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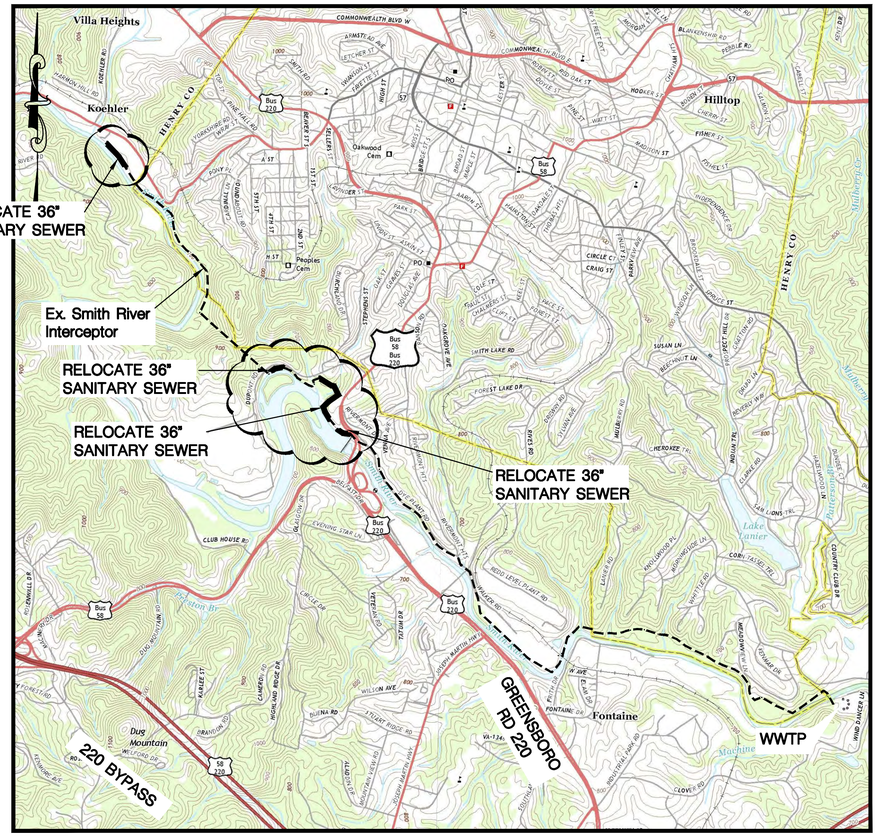
Smith River Interceptor

CMP Rehabilitation
City of Martinsville, Virginia
Contract I



Vicinity Map

SCALE: N.T.S.

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SUBMITTAL
- ☐ PRELIMINARY
- ☐ APPROVAL
- ☑ BIDDING
- ☐ CONSTRUCTION
- ☐ REVISION
- ☐ RECORD

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Smith River Interceptor
CMP Rehabilitation
City of Martinsville
Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

COVER SHEET

PROJECT NO. 50078733

T1

SHEET NO. OF

P:\50078733\CAD\Civil Contract 1\2016.03.30 - Cover.dwg, 7/21/2016 9:32:46 AM, mcollins
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LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BUILDING
00	00	CONTOURS
		CURB & GUTTER
		CONCRETE WALK OR SLAB
		PAVEMENT
		UNIMPROVED OR GRAVEL
		TREE LINE
		TREE OR SHRUB
		FENCE & GATE
		DITCH OR SWALE
		CREEK / WATER'S EDGE
R	R	PROPERTY LINE
		CENTERLINE
R/W	R/W	STREET RIGHT-OF-WAY
		LIMITS OF GRADING
		STORM STRUCTURE & LINE
		FLARED END SECTION
		ENDWALL

EXISTING	PROPOSED	DESCRIPTION
W	W	WATERLINE
YH	YH	YARD HYDRANT
WM		WATER METER
		FIRE HYDRANT ASSEMBLY
		VALVE ASSEMBLY
		PRESSURE PIPE & FITTINGS
	ARV	AIR RELEASE VALVE
SS S		SAN. SEWER M.H. & LINE
		FORCEMAIN
C.O.	C.O.	CLEANOUT
G	G	GASLINE
OHE	OHE	OVERHEAD ELECTRIC LINE
UGE	UGE	UNDERGROUND ELECTRIC LINE
OHT	OHT	OVERHEAD UTILITY LINE
		POLE, GUY, & ANCHOR
T	T	TELEPHONE PEDESTAL
FO	FO	FIBER OPTIC CABLE
UGT	UGT	UNDERGOUND TELEPHONE
UGU	UGU	UNDERGOUND UTILITY
		SURVEY TRAVERSE POINTS
		SUBSURFACE BORING

EXISTING	PROPOSED	DESCRIPTION
		BENCHMARK
	1	REVISION NUMBER
		CABLE (TELEVISION OR FIBER OPTIC)
		WELL
		MONUMENT
		ROAD SIGN
		MAILBOX
		GROUND LIGHTS
		LIGHT POLE
		GUARD PIPE POST
x100.00	x100.00	SPOT ELEVATION
XX	SF	SILT FENCE
	CD	CHECK DAM
	DV	DIVERSION
	CE	CONSTRUCTION ENTRANCE
	CIP	CULVERT INLET PROTECTION
	OP	OUTLET PROTECTION
	IP	INLET PROTECTION
	PS	PERMANENT SEEDING
	TS	TEMPORARY SEEDING
	LS	LEVEL SPREADER
	BM	BLANKET MATTING
	UCS	UTILITY STREAM CROSSING

ABBREVIATIONS

A	AIR
A.B.	ANCHOR BOLT
ABUT	ABUTMENT
ADD	ADDITIONAL
ADJ	ADJUSTABLE
AGGR	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
ASTM	AMERICAN STANDARD FOR TESTING & MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
ASSY	ASSEMBLY
APPROX	APPROXIMATE
BOC	BACK OF CURB
BSMT	BASEMENT
BO	BLOW OFF
BRG	BEARING
BM	BENCH MARK
B	BEND
BOTT	BOTTOM
BOB	BOTTOM OF BANK
BRZ	BRONZE
BLDG	BUILDING
CI	CAST IRON
CB	CATCH BASIN
CEM	CEMENT
CL	CENTERLINE
CO	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CMP	CORRUGATED METAL PIPE
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CU IN	CUBIC INCH
CULV	CULVERT
CV	CHECK VALVE
C & G	CURB & GUTTER
CY	CUBIC YARD
DEPT	DEPARTMENT
GEN	GENERATOR
GOVT	GOVERNMENT
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DN	DOWN
DWG	DRAWING
DR	DRIVE
DI	DROP INLET
DIP	DUCTILE IRON PIPE
DMH	DROP MANHOLE
D	DRAIN
DWL	DWELLING
EA	EACH
EF	EACH FACE
EW	EACH WAY, END WALL
EOP	EDGE OF PAVEMENT
EL	ELBOW
ELEC	ELECTRICAL, ELECTRIC
ELEV	ELEVATION
ENGR	ENGINEER
ENTR	ENTRANCE
EQUIP	EQUIPMENT
EX, EXIST.	EXISTING
EJ	EXPANSION JOINT
EXT	EXTERIOR
FOC	FACE OF CURB
FT	FEET
FES	FLARED END SECTION
FIG	FIGURE
FIN	FINISH
FH	FIRE HYDRANT
FLEX	FLEXIBLE
F.F.	FINISHED FLOOR
FL	FLOOR
FD	FLOOR DRAIN
FLOUR	FLOURESCENT
FM	FORCE MAIN
FLG	FLANGE
GPM	GALLONS PER MINUTE
GALV	GALVANIZED
GV	GATE VALVE
GRD	GRADE
GA	GAUGE
GPDW	GYPSUM DRYWALL
HTR	HEATER
HVAC	HEATING VENTILATION & AIR CONDITIONING
HT	HEIGHT
HWY	HIGHWAY
HOR	HORIZONTAL
HP	HORSEPOWER, HIGH POINT
IN	INCH
ID	INSIDE DIAMETER
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
JB	JUNCTION BOX
LB	POUND
LG	LENGTH OR LONG
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MB	MAILBOX
MH	MANHOLE
MFR	MANUFACTURER
MATL	MATERIAL
MAX	MAXIMUM
MJ	MECHANICAL JOINT
MGD	MILLION GALLONS PER DAY
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MIXED LIQUOR
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NPW	NON POTABLE WATER
NPR	NON POTABLE REUSE WATER
NATL	NATIONAL
N	NEW
NCDOT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY & HEALTH ACT
PB	PAPER BOX
PVC	POLYVINYL CHLORIDE
PRV	PRESSURE RELIEF VALVE, PRESSURE REDUCING VALVE
PL	PROPERTY LINE
PED	PEDESTAL
PVMT	PAVEMENT
PERF	PERFORATED
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND
PI	CURVATURE POINT OF INTERSECTION
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
POVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
RAD	RADIUS REF REFERENCE
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD, ROOF DRAIN
REQ'D	REQUIRED REV REVISED
RT	RIGHT
R/W, ROW	RIGHT OF WAY
R	RISER
RS	RAW SEWAGE
SE	SECONDARY EFFLUENT
SIM	SIMILAR
SPEC	SPECIFICATION
SR	STATE ROUTE OR SECONDARY ROAD
STD	STANDARD
STA	STATION
STL	STEEL
S.S.	SANITARY SEWER, STAINLESS STEEL
SSC	SECONDARY SCUM
SCH	SCHEDULE
SECT	SECTION
SHT	SHEET
STM	STORM
ST	STREET
STY	STORY
TD	TANK DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY OR TEMPERATURE
THK	THICK
T & B	TOP AND BOTTOM
TOB	TOP OF BANK
TOW	TOP OF WALL
TDC	TURNED DOWN CURB
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORY
VERT	VERTICAL
VC	VERTICAL CURVE
VDOT	VIRGINIA DEPT OF TRANSPORATION
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WL	WATER MAIN

GENERAL NOTES

1. ALL WORK SHALL BE COORDINATED WITH THE CITY OF MARTINSVILLE WATER AND SEWER DEPARTMENT.
2. CONTRACTOR SHALL NOTIFY THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO ANY CONSTRUCTION ON STREET RIGHT-OF-WAYS (PHONE NO. 276-627-1509).
3. ANY CONSTRUCTION WITHIN THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S RIGHTS-OF-WAY ARE TO BE IN ACCORDANCE WITH VDOT 2007 ROAD AND BRIDGE SPECIFICATIONS AND THE 2008 VDOT ROAD AND BRIDGE STANDARDS REGARDING MATERIALS, INSTALLATION, AND TESTING, UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS AND TECHNICAL SPECIFICATIONS, EXCEPT THE METHOD OF PAYMENT WHICH WILL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS AND CONTRACT DOCUMENTS. ANY CONSTRUCTION WITHIN THE VDOT RIGHTS-OF-WAYS AND AT ENTRANCE TO VDOT RIGHT-OF-WAYS ARE TO BE IN ACCORDANCE WITH THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL STANDARDS, REV.1.
4. CONTRACTOR SHALL FIELD VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY. CONTRACTOR SHALL CONTACT MISS UTILITY (811) 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
5. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO VERIFY LOCATION OF AND PREVENT DISTURBANCE OF ANY EXISTING UTILITIES IN WORK AREA, AND PROVIDE IMMEDIATE TEMPORARY SERVICE TO ANY DAMAGED UTILITIES.
6. WHEN WORKING ADJACENT TO EXISTING STRUCTURES, POLES, ETC., CONTRACTOR SHALL USE WHATEVER METHODS THAT ARE NECESSARY TO PROTECT STRUCTURES FROM DAMAGE. REPLACEMENT OF DAMAGED STRUCTURES SHALL BE AT THE CONTRACTOR'S EXPENSE.
7. DRIVEWAYS, FENCES, MAILBOXES, ROAD SIGNS, STEPS, SIDEWALKS, ETC., THAT INTERFERE WITH CONSTRUCTION ARE TO BE RESTORED TO ORIGINAL CONDITION.
8. PAVED DRIVEWAYS, PARKING LOTS, AND PRIVATE ROADS SHALL BE OPEN-CUT UNLESS SHOWN OTHERWISE. ALL DISTURBED CONCRETE, PAVEMENT, AND GRAVEL DRIVES ARE TO BE RESTORED TO ORIGINAL CONDITION OR BETTER
9. ALL AREAS WITHIN VDOT 'S RIGHT-OF-WAYS THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RESTORED PRIOR TO FINAL ACCEPTANCE IN ACCORDANCE WITH SECTION 107.08 OF THE 2007 VDOT ROAD AND & BRIDGE SPECIFICATIONS AND THE LAND USE PERMIT SPECIAL PROVISIONS (LUP-SP). RESTORATION SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING SHRUBBERY, SOD OR TOPSOIL WITH SEED, LIME, FERTILIZER, AND MULCH; REPLACING PAVED OR FINISHED SURFACES WITH SIMILAR MATERIALS, AND REPLACING AND/OR REPAIRING DAMAGED DRAINAGE STRUCTURES. SOIL STABILIZATION BLANKETS SHALL BE INSTALLED ON ALL SLOPES BEING REPLACED THAT ARE GREATER THAN 3:1 WITHIN VDOT RIGHT-OF-WAY.
10. CONTRACTOR SHALL NOT DISTURB ANY TREES, SHRUBS, OR LANDSCAPING OUTSIDE THE CONSTRUCTION LIMITS. CONTRACTOR SHALL USE EXTREME CAUTION TO PREVENT DISTURBANCE TO THE TREES, SHRUBS, ETC., WHICH ARE IN THE CONSTRUCTION LIMITS AND NOTED TO REMAIN. "ANY TREE THAT IS DESIRED TO CUT ON VDOT'S RIGHT-OF-WAY REQUIRES APPROVAL FROM THE DISTRICT ARBORIST. TREES DESIRED TO BE CUT NEEDS TO BE FLAGGED PRIOR TO OBTAINING VDOT APPROVAL. CLEARING AND GRUBBING SHALL BE CONFINED TO THOSE AREAS APPROVED FOR CONSTRUCTION. NO TREES OR SHRUBS IN UNGRADED AREAS SHALL BE CUT WITHOUT THE PERMISSION OF THE VDOT."
11. EROSION AND SEDIMENT CONTROL NOTES:
    A. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE VIRGINIA EROSION AND CONTROL HANDBOOK AND THE 2007 VDOT ROAD AND BRIDGE SPECIFICATIONS.
    B. CONTRACTOR SHALL INSTALL SILT BARRIERS, INLET PROTECTION, CONSTRUCTION ENTRANCES AT POINTS OF INGRESS AND EGRESS TO PUBLIC RIGHT-OF-WAY, STABILIZE DISTURBED AREAS, AND PROVIDE OTHER MEASURES REQUIRED AS SHOWN ON THE DRAWINGS AND SPECIFIED.
    C. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT TRACKING ON EXISTING PAVEMENTS.
    D. CONTRACTOR SHALL INSTALL GRAVEL CONSTRUCTION ROAD STABILIZATION OF ADEQUATE AREA TO ACCOMMODATE CONSTRUCTION VEHICLE PARKING, MATERIAL STORAGE, ETC. AT A LOCATION CONVENIENT TO THE INDIVIDUAL CONSTRUCTION AREAS AND CONSISTENT WITH THE CONSTRUCTION SEQUENCES.
    E. THE LOCATIONS OF SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON PLANS ARE APPROXIMATE, THE EXACT LOCATION MUST BE DETERMINED IN THE FIELD.
    F. A ROCK CHECK DAM SHALL BE INSTALLED BELOW THE DISTURBED AREA WITHIN DITCH LINES AND/OR WHERE DITCH LINES OUTLET TO UNDISTURBED AREAS.
    G. SILT FENCE SHALL PROVIDED BELOW DISTURBED AREAS FOR ALL LOCATIONS WHERE DISTURBED AREA DRAINS TOWARD PROPERTY OWNER BY OTHERS AND/OR TOWARD STREAMS. SHOULD EXISTING DRAINAGE PIPES BECOME SILTED AS A RESULT OF FORCEMAIN CONSTRUCTION, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN THE PIPES TO THE SATISFACTION OF VDOT. IN ADDITION, ANY DITCHES DISTURBED IN VDOT'S RIGHT-OF-WAY SHALL BE CLEANED/RESTORED.
    H. IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATION §107.16 (A), LAND DISTURBING ACTIVITY WHICH OCCURS WITHIN THE VDOT RIGHT-OF-WAY MUST BE SUPERVISED BY A CERTIFIED EROSION AND SEDIMENT CONTROL (ESC) CONTRACTOR WHO IS REQUIRED TO BE ON-SITE AT ALL TIMES DURING THAT LAND-DISTURBING ACTIVITY. IF EROSION OR SCOUR OCCURS, THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTION MEASURES.
12. ALL DISTURBED AREAS ARE TO BE MULCHED AND SEEDED PER THE SPECIFICATIONS WITHIN 7 DAYS OF ACHIEVING FINAL GRADES.
13. IF CONSTRUCTION SCHEDULE DOES NOT ALLOW PERMANENT SEEDING IN THE DATES SHOWN IN THE SPECIFICATIONS OR IF CONSTRUCTION IS TEMPORARILY HALTED FOR A PERIOD OF 21 DAYS OR LONGER DUE TO WEATHER, WINTER SHUT DOWN, ETC., CONTRACTOR SHALL INSTALL TEMPORARY SEEDING WITHIN 7 DAYS. WHEN PERMANENT SEEDING DATES CAN BE ACCOMMODATED, THE CONTRACTOR SHALL RESEED WITH PERMANENT SEEDING MIXTURES. ALL SEEDED AREAS, WHICH DO NOT PRODUCE A THICK, HEALTHY, DESIRABLE VEGETATIVE COVER, ARE TO BE RESEEDED AND MULCHED AS NECESSARY UNTIL ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. PRIOR TO RESEEDING WITH PERMANENT VEGETATION, ALL ESTABLISHED TEMPORARY VEGETATION IS TO BE REMOVED.
14. TOPSOIL IS TO BE STOCKPILED AND RE-SPREAD OVER DISTURBED AREAS TO BE SEEDED PER THE TECHNICAL SPECIFICATIONS. STOCKPILES SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND SEDIMENT AND EROSION CONTROLS DEVICES/MEASURES SHALL BE INSTALLED AS NECESSARY. THESE STOCKPILES ARE TO BE LOCATED IN AREAS THAT MINIMIZE DISTURBANCE TO CONSTRUCTION OPERATIONS.
15. WHEN CONSTRUCTION DISTURBS EXISTING DITCHLINES, THE RESTORED DITCHLINES SHALL BE STABILIZED WITH EXCELSIOR MAT FOR EROSION CONTROL.
16. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR.
17. VERTICAL CONTROL FOR THIS PROJECT IS REFERENCED TO VIRGINIA STATE PLANE GRID COORDINATES (SOUTH ZONE) US SURVEY FEET.
    HORIZONTAL: NAD83 (CORS) BLKV,DOBS,ASUB
    VERTICAL: NAVD88
    AVERAGE COMBINED FACTOR: GROUND TO GRID 0.999987
18. CONSTRUCTION WITHIN VDOT'S RIGHT-OF-WAY SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL, REV. 1, AND TO THE APPROVED TRANSPORTATION MANAGEMENT PLAN (TMP). ANY PROPOSED DEVIATION FROM THE APPROVED PLAN SHALL BE APPROVED BY VDOT. CONTROL OF TRAFFIC ELEMENTS RELATING TO ROAD REGULATIONS & CONSTRUCTION MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY VDOT".
19. LAND DISTURBANCE ACTIVITIES AND RELATED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF MARTINSVILLE PUBLIC SERVICE AUTHORITY'S STANDARD SPECIFICATION UNLESS, A MORE STRINGENT REQUIREMENT IS SHOWN ON PLANS OR LISTED IN PROJECT SPECIFICATIONS.
20. "ALL CONTRACTORS PERFORMING CONSTRUCTION ACTIVITIES UNDER THE AUSPICES OF A VDOT LAND USE PERMIT MUST HAVE AT LEAST ONE (1) EMPLOYEE ON-SITE WHO, AT A MINIMUM, IS VERIFIED BY VDOT IN BASIC WORK ZONE TRAFFIC CONTROL FOR ACTIVITIES INVOLVING THE INSTALLATION, MAINTENANCE AND REMOVAL OF WORK ZONE TRAFFIC CONTROL DEVICES. AN EMPLOYEE VERIFIED BY VDOT IN INTERMEDIATE OR ADVANCED WORK ZONE TRAFFIC CONTROL MUST BE ON-SITE TO PROVIDE SUPERVISION DURING WORKZONE ADJUSTMENTS OR CHANGES TO TRAFFIC CONTROL DUE TO FIELD CONDITIONS. THESE PERSONS MUST HAVE THEIR CERTIFICATION CARD WITH THEM WHILE ON THE PROJECT SITE."
21. A LAND USE PERMIT (LUP) SHALL BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BEGINNING ANY CONSTRUCTION WITHIN THE EXISTING STATE MAINTAINED RIGHT OF WAY. THE LUP MAY BE OBTAINED FROM THE LOCAL VDOT LAND USE OFFICE LOCATED AT 309 WEEPING WILLOW LANE, BASSETT, VIRGINIA (CONTACT JIM KEENE AT 276-627-1509). VDOT SHALL BE INVITED TO THE PRECONSTRUCTION MEETING.
22. ALL UTILITY LINES SHALL HAVE A MINIMUM OF THREE (3) FEET OF COVER AND BE INSTALLED NOT LESS THAN 3' FROM ANY EXISTING/PROPOSED GUARDRAIL POSTS. ALL UTILITY LINES & APPURTENANCES SHALL BE INSTALLED 5'OR GREATER OFF THE EDGE OF PAVEMENT. DO NOT INSTALL UTILITY APPURTENANCES IN DITCH LINES. IN CASES WHERE THERE ARE LESS THAN 5 FEET BETWEEN THE EDGE OF PAVEMENT AND GUARDRAIL POSTS AND THE UTILITY CANNOT BE INSTALLED BEYOND THE GUARDRAIL, INSTALL UTILITY HALF-WAY BETWEEN THE TWO ITEMS, BUT NO CLOSER THAN TWO FEET TO THE POSTS (OUTSIDE DIMENSION OF THE UTILITY TO POSTS).
23. VDOT APPROVAL OF THESE PLANS EXPIRES THREE YEARS FROM DATE OF APPROVAL, IF A LAND USE PERMIT HAS NOT BEEN ISSUED."
24. "FINAL RIM ELEVATIONS IN VDOT'S R/W SHALL NOT BE GREATER THAN THE FINISH GRADE. ALL AREAS WITHIN VDOT'S R/W) WITH SLOPES OF 3:1 OR GENTLER SHALL BE CONSIDERED TRAFFIC BEARING AREAS, AND ANY UTILITY VAULTS/MANHOLES SHALL BE INSTALLED WITH TRAFFIC BEARING COVERS."
25. "ANY EDGE LINE OR CENTERLINE MARKINGS DESTROYED SHALL BE REPLACED ACCORDING TO THE CURRENT VDOT REQUIREMENTS."
26. "REPLACE ANY DISTURBED RIGHT OF WAY MONUMENTS IN ACCORDANCE TO 2008 ROAD AND BRIDGE STANDARDS RM-2."

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Smith River Interceptor
CMP Rehabilitation
City of Martinsville
Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Legend Abbreviations and General Notes

PROJECT NO. 50078733

T2

SHEET NO. OF

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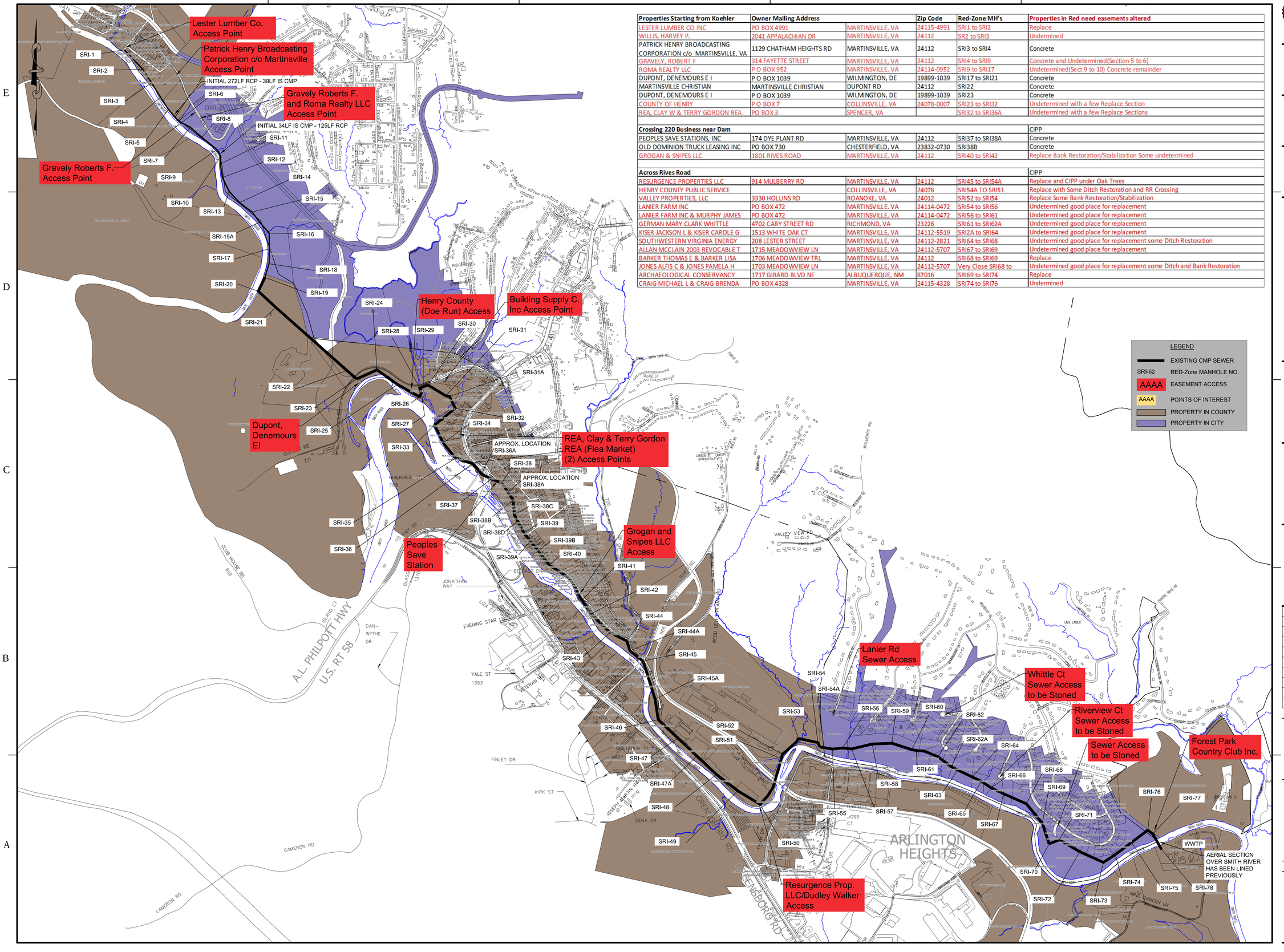
3/30/2016 1:45:25 PM



Properties Starting from Koehler	Owner Mailing Address		Zip Code	Red-Zone MH's	Properties in Red need easements altered
LESTER LUMBER CO INC	PO BOX 4991	MARTINSVILLE, VA	24115-4991	SRI1 to SRI2	Replace
WILLIS, HARVEY P.	2041 APPALACHIAN DR	MARTINSVILLE, VA	24112	SR2 to SRI3	Undermined
PATRICK HENRY BROADCASTING CORPORATION c/o MARTINSVILLE, VA	1129 CHATHAM HEIGHTS RD	MARTINSVILLE, VA	24112	SRI3 to SRI4	Concrete
GRAVELY, ROBERT F	314 FAYETTE STREET	MARTINSVILLE, VA	24112	SRI4 to SRI9	Concrete and Undetermined(Section 5 to 6)
ROMA REALTY LLC	P O BOX 952	MARTINSVILLE, VA	24114-0952	SRI9 to SRI17	Undetermined(Sect 9 to 10) Concrete remainder
DUPONT, DENEMOURS E I	P O BOX 1039	WILMINGTON, DE	19899-1039	SRI17 to SRI21	Concrete
MARTINSVILLE CHRISTIAN	MARTINSVILLE CHRISTIAN	DUPONT RD	24112	SRI22	Concrete
DUPONT, DENEMOURS E I	P O BOX 1039	WILMINGTON, DE	19899-1039	SRI23	Concrete
COUNTY OF HENRY	P O BOX 7	COLLINSVILLE, VA	24078-0007	SRI23 to SRI32	Undetermined with a few Replace Section
REA, CLAY W & TERRY GORDON REA	PO BOX 3	SPENCER, VA		SRI32 to SRI36A	Undetermined with a few Replace Sections
Crossing 220 Business near Dam					CIPP
PEOPLES SAVE STATIONS, INC	174 DYE PLANT RD	MARTINSVILLE, VA	24112	SRI37 to SRI38A	Concrete
OLD DOMINION TRUCK LEASING INC	PO BOX 730	CHESTERFIELD, VA	23832-0730	SRI38B	Concrete
GROGAN & SNIPES LLC	1801 RIVES ROAD	MARTINSVILLE, VA	24112	SRI40 to SRI42	Replace Bank Restoration/Stabilization Some undetermined
Across Rives Road					CIPP
RESURGENCE PROPERTIES LLC	914 MULBERRY RD	MARTINSVILLE, VA	24112	SRI45 to SRI54A	Replace and CIPP under Oak Trees
HENRY COUNTY PUBLIC SERVICE		COLLINSVILLE, VA	24078	SRI54A TO SRI51	Replace with Some Ditch Restoration and RR Crossing
VALLEY PROPERTIES, LLC	3330 HOLLINS RD	ROANOKE, VA	24012	SRI52 to SRI54	Replace Some Bank Restoration/Stabilization
LANIER FARM INC	PO BOX 472	MARTINSVILLE, VA	24114-0472	SRI54 to SRI56	Undetermined good place for replacement
LANIER FARM INC & MURPHY JAMES	PO BOX 472	MARTINSVILLE, VA	24114-0472	SRI56 to SRI61	Undetermined good place for replacement
GERMAN MARY CLARK WHITTLE	4702 CARY STREET RD	RICHMOND, VA	23226	SRI61 to SRI62A	Undetermined good place for replacement
KISER JACKSON L & KISER CAROLE G	1513 WHITE OAK CT	MARTINSVILLE, VA	24112-5519	SRI2A to SRI64	Undetermined good place for replacement
SOUTHWESTERN VIRGINIA ENERGY	208 LESTER STREET	MARTINSVILLE, VA	24112-2821	SRI64 to SRI68	Undetermined good place for replacement some Ditch Restoration
ALLAN MCCLAIN 2003 REVOCABLE T	1715 MEADOWVIEW LN	MARTINSVILLE, VA	24112-5707	SRI67 to SRI69	Undetermined good place for replacement
BARKER THOMAS E & BARKER LISA	1706 MEADOWVIEW TRL	MARTINSVILLE, VA	24112	SRI68 to SRI69	Replace
JONES ALFIS C & JONES PAMELA H	1703 MEADOWVIEW LN	MARTINSVILLE, VA	24112-5707	Very Close SRI68 to	Undetermined good place for replacement some Ditch and Bank Restoration
ARCHAEOLOGICAL CONSERVANCY	1717 GIRARD BLVD NE	ALBUQUERQUE, NM	87016	SRI69 to SRI74	Replace
CRAIG MICHAEL L & CRAIG BRENDA	PO BOX 4328	MARTINSVILLE, VA	24115-4328	SRI74 to SRI76	Undermined

Dewberry

Dewberry Engineers Inc.
551 Piney Forest Road
Danville ,VA 24540
Phone: 434.797.4497
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Smith River Interceptor
CMP Rehabilitation
City of Martinsville
Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 800' 1600'
SCALE: 1" = 800'

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Smith River Interceptor SS Access Easement Location Map

PROJECT NO. 50078733

T3

SHEET NO. OF

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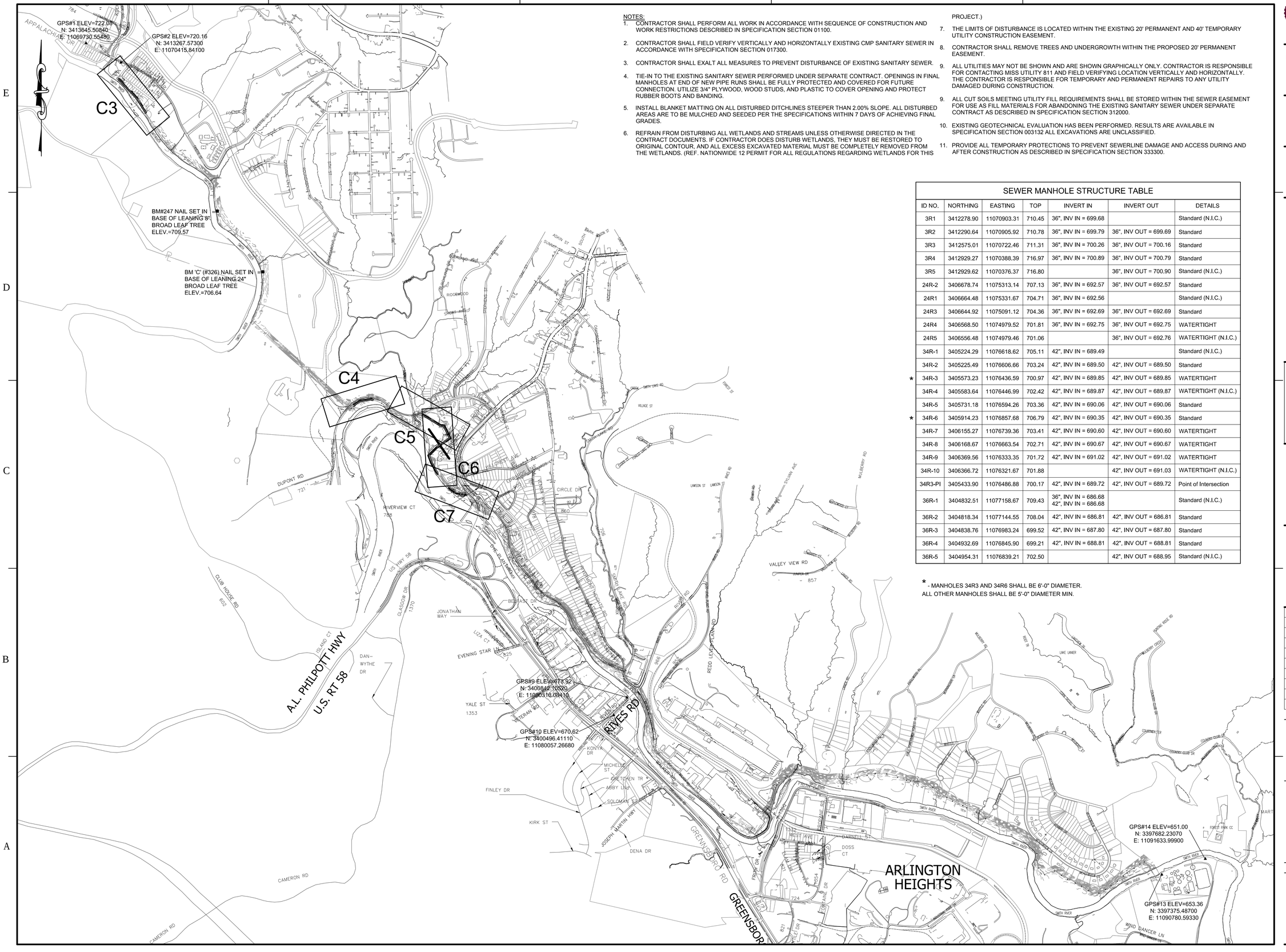

NOTES:

1. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH SEQUENCE OF CONSTRUCTION AND WORK RESTRICTIONS DESCRIBED IN SPECIFICATION SECTION 01100.
2. CONTRACTOR SHALL FIELD VERIFY VERTICALLY AND HORIZONTALLY EXISTING CMP SANITARY SEWER IN ACCORDANCE WITH SPECIFICATION SECTION 017300.
3. CONTRACTOR SHALL EXALT ALL MEASURES TO PREVENT DISTURBANCE OF EXISTING SANITARY SEWER.
4. TIE-IN TO THE EXISTING SANITARY SEWER PERFORMED UNDER SEPARATE CONTRACT. OPENINGS IN FINAL MANHOLES AT END OF NEW PIPE RUNS SHALL BE FULLY PROTECTED AND COVERED FOR FUTURE CONNECTION. UTILIZE 3/4" PLYWOOD, WOOD STUDS, AND PLASTIC TO COVER OPENING AND PROTECT RUBBER BOOTS AND BANDING.
5. INSTALL BLANKET MATTING ON ALL DISTURBED DITCHLINES STEEPER THAN 2.00% SLOPE. ALL DISTURBED AREAS ARE TO BE MULCHED AND SEEDED PER THE SPECIFICATIONS WITHIN 7 DAYS OF ACHIEVING FINAL GRADES.
6. REFRAIN FROM DISTURBING ALL WETLANDS AND STREAMS UNLESS OTHERWISE DIRECTED IN THE CONTRACT DOCUMENTS. IF CONTRACTOR DOES DISTURB WETLANDS, THEY MUST BE RESTORED TO ORIGINAL CONTOUR, AND ALL EXCESS EXCAVATED MATERIAL MUST BE COMPLETELY REMOVED FROM THE WETLANDS. (REF. NATIONWIDE 12 PERMIT FOR ALL REGULATIONS REGARDING WETLANDS FOR THIS PROJECT.)
7. THE LIMITS OF DISTURBANCE IS LOCATED WITHIN THE EXISTING 20' PERMANENT AND 40' TEMPORARY UTILITY CONSTRUCTION EASEMENT.
8. CONTRACTOR SHALL REMOVE TREES AND UNDERGROWTH WITHIN THE PROPOSED 20' PERMANENT EASEMENT.
9. ALL UTILITIES MAY NOT BE SHOWN AND ARE SHOWN GRAPHICALLY ONLY. CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS UTILITY 811 AND FIELD VERIFYING LOCATION VERTICALLY AND HORIZONTALLY. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY AND PERMANENT REPAIRS TO ANY UTILITY DAMAGED DURING CONSTRUCTION.
9. ALL CUT SOILS MEETING UTILITY FILL REQUIREMENTS SHALL BE STORED WITHIN THE SEWER EASEMENT FOR USE AS FILL MATERIALS FOR ABANDONING THE EXISTING SANITARY SEWER UNDER SEPARATE CONTRACT AS DESCRIBED IN SPECIFICATION SECTION 312000.
10. EXISTING GEOTECHNICAL EVALUATION HAS BEEN PERFORMED. RESULTS ARE AVAILABLE IN SPECIFICATION SECTION 003132 ALL EXCAVATIONS ARE UNCLASSIFIED.
11. PROVIDE ALL TEMPORARY PROTECTIONS TO PREVENT SEWERLINE DAMAGE AND ACCESS DURING AND AFTER CONSTRUCTION AS DESCRIBED IN SPECIFICATION SECTION 333300.

SEWER MANHOLE STRUCTURE TABLE

	ID NO.	NORTHING	EASTING	TOP	INVERT IN	INVERT OUT	DETAILS
	3R1	3412278.90	11070903.31	710.45	36", INV IN = 699.68		Standard (N.I.C.)
	3R2	3412290.64	11070905.92	710.78	36", INV IN = 699.79	36", INV OUT = 699.69	Standard
	3R3	3412575.01	11070722.46	711.31	36", INV IN = 700.26	36", INV OUT = 700.16	Standard
	3R4	3412929.27	11070388.39	716.97	36", INV IN = 700.89	36", INV OUT = 700.79	Standard
	3R5	3412929.62	11070376.37	716.80		36", INV OUT = 700.90	Standard (N.I.C.)
	24R-2	3406678.74	11075313.14	707.13	36", INV IN = 692.57	36", INV OUT = 692.57	Standard
	24R1	3406664.48	11075331.67	704.71	36", INV IN = 692.56		Standard (N.I.C.)
	24R3	3406644.92	11075091.12	704.36	36", INV IN = 692.69	36", INV OUT = 692.69	Standard
	24R4	3406568.50	11074979.52	701.81	36", INV IN = 692.75	36", INV OUT = 692.75	WATERTIGHT
	24R5	3406556.48	11074979.46	701.06		36", INV OUT = 692.76	WATERTIGHT (N.I.C.)
	34R-1	3405224.29	11076618.62	705.11	42", INV IN = 689.49		Standard (N.I.C.)
	34R-2	3405225.49	11076606.66	703.24	42", INV IN = 689.50	42", INV OUT = 689.50	Standard
*	34R-3	3405573.23	11076436.59	700.97	42", INV IN = 689.85	42", INV OUT = 689.85	WATERTIGHT
	34R-4	3405583.64	11076446.99	702.42	42", INV IN = 689.87	42", INV OUT = 689.87	WATERTIGHT (N.I.C.)
	34R-5	3405731.18	11076594.26	703.36	42", INV IN = 690.06	42", INV OUT = 690.06	Standard
*	34R-6	3405914.23	11076857.68	706.79	42", INV IN = 690.35	42", INV OUT = 690.35	Standard
	34R-7	3406155.27	11076739.36	703.41	42", INV IN = 690.60	42", INV OUT = 690.60	WATERTIGHT
	34R-8	3406168.67	11076663.54	702.71	42", INV IN = 690.67	42", INV OUT = 690.67	WATERTIGHT
	34R-9	3406369.56	11076333.35	701.72	42", INV IN = 691.02	42", INV OUT = 691.02	WATERTIGHT
	34R-10	3406366.72	11076321.67	701.88		42", INV OUT = 691.03	WATERTIGHT (N.I.C.)
	34R3-PI	3405433.90	11076486.88	700.17	42", INV IN = 689.72	42", INV OUT = 689.72	Point of Intersection
	36R-1	3404832.51	11077158.67	709.43	36", INV IN = 686.68 42", INV IN = 686.68		Standard (N.I.C.)
	36R-2	3404818.34	11077144.55	708.04	42", INV IN = 686.81	42", INV OUT = 686.81	Standard
	36R-3	3404838.76	11076983.24	699.52	42", INV IN = 687.80	42", INV OUT = 687.80	Standard
	36R-4	3404932.69	11076845.90	699.21	42", INV IN = 688.81	42", INV OUT = 688.81	Standard
	36R-5	3404954.31	11076839.21	702.50		42", INV OUT = 688.95	Standard (N.I.C.)

* - MANHOLES 34R3 AND 34R6 SHALL BE 6'-0" DIAMETER.
ALL OTHER MANHOLES SHALL BE 5'-0" DIAMETER MIN.

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Contract I

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KEY PLAN

SCALE

0' 800' 1600'
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No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Contract I
Overall
Location
Map

PROJECT NO. 50078733

C1

SHEET NO. OF

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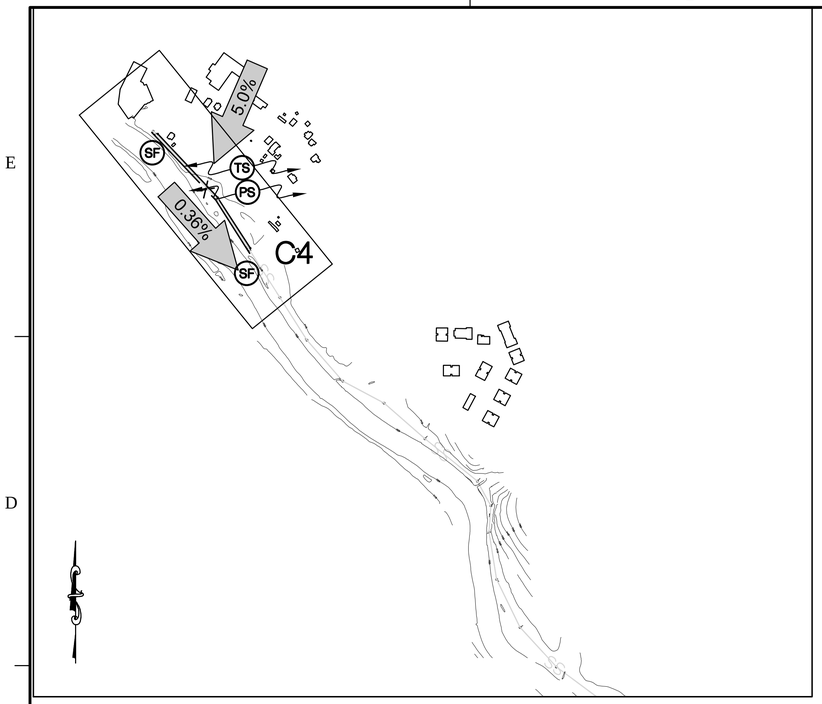
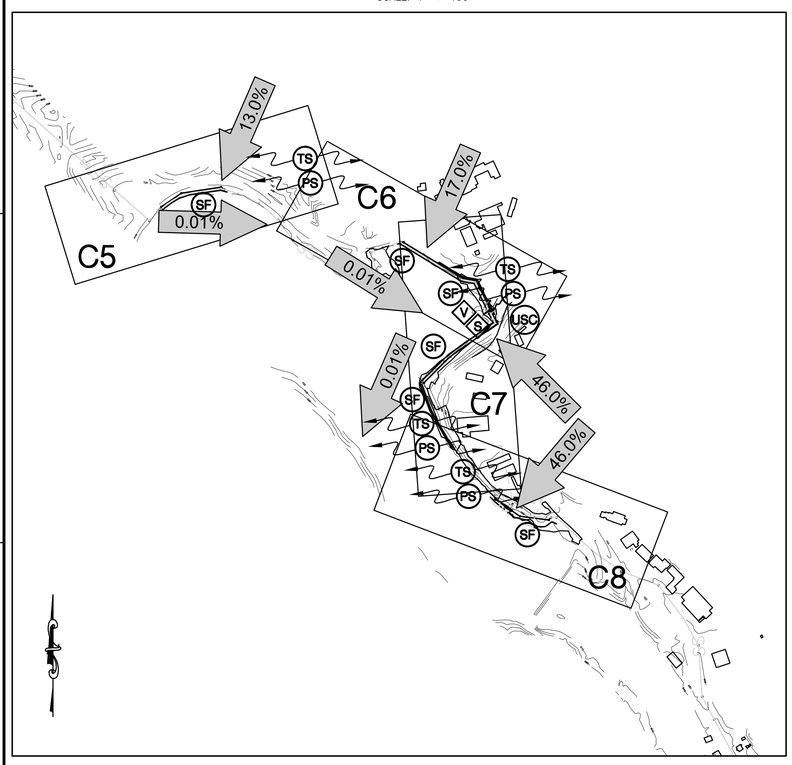


OVERALL SITE LAYOUT

0' 400' 800'

SCALE: 1" = 400'



OVERALL SITE LAYOUT

0' 400' 800'

SCALE: 1" = 400'

VA E&S Minimum Standards

1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND–DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
   - a. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
   - b. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25–YEAR STORM OF 24–HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT–LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX–MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
   - a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
   - b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
   - c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF–SITE PROPERTY.
   - d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
   - e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
   - f. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

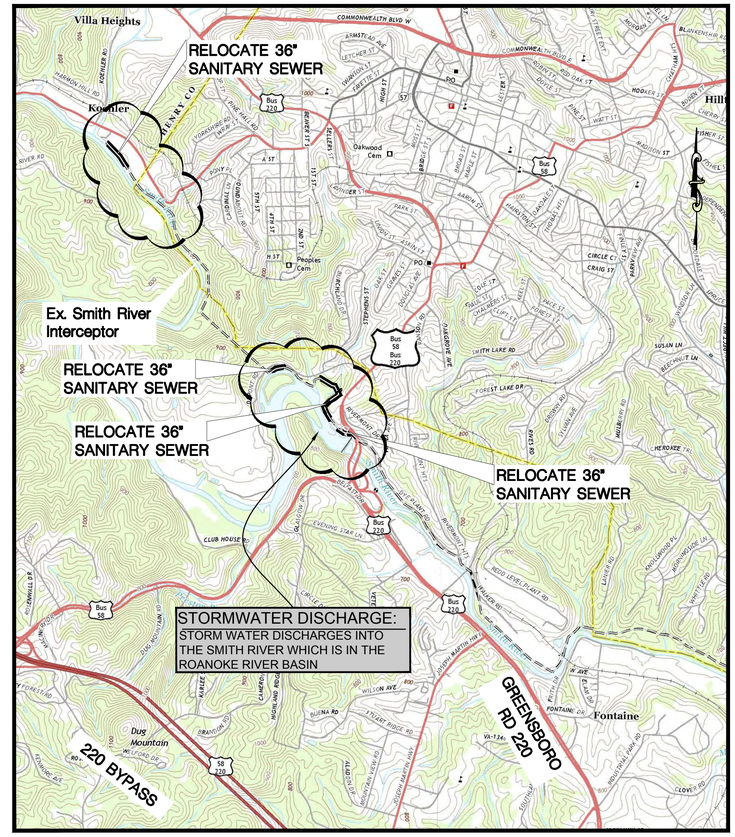
17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND–DISTURBING ACTIVITIES.

18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24–HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN–MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS:
   - a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN–MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
   - b. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
   - i. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
   - ii. (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO–YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.

     (B) ALL PREVIOUSLY CONSTRUCTED MAN–MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN–YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO–YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND

     (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN–YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
   - c. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN–MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
   - i. IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN–YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO–YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR
   - ii. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN–YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
   - iii. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE–DEVELOPMENT PEAK RUNOFF RATE FROM A TWO–YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE–DEVELOPMENT PEAK RUNOFF RATE FROM A TEN–YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN–MADE CHANNEL; OR
   - iv. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
   - d. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
   - e. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
   - f. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
   - g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
   - h. ALL ON–SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
   - i. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
   - j. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
   - k. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.
   - l. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO
   - i. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS;
   - ii. DETAIN AND RELEASE OVER A 24–HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24–HOUR STORM; AND
   - iii. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10–YEAR, 24–HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1–44.15:54 OR 62.1–44.15:65 OF THE ACT.
   - m. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1–44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1–44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND–DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25–870–48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS.
   - n. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25–870–66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.



USGS VICINITY MAP
SCALE: 1"=2000'

DEQ - Duidance Memo No. 15-2003

1. The requirement for the preparation and implementation of a site specific stormwater management plan has been waived in accordance with the Virginia Stormwater Management Regulations (9VAC 25-870-et seq) and further clarification in DEQ Guidance Memo No. 15- 2003 (enclosed) based on the project meeting the following requirements:

a. The project does not significantly alter the predevelopment runoff characteristics of the land surface after the completion of construction and final stabilization;
b. The project is managed so that less than one (1) acre of land disturbance occurs on a daily basis;
c. The disturbed land where work has been completed is adequately stabilized on a daily basis;
d. The environment is protected from erosion and sedimentation damage associated with the land-disturbing activity;
e. The owner and/or construction activity operator designs, installs, implements, and maintains pollution prevention measures to:
i. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters;
ii. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on-site to precipitation and to stormwater;
iii. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures;
iv. Prohibit the discharge of wastewater from the washout of concrete;
v. Prohibit the discharge of wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and
vi. Prohibit the discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
f. The owner and/or construction activity operator provides reasonable assurance to DEQ or the local VSMP Authority that all of the above conditions will be satisfied. This may be accomplished by incorporating these conditions into an erosion and sediment control plan developed for the project.

EROSION & SEDIMENT CONTROL NOTES:

THE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE ADHERED TO BY THE CONTRACTOR AT ALL TIMES:

1. OBTAIN ALL PERMITS AND POST ALL REQUIRED BONDS.
2. CONTRACTOR SHALL KEEP & MAINTAIN A COPY OF THE VIRGINIA EROSION & SEDIMENT CONTROL HAND–BOOK, LATEST EDITION ON–SITE AT ALL TIMES.
3. INSTALL PERIMETER SILT FENCE AND TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT. TEMPORARY EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO ALL LAND DISTURBING ACTIVITIES.
4. CONTRACTOR SHALL SEED AND MULCH ALL DITCHES <2% SLOPE. ALL DITCHES GREATER THAN 2% SLOPE SHALL BE LINED W/ BLANKET MATTING.
5. ALL SPECIFIC LOCATIONS FOR SILT FENCE ARE NOT SHOWN ON THE APPROVED PLANS. THE NEED FOR ADDITIONAL E&S CONTROL MEASURES IS TO BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER AND THE EROSION CONTROL DIRECTOR.
6. INSTALL BLANKET MATTING AND RIP–RAP IN DITCHES PER DETAIL.
7. TEMPORARY SEEDING SHALL OCCUR AS CONSTRUCTION PROGRESSES. NO SECTION OF DISTURBANCE LONGER THAN 1000' SHALL BE LEFT UNSEEDED. TEMPORARY SEEDING SHALL COMPLY W/ THE NPDES PERMIT ON THIS SHT.
8. REMOVE EROSION AND SEDIMENT CONTROL MEASURES UPON SITE STABILIZATION.
9. CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE MEASURES UNTIL THE SITE IS STABILIZED.
10. ALL DENUDED AREAS SHALL BE SHAPED TO PROMOTE POSITIVE DRAINAGE.

AREA OF LAND DISTURBANCE = 1.58± (ACRES)

E&S LEGEND

- LIMITS OF DISTURBANCE
- CE — TEMPORARY STONE CONSTRUCTION ENTRANCE, VA STD. 3.02
- TS — TEMPORARY SEEDING, VA E&S STD. 3.31
- PS — PERMANENT SEEDING, VA E&S STD. 3.32
- TP — TREE PROTECTION VA E&S STD. 3.38
- S — STRUCTURAL STREAMBANK STABILIZATION, VA E&S STD. 3.23
- V — VEGETATIVE STREAMBANK STABILIZATION, VA E&S STD. 3.22
- BM — SOIL STABILIZATION BLANKETS & MATTING, VA E&S STD. 3.36
- SF — SILT FENCE, VA E&S STD. 3.05 — XX —
- CIP — CULVERT INLET PROTECTION, VA E&S STD. 3.08
- 0.0% — DRAINAGE FLOW ARROW w/ APPROXIMATE SLOPE

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Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC	MWC
APPROVED BY	RSE	RSE
CHECKED BY	FRJ	JAP
DATE	July, 2016	

TITLE

OVERALL EROSION AND SEDIMENT CONTROL PLAN

PROJECT NO. 50078733

C2

SHEET NO. OF

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3/30/2016 1:45:23 PM

LEGEND

SS — EXISTING CMP SS PIPE

SS — NEW DUCTILE IRON PIPE

NOTES:

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2. CONTRACTOR SHALL FIELD VERIFY VERTICALLY AND HORIZONTALLY EXISTING CMP SANITARY SEWER IN ACCORDANCE WITH SPECIFICATION SECTION 017300.
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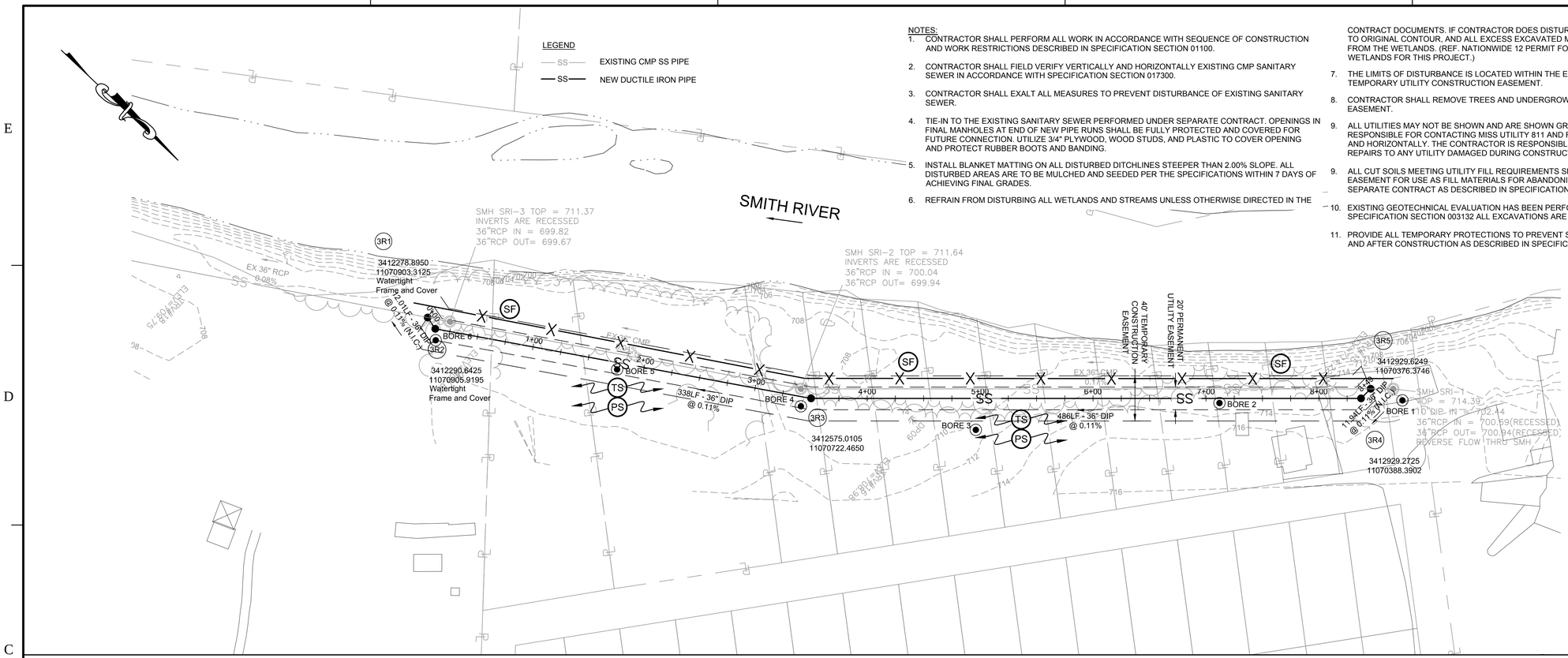

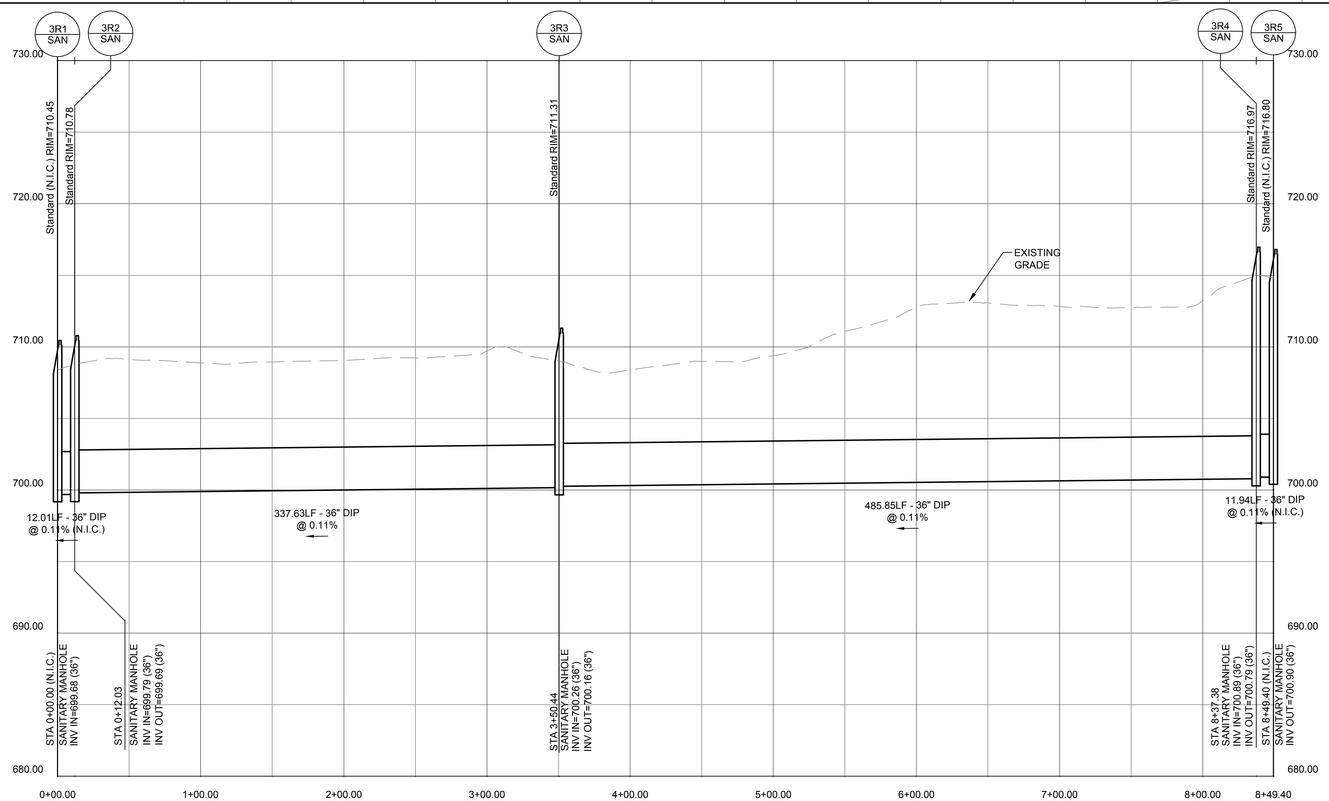

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Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 50' 100'

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VERT. 1"=5'
HORIZ. 1"=50'

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Sanitary Sewer Relocation 3R-1 - 3R-5

PROJECT NO. 50078733

C3

SHEET NO. OF

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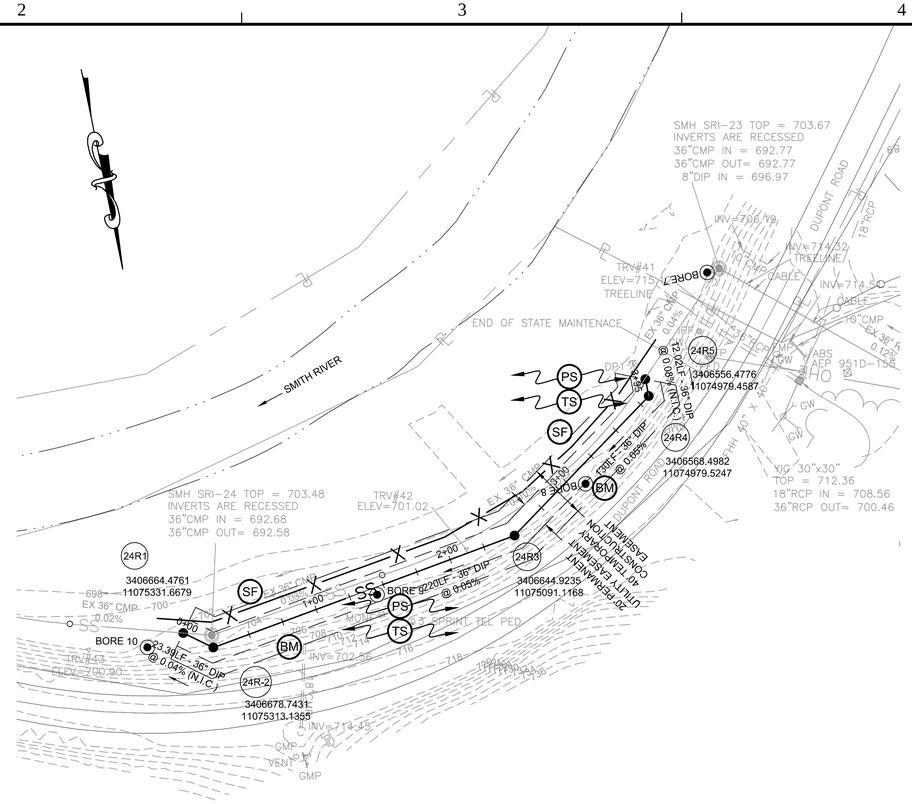

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LEGEND

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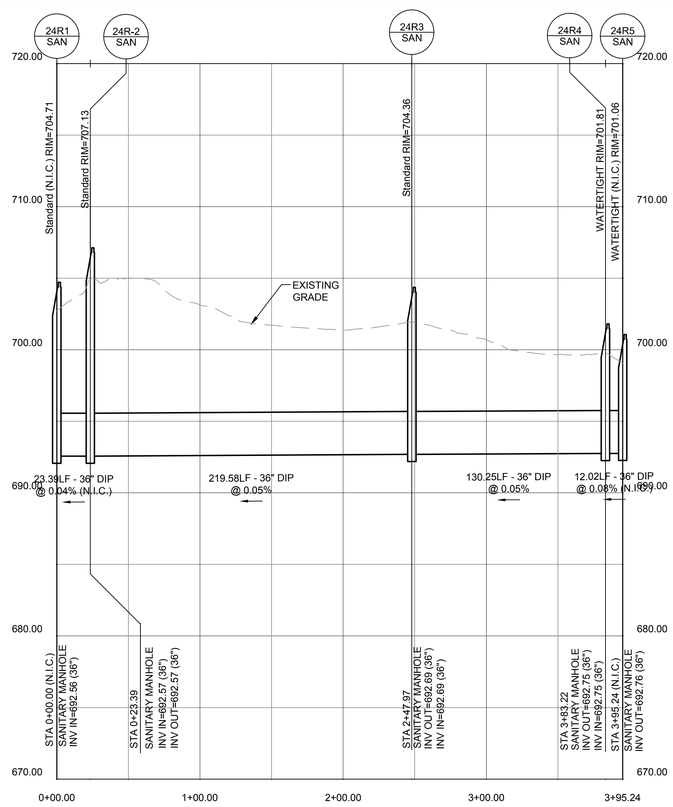
—— SS —— NEW DUCTILE IRON PIPE



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7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

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HORIZ. 1"=50'

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Sanitary Sewer Relocation 24R-1 - 24R-5

PROJECT NO. 50078733

C4

SHEET NO. OF

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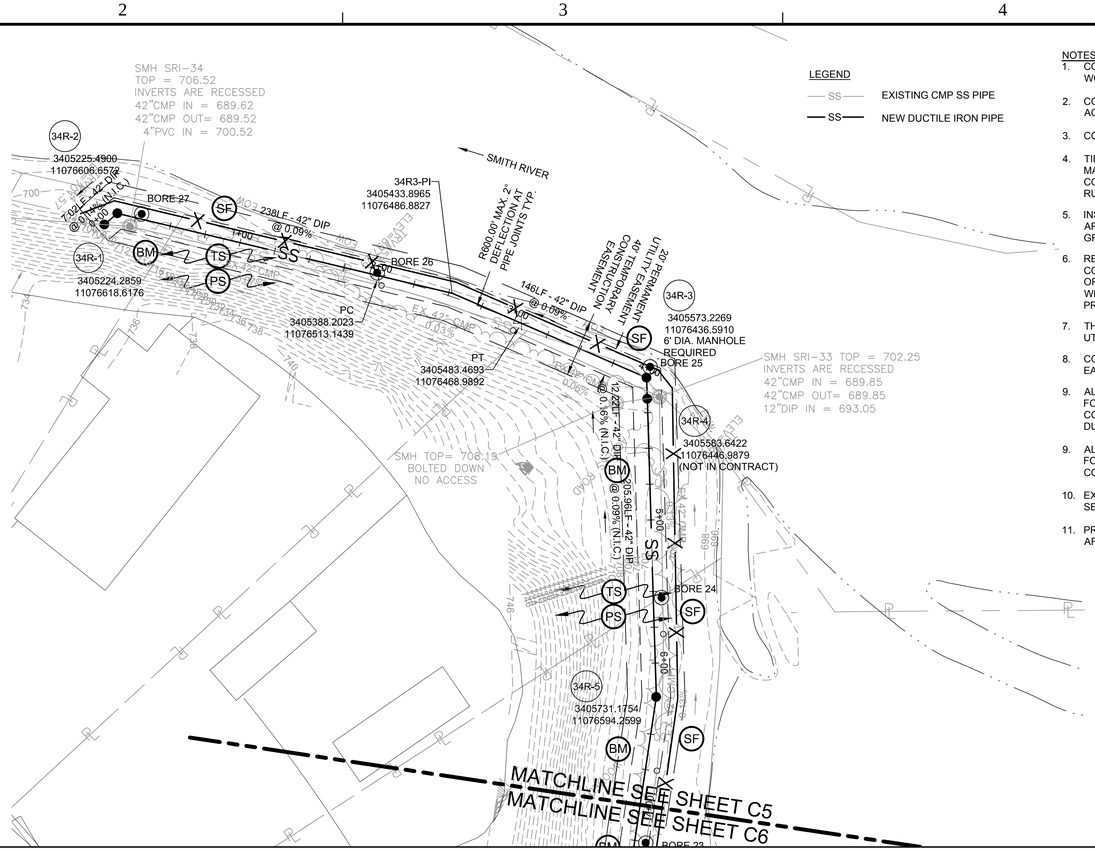

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LEGEND

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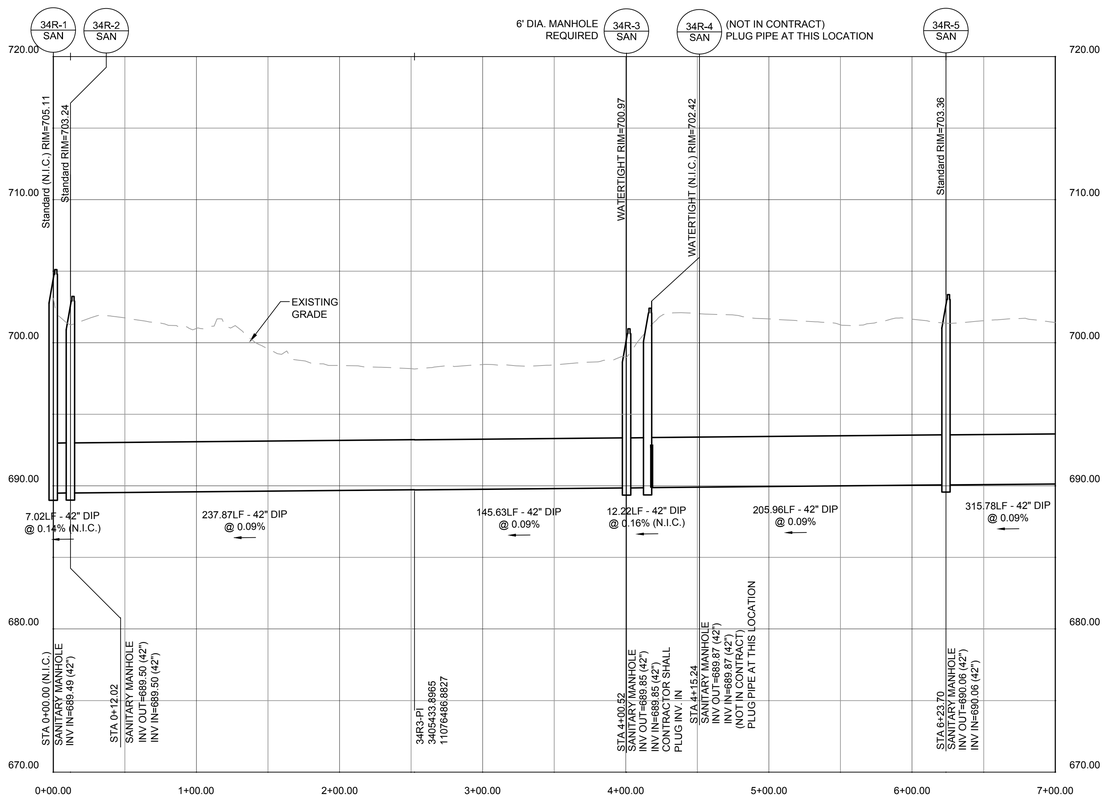

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KEY PLAN

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No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Sanitary Sewer Relocation
34R-1 - 34R-6

PROJECT NO. 50078733

C5

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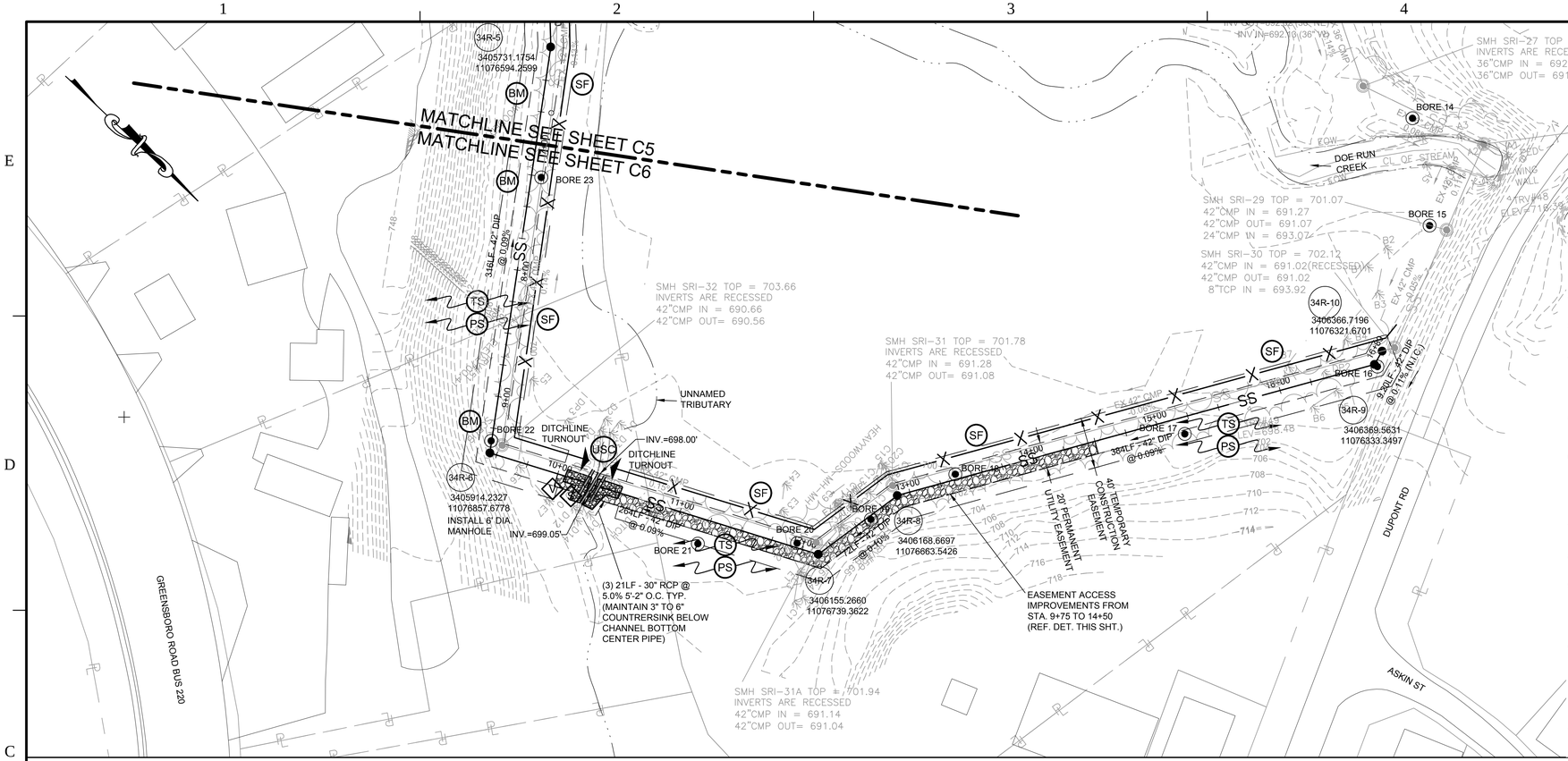

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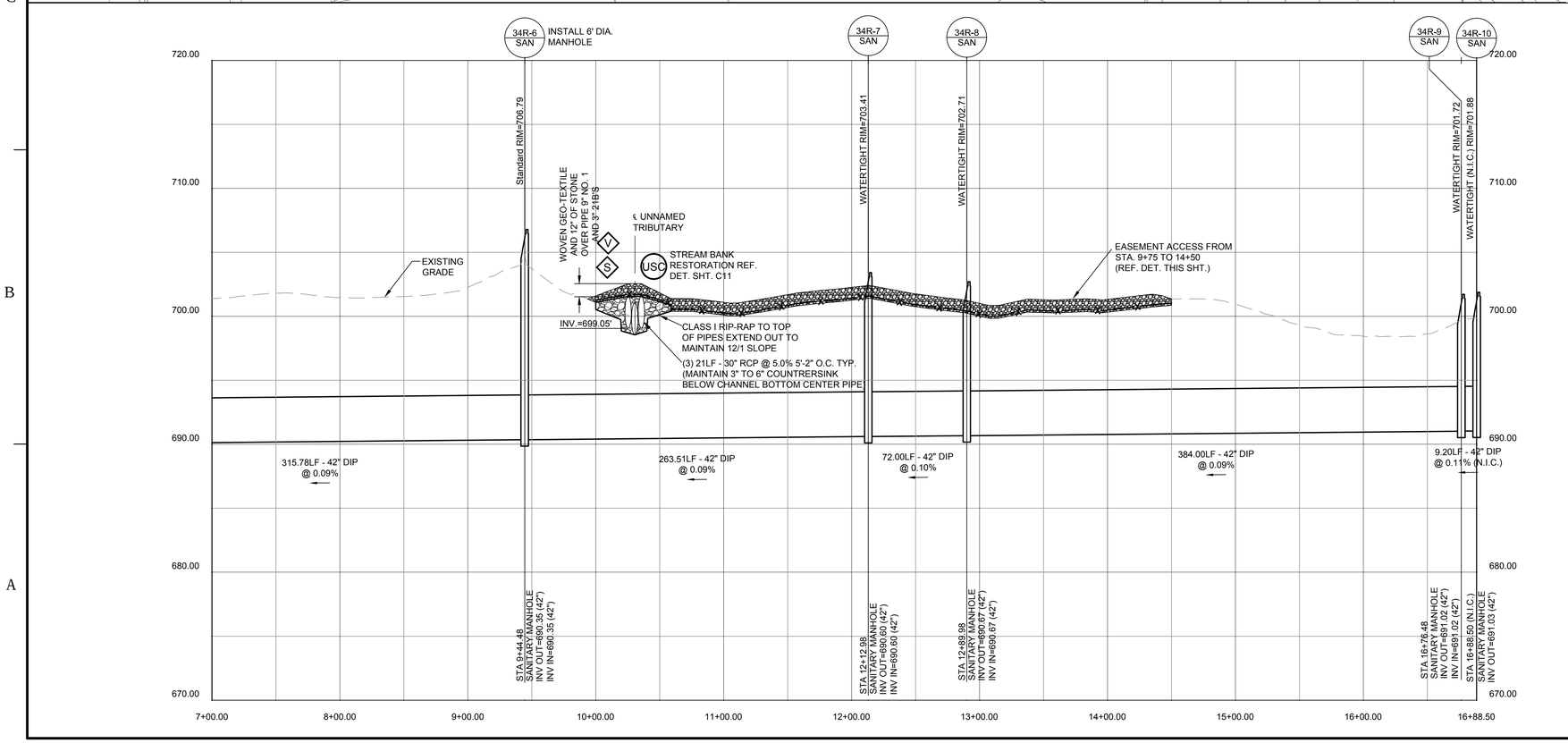

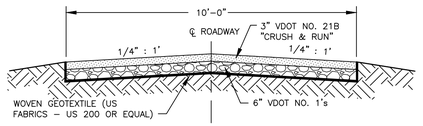

EASEMENT ACCESS - TYPICAL SECTION

NTS.

LEGEND

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KEY PLAN

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No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Sanitary Sewer Relocation
34R-6 - 34R-11

PROJECT NO. 50078733

C6

SHEET NO. OF

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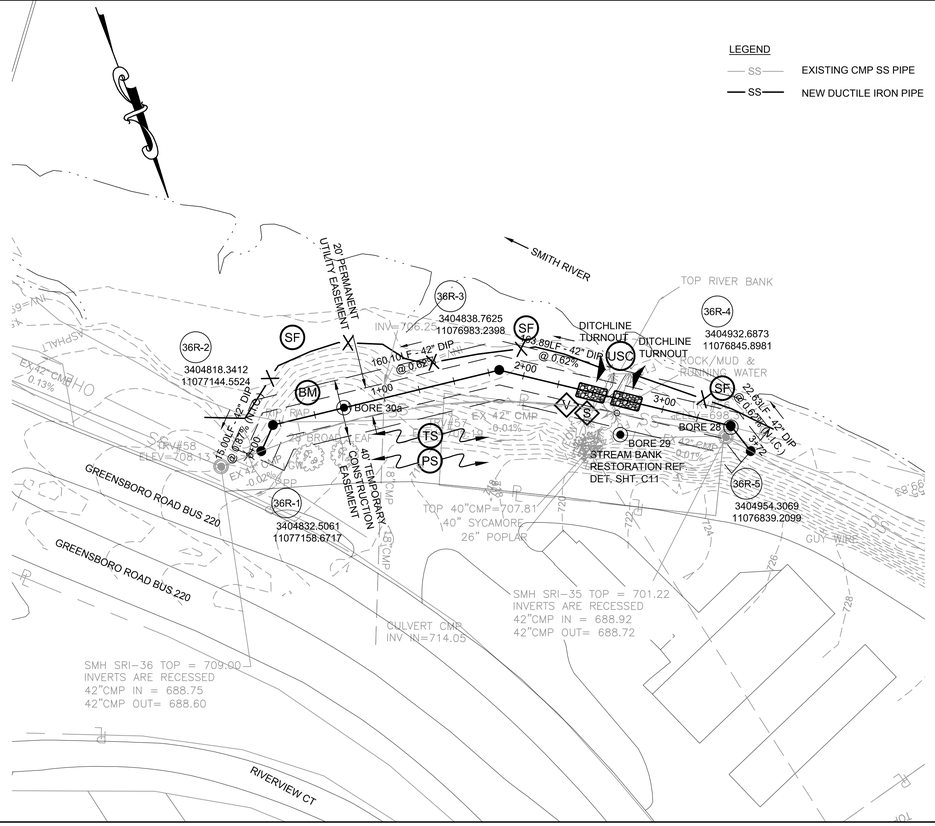

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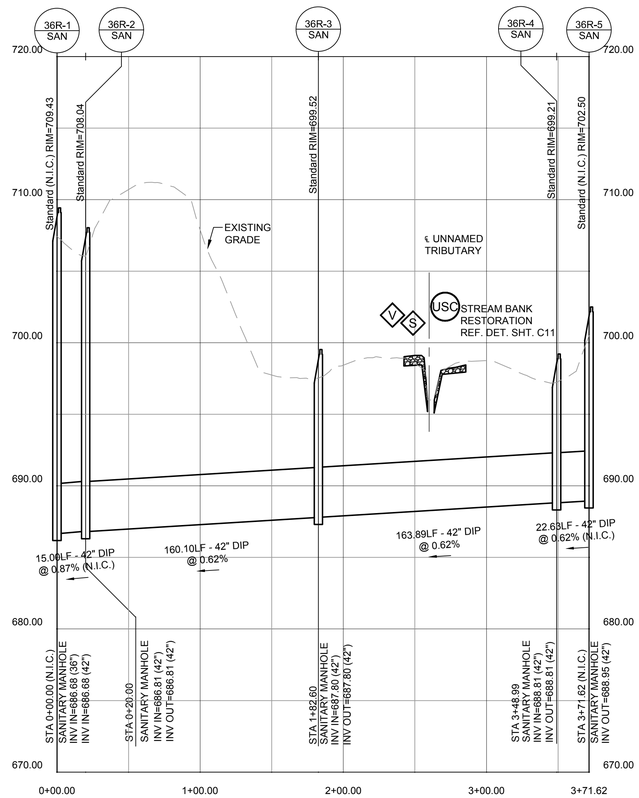

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HORIZ. 1"=50'

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Sanitary Sewer Relocation
36R-1 - 36R-5

PROJECT NO. 50078733

C7

SHEET NO. OF

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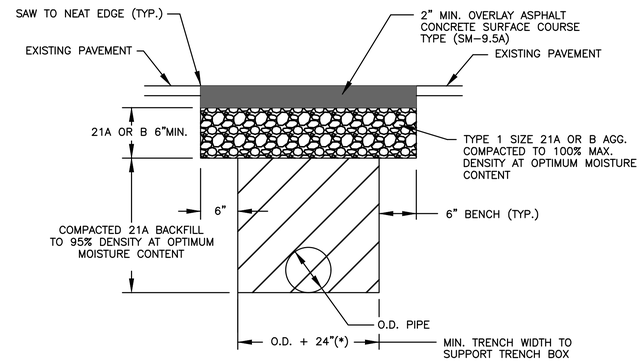
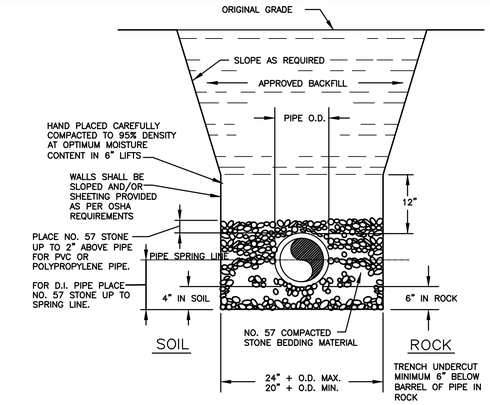


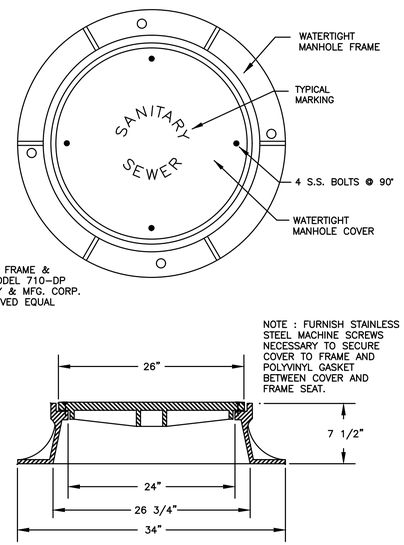
ASPHALT DRIVEWAY REPAIR DETAIL

NOT TO SCALE



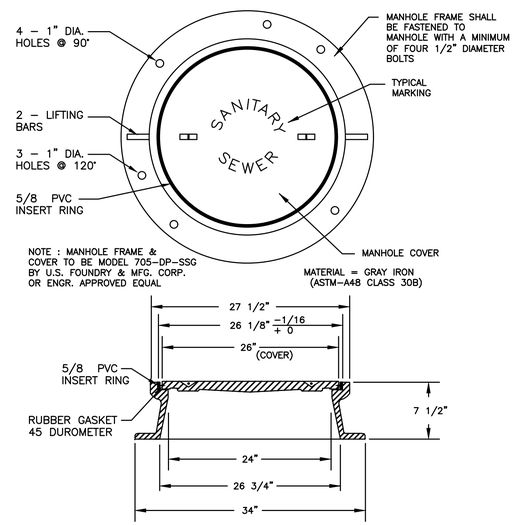
PIPE LAYING CONDITION - GRAVITY SEWER

NOT TO SCALE



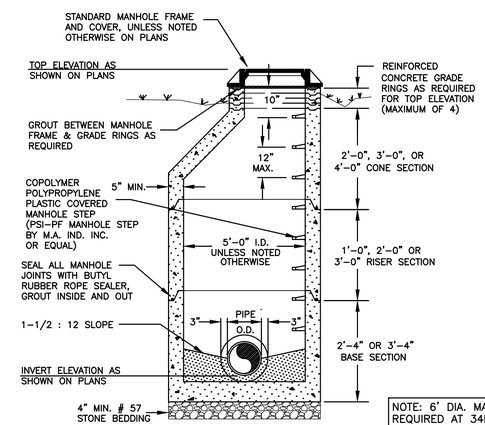
WATERTIGHT MANHOLE FRAME & COVER

NOT TO SCALE



STANDARD MANHOLE FRAME & COVER

NOT TO SCALE



NOTE: 6' DIA. MANHOLE REQUIRED AT 34R3, AND 34R6

NOTE :
1. MINIMUM REINFORCING SHALL BE 0.12 SQ. INCHES PER LINEAR FOOT IN EACH DIRECTION.
2. CONTRACTOR SHALL PROVIDE INTERIOR COATING EQUAL TO TWELVE PERMA-SHIELD H2S FR SERIES 434 ON INSIDE WALLS AND BENCH OF NEW MANHOLES.
3. REF. SPECIFICATION SECTION 333300 FOR RESILIENT PIPE CONNECTORS STANDARD BOOT TYPE CAST INTO WALLS.

STANDARD PRECAST MANHOLE WITH MONOLITHIC BASE

NOT TO SCALE

Dewberry

Dewberry Engineers Inc.
551 Piney Forest Road
Danville ,VA 24540
Phone: 434.797.4497
Fax: 434.797.4341

Smith River Interceptor
CMP Rehabilitation
City of Martinsville
Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

STANDARD DETAILS

PROJECT NO. 50078733

C8

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STD & SPEC 3.32

PERMANENT SEEDING

DEFINITION

THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED.

PURPOSES

1. TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS.
2. TO PERMANENTLY STABILIZE DISTURBED AREAS IN A MANNER THAT IS ECONOMICAL, ADAPTABLE TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT MATERIALS.
3. TO IMPROVE WILDLIFE HABITAT.
4. TO ENHANCE NATURAL BEAUTY.

CONDITIONS WHERE PRACTICE APPLIES

1. DISTURBED AREAS WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL.
2. ROUGH-GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE.

LAND USE: A PRIME CONSIDERATION IN SELECTING WHICH PLANTS TO ESTABLISH IS THE INTENDED USE OF THE LAND. ALL OF THESE USES – RESIDENTIAL, INDUSTRIAL, COMMERCIAL, RECREATIONAL – CAN BE SEPARATED INTO TWO MAJOR CATEGORIES: HIGH-MAINTENANCE AND LOW MAINTENANCE.

HIGH-MAINTENANCE AREAS WILL BE MOWED FREQUENTLY, LIMED AND FERTILIZED REGULARLY, AND WILL EITHER RECEIVE INTENSE USE (e.g., ATHLETICS) OR REQUIRE MAINTAINING TO AN AESTHETIC STANDARD (HOME LAWNS). GRASSES USED FOR THESE SITUATIONS MUST BE FINE-LEAVED AND ATTRACTIVE IN APPEARANCE, ABLE TO FORM TIGHT SOD, AND BE LONG-LIVED PERENNIALS. THEY MUST BE WELL-ADAPTED TO THE GEOGRAPHIC AREA WHERE THEY ARE PLANTED, BECAUSE CONSTANT MOWING PUTS TURF UNDER GREAT STRESS. SITES WHERE HIGH-MAINTENANCE VEGETATIVE COVER IS DESIRABLE INCLUDE HOMES, INDUSTRIAL PARKS, SCHOOLS, CHURCHES, ATHLETIC PLAYING SURFACES AS WELL AS SOME RECREATIONAL AREAS.

LOW-MAINTENANCE AREAS WILL BE MOWED INFREQUENTLY OR NOT AT ALL; AND FERTILIZER MAY NOT BE APPLIED ON A REGULAR BASIS; THE AREAS WILL NOT BE SUBJECTED TO INTENSE USE, NOR REQUIRED TO HAVE A UNIFORM APPEARANCE. THESE PLANTS MUST BE ABLE TO PERSIST WITH LITTLE MAINTENANCE OVER LONG PERIODS OF TIME. GRASS AND LEGUME MIXTURES ARE FAVORED FOR THESE SITES BECAUSE LEGUMES ARE CAPABLE OF FIXING NITROGEN FROM THE AIR FOR THEIR OWN USE, AND THE USE OF THE PLANTS AROUND THEM. SUCH MIXED STANDS ARE BETTER ABLE TO WITHSTAND ADVERSE CONDITIONS. SITES WHICH WOULD BE SUITABLE FOR LOW-MAINTENANCE VEGETATION INCLUDE STEEP SLOPES, STREAM OR CHANNEL BANKS, SOME COMMERCIAL PROPERTIES, AND "UTILITY TURF" AREAS SUCH AS ROADBANKS.

TABLE 3.32-D

SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

MINIMUM CARE LAWN	
– COMMERCIAL OR RESIDENTIAL	175–200 LBS./AC.
– KENTUCKY 31 OR TURF-TYPE TALL FESCUE	95–100%
– IMPROVED PERENNIAL RYEGRASS	0–5%
– KENTUCKY BLUEGRASS	0–5%
HIGH-MAINTENANCE LAWN	200–250 LBS./AC.
– KENTUCKY 31 OR TURF-TYPE FESCUE	100%
GENERAL SLOPE (3:1 OR LESS)	
– KENTUCKY 31 FESCUE	128 LBS.
– RED TOP GRASS	2 LBS.
– SEASONAL NURSE CROP *	20 LBS.
	150 LBS./AC.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
– KENTUCKY 31 FESCUE	108 LBS.
– RED TOP GRASS	2 LBS.
– SEASONAL NURSE CROP *	20 LBS.
– CROWNVETCH **	20 LBS.
	150 LBS./AC.

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

FEBRUARY 16TH THROUGH APRIL	ANNUAL RYE
MAY 1ST THROUGH AUGUST 15TH	FOXTAIL MILLET
AUGUST 16TH THROUGH OCTOBER	ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15TH	WINTER RYE

** SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLAXPEA IS USED IN LIEU OF CROWNVETCH, INCREASE RATE TO 30LBS./ ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10–20 LBS./ACRE IN MIXES.

3.32

LIME AND FERTILIZER

LIME AND FERTILIZER NEEDS SHOULD BE DETERMINED BY SOIL TESTS. SOIL TESTS MAY BE PERFORMED BY THE COOPERERATIVE EXTENSION SERVICE SOIL TESTING LABORATORY AT VPI & SU, OR BY A REPUTABLE COMMERCIAL LABORATORY. INFORMATION CONCERNING THE STATE SOIL TESTING LABORATORY IS AVAILABLE FROM COUNTY EXTENSION AGENTS.

UNDER UNUSUAL CONDITIONS WHERE IT IS NOT POSSIBLE TO OBTAIN A SOIL TEST, THE FOLLOWING SOIL AMENDMENTS WILL BE APPLIED:

LIME

PIEDMONT AND APPALACHIAN REGION: 2 TONS/ACRE PULVERIZED AGRICULTURAL GRADE LIMESTONE (90 LBS./1000 FT.)

NOTE: AN AGRICULTURAL GRADE OF LIMESTONE SHOULD ALWAYS BE USED.

FERTILIZER

MIXED GRASSES & LEGUMES: 100 LBS./ACRE 10–20–10 OR EQUIVALENT NUTRIENTS (23 LBS./1000^{2}FT.).

LEGUME STANDS ONLY: 1000 LBS./ACRE 5–20–10 (23 LBS./1000 FT^2.) IS PREFERRED; HOWEVER, 1000 LBS./ACRE OF 10–20–10 OR EQUIVALENT MAY BE USED.

GRASS STANDS ONLY: 1000 LBS./ACRE 10–20–10 OR EQUIVALENTS, (23 LBS./1000^{2}FT.).

OTHER FERTILIZER FORMULATIONS, INCLUDING SLOW-RELEASE SOURCES OF NITROGEN (PREFERRED FROM A WATER QUALITY STANDPOINT), MAY BE USED PROVIDED THEY CAN SUPPLY THE SAME AMOUNTS AND PROPORTIONS OF PLANT NUTRIENTS.

MAINTENANCE OF NEW SEEDING

IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANTING.

IRRIGATION: NEW SEEDINGS SHOULD BE SUPPLIED WITH ADEQUATE MOISTURE. SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY WEATHER, OR ON ADVERSE SITES. WATER APPLICATION RATES SHOULD BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF. INADEQUATE AMOUNTS OF WATER MAY BE MORE HARMFUL THAN NO WATER.

RE-SEEDING: INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RE-SEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

a. IF VEGETATIVE COVER IS INADEQUATE TO PREVENT RILL EROSION, OVER-SEED AND FERTILIZE IN ACCORDANCE WITH SOIL TEST RESULTS.

b. IF A STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANITIES OF LIME AND FERTILIZER. THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE. RE-ESTABLISH THE STAND FOLLOWING SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS.

FERTILIZATION: COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING.

APPLY MAINTENANCE LEVELS OF FERTILIZER AS DETERMINED BY SOIL TEST. IN THE ABSENCE OF A SOIL TEST, FERTILIZATION SHOULD BE AS FOLLOWS:

COOL SEASON GRASSES

4 LBS. NITROGEN (N)

1 LB. PHOSPHORUS (P) } PER 1000 FT^2 PER YEAR

2 LBS. POTASH (K)

SEVENTY-FIVE PERCENT OF THE TOTAL REQUIREMENTS SHOULD BE APPLIED BETWEEN SEPTEMBER 1 AND DECEMBER 31st. THE REMAINDER SHOULD BE APPLIED DURING THE REMAINDER OF THE YEAR. MORE THAN 1 LB. OF SOLUBLE NITROGEN PER 1000 FT. SHOULD NOT BE APPLIED AT ANY ONE TIME.

WARM SEASON GRASSES

APPLY 4–5 LBS. NITROGEN (N) BETWEEN MAY 1 AND AUGUST 15th PER 1000 FT^2 PER YEAR.

PHOSPHOROUS (P) AND POTASH (K) SHOULD ONLY BE APPLIED ACCORDING TO SOIL TEST.

NOTE: THE USE OF SLOW-RELEASE FERTILIZER FORMULATIONS FOR MAINTENANCE OF TURF IS ENCOURAGED TO REDUCE THE NUMBER OF APPLICATIONS AND THE IMPACT ON GROUNDWATER.

SEED QUALITY CRITERIA

WHERE CERTIFIED SEED IS NOT AVAILABLE, THE MINIMUM REQUIREMENTS FOR GRASS AND LEGUME SEED USED IN VEGETATIVE ESTABLISHMENT ARE AS FOLLOWS:

a. ALL TAGS ON CONTAINERS OF SEED SHALL BE LABELED TO MEET THE REQUIREMENTS OF THE STATE SEED LAW.

b. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY THAT EMPLOYS A REGISTERED SEED TECHNOLOGIST OR BY A STATE SEED LAB.

c. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN TWELVE (12) MONTHS.

d. INOCULANT – THE INOCULANT ADDED TO LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. TWICE THE SUPPLIER'S RECOMMENDED RATE OF INOCULANT WILL BE USED ON DRY SEEDINGS; FIVE TIMES THE RECOMMENDED RATE IF HYDROSEEDED.

e. THE QUALITY OF THE SEED USED SHALL BE SHOWN ON THE BAG TAGS TO CONFORM TO THE GUIDELINES IN TABLE 3.32-E (VA. EROSION AND SEDIMENT CONTROL HANDBOOK)

STD & SPEC 3.02
TEMPORARY STONE
CONSTRUCTION ENTRANCE

CE

CONSTRUCTION SPECIFICATIONS

THE AREA OF THE ENTRANCE MUST BE EXCAVATED A MINIMUM OF 3 INCHES AND MUST BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. THE FILTER FABRIC UNDERLINER WILL THEN BE PLACED THE FULL WIDTH AND LENGTH OF THE ENTRANCE.

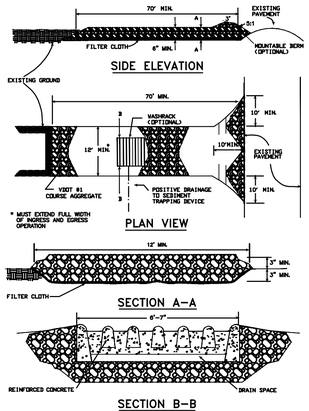
FOLLOWING THE INSTALLATION OF THE FILTER CLOTH, THE STONE SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. CONVEYANCE OF SURFACE WATER UNDER ENTRANCE, THROUGH CULVERTS, SHALL BE PROVIDED AS REQUIRED. IF SUCH CONVEYANCE IS IMPOSSIBLE, THE CONSTRUCTION OF A "MOUNTABLE" BERM WITH 5:1 SLOPES WILL BE PERMITTED.

THE FILTER CLOTH UTILIZED SHALL BA A WOVEN OR NONWOVEN FABRIC CONSISTING ONLY OF CONTINUOUS CHAIN POLYMERIC FILAMENTS OR YARNS OF POLYESTER. THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, BE MILDEW AND ROT RESISTANT, AND CONFORM TO THE PHYSICAL PROPERTIES NOTED IN TABLE 3.02-A.

MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

STONE CONSTRUCTION ENTRANCE



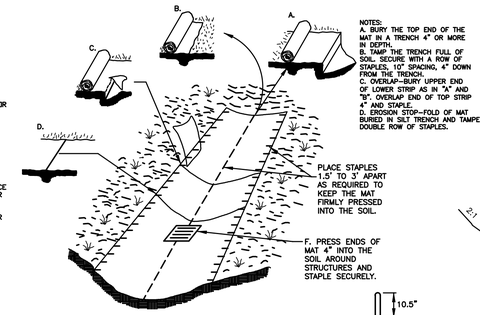
SOURCE: MARYLAND WATER RESOURCES ADMINISTRATION VA: DSWC

PLATE. 3.2-1

STD & SPEC 3.05

SILT FENCE

SF



NOTES:
A. BURY THE TOP END OF THE MAT IN A TRENCH 4" OR MORE IN DEPTH.
B. TAMP THE TRENCH FULL OF SOIL. SECURE WITH A ROW OF STAPLES, 10" SPACING, 4" DOWN FROM THE TRENCH.
C. OVERLAP–BURY UPPER END OF LOWER STRIP AS IN "A" AND "B". OVERLAP END OF TOP STRIP 4" AND STAPLE.
D. EROSION STOP–FOLD OF MAT BURIED IN SILT TRENCH AND TAMPED, DOUBLE ROW OF STAPLES.

DETAIL FOR STABILIZING CHANNEL WITH EXCELSIOR MAT

NTS

TYPICAL STAPLES

NTS

CONSTRUCTION SPECIFICATIONS

MATERIALS

1. SYNTHETIC FILTER FABRIC SHALL BE A PREVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS NOTED IN TABLE 3.05-B.
2. SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0° F TO 120° F.
3. IF WOODEN STAKES ARE UTILIZED FOR SILT FENCE CONSTRUCION, THEY MUST HAVE A DIAMETER OF 2 INCHES WHEN OAK IS USED AND 4 INCHES WHEN PINE IS USED. WOODEN STAKES MUST HAVE A MINIMUM LENGTH OF 5 FEET.
4. IF STEEL POSTS (STANDARD "U" OR "T" SECTIONS ARE UTILIZED FOR SILT FENCE CONSTRUCTION, THEY MUST HAVE A MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT AND SHALL HAVE A MINIMUM LENGTH OF 5 FEET.
5. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD-STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES.

INSTALLATION

1. THE HEIGHT OF A SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE AND SHALL NOT EXCEED 34 INCHES ABOVE GROUND ELEVATION.
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE UNAVOIDABLE, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED.
3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4-INCHES WIDE AND 4-INCHES DEEP ON THE UPSLOPE SIDE OF THE PROPOSED LOCATION OF THE MEASURE.
4. WHEN WIRE SUPPORT IS USED, STANDARD-STRENGTH FILTER CLOTH MAY BE USED. POSTS FOR THIS TYPE OF INSTALLATION SHALL BE PLACED A MAXIMUM OF 10-FEET APART (SEE PLATE 3.05-1). THE WIRE MESH FENCE MUST BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF TWO INCHES AND SHALL NOT EXTEND MORE THAN 34-INCHES ABOVE THE ORIGINAL GROUND SURFACE. THE STANDARD-STRENGTH FABRIC SHALL BE STAPLED OR WIRED TO THE WIRE FENCE, AND 8-INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHEN WIRE SUPPORT IS NOT USED, EXTRA-STRENGTH FILTER CLOTH SHALL BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6-FEET APART (SEE PLATE 3.05-2). THE FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING ONE INCH LONG (MINIMUM HEVY-DUTY WIRE STAPLES OR TIE WIRES AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT BE STAPLED TO EXISTING TREES. THIS METHOD OF INSTALLATION SHOULD NOT BE USED WHERE COMMONPLACE THAN #4.
6. IF A SILT FENCE IS TO BE CONSTRUCTED ACROSS A DITCH LINE OR SVALE, THE MEASURE MUST BE OF SUFFICINT LENGTH TO ELIMINATE ENDFLOW, AND THE PLAN CONFIGURATION SHALL RESEMBLE AN ARC OR HORSESHOE WITH THE ENDS ORIENTED UPSLOPE (SEE PLATE 3.05-2). EXTRA-STRENGTH FILTER FABRIC SHALL BE USED FOR THIS APPLICATION WITH A MAXIMUM 3-FOOT SPACING OF POSTS. ALL OTHER INSTALLATION REQUIREMENTS NOTED IN #5 APPLY.
7. THE 4-INCH BY 4-INCH TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
8. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

MAINTENANCE

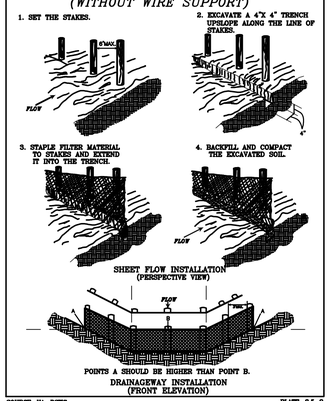
1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING.
3. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

TABLE 3.05-B
PHYSICAL PROPERTIES OF
FILTER FABRIC IN SILT FENCE

PHYSICAL PROPERTY	TEST	REQUIREMENTS
FILTERING EFFICIENCY	ASTM 5141	75% (MINIMUM)
TENSILE STRENGTH AT 20%(MAX.) ELONGATION*	VTM-52	EXTRA STRENGTH 50 LBS./LINEAR INCH (MINIMUM) STANDARD STRENGTH- 30 LBS./LINEAR INCH (MINIMUM)
FLOW RATE	ASTM 5141	0.20 GAL. SQ.FT./ MINUTE (MINIMUM)
ULTRAVIOLET RADITION STABILITY %	ASTM-G-26	90% (MINIMUM)

* REQUIREMENTS REDUCED BY 50% AFTER SIX MONTHS OF INSTALLATION.

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



SOURCE: VA. DSWC

PLATE. 3.5-2

STD & SPEC 3. 31

TEMPORARY SEEDING

TS

PURPOSES

1. TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS.
2. TO REDUCE DAMAGE FROM SEDIMENT AND RUNOFF TO DOWNSTREAM OR OFF-SITE AREAS, AND TO PROVIDE PROTECTION TO BARE SOILS EXPOSED DURING CONSTRUCTION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.

SPECIFICATIONS

PRIOR TO SEEDING, INSTALL NECESSARY EROSION CONTROL PRACTICES SUCH AS DIKES, WATERWAYS, AND BASINS.

PLANT SELECTION

SELECT PLANTS APPROPRIATE TO THE SEASON AND SITE CONDITIONS FROM TABLE 3.31-B AND 3.31-C. NOTE THAT TABLE 3.31-B PRESENTS PLANTS WHICH CAN BE USED WITHOUT EXTENSIVE EVALUATION OF SITE CONDITIONS; TABLE 3.31-C PRESENTS MORE IN-DEPTH INFORMATION ON THE PLANT MATERIALS.

SEEDBED PREPARATION

TO CONTROL EROSION ON BARE SOIL SURFACES, PLANTS MUST BE ABLE TO GERMINATE AND GROW, SEEDBED PREPARATION IS ESSENTIAL.

1. LIMING: AN EVALUTION SHOULD BE CONDUCTED TO DETERMINE IF LIME IS NECESSARY FOR TEMPORARY SEEDING. IN MOST SOILS, IT TAKES UP TO 6 MONTHS FOR pH ADJUSTMENTS TO OCCUR FOLLOWING THE APPLICATION OF LIME. THEREFORE, IT MAY BE DIFFICULT TO JUSTIFY THE COST OF LIMING A TEMPORARY SITE, ESPECIALLY WHEN THE SOIL WILL LATER BE MOVED AND REGRADED. THE FOLLOWING TABLE MAY BE USED TO DETERMINE THE ACTUAL NEED ALONG WITH SUGGESTED APPLICATION RATES.
2. FERTILIZER: SHALL BE APPLIED AS 600 LBS./ACRE OF 10-20-10 (14 LBS. /1,000 SQ. FT.) OR EQUIVALENT NUTRIENTS. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2 TO 4 INCHES OF THE SOIL IF POSSIBLE.
3. SURFACE ROUGHENING: IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FUTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE SHALL BE LOOSENED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS (SEE SURFACE ROUGHENING, STD. & SPEC. 3. 29).
4. TRACKING: TRACKING WITH BULLDOZER CLEATS IS MOST EFFECTIVE ON SANDY SOILS. THIS PRACTICE OFTEN CAUSES UNDUE COMPACTION OF THE SOIL SURFACE, ESPECIALLY IN CLAYEY SOILS, AND DOES NOT AID PLANT GROWTH AS EFFECTIVELY AS OTHER METHODS OF SURFACE ROUGHENING.

SEEDING

SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" SOIL COVER.

MULCHING

1. SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED ACCORDING TO MULCHING, STD. & SPEC. 3. 35, EXCEPT THAT HYDROMULCHES (FIBER MULCH) WILL NOT BE CONSIDERED ADEQUATE. STRAW MULCH SHOULD BE USED DURING THESE PERIODS.
2. TEMPORARY SEEDINGS MADE UNDER FAVORABLE SOIL AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

RE-SEEDING

AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.

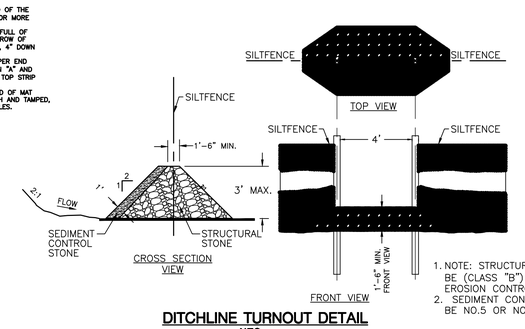
TABLE 3. 31-B
ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS
"QUICK REFERENCE FOR ALL REGIONS"

PLANTING DATES	SPECIES	RATE (lbs./acre)
SEPT. 1-FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50 - 100
FEB. 16-APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 - 100
MAY1-AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

TABLE 3. 31-C
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIS	SEEDING RATE		NORTH[a]			SOUTH[b]			PLANT CHARACTERISTICS
	ACRE	1000 FT^2	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15	
OATS (AVENA SATIVA)	3 bu (up to 100 lbs./not less than 50 lbs.)	2 lbs	X	-	-	X	-	-	Use spring varities (e.g., Noble)
RYE[d] (SECALE CEREALE)	2 bu (up to 110 lbs./not less than 50 lbs.)	2.5 lbs	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (SETARIA ITALICA)	50 lbs	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS[c] (LOLIUM MULTI-FLORUM)	60 lbs	1.5 lbs	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.
WEEPING LOVEGRASS (ERAGROSTIS CURVULA)	15 lbs	5.5 ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acidic, infertile soils. May be added to mixes.
KOREAN LESPEDEZA[c] (LESPEDEZA STIPULACEA)	25 lbs	approx. 1.5 lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.

a. NOUTHERN PIEDMONT AND MOUNTAIN REGION. SEE PLATES 3.22-1 AND 3.22-2.
b. SOUTHERN PIEDMONT AND COASTAL PLAIN.
c. MAY BE USED AS A COVER CROP WITH SPRING SEEDING.
d. MAY BE USED AS A COVER CROP FOR FALL SEEDING.
X. MAY BE PLANTED BETWEEN THESE DATES.
– MAY NOT BE PLANTED BETWEEN THESE DATES.



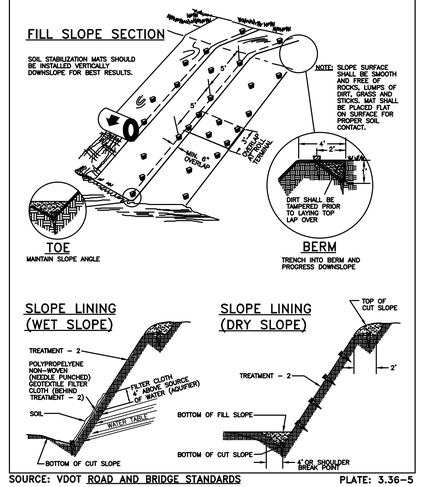
1. NOTE: STRUCTURAL STONE SHALL BE (CLASS "B") STONE FOR EROSION CONTROL PURPOSES.
2. SEDIMENT CONTROL STONE SHALL BE NO.5 OR NO. 57 STONE.

DITCHLINE TURNOUT DETAIL

N.T.S.

TYPICAL TREATMENT – 2 SOIL STABILIZATION MATTING SLOPE INSTALLATION

BM

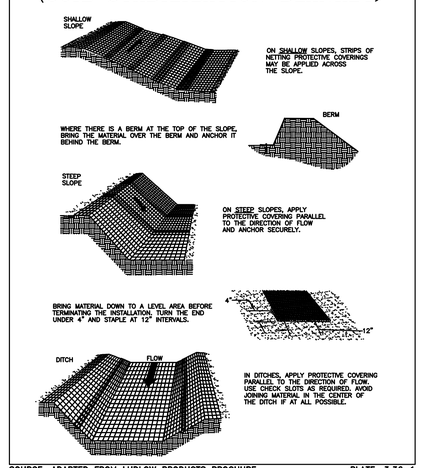


SOURCE: VDOT ROAD AND BRIDGE STANDARDS

PLATE: 3.36-5

TYPICAL ORIENTATION OF TREATMENT – 1 (SOIL STABILIZATION BLANKET)

BM

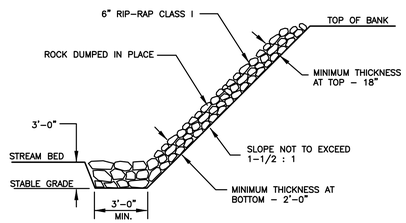


SOURCE: ADAPTED FROM LUDLOW PRODUCTS BROCHURE

PLATE: 3.36-1

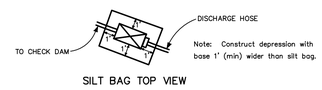
Dewberry

Dewberry Engine



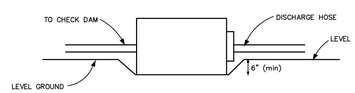
S RIP-RAP PLACEMENT DETAIL

NOT TO SCALE



Note: Construct depression with base 1' (min) wider than silt bag.

SILT BAG TOP VIEW

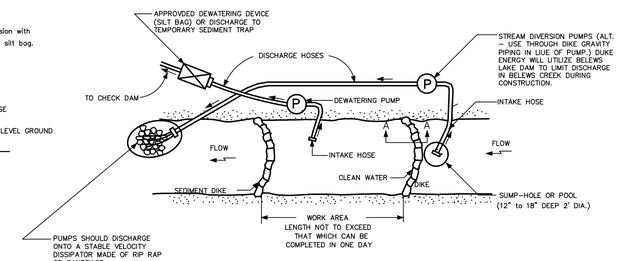


SILT BAG PROFILE VIEW

Note: Fill and seed the silt bag depression when pump around operation is completed.

SECTION A–A
CROSS SECTION OF SANDBAG DIKE

NOTE: CONTRACTOR MAY UTILIZE A PORTABLE DAM IN LIEU OF SAND BAGS IF DESIRED.

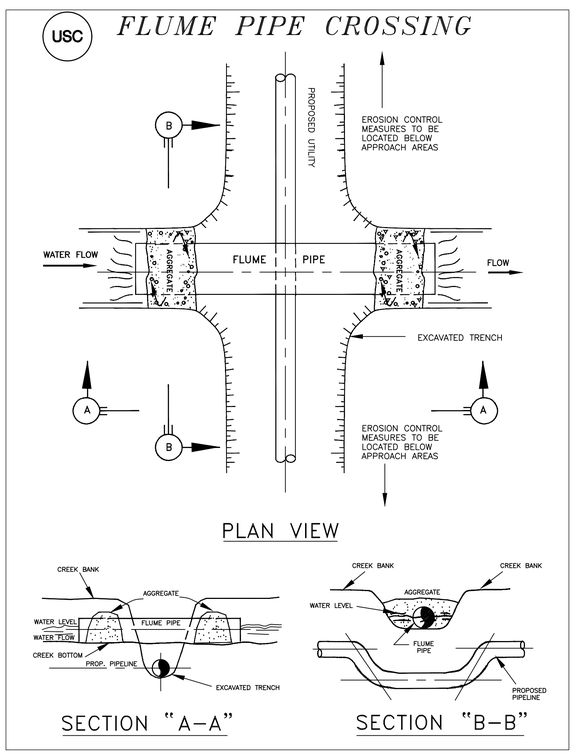


PLAN VIEW

NOTE: ESTIMATED MINIMUM PUMP SIZE NEEDED FOR BASE FLOW IS 2" PUMP. CONTRACTOR IS RESPONSIBLE FOR SIZING PUMP AND MAINTAINING WORK "IN THE DRY".

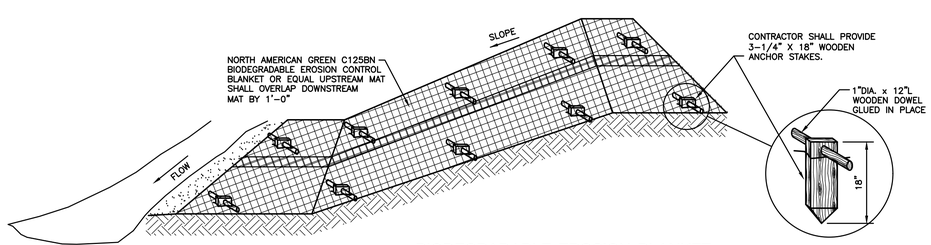
USC TEMPORARY PUMP AROUND

N.T.S.



SOURCE: Va. DSWC

PLATE. 3.25–3



NOTES:

1. BRING THE MATERIAL TO THE STREAM BANKS EDGE BEFORE TERMINATING THE INSTALLATION. TURN THE END UNDER 4" AND STAKE AT 12" INTERVALS.
2. CONTRACTOR SHALL SEED BEFORE EROSION CONTROL BLANKET IS PUT IN PLACE

BIODEGRADABLE EROSION BLANKET INSTALLATION DETAIL

N.T.S.

S STREAM RESTORATION DETAILS

V STREAM RESTORATION PLANTING SPECIES LIST

Plants for this list have been selected based on tolerance to deposition, flooding, drought and salt; having a high habitat value; native; local; endemic; indigenous; and having a fibrous and networking root pattern. Selection of spices for planting configuration must take into account wetland indicator status.

SEEDING SCHEDULE ALONG STREAM BANK (ALL AREAS)				
SCIENTIFIC NAME	COMMON NAME	LAYER	PLANT SIZE	DISTRIBUTION
PERMANENT EROSION SEEDING				
PANICUM VIRGATUM	*SWITCHGRASS*	*HERB*	*SEED*	*BROADCAST MIX*
JUNCUS EFFUSUS	*SOFT RUSH*	*HERB*	*SEED*	*BROADCAST MIX*
ELYMUS VIRGINICUS	*VIRGINIA WILD RYE*	*HERB*	*SEED*	*BROADCAST MIX*
TEMPORARY EROSION SEEDING				
LOLIUM MULTIFORUM	*ANNUAL RYGRASS*	*HERB*	*SEED*	*BROADCAST MIX*
SETARIA ITALICA	*GERMAN MILLET*	*HERB*	*SEED*	*BROADCAST MIX*

*EACH OF THE SPECIES LISTED FOR PERMANENT SEEDING MUST BE INCLUDED IN THE MIX IF A SPECIES IS NOT AVAILABLE. THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR AND ALTERNATIVE SPECIES.

GENERAL CONSTRUCTION NOTES:

1. GRADING OF THE STREAM BANK SHALL BE CONDUCTED ABOVE THE NORMAL FLOW ELEVATION, WHICH ASSURES NO DISTURBANCE AT OR BENEATH WATER LEVEL.
2. ANY DEPOSITION OF EXCAVATED MATERIALS IN UPLAND AREAS AND ALL EARTHWORK OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO PREVENT THE EROSION OF THESE MATERIALS AND PRECLUDE THEIR ENTRY INTO STATE WATERS. RESTORED STREAMS SHALL BE PROTECTED FROM SEDIMENTATION FROM DISTURBED BANKS BY THE INSTALLATION OF SILT FENCING OR TEMPORARY EARTHEN BERMS WITH ROCK CHECK OUTLETS ALONG THE TOE OF THE BANK SLOPE ABOVE NORMAL WATER FLOW LEVEL. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CLEARING AND GRADING AND SHALL BE MAINTAINED IN GOOD WORKING ORDER TO MINIMIZE IMPACTS TO STATE WATERS IN ACCORDANCE WITH THE CURRENT EDITION OF THE "VIRGINIA EROSION AND SEDIMENTATION HANDBOOK. BANKS SHALL BE IMMEDIATELY STABILIZED PER PLANTING REQUIREMENTS AND SPECIFICATIONS INDICATED ON THESE PLANS.
3. STREAM BANKS TO BE RESTORED SHALL BE GRADED AS SHOWN ON PLANS.
4. EXCAVATION EQUIPMENT WILL AVOID WORKING WITHIN THE STREAM. WHEN THE NEED IS UNAVOIDABLE, DIVERSION DIKES, PORTABLE DAMS AND PUMPS WILL BE UTILIZED. NO EXCAVATION EQUIPMENT WILL BE ALLOWED TO OPERATE WITHIN A FLOWING (LIVE) STREAM.

GENERAL PLANTING NOTES:

INTRODUCTION

1. THE GOAL OF THE PLANTING PLAN IS TO STABILIZE THE STREAM BANK.
2. TEMPORARY SEEDING AND MATTING OF DISTURBED AREAS SHALL BE REQUIRED TO PROVIDE SEDIMENT AND EROSION CONTROL PURPOSES AND FOR THE BENEFIT OF HABITAT.
3. PERMANENT SEEDING SHALL BE ESTABLISHED BY PLANTING THE SELECTED SEED MIX DESCRIBED IN PERMANENT SEEDING MIXTURE PROVIDED HEREIN. IF ANY SPECIES, ON THE PERMANENT SEEDING MIXTURE IS NOT AVAILABLE, CONTACT THE CONSTRUCTION MANAGER FOR SUBSTITUTE SPECIES. THE SEEDING SHALL BE COVERED WITH COIR MATTING BELOW BANKFULL AND STRAW MULCH, OR APPROVED REPLACEMENT, ABOVE BANKFULL TO THE LIMITS OF DISTURBANCE. MULCH IS TO BE SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT AND ANCHORED INTO THE TOPSOIL WITH POLY DURING BLOWING, OR BY DISCING.
4. BARE ROOT SEEDLINGS, LIVE STAKES OR PLUGS WILL BE PLANTED AFTER THE TEMPORARY SEED MIXTURE HAS BEEN APPLIED.
5. TREES, SHRUBS, LIVE STAKES, BARE ROOT SEEDLINGS AND PLUGS SHALL BE PLANTED IN A MANNER TO ENSURE THEIR SURVIVAL. CONTRACTOR SHALL PLANT INTACT ROOTS, PLANT AT PROPER DEPTH, PROVIDE PROPER BACKFILLING, AND PROVIDE WATERING.
6. PLANT MATERIALS SHALL BE STORED IN A MANNER TO PREVENT DESICCATION OF THE ROOT SYSTEM. PROTECT PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS. PLANTS THAT CAN NOT BE PLANTED IMMEDIATELY SHALL BE KEPT IN THE SHADE AND WELL WATERED. PLANTS NOT PLANTED WITHIN TWO DAYS SHALL BE PROVIDED WITH ADEQUATE IRRIGATION AND ON–SITE PROTECTION FROM THE ELEMENTS.
7. PLANTS SHALL NOT BE HANDLED BY THE STEMS DURING TRANSPORT TO PLANTING SITE OR DURING PLANTING.
8. IF AN EROSION CONTROL BLANKET IS PRESENT, A CIRCULAR OPENING SHALL BE CUT IN THE BLANKET PRIOR TO EXCAVATION OF THE PIT.
9. NON–BIODEGRADABLE MATERIAL SURROUNDING THE EARTHEN BALL OF THE PLAN SHALL BE REMOVED PRIOR TO BACKFILLING OF THE PIT.
10. TO SET THE PLANTS, PREPARE ALIGNMENT OF INDIVIDUAL TREE SAPLINGS PLUMB AND STRAIGHT AND PROVIDE ALLOWANCE FOR SETTLEMENT.
11. BACKFILL THE PLANTING HOLES WITH IN–SITU SOIL MATERIALS REMOVED FOR PLANTING.
12. AFTER BACKFILLING, WATER TO THE POINT OF SOIL SATURATION AND TAMP TO COMPACT THE BACKFILL MIXTURE. ADD EXISTING SOIL TO BRING THE FINAL GRADE IN THE PLANTING HOLE TO THE SURROUNDING SOIL SURFACE. RAKE THE UNUSED SOIL OUTSIDE THE PLANTING HOLES, TAKING CARE NOT TO MOUND THE SOIL OR TO SIGNIFICANTLY ALTER THE EXISTING GRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING 80% SURVIVABILITY THROUGH THE FIRST YEAR AFTER CONSTRUCTION. AS–BUILT, VEGETATIVE MONITORING AND GEOMORPHOLOGICAL MONITORING WILL BE COMPLETED WITHIN 60 DAYS AFTER CONSTRUCTION COMPLETION.
14. TREES, SHRUBS AND LIVE STAKE PLANTING IS TO OCCUR BETWEEN NOVEMBER 15 AND MARCH 15, DURING DORMANCY. LIVE STAKES SHOULD ONLY BE USED WITHIN THE AREA WHERE ADEQUATE DRAINAGE AND SOIL SATURATION WILL INDUCE ADEQUATE ROOT GROWTH. LIVE STAKES SHALL HAVE A MINIMUM DIAMETER OF 1/2 INCHES AND A MINIMUM OF LENGTH 24 INCHES. SOAK THE STAKE FOR 24 HOURS. CUT ENDS AT A 45° ANGLE PRIOR TO INSTALLATION. DRIVE STAKE INTO THE GROUND TO 3/4 OF ITS LENGTH, AT A 45° IN THE DOWNSTREAM DIRECTION.
15. THE SUPPLIER OF ALL SEEDS AND/OR VEGETATION SHALL CERTIFY THAT THE ORIGIN OF THE SEEDS FROM WHICH THE PLANTS OR SEEDS WERE PRODUCED IS FROM HARDINESS ZONES 7A AND 7B, EAST OF TENNESSEE, AND AS DIRECTED BY THE SPECIAL PROVISIONS.
16. ALL PLANTS SHALL BE CONSERVATION GRADE, FIRST CLASS REPRESENTATIVES OF THEIR SPECIES, NURSERY GROWN ACCORDING TO GOOD HORTICULTURE PRACTICES AND GROWN IN A CLIMATE SIMILAR TO THE PROJECT AREA. PLANTS SHALL BE VIGOROUS, HEALTHY AND FREE OF DISEASE, INSECTIVOROUS PESTS, DECAY, INJURIES AND ALL FORMS OF OBJECTIONABLE DISFIGUREMENTS. TRUNKS AND BRANCHES SHALL BE FREE OF CUTS AND ABRASIONS. PLANTS SHALL CONFORM TO ALL ASPECTS OF THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1) FOR CONSERVATION GRADE PLANT MATERIAL.
17. TREES AND SHRUBS SHALL BE PLANTED ON 10 FT CENTERS. LIVE STAKES SHALL BE PLANTED IN GROUPS WHERE PLANS SHOW ON 4 FT CENTERS.

A COMBINATION OF BARE ROOT AND PLUG PLANTS SHOULD BE PLANTED IN CONJUNCTION WITH THE APPLIED WETLAND VARIETY SEED MIX IN ORDER TO CREATE A NATURALIZED STREAM BANK AND TO ESTABLISH ADEQUATE VEGETATIVE COVER TO PREVENT SLOUGHING AND EROSION OF THE BANK.

18. THE SELECTED WETLAND SEED MIX SHALL BE SURFACE SOWN AT THE RATE OF 150 LBS/ACRE TO ALL DISTURBED AREAS ALONG THE EASEMENT.
19. ALL BARE ROOT SEEDLINGS OR PLUGS SHALL BE PLANTED IN SUCH A MANNER AS TO ENSURE THEIR SURVIVAL. THIS SHALL INCLUDE THE PLANTING OF INTACT ROOTS, PLANTING AT PROPER DEPTH, PROPER BACKFILLING AND WATERING.
20. IN AREAS WHERE THE RESTORATION DESIGN REQUIRES SLOPES TO BE CUT BACK AND GRADED, SLOPES SHALL BE SCARIFIED APPROXIMATELY 4 TO 6 INCHES BELOW THE SURFACE PRIOR TO PLANTING. BIODEGRADABLE EROSION CONTROL MAT SHALL BE USED IN ALL AREAS. AN OPENING SHALL BE CUT IN THE MAT FOR EACH PLANTING PRIOR TO INSTALLATION. BARE ROOT SEEDLINGS OR PLUGS SHALL BE PLANTED AND THE ENTIRE AREA SHALL BE TOP DRESSED WITH A WETLAND SEED MIX.
21. BARE ROOT SEEDLINGS OR PEAT POTS THAT ARE TO BE SELECTED FROM THE PLANTING SPECIES LIST ON THIS SHEET SHALL BE PLANTED IN MONOSPECIFIC GROUPS USING A 2–FOOT ON CENTER SPACING WITHIN THE GROUP TO A MAXIMUM NUMBER OF 50 PLANTS PER GROUP. THE PLANTS TO BE LOCATED NEAREST TO THE BANKFULL ELEVATION SHOULD BE FACULTATIVE WET (FACW).
22. BARE ROOT/PLUG PLANTS DIMENSIONS ARE MAXIMUMS, PLANTINGS SHALL BE RANDOM.

Dewberry

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Smith River Interceptor
CMP Rehabilitation
City of Martinsville
Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

STREAM RESTORATION DETAILS

PROJECT NO. 50078733

C10

SHEET NO. OF

P:\50078733\CAD\Civil\Contract I\2016.03.30 - Details.dwg, 7/21/2016 9:38:59 AM, mcollins

3/30/2016 1:45:23 PM

Typical Traffic Control

Work Beyond the Shoulder Operation

(Figure TTC-1.1)

NOTES

Guidance:

1. *The minimum distance between the sign and work vehicle should be 1300'-1500' on Limited Access highways, and on all other roadways 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limited is 45 mph or less.*

Option:

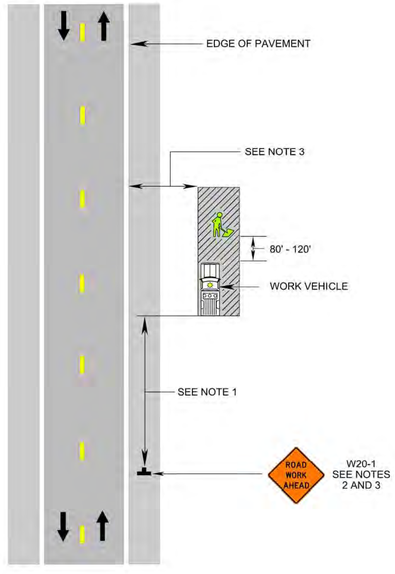
2. The ROAD WORK AHEAD (W20-1) sign may be replaced with other appropriate signs such as the SHOULDER WORK (W21-5) sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.
3. The ROAD WORK AHEAD sign may be omitted where the work space is behind a barrier, more than 4 feet behind vertical curb (Standard CG-2 and CG-6) on urban roadways, or outside of the clear zone for all other roadways. For clear zone values see Page A-4 of Appendix A.
4. For short-term, short duration or mobile operations[1], all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or[1] oscillating lights is used.

Standard:

5. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or[1] oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or oscillating lights.**
6. **If the work space is in the median of a divided highway, an advance warning sign shall also be placed on the left side of the directional roadway.**

1: Revision 1 – 4/1/2015

Work Beyond the Shoulder Operation
(Figure TTC-1.1)



TRANSPORTATION MANAGEMENT PLAN NOTES

1. THIS TRANSPORTATION MANAGEMENT PLAN (TMP) IS PREPARED FOR THE CITY OF MARTINSVILLE - SPRUCE STREET EXTENSION WATERLINE REPLACEMENT PROJECT. IT IS NOT THE INTENT OF THIS PLAN TO INCLUDE EVERY DETAIL WHICH MUST BE CONSIDERED FOR TRAFFIC CONTROL DURING CONSTRUCTION OF EACH WORK ZONE, BUT TO PROVIDE THE GENERAL GUIDELINES THAT THE CONTRACTOR SHALL FOLLOW WHEN DEVELOPING THE TMP FOR VDOT APPROVAL. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR SAFE TRAVEL AROUND WORK ZONES IN ACCORDANCE WITH ALL VDOT REQUIREMENTS. **THE ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR THE TRAFFIC CONTROL MEASURES THAT ARE IMPLEMENTED DURING PROJECT CONSTRUCTION.**
2. THE WORK AREAS THAT REQUIRE TRAFFIC MANAGEMENT ARE SHOWN ON THE PROJECT AREA MAP ON THIS SHEET. OTHER ROADWAYS MAY BE AFFECTED DUE TO MATERIAL STAGING, TRANSPORTATION OF MATERIALS, LINE TESTING, UNFORSEEN FIELD CONDITIONS, ETC., AND SHALL BE CONSIDERED FOR WORK AREA PROTECTION AND TRAFFIC MANAGEMENT TECHNIQUES AS REQUIRED. VARIOUS TEMPORARY TRAFFIC CONTROL DETAILS FROM THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL, REVISION 1 ARE SHOWN ON THIS SHEET. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE WHICH DETAILS APPLY FOR EACH SPECIFIC WORK CONDITION. ADDITIONAL DETAILS MAY BE REQUIRED PRIOR TO CONSTRUCTION BY VDOT.
3. THE CONTRACTOR SHALL CONTACT VDOT IN WRITING WITH A WORK SCHEDULE TWO (2) WEEKS PRIOR TO CONSTRUCTION. VDOT WILL DETERMINE IF POLICE PATROL IS NECESSARY FOR TRAFFIC CONTROL.
4. THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF CONSTRUCTION WITH VDOT.
5. SIGN SPACING MAY ONLY BE ADJUSTED FOR FIELD CONDITIONS IF AUTHORIZED BY VDOT.
6. ALL PAVEMENT MARKINGS CONFLICTING WITH TRAFFIC PATTERNS SHALL BE REMOVED AND RESTRIPED AS NECESSARY. PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE VDOT ROAD AND BRIDGE SPECIFICATIONS.
7. WHEN WORK IS NOT BEING PERFORMED, MATERIALS AND PARKED EQUIPMENT SHALL NOT INTERFERE WITH TRAFFIC.
8. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL, REVISION 1 AND AS DIRECTED BY VDOT. WORK SHALL COMPLY WITH ALL REGULATIONS PROVIDED IN THE LAND USE PERMIT.
9. SAFE ACCESS TO ALL EXISTING PUBLIC ROADWAYS SHALL BE MAINTAINED AT ALL TIMES.
10. WORK HOURS SHALL BE APPROVED BY VDOT PRIOR TO CONSTRUCTION. CONSTRUCTION WORK AFTER DARK IS NOT ANTICIPATED FOR THE PROJECT. HOWEVER, SHOULD CONSTRUCTION CONTINUE AFTER DARK, FLOODLIGHTS SHALL BE UTILIZED WHERE EXISTING LIGHT IS NOT ADEQUATE. THE FLOODLIGHT SHALL NOT CREATE A DISTRACTING GLARE TO DRIVERS.
11. ALL FLAGGERS SHALL BE STATE CERTIFIED AND HAVE THEIR CERTIFICATION CARD IN THEIR POSSESSION WHEN PERFORMING FLAGGING DUTIES.
12. CHANNELLING DEVICES SUCH AS CONES SHALL BE UTILIZED WHERE REQUIRED AND FOLLOW THE WORK AREA PROTECTION MANUAL, REVISION 1 GUIDELINES.
13. ALL EXISTING ROADWAY SIGNAGE SHALL BE MAINTAINED DURING THE LIFE OF THE PROJECT.
14. THIS PROJECT IS CLASSIFIED AS TYPE A, CATEGORY 1.

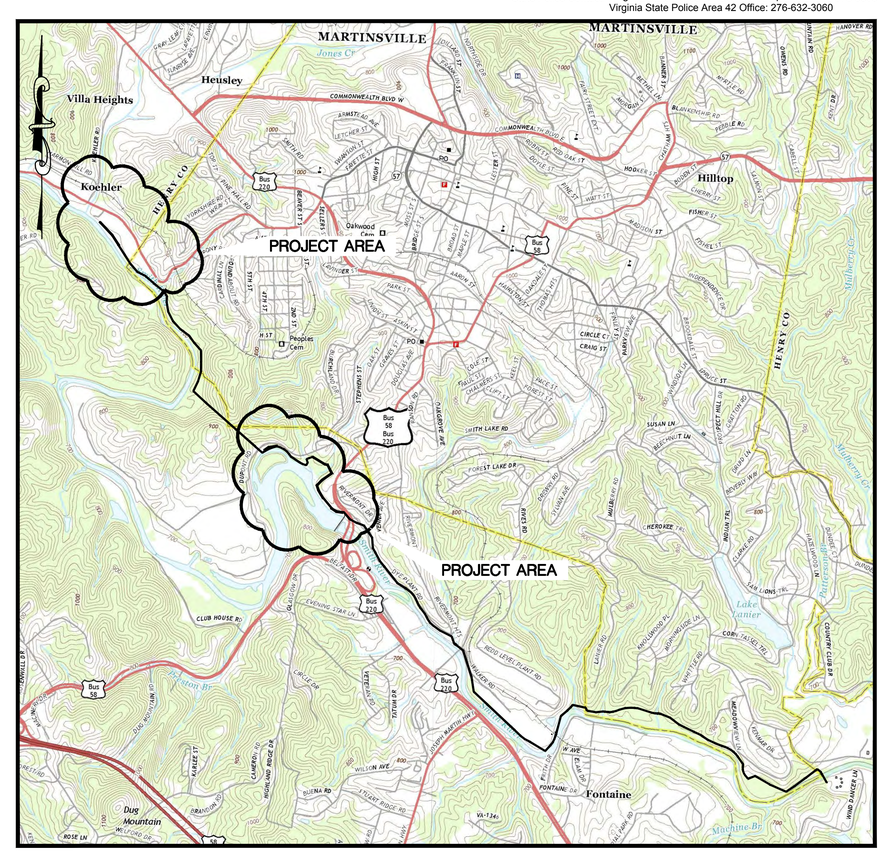
PUBLIC COMMUNICATION PLAN

VDOT Contact: Jim Keene - 276-627-1509

Traffic Operation Center: 540-375-0170 or 1-800-367-7623

Local Contact: City of Martinsville: 276-403-5182
City of Martinsville Fire and EMS: 276-403-5325
City of Martinsville Sherriff's Office: 276-403-5151
Henry County: 276-634-4601
Henry County Sheriff's Office: 276-656-4200
Henry County EMS: 276-634-4660

State Police Contact: Virginia State Police Division 6 Headquarters: 540-375-9500
Virginia State Police Area 42 Office: 276-632-3060



Vicinity Map

SCALE: N.T.S.

Dewberry

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Smith River Interceptor
CMP Rehabilitation
City of Martinsville
Contract I

SEAL

COMMONWEALTH OF VIRGINIA
R. SCOTT EHRHARDT
Lic. No. 019303
7/20/16
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

No.	DATE	BY	Description

REVISIONS

DRAWN BY	MWC
APPROVED BY	RSE
CHECKED BY	JAP
DATE	July, 2016

TITLE

Transportation Management Plan

PROJECT NO. 50078733

C12

SHEET NO. OF

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