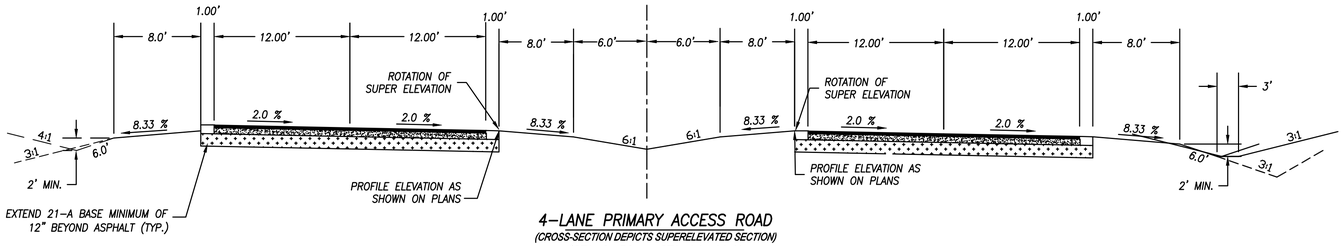


4-LANE PRIMARY ACCESS ROAD

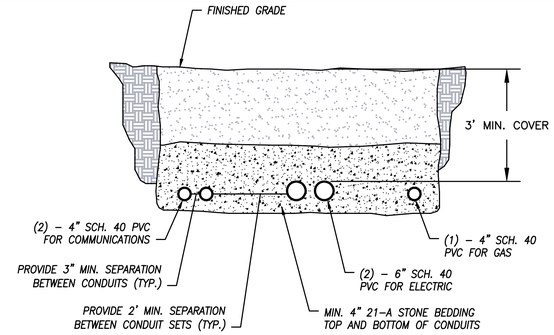
(CROSS-SECTION DEPICTS SUPERELEVATED SECTION)

(STA 6+50 – STA 14+41.9)

ADT=7,303

TRUCKS = 365

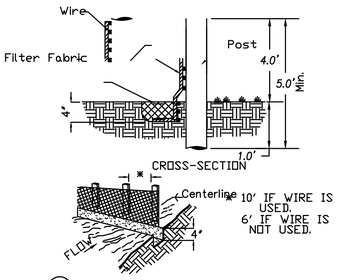
NOT TO SCALE



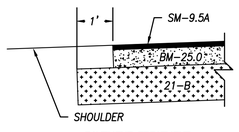
BLANK CONDUIT DETAIL

N.T.S.

NOTE: CONTRACTOR SHALL INSTALL A WITNESS POST AT BOTH ENDS OF CONDUIT.



(SF) CONSTRUCTION OF A SILT FENCE



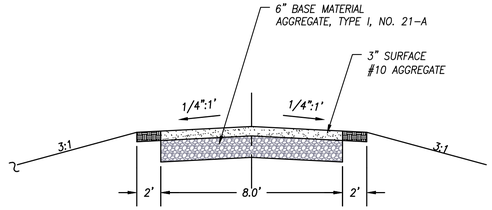
PAVEMENT TREATMENT

N.T.S.

MINIMUM SECTION

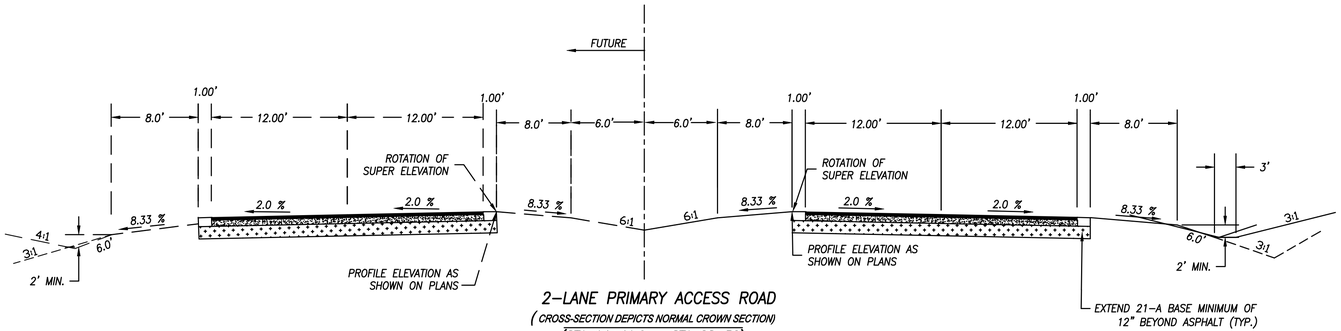
1.) 1.5" SM-9.5A TOP COURSE
2.) 6" BM-25.0 ASPHALT CONCRETE
3.) 8" 21-B AGGREGATE BASE (EXTEND THROUGH SHOULDER)
4.) SUBGRADE COMPACTED TO 95% DENSITY PER ASTM D-698

** COMPOSITION OF SECTION BASED ON CBR VALUE OF 6 CBR TEST. PAVEMENT DESIGN SHOULD BE BASED UPON ACTUAL CBR'S AND APPROVED BY THE VDOT'S DISTRICT MATERIALS SECTION*



TYPICAL WALKING TRAIL SECTION

NOT TO SCALE



2-LANE PRIMARY ACCESS ROAD

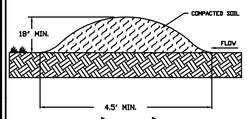
(CROSS-SECTION DEPICTS NORMAL CROWN SECTION)

(STA 14+41.9 – STA 28+50)

ADT=7,303

TRUCKS = 365

NOT TO SCALE

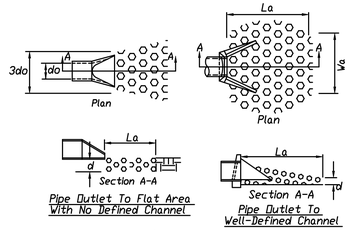


(DD) TEMPORARY DIVERSION DIKE

(FD) TEMPORARY FILL DIVERSION

(RWD) TEMPORARY RIGHT-OF-WAY DIVERSION

(DV) DIVERSION



NOTES
1. Apron lining may be rip-rap,grouted rip-rap or concrete.
2. La is the length of the rip-rap apron as calculated using plates 1.36d and 1.36e.
3. d=1.5 times the maximum stone diameter, but not less than 6".

(OP) OUTLET PROTECTION

NO.	TITLE	KEY	SYMBOL	NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	(SAF)	SAF	3.20	ROCK CHECK DAMS	(CD)	CD
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	(CE)	CE	3.21	LEVEL SPREADER	(LS)	LS
3.03	CONSTRUCTION ROAD STABILIZATION	(CRS)	CRS	3.22	VEGETATIVE STREAMBANK STABILIZATION	(VSS)	VSS
3.04	STRAW BALE BARRIER	(STB)	STB	3.23	STRUCTURAL STREAMBANK STABILIZATION	(SSS)	SSS
3.05	SILT FENCE	(SF)	SF	3.24	TEMPORARY VEHICULAR STREAM CROSSING	(VSC)	VSC
3.06	BRUSH BARRIER	(BB)	BB	3.25	UTILITY STREAM CROSSING	(USC)	USC
3.07	STORM DRAIN INLET PROTECTION	(IP)	IP	3.26	DEWATERING STRUCTURE	(DS)	DS
3.08	CULVERT INLET PROTECTION	(CIP)	CIP	3.27	TURBIDITY CURTAIN	(TC)	TC
3.09	TEMPORARY DIVERSION DIKE	(DD)	DD	3.28	SUBSURFACE DRAIN	(SD)	SD
3.10	TEMPORARY FILL DIVERSION	(FD)	FD	3.29	SURFACE ROUGHENING	(SR)	SR
3.11	TEMPORARY RIGHT-OF-WAY DIVERSION	(RWD)	RWD	3.30	TOPSOILING	(TO)	TO
3.12	DIVERSION	(DV)	DV	3.31	TEMPORARY SEEDING	(TS)	TS
3.13	TEMPORARY SEDIMENT TRAP	(ST)	ST	3.32	PERMANENT SEEDING	(PS)	PS
3.14	TEMPORARY SEDIMENT BASIN	(SB)	SB	3.33	SODDING	(SO)	SO
3.15	TEMPORARY SLOPE DRAIN	(TSD)	TSD	3.34	BERMUDA GRASS AND ZOYSIAGRASS ESTABLISHMENT	(BE, ZE)	BE OR ZE
3.16	PAVED FLUME	(PF)	PF	3.35	MULCHING	(MU)	MU
3.17	STORMWATER CONVEYANCE CHANNEL	(SCC)	SCC	3.36	SOIL STABILIZATION BLANKETS AND MATTING	(B/M)	TREAT. 1 / TREAT. 2
3.18	OUTLET PROTECTION	(OP)	OP	3.37	TREES, SHRUBS, VINES AND GROUND COVERS	(VEG)	VEG
3.19	RIPRAP	(RR)	RR	3.38	TREE PRESERVATION AND PROTECTION	(TP)	TP
				3.39	DUST CONTROL	(DC)	DC

ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619
FINCASTLE, VIRGINIA 24090
540.473.1253 FAX: 540.473.1254

(PS) PERMANENT SEEDING MIXTURE

TYPE A	TYPE B (SLOPES 3:1 OR STEEPER)
15 OCTOBER TO 1 FEBRUARY K-31 FESCUE @ 5 LB / 1000 SF BORZY WINTER RYE @ 1/2 LB / 1000 SF	15 MARCH TO 1 MAY CROWN VETCH @ 1/2 LB / 1000 SF PERENNIAL RYE GRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF
1 FEBRUARY TO 1 JUNE K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	15 AUGUST TO 1 OCTOBER CROWN VETCH @ 1/2 LB / 1000 SF PERENNIAL RYE GRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF
1 JUNE TO 1 SEPTEMBER K-31 FESCUE @ 5 LB / 1000 SF GERMAN MILLET @ 1/2 LB / 1000 SF	
1 SEPTEMBER TO 15 OCTOBER K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF
38-0-0 @ 7 LB / 1000 SF

MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT INCLUDES THE EXTENSION OF INTERNATIONAL PARKWAY IN BOTETOURT COUNTY, VA.

EXISTING SITE CONDITIONS
THE EXISTING SITE CONDITIONS FOR THIS SITE ARE OPEN MEADOW WITH EXISTING GRAVEL ROADS, WATERLINE, AND SANITARY SEWER.

OFFSITE AREAS
NO OFF SITE AREAS EXIST FOR THIS PROJECT.

ADJACENT PROPERTY
THE PROPERTY IS LOCATED IN THE CENTRAL PORTION OF A 923-ACRE BUSINESS PARK.

CRITICAL EROSION AREAS
CRITICAL EROSION AREAS INCLUDE ALL AREAS WHERE SLOPES ARE 2:1 OR GREATER. ALL 2:1 SLOPES WILL RECEIVE TURF REINFORCEMENT MATTING.

SOILS
SOILS LOCATED IN THE PROJECT AREA HAVE MODERATE TO HIGH EROSION POTENTIAL AND SHOULD BE CAREFULLY MANAGED DURING THE CONSTRUCTION PROJECT TO PREVENT SILT FROM LEAVING THE CONSTRUCTION AREA.

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 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, OR LATEST EDITION. THE MINIMUM STANDARDS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

STRUCTURAL PRACTICES
1. CE – TEMPORARY CONSTRUCTION ENTRANCE – 3.02
A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AND MAINTAINED AT THE END OF EXISTING INTERNATIONAL PARKWAY.
2. SF – SILT FENCE BARRIER – 3.05
SILT FENCE BARRIERS WILL BE INSTALLED DOWN SLOPE OF ALL AREAS TO FILTER SEDIMENT LADEN RUNOFF FROM SHEET FLOW.
3. CD – CHECK DAMS – 3.20
ROCK CHECK DAMS SHALL BE PLACED IN ALL CHECK DAMS IN A LOCATION AND FREQUENCY REQUIRED PER MINIMUM STANDARDS.

EROSION – SEDIMENT CONTROL PHASING NOTES

1. INSTALL ALL PERIMETER SILT FENCE.

2. INSTALL DIVERSION DIKES TO DIVERT RUNOFF AWAY FROM PROJECT AREA WHERE PRACTICAL.

4. INSTALL INLET AND OUTLET PROTECTION IMMEDIATELY AFTER STORM SEWER AND INLET PLACEMENT.

5. CONTRACTOR SHALL REMOVE EROSION CONTROL MEASURES ONLY AFTER DISTURBED AREAS ARE STABILIZED AND APPROVAL HAS BEEN OBTAINED FROM THE INSPECTOR.

6. SOIL STOCKPILE AREAS, IF NEEDED, SHALL BE LOCATED AND COORDINATED WITH THE OWNER AND BOTETOURT COUNTY EROSION AND SEDIMENT CONTROL ADMINISTRATOR.

CONTRACTOR SHALL SECURE A CERTIFIED LAND DISTURBER FOR THIS PROJECT. THE NAME OF THE CERTIFIED R.L.D. SHALL BE GIVEN TO THE PROPER AUTHORITIES BEFORE OBTAINING A GRADING PERMIT.

VEGETATIVE PRACTICES
1. TS – TEMPORARY SEEDING – 3.31
ALL DENUDED AREAS, WHICH WILL BE LEFT DORMANT FOR MORE THAN 7 DAYS, SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING.
2. PS – PERMANENT SEEDING – 3.32
ALL FINAL-GRADED AREAS WHERE PERMANENT COVER IS DESIRED OR ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE SHALL BE SEEDED WITH PERENNIAL VEGETATION WITHIN 7 DAYS OF REACHING FINAL GRADE.
3. B/M – SOIL STABILIZATION BLANKETS & MATTING – 3.36
A PROTECTIVE COVERING (BLANKET) OR A SOIL STABILIZATION MAT WILL BE INSTALLED ON PREPARED PLANTING AREAS OF STEEP SLOPES, CHANNELS, OR SHORELINES WHERE NOTED. VDOT EC-2 SHALL BE USED ON SLOPES STEEPER THAN 2.5:1. ALL SLOPES 2.5:1 OR LESS SHALL BE HYDRO-SEEDED.

MAINTENANCE
IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:
1. THE SEDIMENT TRAPPING DEVICES WILL BE CHECKED REGULARLY FOR SEDIMENT CLEAN-OUT.
2. THE GRAVEL OUTLETS WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP THAT MAY PREVENT DRAINAGE. IF THE GRAVEL IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED, OR REPLACED.
3. THE SILT FENCE BARRIERS WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
4. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RE-SEEDED AS NEEDED.

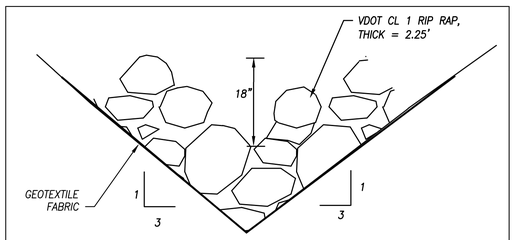
PERMANENT STABILIZATION
ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING WITHIN 7 DAYS OF REACHING FINAL GRADES. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD. AND SPEC. 3.32, PERMANENT SEEDING, OF THE 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. MULCH (STRAW OR FIBER) WILL BE USED ON ALL SEEDED AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING. EROSION CONTROL BLANKETS MAY BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES PROPERLY.

STORMWATER MANAGEMENT
STORMWATER MANAGEMENT IS PROVIDED BY THE GREENFIELD LAKE REGIONAL STORMWATER MANAGEMENT FACILITY DESIGNED TO MANAGE THE 2-2 AND 10-10 STORM EVENTS FOR THE BOTETOURT CENTER AT GREENFIELD.

NOTE:
1. ALL LANE TRANSITIONS SHALL BE IN ACCORDANCE WITH VDOT STANDARDS.

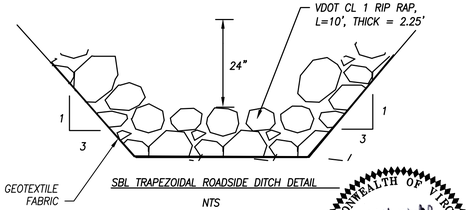
2. PAVEMENT MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.

3. CONTRACTOR TO ADHERE TO VDOT GS-11 AND GS-4 STANDARDS



36" OUTLET AND NBL ROADSIDE DITCH DETAIL

NTS



SBL TRAPEZOIDAL ROADSIDE DITCH DETAIL

NTS

NOTE:
OUTLET AND DITCHES SHALL BE INSTALLED IN ACCORDANCE WITH VDOT STANDARDS EC-1.

COMMONWEALTH OF VIRGINIA
Robert H. Wampler, Jr.
ROBERT H. WAMPLER, JR.
No. 34713
5/10/07
PROFESSIONAL ENGINEER

No.	Revision	By	Appd.	Date
1	VDOT Comments	MLW	RHW	11/21/06
2	ADD BID ALTERNATE	RHW	RHW	1/8/07
3	VDOT COMMENTS	RHW	RHW	5/10/07

Drawn GBB
Designed GBB
Checked RHW
Approved RHW

INTERNATIONAL PARKWAY PHASE II

DETAILS

NO SCALE
MAY 10, 2007
PROJECT: 05101