

NORTHUMBERLAND ELEMENTARY SCHOOL PROPOSED OFF-SITE DRAINAGE REPAIRS

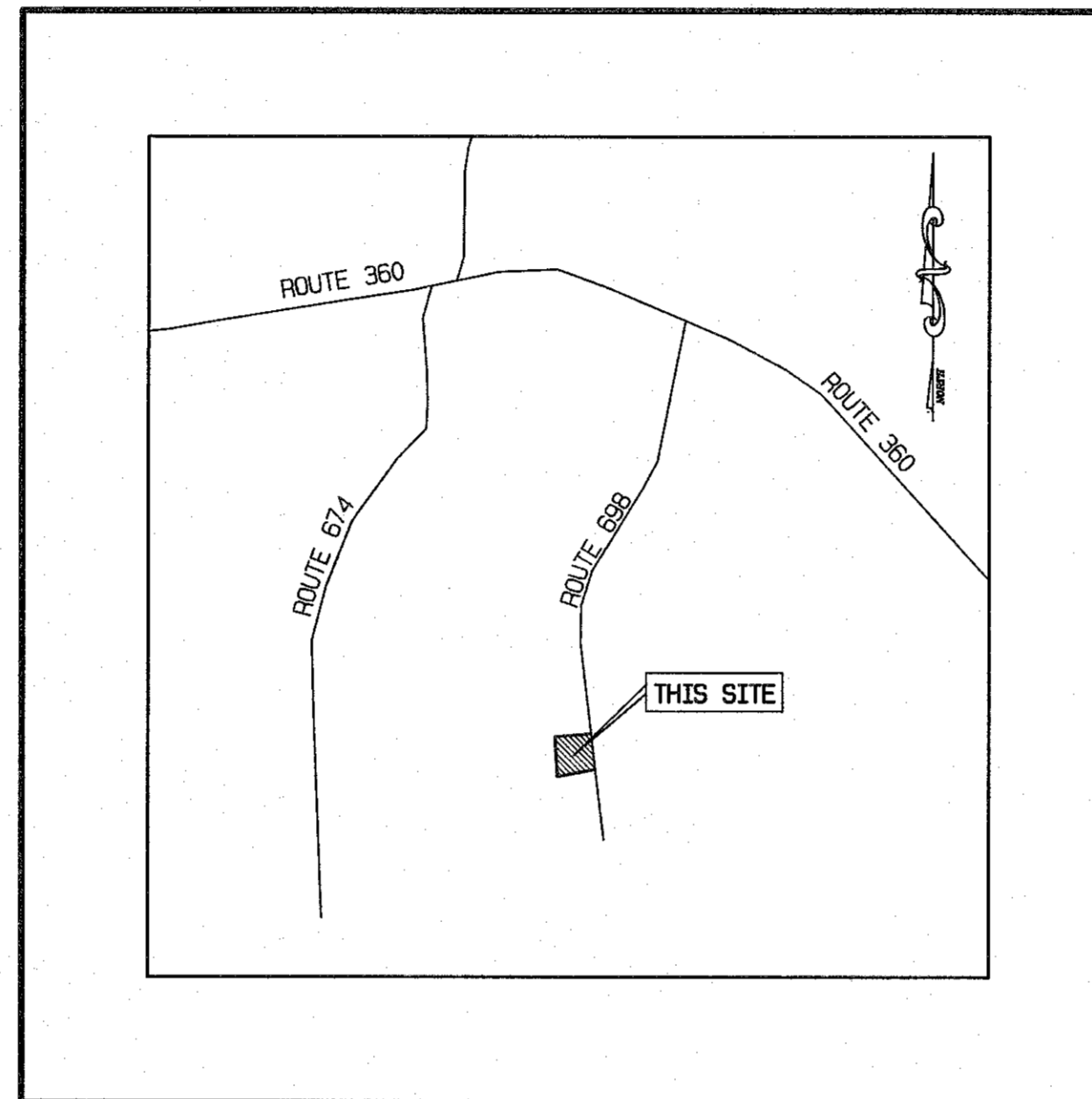
HEATHSVILLE MAGISTERIAL DISTRICT
NORTHUMBERLAND COUNTY, VIRGINIA

OVERALL NOTES

01. No work is to begin without a copy of signed development plans from Northumberland County Department of Planning on the site. A permit must be obtained from the County Engineer before doing any work in a County right-of-way. A permit must be obtained from VDOT before doing any work in a VDOT right-of-way.
02. The Contractor shall, at no additional cost to the Owner, relocate utility poles, flagpoles, planters, traffic barriers, bollards, signage, and other objects within the construction area as required by the work and as directed by the Owner. While the objects shown on the plans are believed to be a complete listing, the Contractor should visit the site prior to submitting his bid to verify all such items.
03. The Contractor shall comply with all safety regulations. The Engineer assumes no responsibility for worksite safety.
04. Do not disturb property corners, control points, or grade stakes. If one is accidentally disturbed, the Contractor shall contact the Engineer to reset it. The Contractor is liable for the cost of resetting, and must remain on schedule for overall project completion.
05. The Contractor shall not store materials or equipment nor allow his employees to park outside of the area reserved for construction operations.
06. Lighting, landscaping, and signage plans must be submitted separately to the County for approval.
07. Topography based on actual field survey by this firm dated Nov. 21, 2017. Contour interval is 1 foot, NGS MSL datum. North is VSPN North, NAD 1983.
09. Metes and bounds shown on this plan does not constitute a boundary survey.

EROSION CONTROL NOTES

- ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and the Virginia Erosion and Sediment Control Regulations (9VAC25-840).
- ES-2: The plan approving authority (DEQ Stormwater Compliance Specialist @ (804) 296-7279 must be notified one week prior to the pre-construction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection. The name of the Responsible Land Disturber must be provided to the plan approving authority prior to actual engagement in the land-disturbing activity shown on the approved plan. If the name is not provided prior to engaging in the land-disturbing activity, the plan's approval will be revoked.
- ES-3: All erosion and sediment control measures are to be placed prior to or as the first step in clearing.
- ES-4: A copy of the approved erosion and sediment control plan and the Virginia Erosion and Sediment Control Handbook shall be maintained on the site at all times.
- ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.
- ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority, and as required by law.
- ES-7: All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved, after which, upon approval of the DEQ Stormwater Compliance Specialist, the controls shall be removed. Trapped sediment and the disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.
- ES-8: During dewatering operations, water shall be pumped into an approved filtering device.
- ES-9: The contractor shall inspect all erosion control measures at least every 2 weeks and immediately after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately. The Responsible Land Disturber associated with this project shall maintain written monitoring reports on-site and provide to the DEQ Stormwater Compliance Specialist upon request.
- ES-10: The contractor is responsible for the daily removal of sediment that has been transported onto a paved or public road surface.
- ES-11: Seeding operations shall be initiated within 7 days after reaching final grade or upon suspension of grading operations for anticipated duration of greater than 30 days or upon completion of grading operations for a specific area.
- ES-12: The contractor shall be responsible for preventing surface and air movement of dust from exposed soils which may present health hazards, traffic safety problems, or harm animal or plant life.
- ES-13: A Virginia Stormwater Management Permit (VSMP) for the discharge of stormwater from construction activities is required for the proposed project as the disturbance is greater than 1 acre. A VSMP is also required for projects disturbing 2,500 square feet or greater in a designated Chesapeake Bay Preservation Area. For more information, visit the Virginia Stormwater Management Program Permitting web page at <http://www.deq.virginia.gov/programs/water/stormwatermanagement.aspx>



VICINITY MAP

SCALE: 1" = 2000'

SITE DATA

OWNER:
STEVE Y. & LINDA D. SISSON
734 ACADEMIC LANE
HEATHSVILLE, VIRGINIA 22473
& LISA L. JONES
668 ACADEMIC LANE
HEATHSVILLE, VIRGINIA 22473
TAX PARCELS: 25-(3)-2A, 25-(1)-43 & 25-(3)-1A
ZONING: A-1

LEGEND		
EXISTING	PROPOSED	
---	---	STD. CURB & GUTTER
---	---	EDGE OF PAVEMENT
---	---	BUILDING
-X-	-X-	FENCE
---	---	FLOODPLAIN
---	---	HEAVY-DUTY PAVEMENT
---	---	LIGHT-DUTY PAVEMENT
---	---	DITCH / WATER SURFACE
---	---	WETLANDS
---	---	STORM SEWER
---	---	GRATE DROP INLET
---	---	CURB DROP INLET
---	---	CONTOUR
160	160	INDEX CONTOUR
---	---	WATER LINE
---	---	SEWER LINE
---	---	ELECTRIC LINE
---	---	TELEPHONE LINE
---	---	GAS LINE
---	---	UNKNOWN UTILITY LINE
---	---	MANHOLE
---	---	CLEANOUT
---	---	LIGHT POLE

SHEET INDEX

1. COVER SHEET
2. EXIST COND, DEMO & PHASE I ESC PLAN
3. GRADING, DRAINAGE & PHASE II ESC PLAN
4. STORM SEWER PROFILE AND DETAILS
5. DRAINAGE AREA MAP & CALCULATIONS
6. EROSION & SEDIMENT CONTROL NARRATIVE AND DETAILS

VSMP GENERAL NOTES

As part of the general permit to discharge stormwater from construction activities as authorized to discharge under the Virginia Stormwater Management Program and the Virginia Stormwater Management Act, the following measures in addition to those contained within this plan of development shall be followed and strictly adhered to:

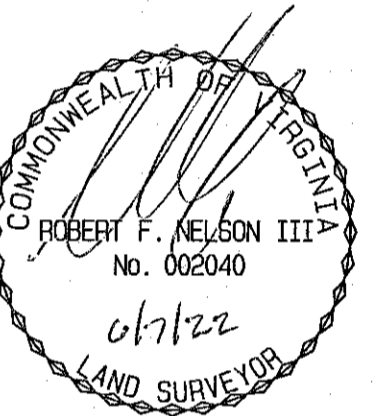
1. All solid waste shall be disposed of in specified container in a location(s) central & accessible to the site.
2. All vehicle fueling that must be done on site shall be completed in one area. Special care shall be taken to ensure that fuel is not spilled. In the event fuel spills on site, proper care shall be taken to ensure the spill is contained immediately and properly cleaned. Reporting of fuel spills shall be completed as required.
3. Chemical storage shall not be allowed on site unless a separate plan has been prepared to outline what chemicals are to be stored and the handling, spill prevention, and spill cleanup procedures are followed.
4. All person(s) on site shall utilize the on site sanitary facility. The sanitary facility shall be regularly maintained by an authorized company in order to ensure and demonstrate compliance with applicable state and local waste disposal, sanitary sewer, or septic system regulations.

All limitations, prohibitions, and conditions as contained the general permit shall be adhered to and noted. The application package submitted to the State shall serve as part of the SWPPP to cover all information as required by Section II, D.

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ENGINEERING DESIGN ASSOCIATES

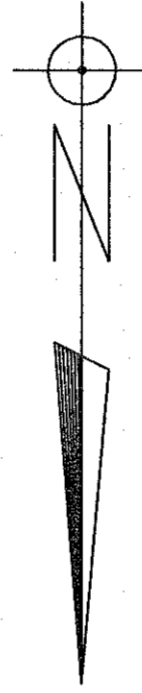
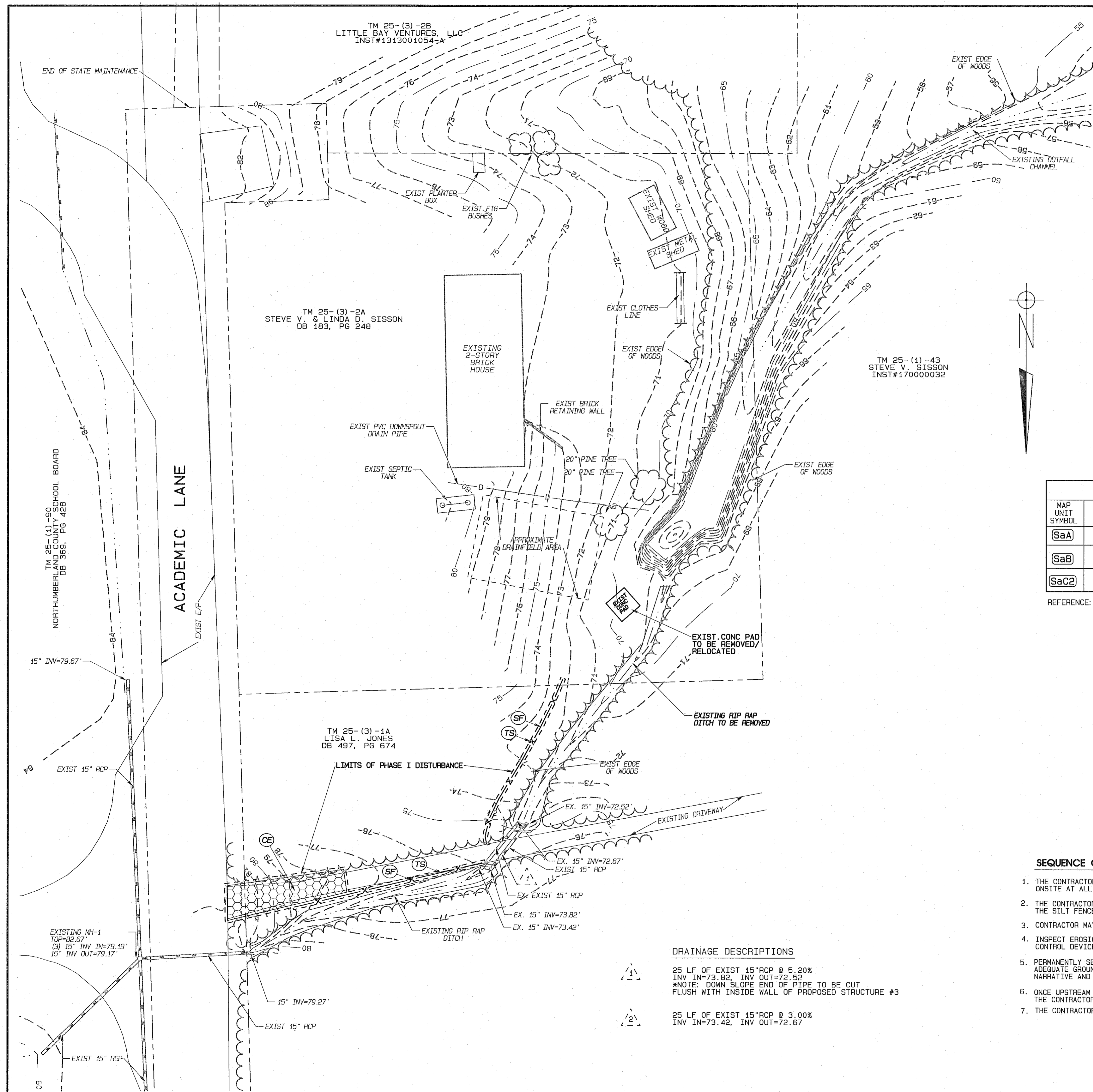
5625 LABURNUM AVENUE
RICHMOND, VIRGINIA 23231
PHONE: 804-236-0190
FAX: 804-236-0194

PO BOX 515
WICOMICO CHURCH 22579
PHONE: 804-680-2227
FAX: 804-680-3334



REVISION:		DESCRIPTION:
NO.	DATE:	PER CLIENT COMMENTS
1	08/26/22	

NORTHUMBERLAND ELEMENTARY SCHOOL
PROPOSED OFF-SITE DRAINAGE REPAIRS
 HEATHSVILLE MAGISTERIAL DIST., NORTHUMBERLAND COUNTY, VIRGINIA
COVER SHEET
 DESIGNED BY: RFN . DRAWN BY: CIA . CHECKED BY: RFN
 SCALE: AS NOTED . DATE: DEC. 10, 2019 . PROJECT NO: 19179



SOILS LEGEND					
MAP UNIT SYMBOL	MAP UNIT NAME	TEXTURE	ERODIBILITY FACTOR (K)	HYDRO-LOGICAL GROUP	DRAINAGE CLASSIFICATION
(SaA)	SUFFOLK	FINE SANDY LOAM	0.28	B	WELL DRAINED
(SaB)	SASSAFRAS	FINE SANDY LOAM	0.28	B	WELL DRAINED
(SaC2)	SASSAFRAS	FINE SANDY LOAM	0.28	B	WELL DRAINED

REFERENCE: NATURAL RESOURCES CONSERVATION SERVICE.

EROSION CONTROL LEGEND			
SYMBOL	VESCH. STD. #	DESCRIPTION	QUANTITY
(CE)	3.02	CONSTRUCTION ENTRANCE	1 EA.
(SF)	3.05	SILT FENCE	160 L.F.
(IP)	3.07	INLET PROTECTION	2 EA.
(RR)	3.19	RIP RAP	12 TONS
(TS)	3.31	TEMPORARY SEEDING	0.1± ACRES
(PS)	3.32	PERMANENT SEEDING	0.4± ACRES

DISTURBED AREA = 0.35 ACRES

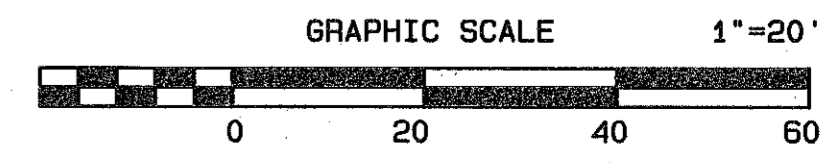
SEQUENCE OF EVENTS

1. THE CONTRACTOR SHALL OBTAIN COPIES OF ALL NECESSARY PERMITS AND APPROVED PLAN SETS AND KEEP ONSITE AT ALL TIMES.
2. THE CONTRACTOR SHALL INSTALL THE CONSTRUCTION ENTRANCE, SAFETY FENCE, SILT FENCE AND CHECK DAM. THE SILT FENCE INSTALLATION DISTURBED AREAS MUST BE IMMEDIATELY SEEDED.
3. CONTRACTOR MAY COMMENCE CLEARING AND GRADING OPERATIONS.
4. INSPECT EROSION CONTROL MEASURES DAILY AND MAINTAIN OR REPAIR AS NEEDED. DO NOT REMOVE ANY EROSION CONTROL DEVICES WITHOUT THE APPROVAL OF THE COUNTY INSPECTOR.
5. PERMANENTLY SEED ALL DISTURBED AREAS NOT RECEIVING PAVEMENT. SCARIFY AND RESEED BARE PATCHES UNTIL ADEQUATE GROUND COVER HAS BEEN ACHIEVED. ALL PERMANENT SEEDING SHALL BE PERFORMED AS OUTLINED IN THE NARRATIVE AND SEEDED AS SHOWN IN TABLE 3.32-E.
6. ONCE UPSTREAM AREAS HAVE BEEN STABILIZED TO THE SATISFACTION OF THE COUNTY ENVIRONMENTAL INSPECTOR, THE CONTRACTOR SHALL REMOVE THE SILT FENCE.
7. THE CONTRACTOR SHALL PERMANENTLY RESEED ANY AREAS WHICH MAY HAVE BEEN DISTURBED BY ESC DEVICE REMOVAL.

DRAINAGE DESCRIPTIONS

25 LF OF EXIST 15" RCP @ 5.20%
 INV IN=73.82, INV OUT=72.52
 *NOTE: DOWN SLOPE END OF PIPE TO BE CUT
 FLUSH WITH INSIDE WALL OF PROPOSED STRUCTURE #3

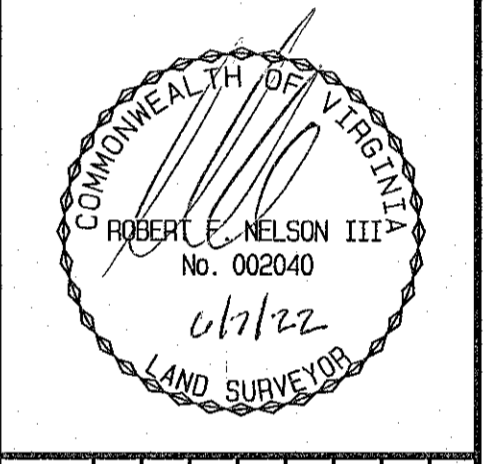
25 LF OF EXIST 15" RCP @ 3.00%
 INV IN=73.42, INV OUT=72.67



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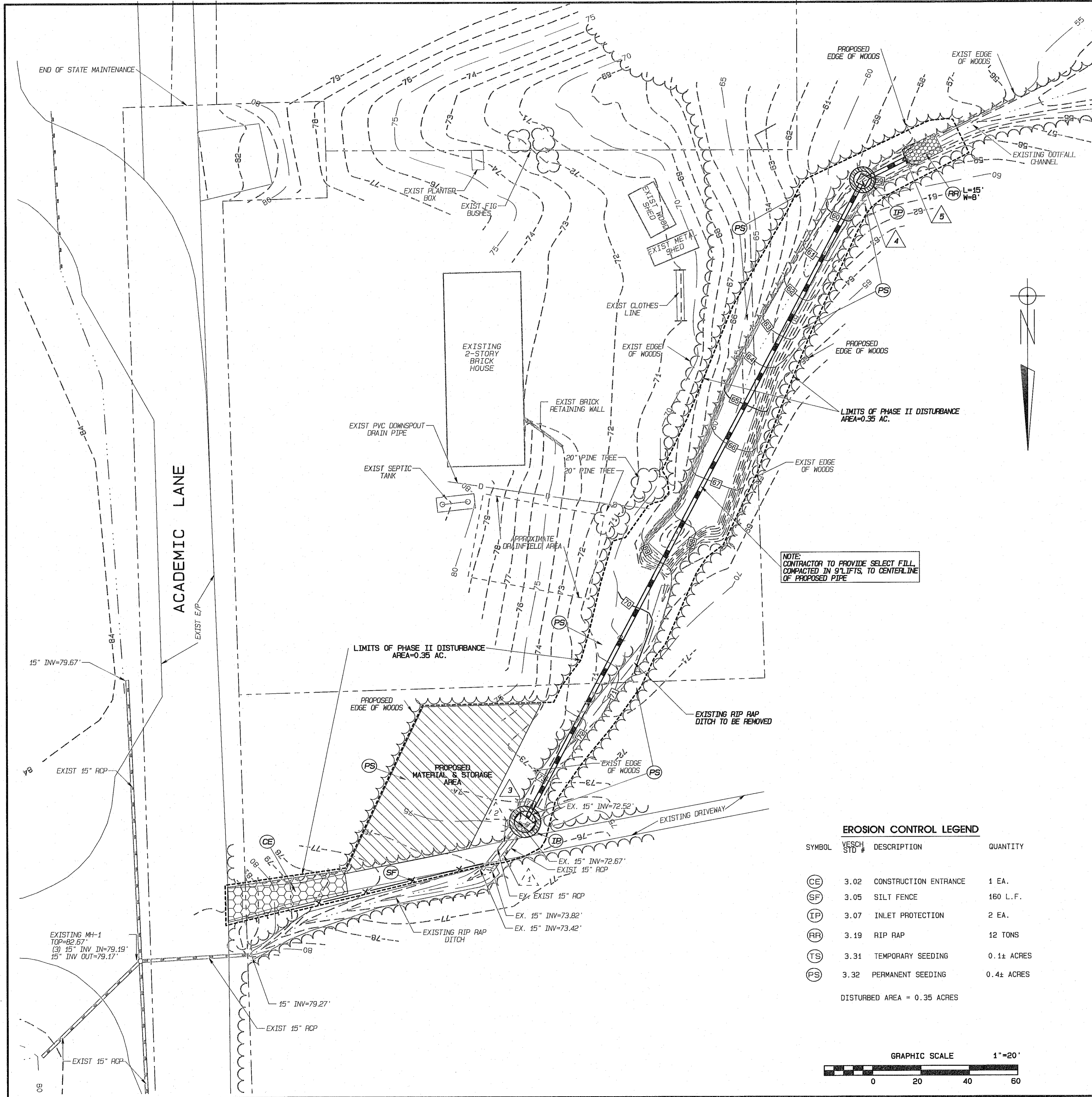


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	DESCRIPTION: PER CLIENT COMMENTS

NORTHUMBERLAND ELEMENTARY SCHOOL
PROPOSED OFF-SITE DRAINAGE REPAIRS
 HEATHSVILLE MAGISTERIAL DIST., NORTHUMBERLAND COUNTY, VIRGINIA

EXIST COND, DEMO & PHASE I ESC PLAN

DESIGNED BY: RFN · DRAWN BY: CIA · CHECKED BY: RFN
 SCALE: AS NOTED · DATE: DEC. 10, 2019 · PROJECT NO: 19179



DRAINAGE DESCRIPTIONS

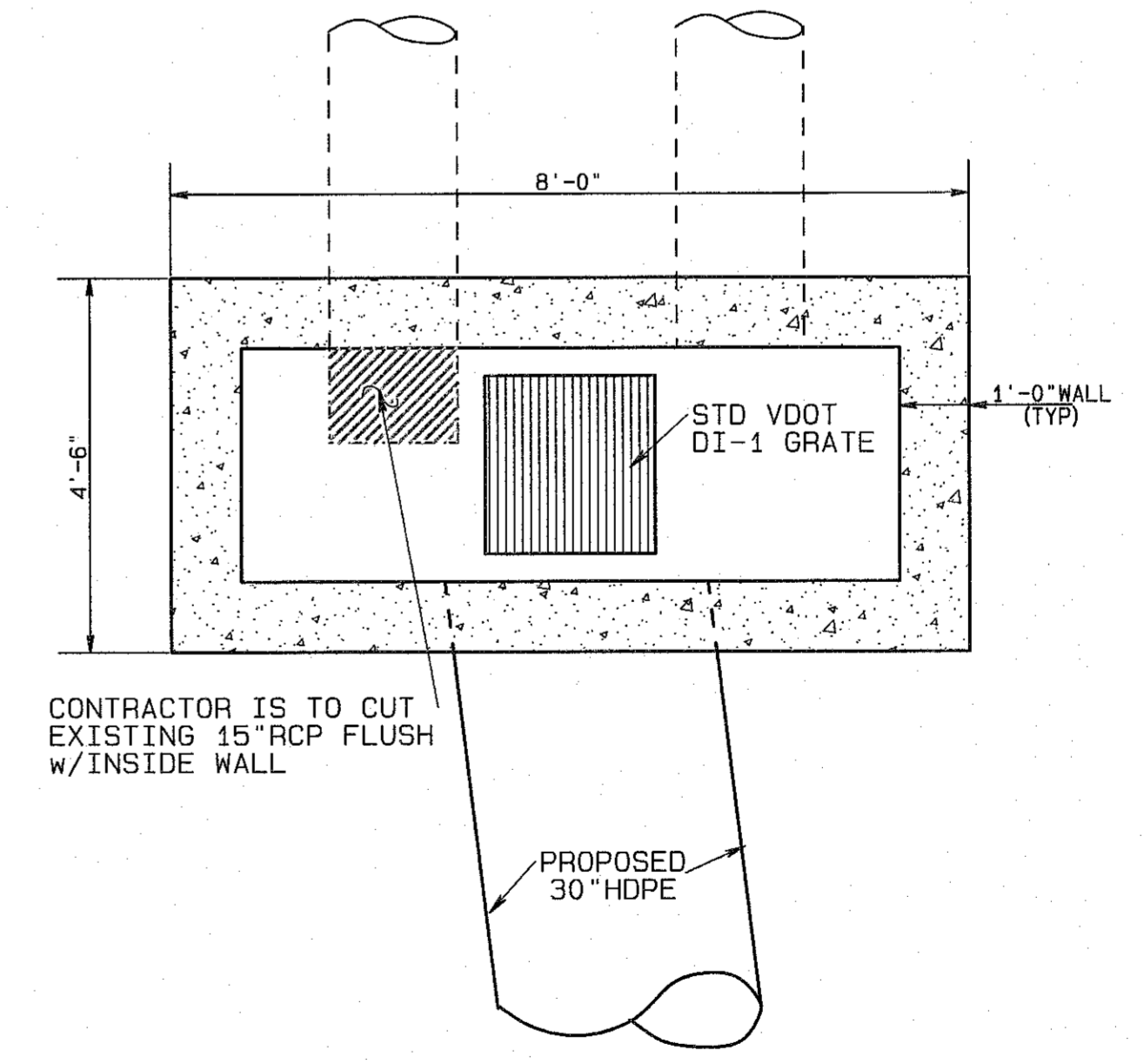
- 1. 25 LF OF EXIST 15" RCP @ 5.20%
INV IN=73.82, INV OUT=72.52
*NOTE: DOWN SLOPE END OF PIPE TO BE CUT FLUSH WITH INSIDE WALL OF PROPOSED STRUCTURE #3
- 2. 25 LF OF EXIST 15" RCP @ 3.00%
INV IN=73.42, INV OUT=72.67
- 3. PROPOSED MODIFIED DI-1, TOP=75.00
EXIST 15" RCP IN=72.52, EXIST 15" RCP IN=72.67
PROPOSED 30" HDPE INV OUT=71.30, SEE DETAIL BELOW
- 3-4. 300 LF OF 30" HDPE @ 5.27%
INV IN=71.30, INV OUT=55.40
- 4. PROPOSED DI-1, TOP=59.00
30" HDPE INV IN=55.50, 30" HDPE INV OUT=55.40
- 4-5. 20 LF OF 30" HDPE @ 1.00%
INV IN=55.40, INV OUT=55.20
- 5. PROPOSED 30" HDPE ES-1, INV=55.20

NOTE: CONTRACTOR TO PROVIDE SELECT FILL, COMPACTED IN 9" LIFTS, TO CENTERLINE OF PROPOSED PIPE

EROSION CONTROL LEGEND

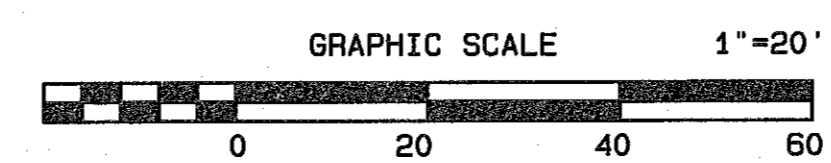
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(SF)	3.05	SILT FENCE	160 L.F.
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DISTURBED AREA = 0.35 ACRES



STRUCTURE ## MODIFIED DI-1 DETAIL
N.T.S.

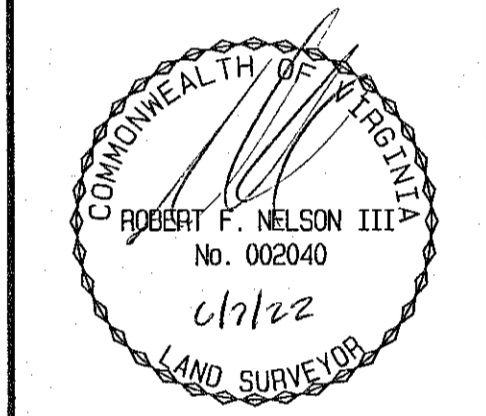
NOTE: REFERENCE STD VDOT DI-1 DETAIL FOR ALL CONCRETE AND REBAR SPECIFICATIONS



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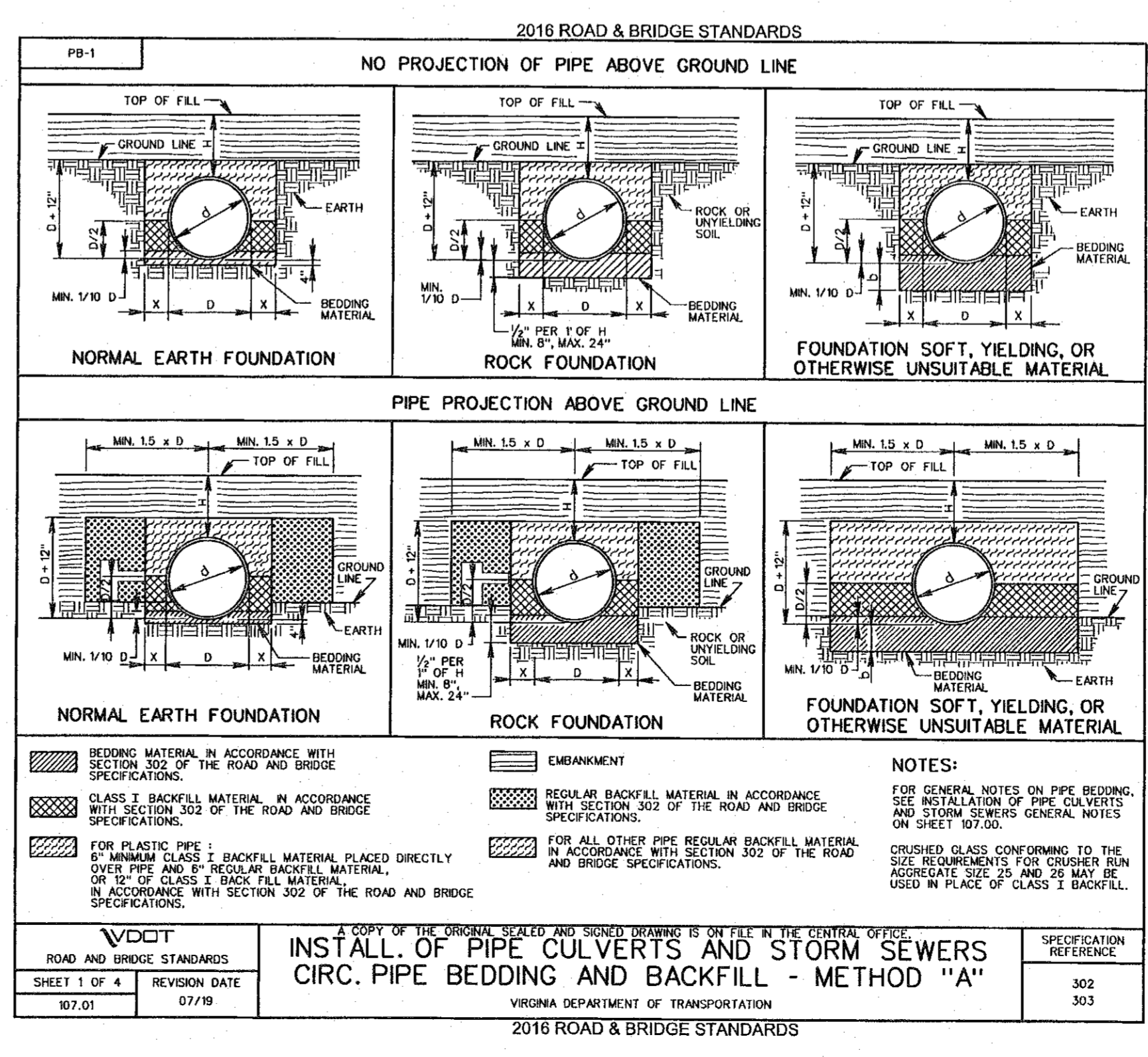
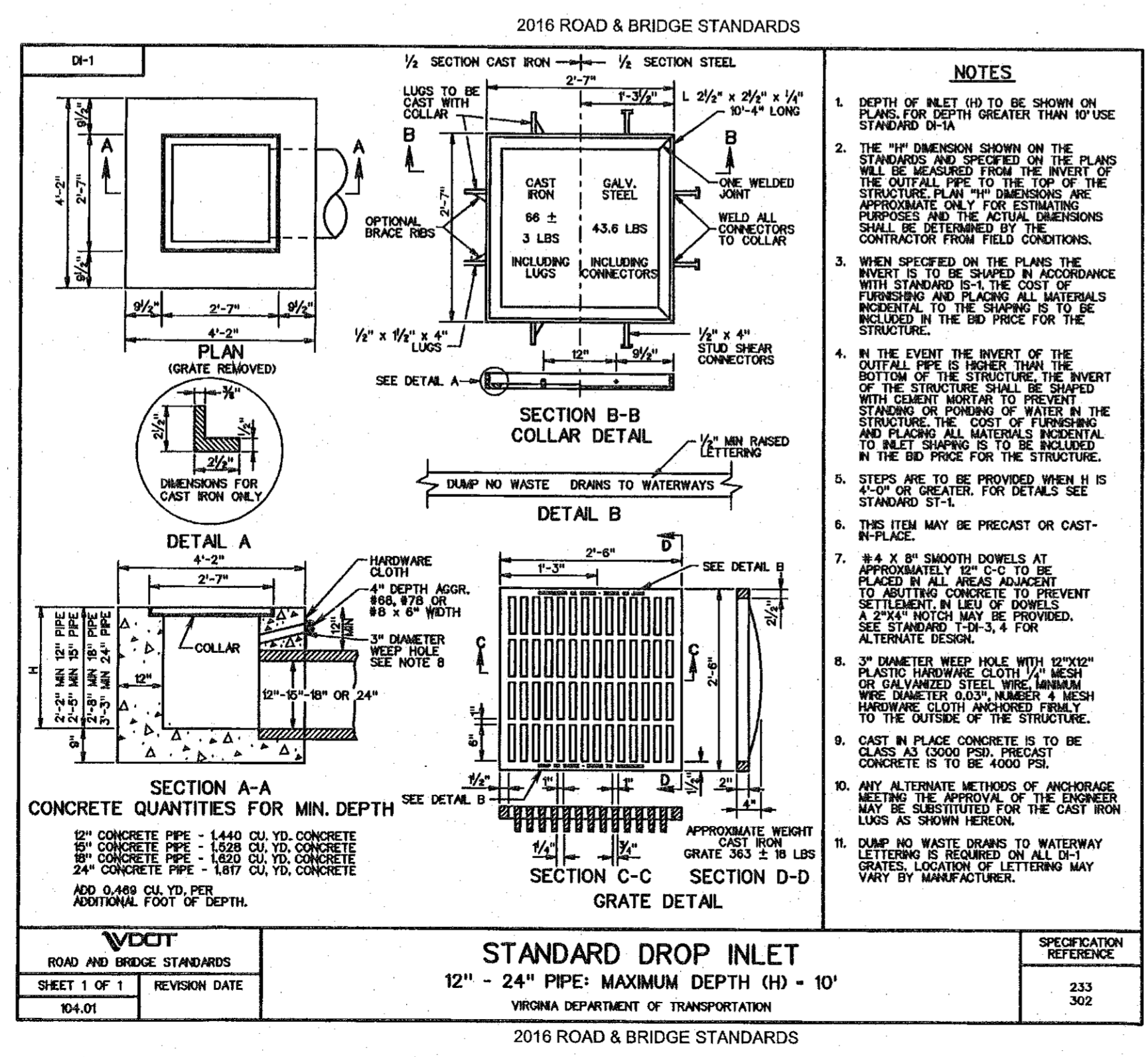
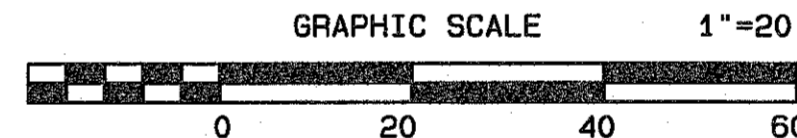
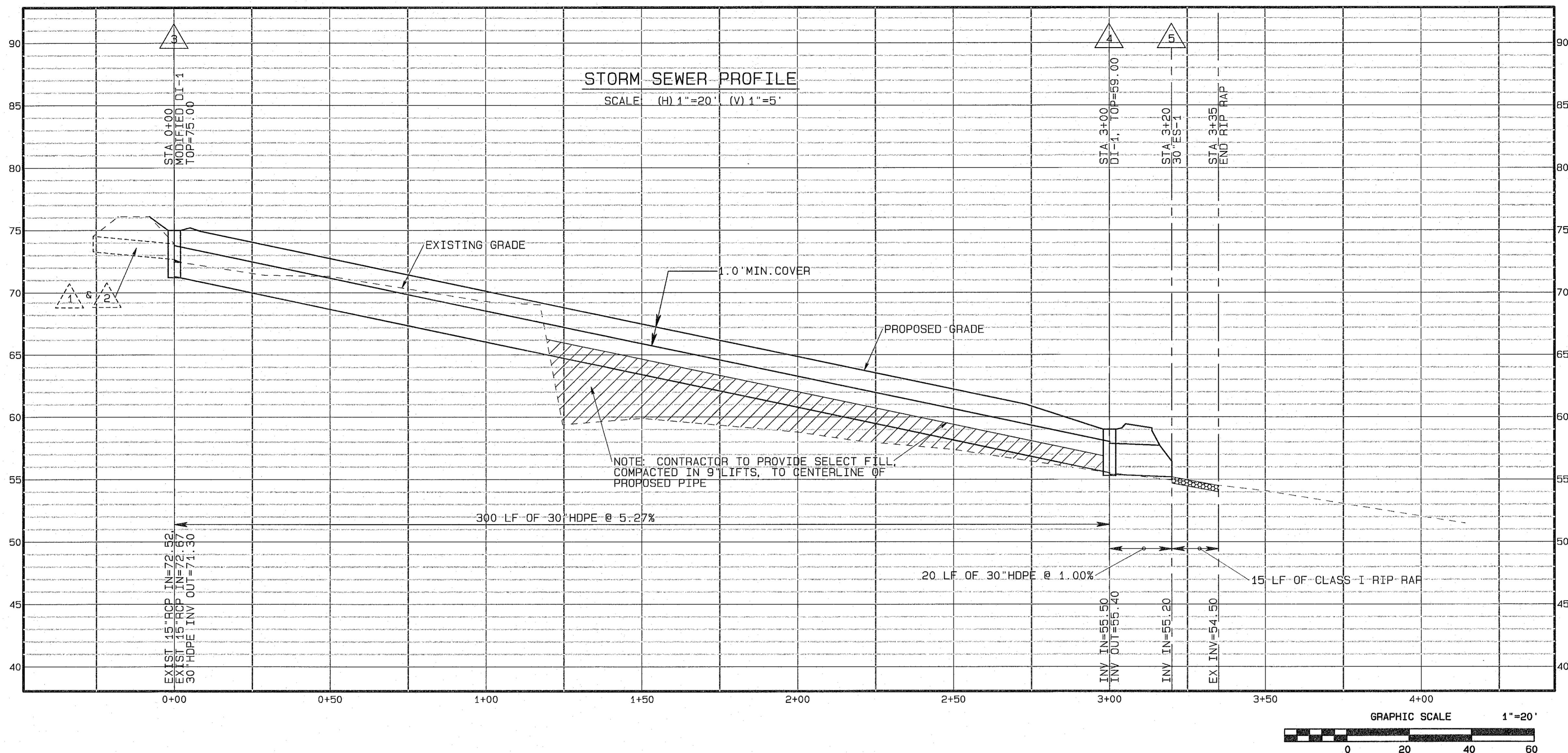


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GRADING, DRAINAGE & PHASE II ESC PLAN

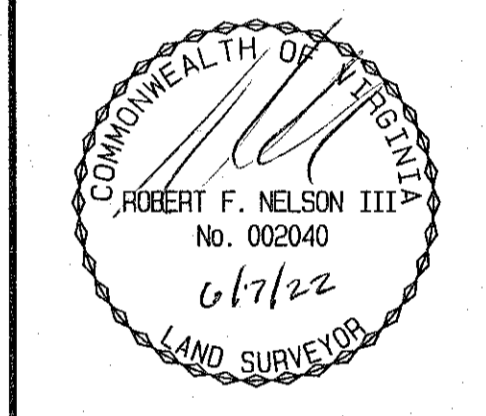
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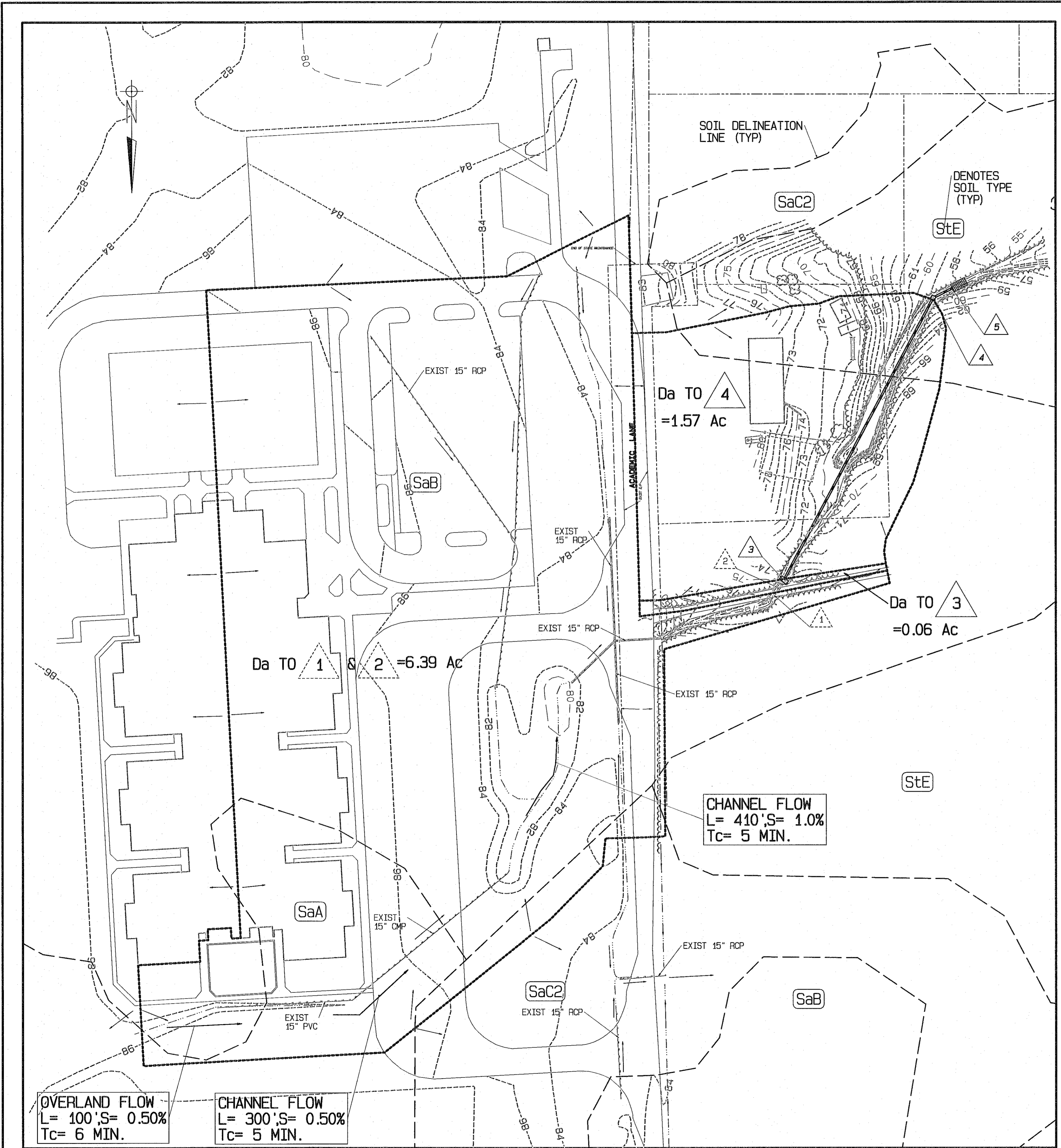
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NORTHUMBERLAND ELEMENTARY SCHOOL
PROPOSED OFF-SITE DRAINAGE REPAIRS
HEATHSVILLE MAGISTERIAL DIST., NORTHUMBERLAND COUNTY, VIRGINIA

STORM SEWER PROFILE AND DETAILS

DESIGNED BY: PFN . DRAWN BY: CIA . CHECKED BY: PFN
SCALE: AS NOTED . DATE: DEC. 10, 2019 . PROJECT NO: 19179

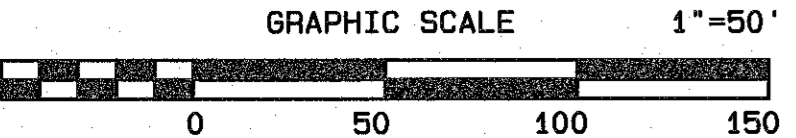
DRAWING NO:
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OVERLAND FLOW
L= 100', S= 0.50%
Tc= 6 MIN.

CHANNEL FLOW
L= 300', S= 0.50%
Tc= 5 MIN.

CHANNEL FLOW
L= 410', S= 1.0%
Tc= 5 MIN.



DRAINAGE AREA MAP
SCALE: 1"=50'

RUNOFF CALCULATIONS TO 1 AND 2
Da= 6.39 AC
c=4.15 AC @ 0.90= 3.735 (IMPERVIOUS AREA)
2.24 AC @ 0.11= 0.246 (HSG B, TURF AREA)
3.981
C=3.981/6.39 AC= 0.62
Tc=OVERLAND FLOW = 6 MIN
CHANNEL FLOW = 10 MIN
16 MIN
i₂ = 3.7, Q₂ = 14.6 CFS
i₁₀ = 5.0, Q₁₀ = 19.8 CFS

SHEET PASSWORD: EDA
PROJECT: NORTHUMBERLAND ELEMENTARY SCHOOL OUTFALL
DATE: 12/8/19

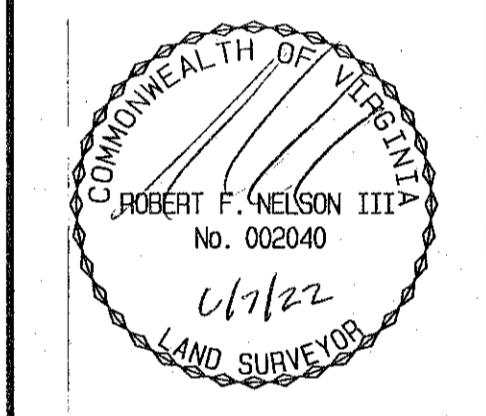
STORM SEWER DESIGN (10-YR STORM)

COMPUTATION		AREA DRAIN "A" ACRES	RUNOFF COEF. "C"	CA INCREMENT	ACCUMULATED	INLET TIME (MIN.)	RAINFALL I (IN/HR)	RUNOFF Q (CFS)	INVERT ELEVATIONS		LENGTH (FT.)	SLOPE (FT./FT.)	DIA. (IN.)	CAPACITY (CFS)	VEL (FPS)	FLOW TIME (SEC)	REMARKS
FROM POINT	TO POINT								UPPER	LOWER							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
182	3	6.39	0.62	3.96	3.96	16	5.0	19.81	73.82	72.62	25.00	0.052	30	93.77	4.04	6.20	
3	4	0.06	0.28	0.02	3.98	16	5.0	19.89	71.30	55.40	300.00	0.053	30	94.67	4.05	74.03	
4	5	1.57	0.35	0.55	4.53	16	5.0	22.04	65.40	55.20	20.00	0.010	30	41.12	4.81	4.34	

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HEATHSVILLE MAGISTERIAL DIST., NORTHUMBERLAND COUNTY, VIRGINIA
DRAINAGE AREA MAP & CALCULATIONS
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SCALE: AS NOTED . DATE: DEC. 10, 2019 . PROJECT NO: 19179

DRAWING NO:
5 of **6**

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO REPAIR THE EXISTING ERODED OUTFALL WITH STORM SEWER. THERE WILL BE NO INCREASE OF IMPERVIOUS AREA AND 0.35 ACRES WILL BE DISTURBED WITH THIS PROJECT.

SEQUENCE OF EVENTS

1. THE CONTRACTOR SHALL OBTAIN COPIES OF ALL NECESSARY PERMITS AND APPROVED PLAN SETS AND KEEP ONSITE AT ALL TIMES.
2. THE CONTRACTOR SHALL INSTALL THE CONSTRUCTION ENTRANCE AND SILT FENCE. THE SILT FENCE INSTALLATION DISTURBED AREAS MUST BE IMMEDIATELY SEEDED.
3. CONTRACTOR MAY COMMENCE CLEARING AND GRADING OPERATIONS.
4. INSPECT EROSION CONTROL MEASURES DAILY AND MAINTAIN OR REPAIR AS NEEDED. DO NOT REMOVE ANY EROSION CONTROL DEVICES WITHOUT THE APPROVAL OF THE COUNTY INSPECTOR.
5. PERMANENTLY SEED ALL DISTURBED AREAS NOT RECEIVING PAVEMENT, SCARIFY AND RESEED BARE PATCHES UNTIL ADEQUATE GROUND COVER HAS BEEN ACHIEVED. ALL PERMANENT SEEDING SHALL BE PERFORMED AS OUTLINED IN THE NARRATIVE AND SEEDED AS SHOWN IN TABLE 3.32-E.
6. ONCE UPSTREAM AREAS HAVE BEEN STABILIZED TO THE SATISFACTION OF THE COUNTY ENVIRONMENTAL INSPECTOR, THE CONTRACTOR SHALL REMOVE THE SILT FENCE.
7. THE CONTRACTOR SHALL PERMANENTLY RESEED ANY AREAS WHICH MAY HAVE BEEN DISTURBED BY ESC DEVICE REMOVAL.

EXISTING SITE CONDITIONS

THE PROJECT AREA CONSISTS OF AN EXISTING OUTFALL THAT IS ERODED. THE PROJECT AREA DRAINS TO THE NORTHEAST TO AN EXISTING OUTFALL CHANNEL.

ADJACENT AREAS

THE PROJECT AREA IS BOUNDED ON THE NORTH, WEST AND SOUTH BY RESIDENTIAL PROPERTIES. TO THE EAST, THE PROJECT AREA IS ADJACENT TO THE NORTHERLAND ELEMENTARY SCHOOL.

SOILS

THE USDA NATIONAL COOPERATIVE SOIL SURVEY FOR NORTHERLAND COUNTY SHOWS THE SITE CONSISTS OF SUFFOLK AND SASSAFRASS COMPLEX SOILS. SEE SHEET 2 FOR SOILS DESCRIPTIONS.

CRITICAL AREAS

THE EXISTING DOWNSTREAM OUTFALL SHALL BE KEPT FREE OF SEDIMENT AND THE CONTRACTOR SHALL TAKE CARE TO PREVENT SEDIMENT FROM LEAVING THE PROJECT 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 handbook. The minimum standards of the VESCH shall be adhered to unless otherwise waived or approved by a variance.

Structural Practices

1. Construction Entrance- 3.02
Construction Entrances will be installed to prevent mud being transported onto paved roadways.
2. Silt Fence Barrier- 3.05
Silt fence sediment barriers will be installed down slope of areas with minimal grades to filter sediment laden runoff from sheet flow as indicated on drainage and erosion control plan.
3. Inlet Protection- 3.07
Inlet protection shall be installed on all proposed storm inlets to prevent sediment laden runoff from entering the storm sewer system.
4. Riprap- 3.19
Riprap shall be installed to prevent soil from concentrated runoff and to reduce velocity.
5. Rock Check Dams 3.20
Check dams shall be placed immediately downstream of the outfalls to reduce velocities and trap sediment.

Vegetative Practices

1. Surface Roughening 3.29
Surface roughening shall be utilized to aid in establishment of vegetative cover with seed. All vegetative areas of this project are to be mowed and should be roughened by providing small furrows left by disking, harrowing, raking, or seed-planting machinery operated on the contour. Groves formed by such implements shall not be less than 1' deep and not further than 12' apart. Roughened areas shall be seeded and mulched as soon as possible to obtain optimum seed germination and seedling growth.
2. Topsoiling 3.30
Topsoil will be stripped from areas to be graded and stockpiled for later use. Stockpiles are to be immediately stabilized with temporary vegetation as specified below and in accordance with MS-2. When applying topsoil, topsoil shall not be placed while in a frozen or muddy condition, when topsoil or subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading or proposed seeding. The topsoil shall be uniformly distributed to a minimum compacted depth of 2" on 3:1 or steeper slopes and 4" on flatter slopes. It is necessary to compact the topsoil enough to ensure good contact with the underlying soil and to obtain a level seeded. However, the contractor shall avoid unnecessary compaction by heavy machinery whenever possible. See soil testing requirements under permanent stabilization.
3. Temporary Seeding 3.31
All denuded areas, which will be left dormant for extended periods of time shall be seeded with fast germinating temporary vegetation immediately following grading. Selection of the seed mixture will depend on the time of the year. This site is using Ryegrass. Contractor is to apply 10-10-10 fertilizer at a rate of 450 lbs./acre or 10 lbs./1000 SF, and applying pulverized agricultural limestone at a rate of 2 tons/acre or 90 lbs./1000 SF. See Table 3.31-B on Sheet 20. Contractor to provide a soil test to determine actual amount of lime required to adjust the pH of the soil. When applying slowly available nitrogen use rates available in the Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites, see the web address at the following site: <http://www.dcr.virginia.gov/soilandwater/documents/esnutan.pdf>.
4. Permanent Seeding 3.32
All areas disturbed by construction shall be stabilized with permanent seeding immediately following finish grading. Seeding shall be done with Kentucky 31 Tall Fescue according to STD & Spec 3.32 Permanent Seeding, of the handbook. Erosion control blankets will be installed over fill slopes 3:1 or greater which have been brought to final grade and have been seeded to protect the slopes from rill and gully erosion and to allow seed to germinate properly. Mulch (straw or fiber) will be used on relatively flat areas, i.e., 4:1. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching. Apply 10-20-10 fertilizer at the rate of 500 lbs./acre or 12 lbs./1000 SF, apply pulverized agricultural limestone at a rate of 2 tons/acre or 90 lbs./1000 SF. See Table 3.32-E, marked with an asterisk on Minimum Care Lawn type selected. All areas will be maintained and reseeded until the vegetation is uniform and mature enough to survive inhibit erosion. Contractor to provide a soil test to determine actual amount of lime required to adjust the pH of the soil. When applying slowly available nitrogen use rates available in the Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites, see the web address at the following site: <http://dcr.virginia.gov/soilandwater/documents/esnutan.pdf>.
5. Mulching 3.35
Mulching will be utilized to protect the soil surface from raindrop impact, reduce the velocity of overland flow and foster the growth of vegetation. Areas receiving temporary or permanent seeding should be mulched immediately following seeding. The mulch material for this project shall be straw or hay spread at a rate of 2 tons/acre, see Table 3.35-A.
6. Soil Stabilization Blankets and Matting 3.36
Matting will be used on all slopes 3:1 or steeper and for lining the bottom of all new ditches. Treatment -1: VDOT EC-2 is to be used as a soil stabilization blanket for this project. STD & Spec 3.36 Virginia Erosion and Sediment Control Handbook.

Management Strategies

1. Construction will be sequenced so that grading operations can begin and end as quickly as possible.
2. Temporary seeding or other stabilization will follow immediately after grading.
3. Areas which are not to be disturbed will be clearly marked by flags, signs, etc.
4. The job superintendent shall be responsible for the installation and maintenance of all erosion and sediment control practices.
5. After achieving adequate stabilization the temporary E & S controls will be cleaned up and removed. Any disturbed areas shall be reseeded.

Temporary Stabilization

All disturbed areas which will be left dormant for extended periods of time shall be seeded with fast germinating temporary vegetation immediately following grading. This site will be using Ryegrass as specified under the Vegetative Practices Section of this narrative and shown in Table 3.31-B. Lime and fertilizer shall be incorporated into the top 4-6 inches of the soil by disking, at the rates specified in Table 3.31-B.

Permanent Stabilization

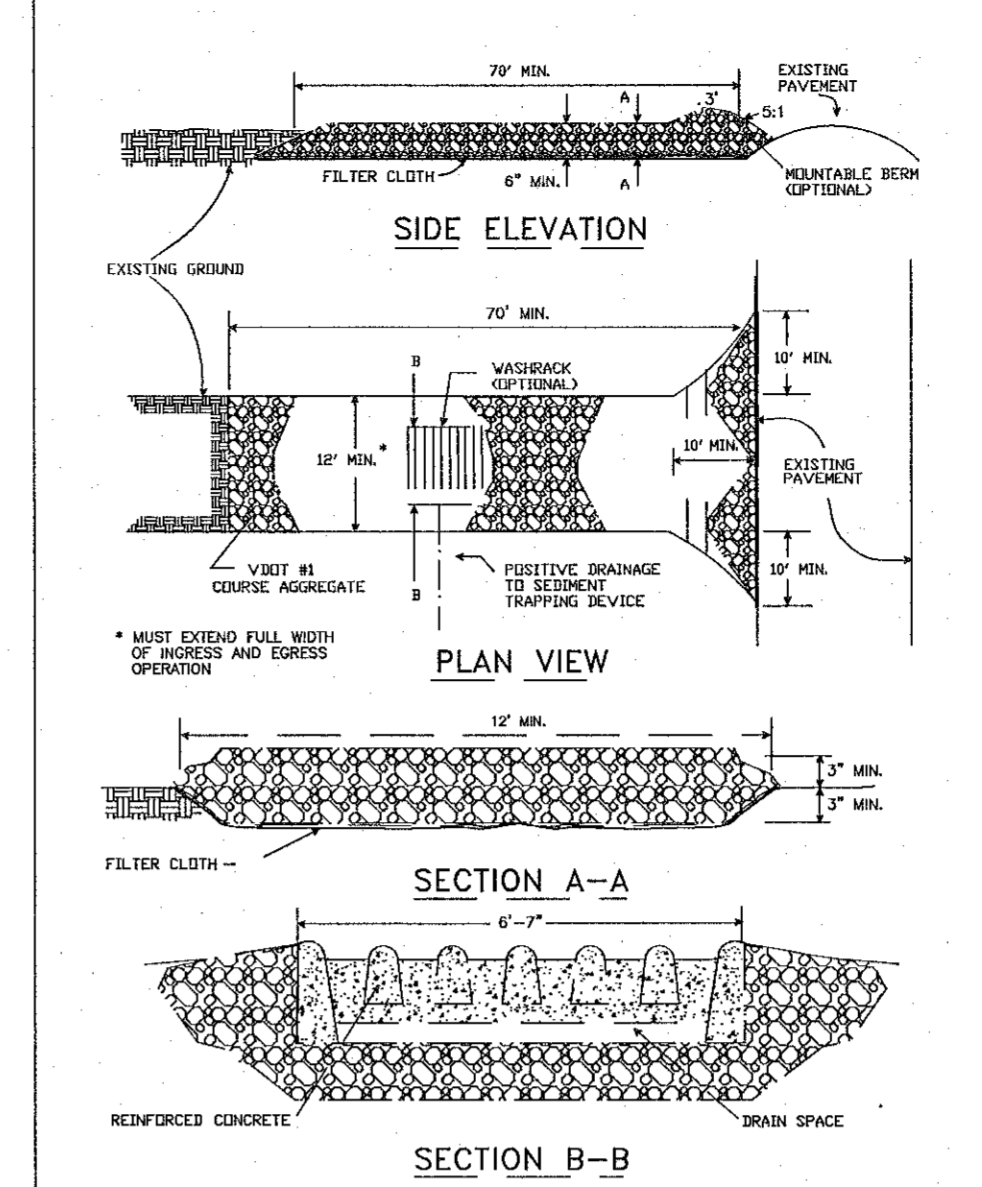
All areas not receiving pavement that have been disturbed by construction shall be stabilized with permanent seeding as specified under the Vegetative Practices Section of this narrative and as shown in Table 3.32-E. Contractor shall perform soil test on the topsoil to be reseeded. Soil test shall be performed by the Cooperative Extension Service Soil Testing Laboratory at VFA & SU or by a reputable commercial laboratory. The soil test shall provide specific information on the amounts of phosphorus, potassium, calcium and magnesium available for plant uptake and recommend additional amounts as required. The soil test shall determine the amount of lime needed to obtain an appropriate soil pH between 6.25 and 6.5. The soil test shall establish the amount of fertilizer to be applied based on the type of grass and season of growth. Phosphorus and potassium fertilizer requirements shall be determined. Disturbed areas shall be rough graded and topsoil applied as specified in the VESCH, STD & Spec 3.36. Basin side slopes, embankments and spillways shall have a minimum compacted depth of 2" of topsoil. The basin bottom and all other areas receiving seed shall have a minimum depth of 4" of topsoil. All areas receiving topsoil shall have the lime and fertilizer incorporated in the top 4-6 inches of soil. Incorporation shall be achieved by disking or harrowing. All topsoil areas shall be roughened as specified in the VESCH, STD & Spec 3.29. After incorporation of the lime and fertilizer, the areas shall be permanently seeded as specified on Table 3.32-E. Upon completion of seeding, the areas with slopes flatter than 3:1 shall be mulched as specified in VESCH, STD & Spec 3.35. All slopes 3:1 or steeper, the basin slopes, embankments and spillways shall be matted with VDOT EC-2. Contractor should visit the DCR web page at <http://www.dcr.state.va.us/sw/docs/esnutan.pdf> for more information.

Maintenance

In general, contractor is to check all erosion and sediment control measures daily and after each significant rainfall. The following items will be checked in particular:

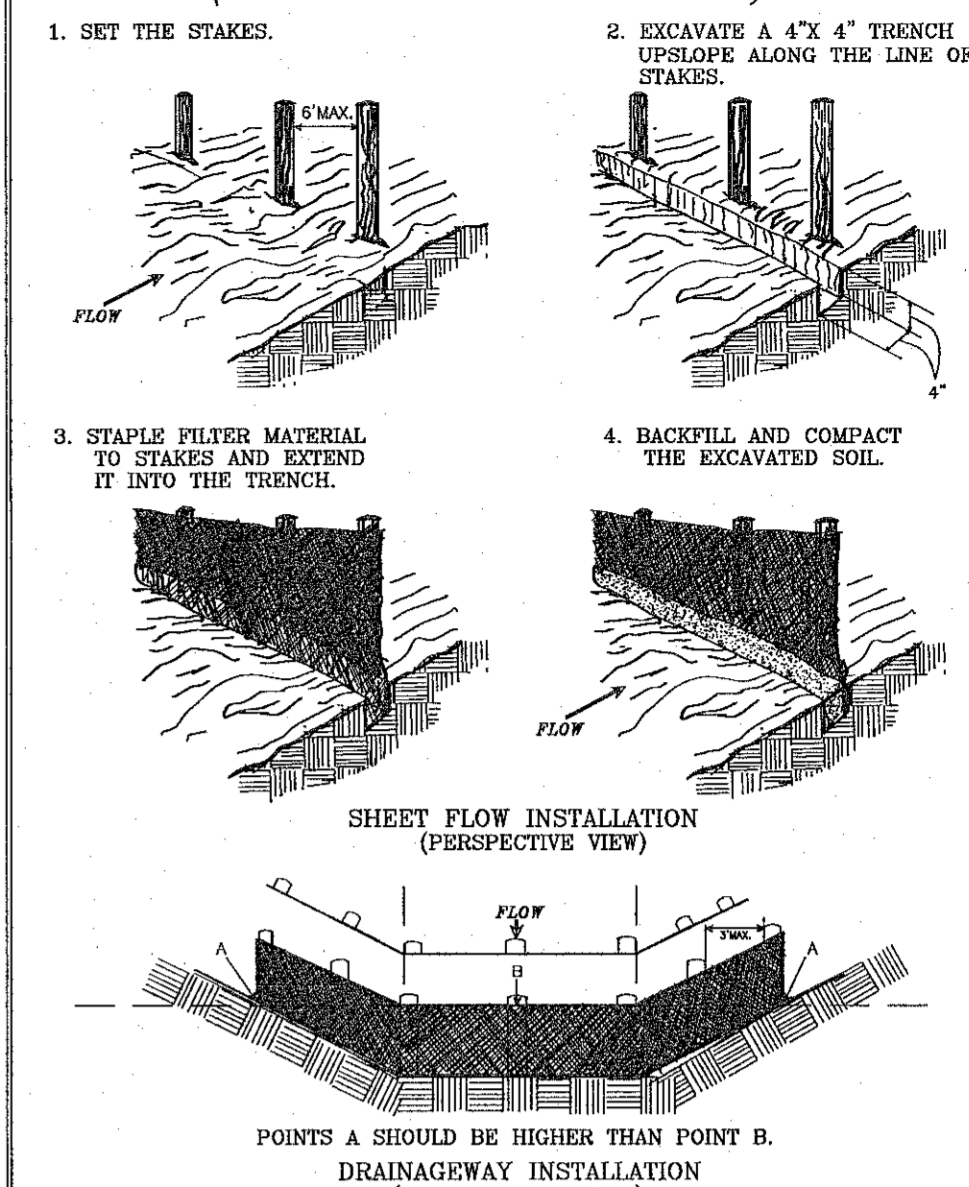
1. Construction Entrance- 3.02
 - a. Construction Entrance- 3.02
The Construction Entrance shall be maintained in a condition that will prevent tracking or flow of mud onto paved roadways.
 - b. Periodic top pressing with additional stone may be required.
2. Silt Fence Barrier- 3.05
 - a. Silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
 - b. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting.
 - c. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
 - d. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier.
 - e. 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.
3. Inlet Protection- 3.07
 - a. The structure shall be inspected after each rain event and repairs made as needed.
 - b. Any buildup of sediment shall be removed and disposed of in a suitable manner.
4. Riprap- 3.19
 - a. Riprap shall be inspected periodically to determine if high flows have caused scour beneath the riprap or filter fabric.
 - b. If repairs are needed, they should be accomplished immediately.
5. Rock Check Dams 3.20
 - a. Check dams should be checked for sediment accumulation after each runoff producing storm event. Sediment should be removed when it reaches one-half of the original height of the measure.
 - b. Regular inspections should be made to ensure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam should be corrected immediately.

STONE CONSTRUCTION ENTRANCE



SOURCE: ADAPTED FROM 1983 Maryland Standards for Soil Erosion and Sediment Control, Vol. 109C. Plate 3.02-1

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, VA DSWC. Plate 3.02-2

TABLE 3.31-B (Revised June 2003)
TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS

APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (odium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50-100 (lb/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (odium multi-florum)	50-100 (lb/acre)
May 1 - Aug. 31	German Millet	50 (lb/acre)

FERTILIZER & LIME

- Apply 10-10-10 fertilizer at a rate of 450 lbs./acre (or 10 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs./1,000 sq. ft.)

NOTE:

1. A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2. Incorporate the lime and fertilizer into the top 4-6 inches of the soil by disking or by other means.
3. When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/soilandwater/documents/esnutan.pdf>

TABLE 3.32-E (Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

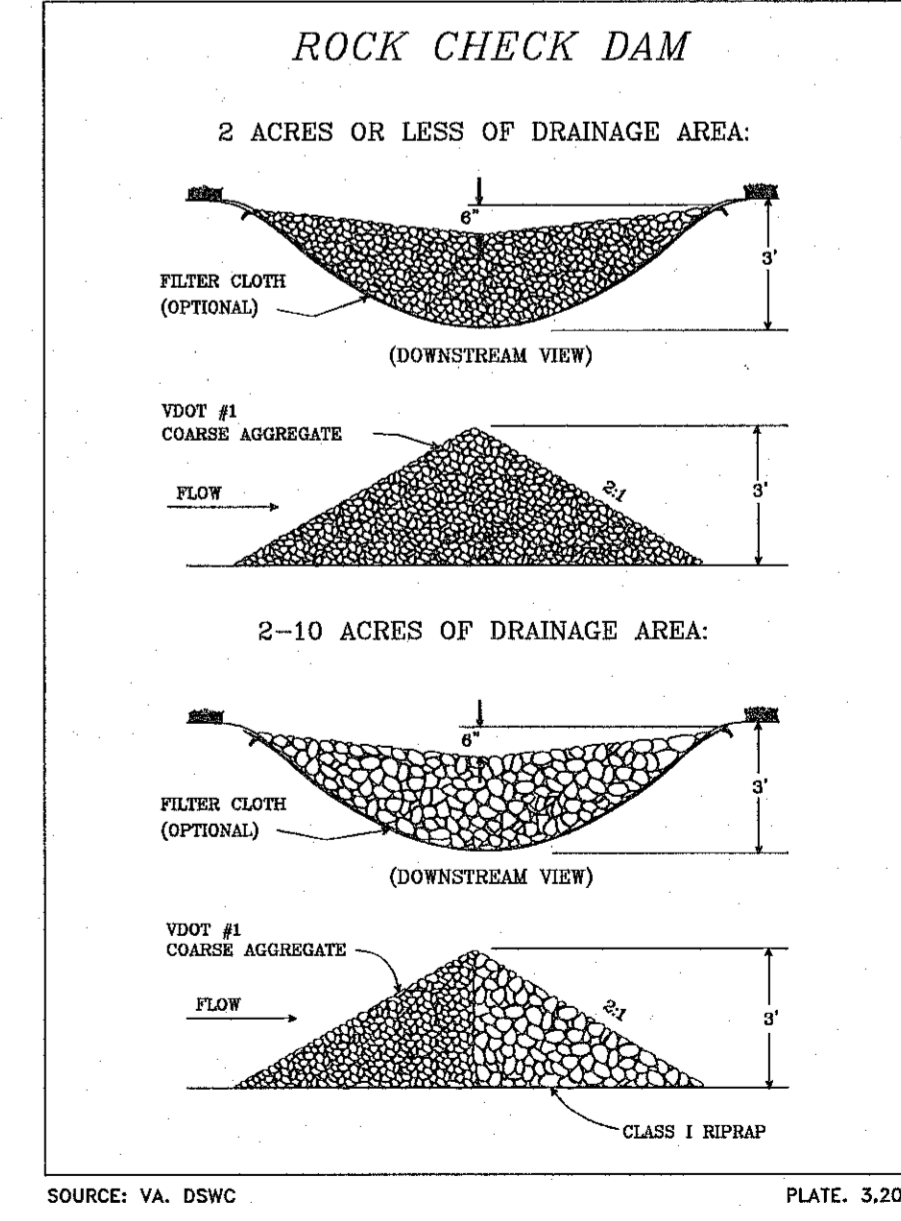
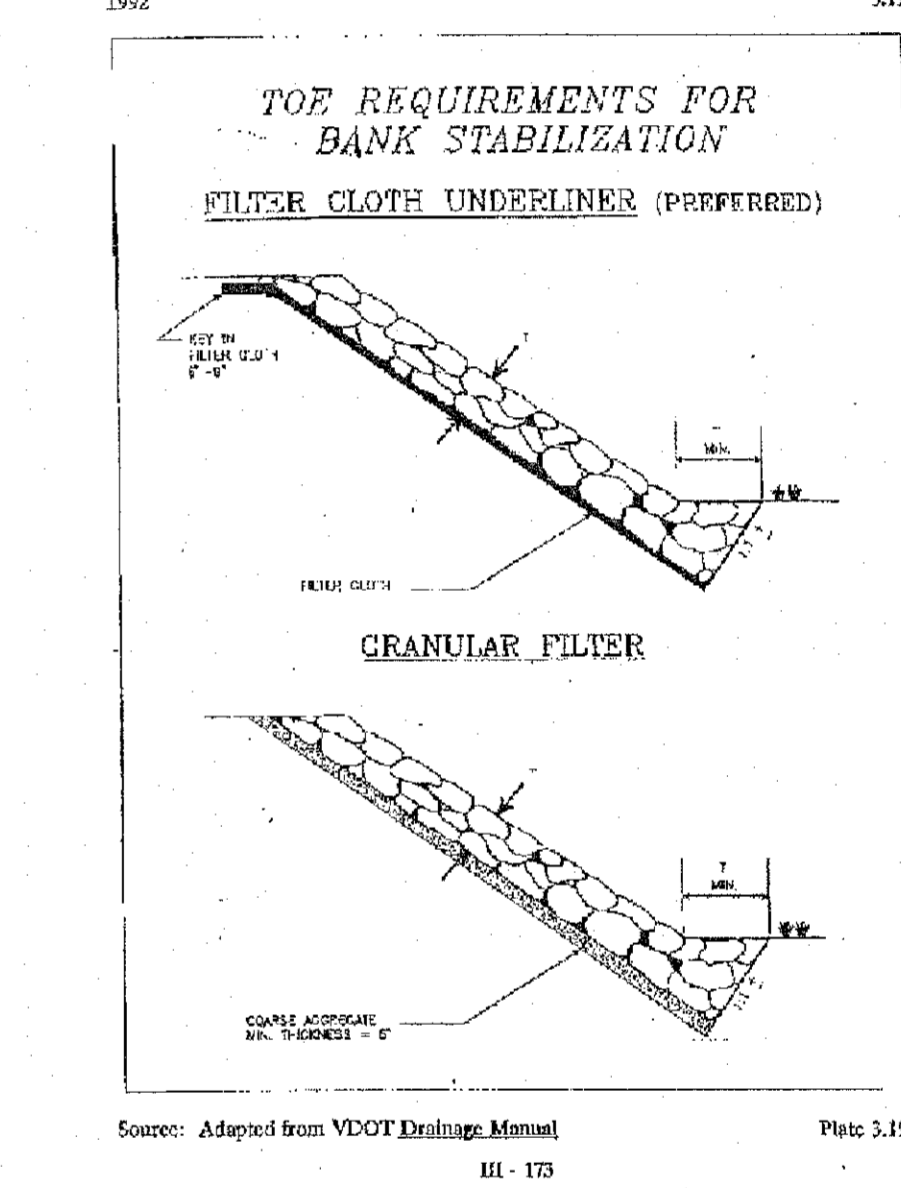
LAND USE	SEED SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue ¹ or Bermudagrass ²	175-200 lbs.
High Maintenance Lawn	Tall Fescue ¹ or Bermudagrass ² (seed) or Bermudagrass ² (by other vegetative establishment method, see SM & Spec. 3.34)	200-250 lbs. 40 lbs. (unfilled) 30 lbs. (filled)
General Slope (3:1 or less)	Tall Fescue ¹ or Red Top Grass or Creeping Red Fescue or Seasonal Nurse Crop ³	128 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.
Low Maintenance Slope (Steeper than 3:1)	Tall Fescue ¹ or Bermudagrass ² or Red Top Grass or Creeping Red Fescue or Seasonal Nurse Crop ³ or Sodex Lespedeza ⁴	93-108 lbs. 0-15 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

FERTILIZER & LIME

- Apply 10-20-10 fertilizer at a rate of 500 lbs./acre (or 12 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs./1,000 sq. ft.)

NOTE:

1. A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2. Incorporate the lime and fertilizer into the top 4-6 inches of the soil by disking or by other means.
3. When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/soilandwater/documents/esnutan.pdf>
4. 2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/soilandwater/documents/esnutan.pdf>



SOURCE: VA, DSWC. PLATE 3.20-1

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LAND SURVEYOR

REVISION: NO. 1 DATE: 05/26/22 PER CLIENT COMMENTS

NORTHERLAND ELEMENTARY SCHOOL
PROPOSED OFF-SITE DRAINAGE REPAIRS

HEATHSVILLE MAGISTERIAL DIST., NORTHERLAND COUNTY, VIRGINIA

EROSION & SEDIMENT CONTROL NARRATIVE AND DETAILS

DESIGNED BY: RFN . DRAWN BY: CIA . CHECKED BY: RFN
SCALE: AS NOTED . DATE: DEC. 10, 2019 . PROJECT NO.: 19179

DRAWING NO.: 6 of 6