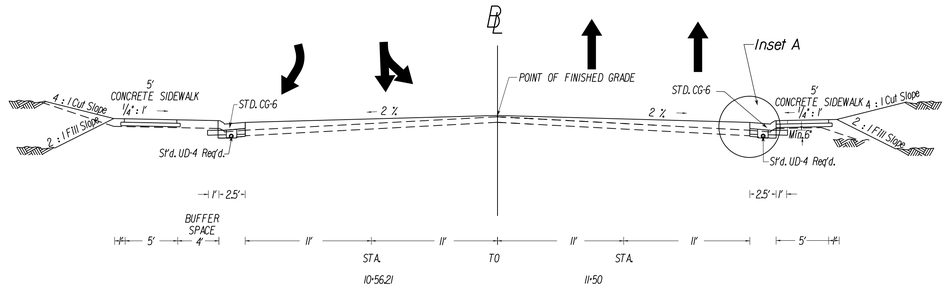
VDOT Location & Design Richmond, Virginia ROADWAY ENGINEER	VDOT Materials Fairfax, Virginia MATERIALS ENGINEER

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-212-249, PE-101	2C

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

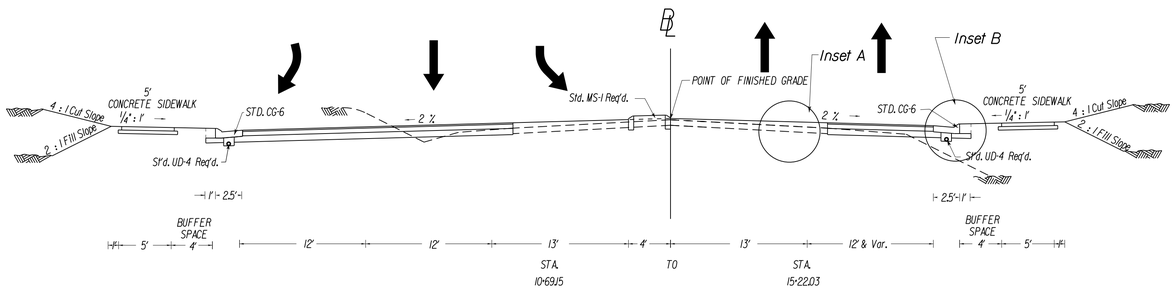
TYPICAL SECTIONS

Graham Park Road Lt.
GS-7 - Urban Collector Street - 40 MPH Design Speed

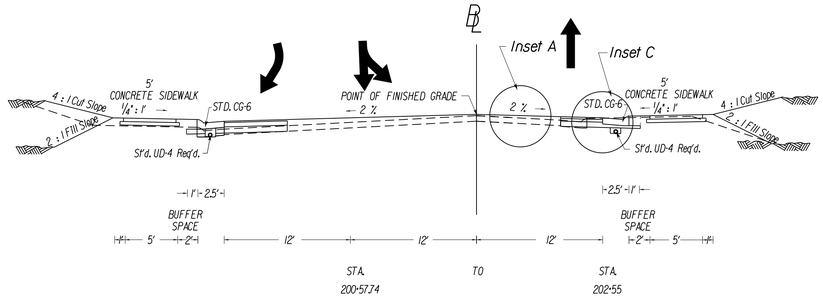


Notes:
All pavement widening shall be performed in accordance with standard WP-2.

Graham Park Road Rt.
GS-7 - Urban Collector Street - 40 MPH Design Speed



Possum Point Road
GS-7 - Urban Collector Street - 30 MPH Design Speed



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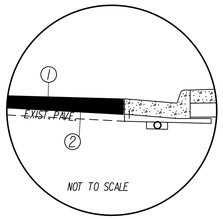
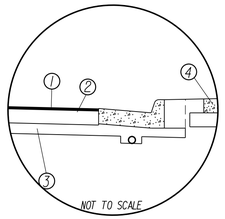


1. Mill the existing surface to a depth of 2".
2. Resurface with 2" & Var. of Asphalt Concrete, Type SM-9.5A estimated at 224 lbs/sy

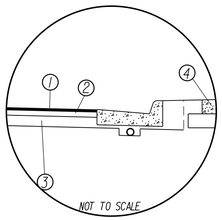
Note:
Locations where existing pavement is to be utilized is to be determined in the future based on vertical grade and width that can be salvaged.

Inset B



1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Base - 8" Asphalt Concrete, Type BM-25.0A
3. Subbase - 6" Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter.
4. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.

Inset C



1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Base - 3" Asphalt Concrete, Type BM-25.0A
3. Subbase - 6" Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter.
4. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.

PROJECT MANAGER Hang "Jenny" Ha, P.E. (703)259-2907 NOVA District
SURVEYED BY, DATE Leon. E. Treutle LS (703)259-3224 7/17/13
DESIGN BY Thomas E. Algner P.E. (804)786-1560 Central Office
SUBSURFACE UTILITY BY, DATE Leon E. Treutle LS (703)259-3224 7/17/13

PH PLANS

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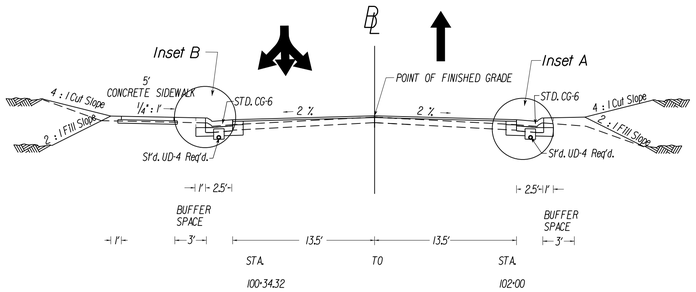
VDOT Location & Design Richmond, Virginia ROADWAY ENGINEER	VDOT Materials Fairfax, Virginia MATERIALS ENGINEER

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-212-249, PE-101	2D

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

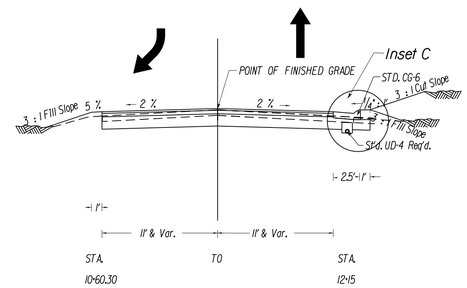
TYPICAL SECTIONS

Tripoli Boulevard
GS-8 - Urban Local Street - 30 MPH Design Speed



Notes:
All pavement widening shall be performed in accordance with standard WP-2.

Canal Road
GS-8 - Urban Local Street - 30 MPH Design Speed



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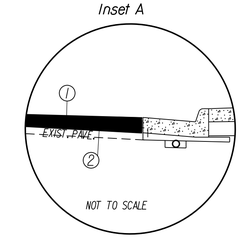
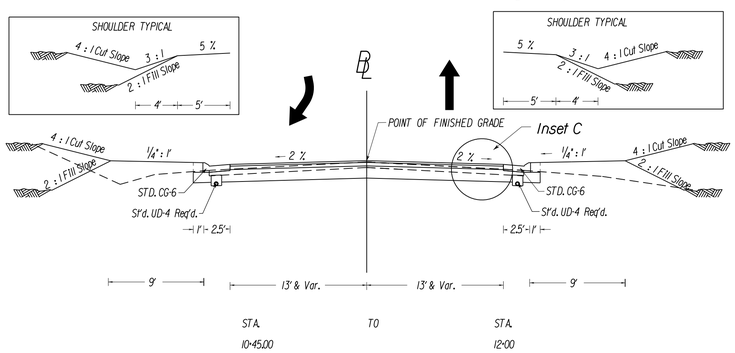


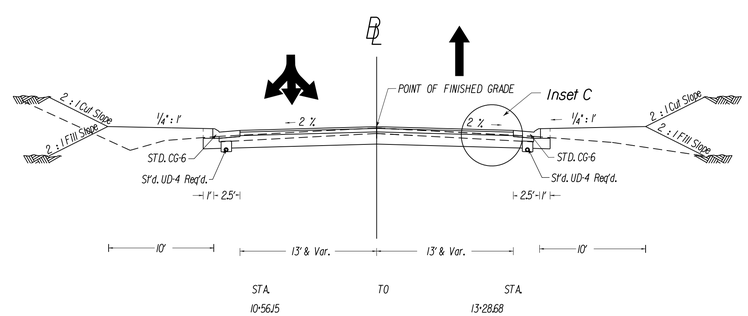
1. Mill the existing surface to a depth of 2".
2. Resurface with 2" & Var. of Asphalt Concrete, Type SM-9.5A estimated at 224 lbs/sy

Note:
Locations where existing pavement is to be utilized is to be determined in the future based on vertical grade and width that can be salvaged.

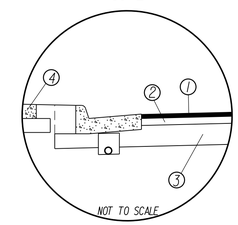
Reloc. Duke Street
GS-8 - Urban Local - 25 MPH Design Speed



Reloc. Old Stage Coach Road
GS-8 - Urban Local - 30 MPH Design Speed

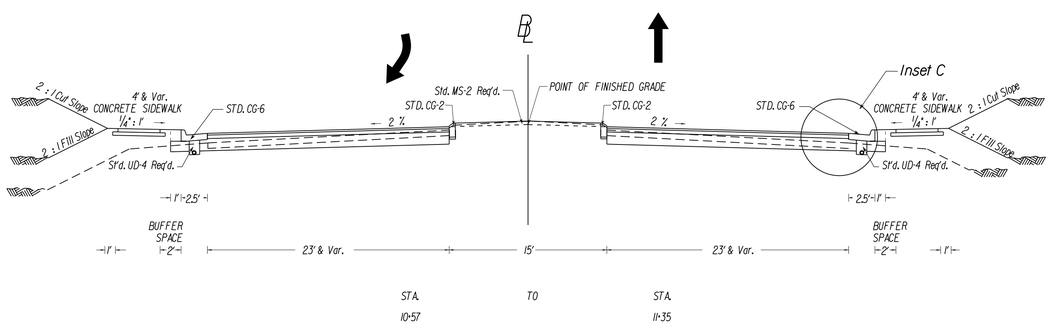


Inset B

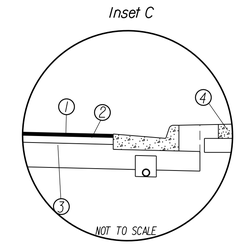


1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Base - 4" Asphalt Concrete, Type BM-25.0A
3. Subbase - 12" Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter.
4. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.

Williamstown Drive
GS-8 - Urban Local Street - 30 MPH Design Speed



Inset C



1. Surface - 2" Asphalt Concrete, Type SM-9.5D estimated at 224 lbs/sy
2. Base - 4" Asphalt Concrete, Type BM-25.0A
3. Subbase - 14" Aggregate Base Material, Type I, Size No. 21B connected to a UD-4 edgedrain beneath the curb and gutter.
4. 4" Hydraulic Cement Concrete, Class A3 over 4" Aggregate Base Material, Type I, Size 21B extended 4" beyond the edges of concrete.

PROJECT	SHEET NO.
0001-212-249	2D