

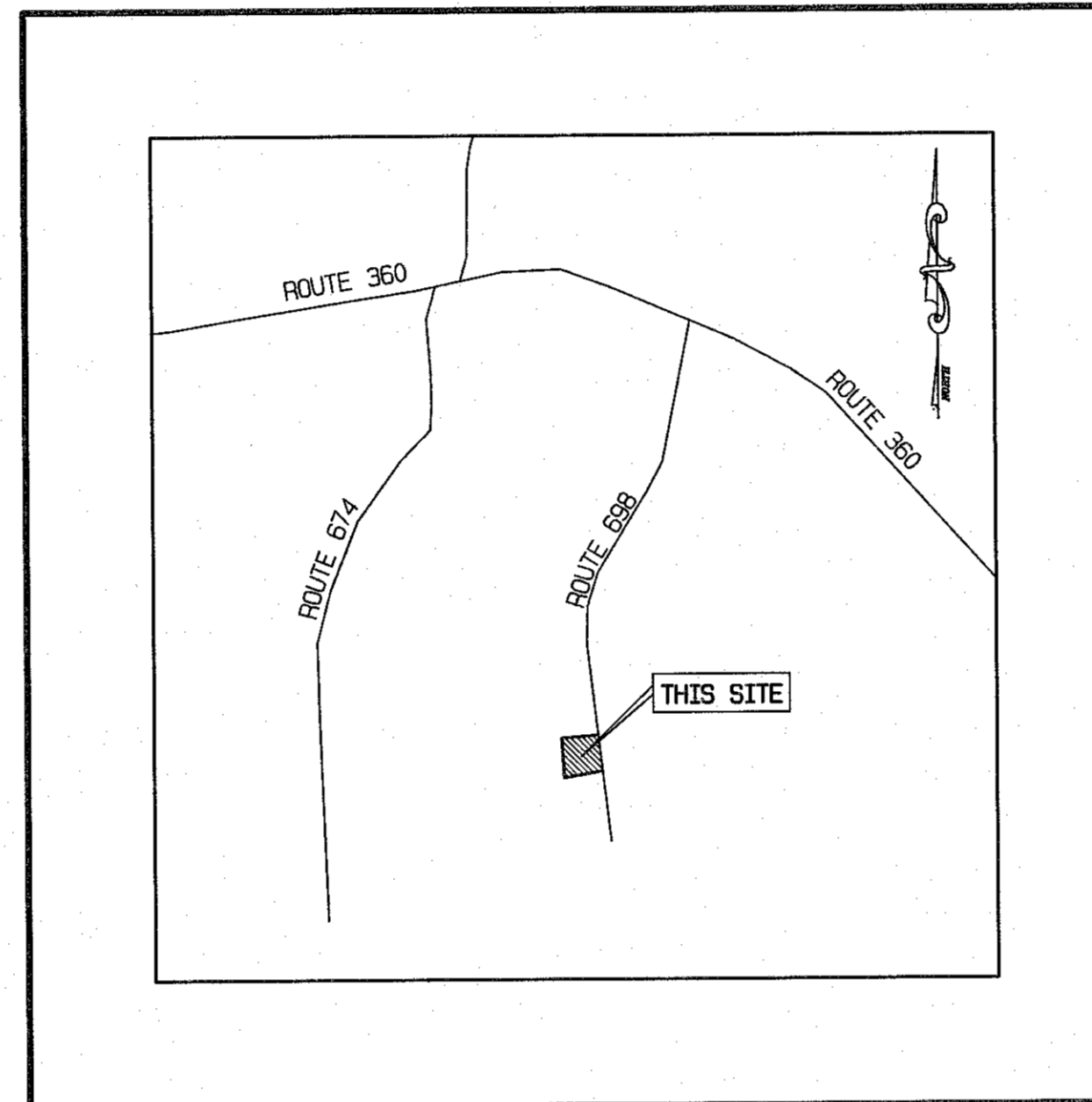
# NORTHUMBERLAND ELEMENTARY SCHOOL PROPOSED OFF-SITE DRAINAGE REPAIRS

HEATHSVILLE MAGISTERIAL DISTRICT  
NORTHUMBERLAND COUNTY, VIRGINIA

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
---	---	INDEX CONTOUR
---	---	WATER LINE
---	---	SEWER LINE
---	---	ELECTRIC LINE
---	---	TELEPHONE LINE
---	---	GAS LINE
---	---	UNKNOWN UTILITY LINE
---	---	MANHOLE
---	---	CLEANOUT
---	---	LIGHT POLE

## OVERALL NOTES

- 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.
- 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.
- The Contractor shall comply with all safety regulations. The Engineer assumes no responsibility for worksite safety.
- 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.
- The Contractor shall not store materials or equipment nor allow his employees to park outside of the area reserved for construction operations.
- Lighting, landscaping, and signage plans must be submitted separately to the County for approval.
- 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.
- Notes and bounds shown on this plan does not constitute a boundary survey.



VICINITY MAP  
SCALE: 1" = 2000'

## SITE DATA

OWNER:  
STEVE V. & 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

## EROSION CONTROL NOTES

- 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).
- 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 approval will be revoked.
- All erosion and sediment control measures are to be placed prior to or as the first step in clearing.
- 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.
- 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.
- 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.
- 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.
- During dewatering operations, water shall be pumped into an approved filtering device.
- 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.
- The contractor is responsible for the daily removal of sediment that has been transported onto a paved or public road surface.
- 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.
- 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.
- 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>

## 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:

- All solid waste shall be disposed of in specified container in a location(s) central & accessible to the site.
- 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.
- 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 cleanout procedures are followed.
- 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.

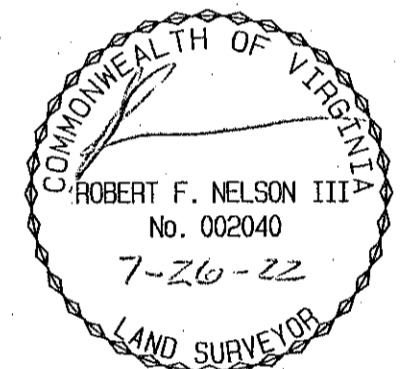
## SHEET INDEX

- COVER SHEET
- EXIST COND, DEMO & PHASE I ESC PLAN
- GRADING, DRAINAGE & PHASE II ESC PLAN
- STORM SEWER PROFILE AND DETAILS
- DRAINAGE AREA MAP & CALCULATIONS
- EROSION & SEDIMENT CONTROL NARRATIVE AND DETAILS

**EDA**  
ENGINEERING DESIGN ASSOCIATES

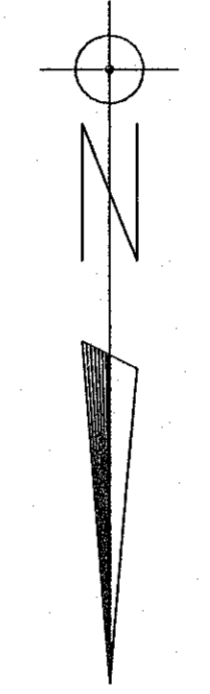
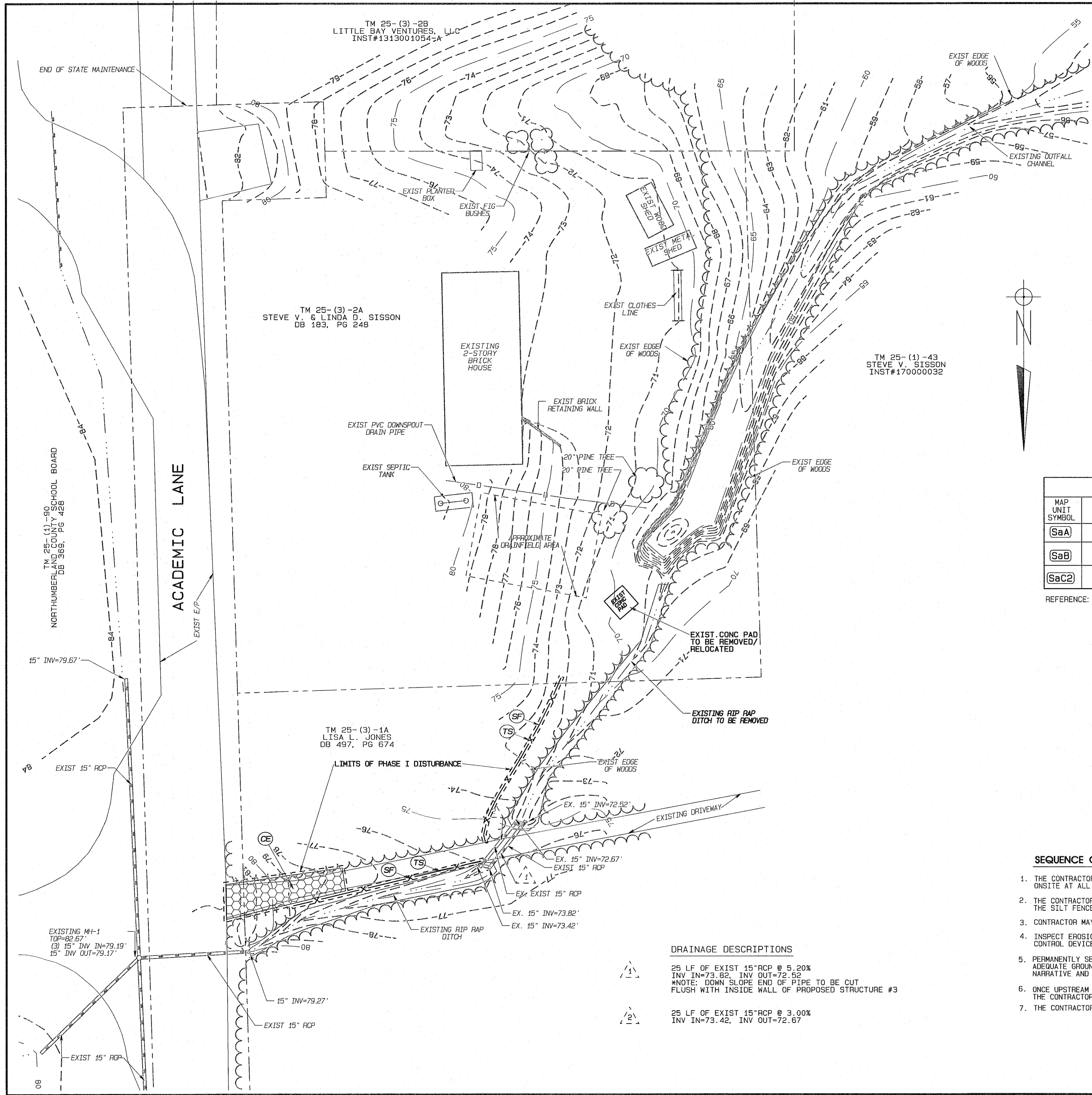
5625 LABURNUM AVENUE  
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PO BOX 515  
WICOMICO CHURCH 22579  
PHONE: 804-580-2227  
FAX: 804-580-3334



REVISION:	NO.	DATE:	DESCRIPTION:
	1	05/26/22	PER CLIENT COMMENTS
	2	7/29/22	PER CLIENT COMMENTS

**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: 19479



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
(B/M)	3.36	BLANKETS & MATTING (EC-3)	8820 SF

DISTURBED AREA = 0.35 ACRES

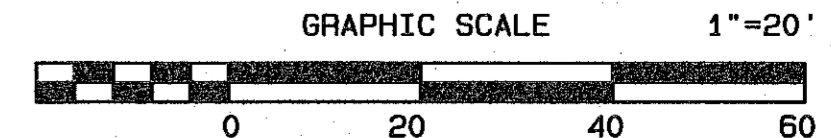
**SEQUENCE OF EVENTS**

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

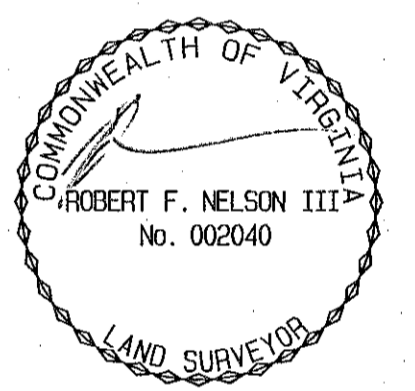
25 LF OF EXIST 15" RCP @ 3.00%  
 INV IN=73.42, INV OUT=72.67



**EDA**  
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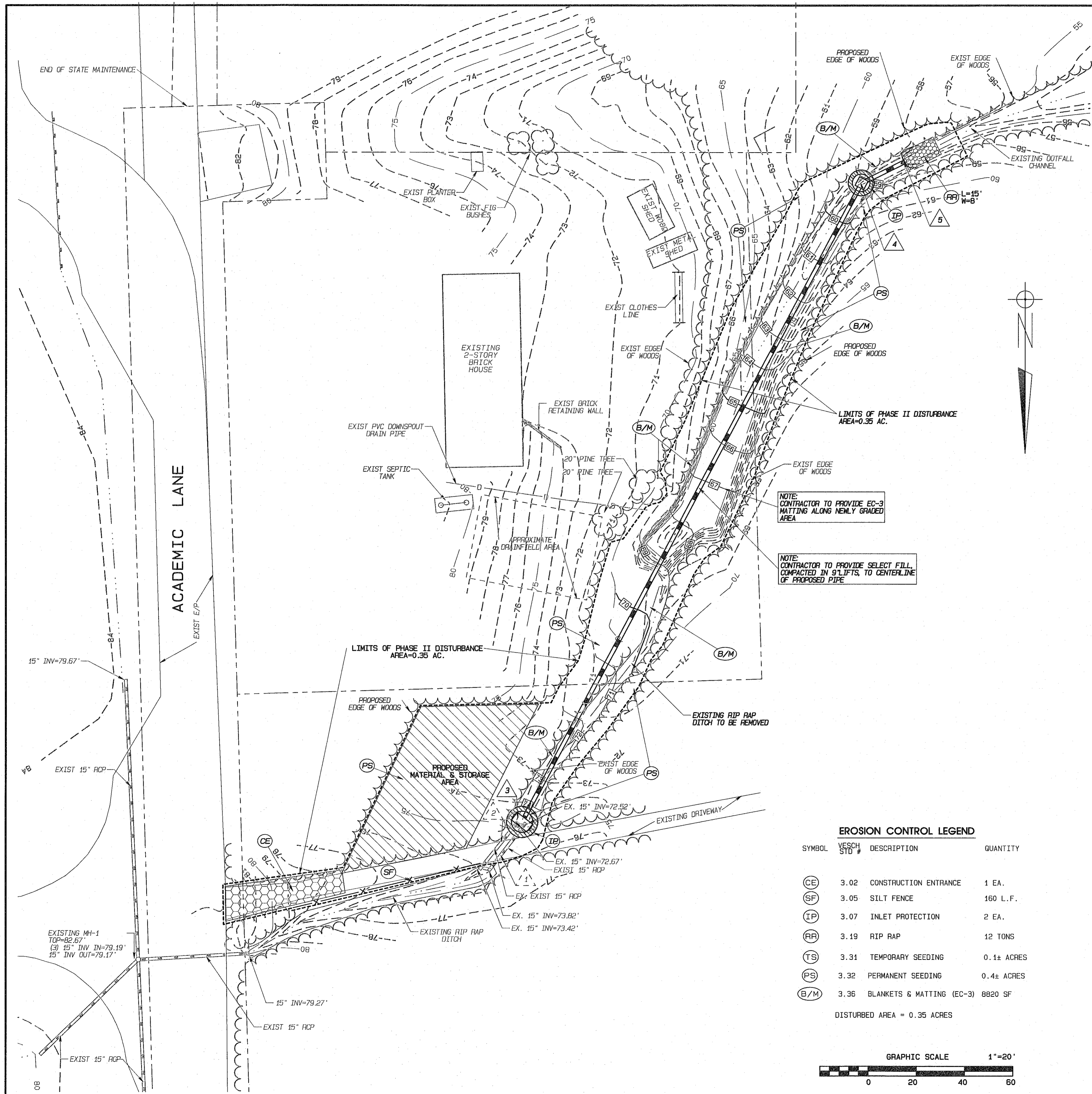


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NO.	DATE: DESCRIPTION: PER CLIENT COMMENTS	
1	02/26/22	PER CLIENT COMMENTS
2	7/25/22	PER CLIENT COMMENTS

**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 INV=72.52, EXIST 15" RCP INV=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 FLARED END SECTION, INV=55.20

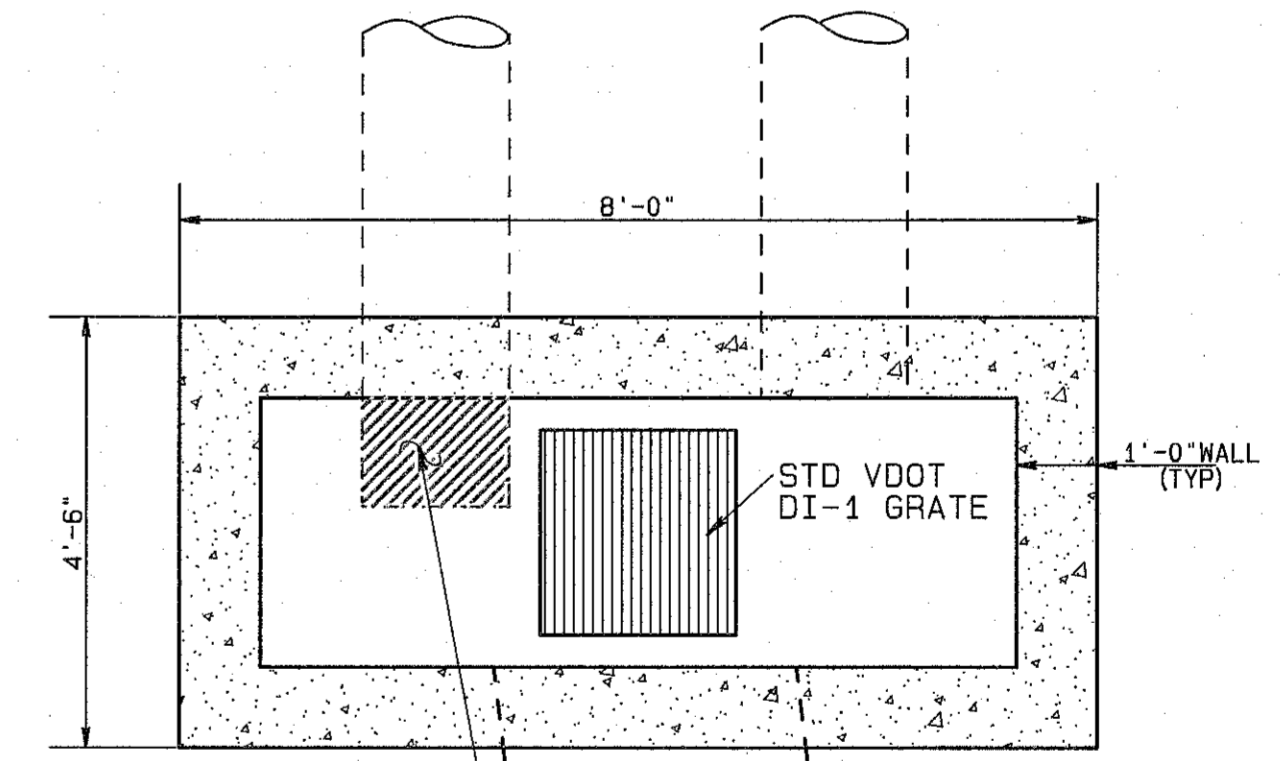
NOTE: CONTRACTOR TO PROVIDE EC-3 MATTING ALONG NEWLY GRADED AREA

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

**EROSION CONTROL LEGEND**

SYMBOL	VESCH STD #	DESCRIPTION	QUANTITY
(CE)	3.02	CONSTRUCTION ENTRANCE	1 EA.
(SF)	3.05	SILT FENCE	160 L.F.
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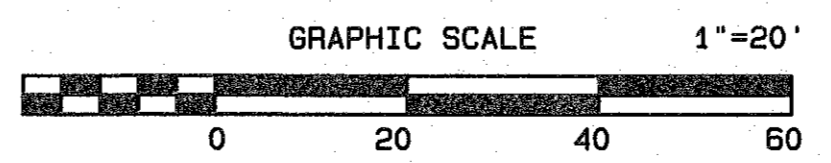
DISTURBED AREA = 0.35 ACRES



CONTRACTOR IS TO CUT EXISTING 15" RCP FLUSH W/INSIDE WALL

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

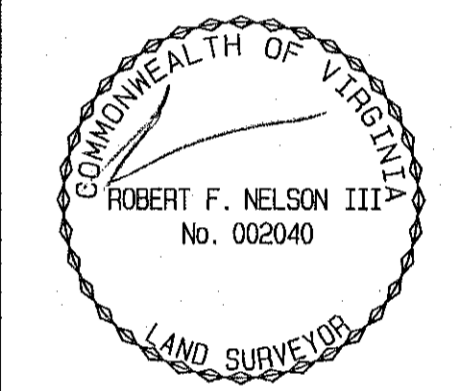
NOTE: REFERENCE STD VDOT DI-1 DETAIL FOR ALL CONCRETE AND REBAR SPECIFICATIONS



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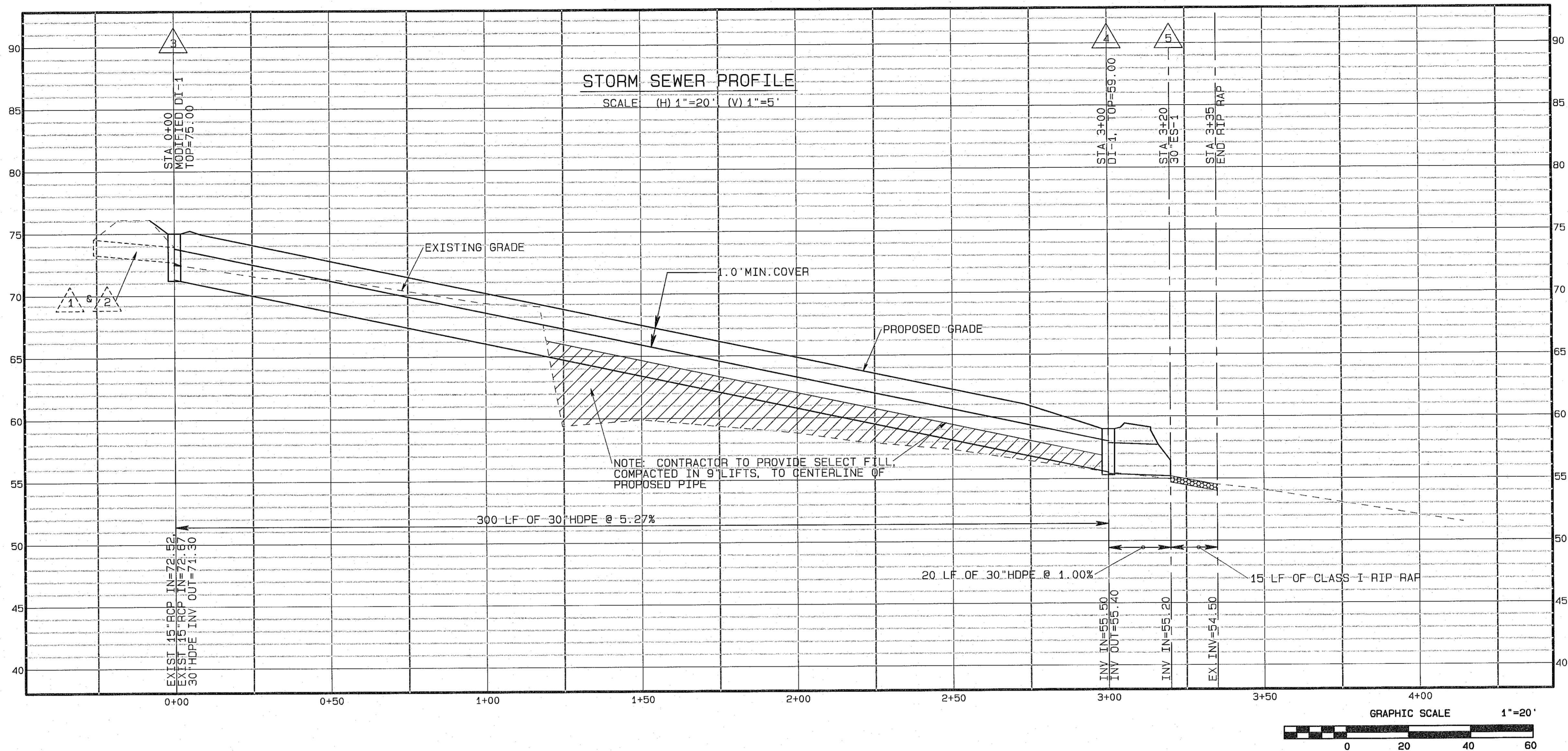


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**PROPOSED OFF-SITE DRAINAGE REPAIRS**  
HEATHSVILLE MAGISTERIAL DIST., NORTHBERLAND COUNTY, VIRGINIA

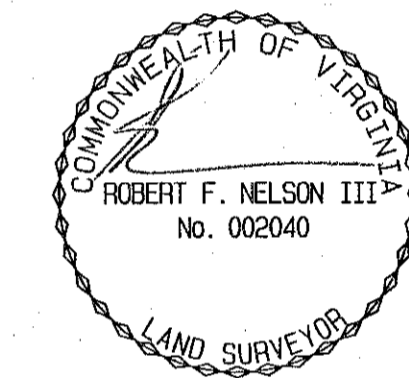
**GRADING, DRAINAGE & PHASE II ESC PLAN**

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

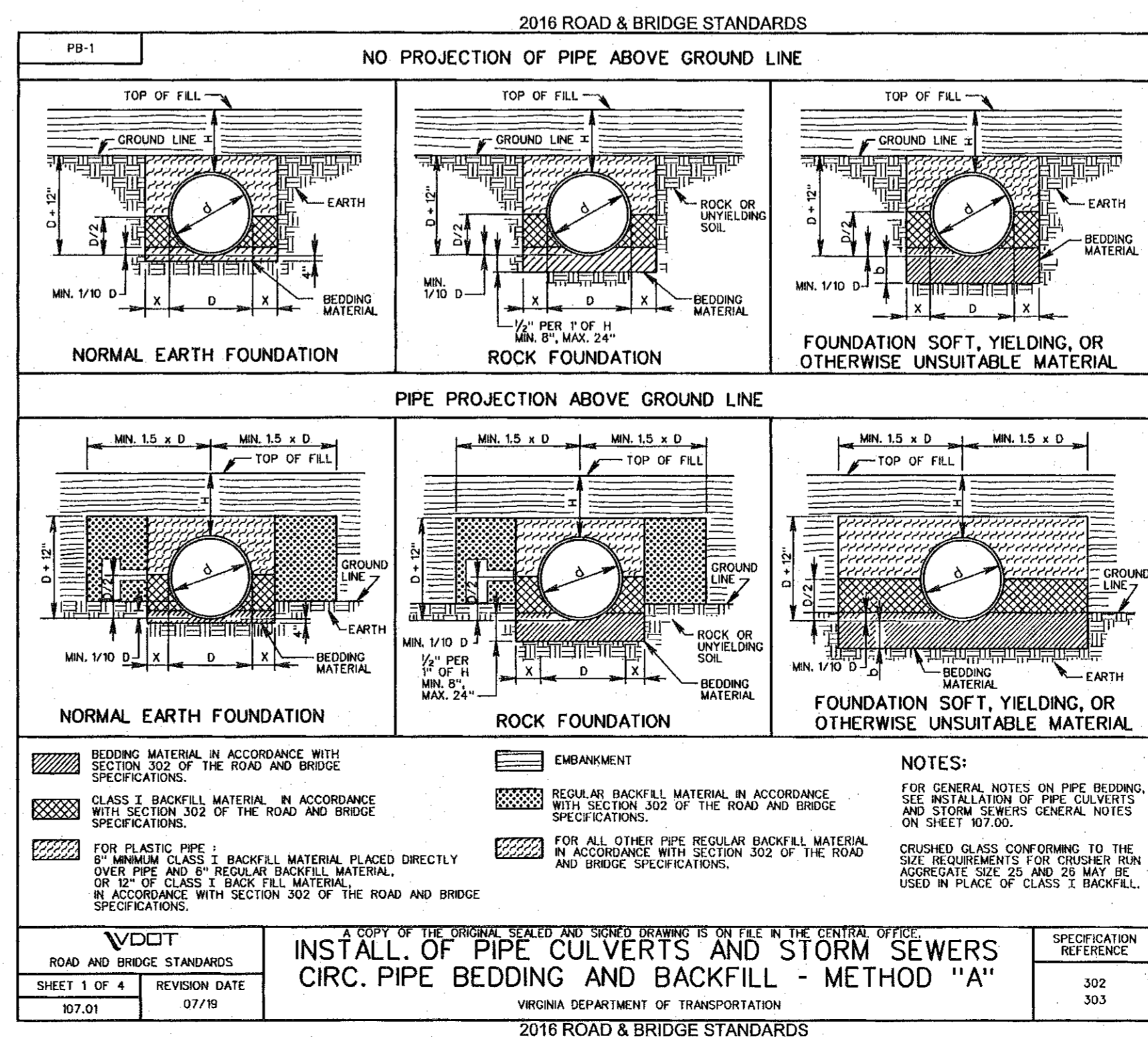
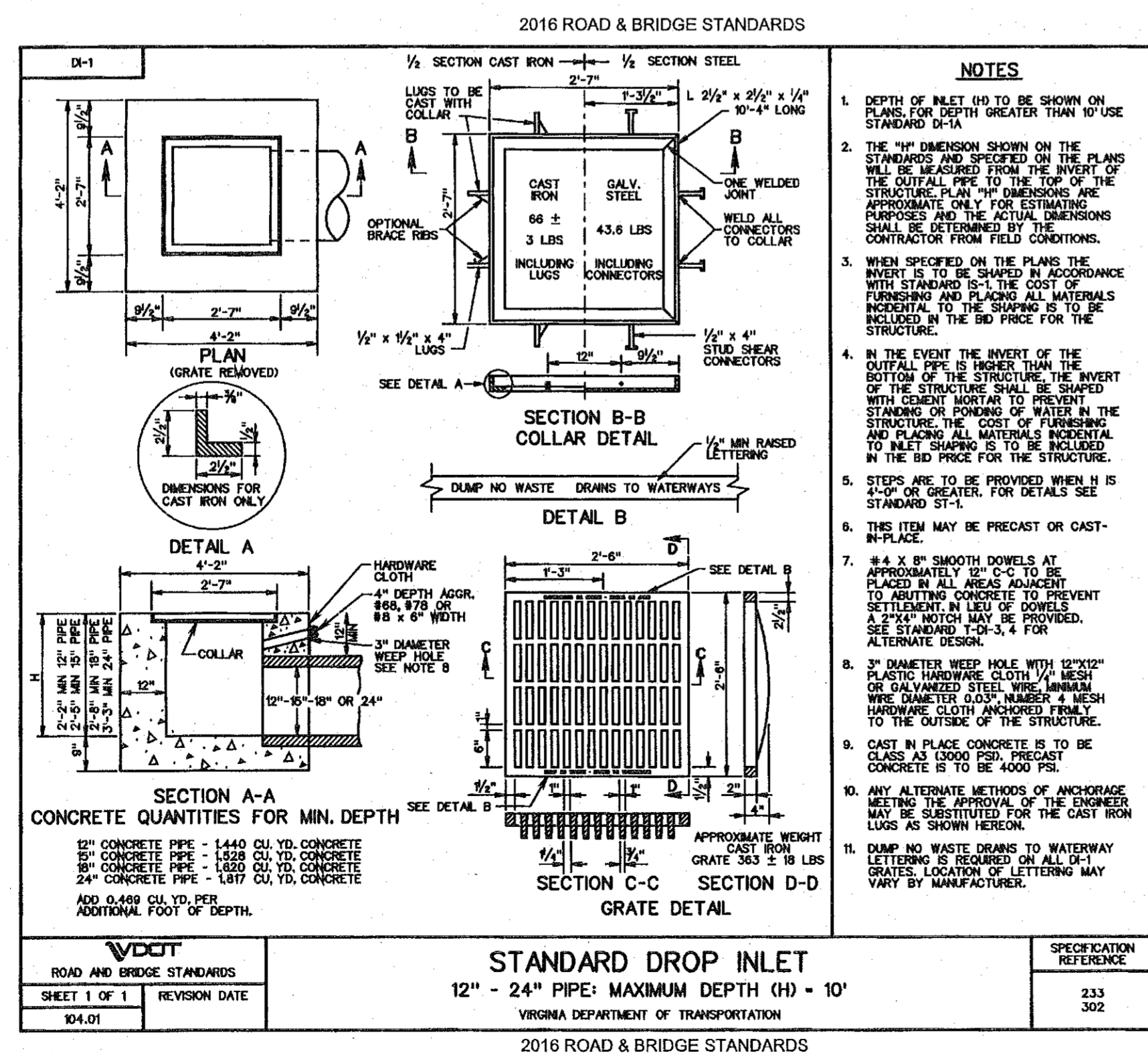


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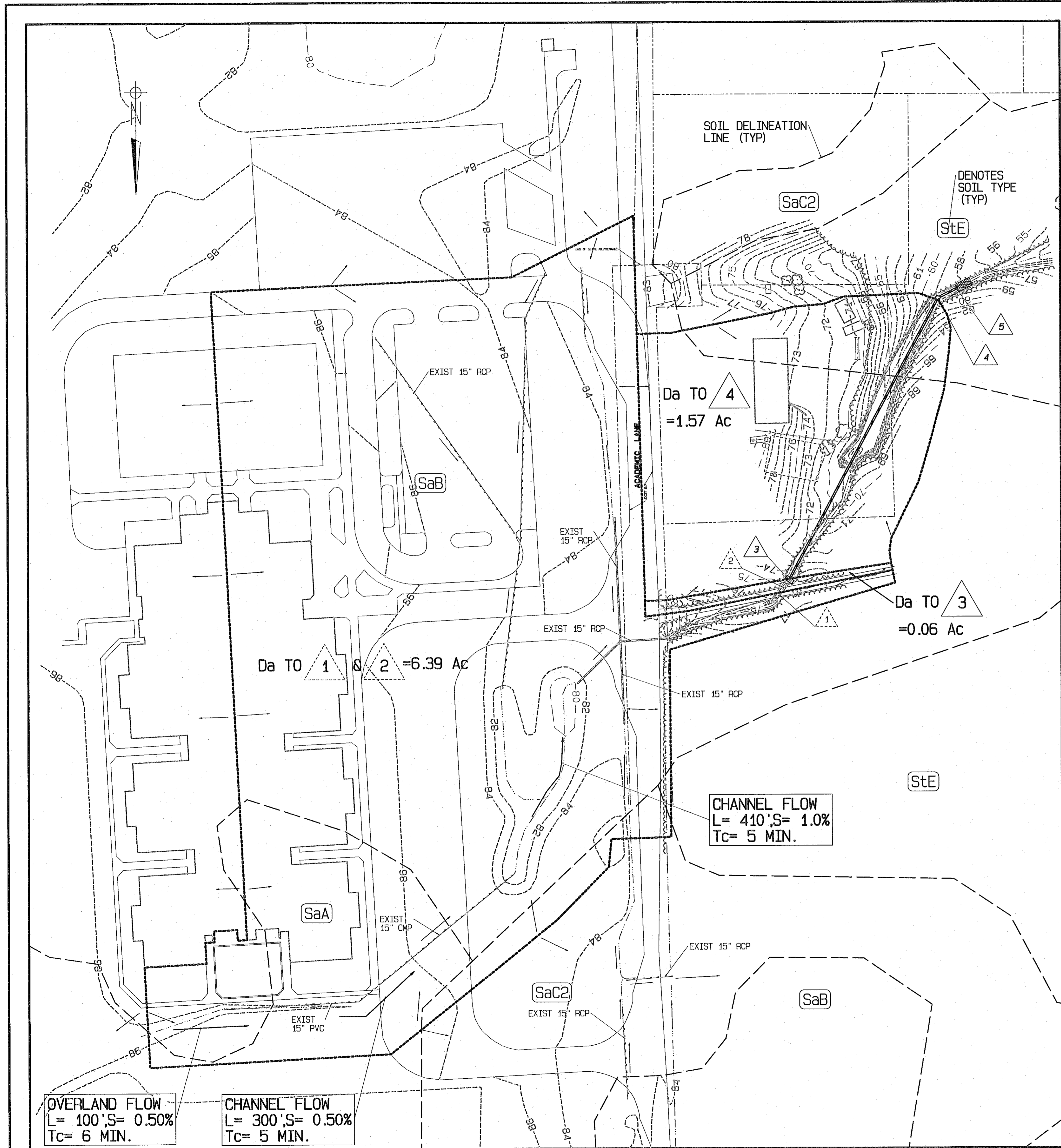


**NORTHUMBERLAND ELEMENTARY SCHOOL**  
**PROPOSED OFF-SITE DRAINAGE REPAIRS**  
HEATHVILLE MAGISTERIAL DIST., NORTHUMBERLAND COUNTY, VIRGINIA

**STORM SEWER PROFILE AND DETAILS**

DESIGNED BY: RFN DRAWN BY: CIA CHECKED BY: RFN

SCALE: AS NOTED DATE: DEC. 10, 2019 PROJECT NO.: 19179



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  
 i<sub>2</sub> = 3.7, Q<sub>2</sub> = 14.6 CFS  
 i<sub>10</sub> = 5.0, Q<sub>10</sub> = 19.8 CFS

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

STORM SEWER DESIGN (10-YR STORM)

FROM POINT	TO POINT	AREA DRAIN "A" ACRES	RUNOFF COEFF. "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
									UPPER	LOWER							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1&2	3	6.39	0.62	3.96	3.96	16	5.0	19.81	73.82	72.52	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	22.64	55.40	55.20	20.00	0.010	30	41.12	4.61	4.34	

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COMMONWEALTH OF VIRGINIA  
 ROBERT F. NELSON III  
 No. 002040  
 LAND SURVEYOR

REVISION NO.	DATE	DESCRIPTION
1	05/26/22	PER CLIENT COMMENTS
2	7/28/22	PER CLIENT COMMENTS

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

DRAWING NO.:  
**5 of 6**

