

Northampton County Health Department
P. O. Box 248 / 7114 Lankford Highway
Nassawadox, VA 23413
(757) 442-6228
(757) 442-4307 Fax

APPENDIX G

PE Sewage Disposal System Construction Permit Letter (COV 32.1-163.6)

October 06, 2014

Chesapeake Bay Bridge & Tunnel
32386 Lankford Highway
Cape Charles, VA 23310

RE: 32442 Lankford Highway Northampton
Tax Map: 117((A))25
HDID: 14-165-0134 **Reserve:** 0% reserve area provided
System Capacity: Non-Residential, 600 gallons per day

Dear Sir:

This letter and the attached drawings, specifications and calculations dated September 29, 2014 constitute your **permit** to install a sewage disposal system on the property referenced above. Your application for a permit was submitted pursuant to §32.1-163.6 of the *Code of Virginia*, which requires the Virginia Department of Health (VDH) to accept designs for onsite sewage systems from individuals licensed as Professional Engineers (PEs). This law allows PEs to design onsite sewage systems that do not fully comply with the *Sewage Handling and Disposal Regulations* (12 VAC 5-610-10 *et seq.*) and requires VDH to accept such designs provided they comply with standard engineering practices, performance requirements set by the Board of Health, and certain horizontal setback requirements necessary to protect public health and the environment. VDH hereby recognizes that the design submitted by **Cooley, Grant Merrill, Mr., P.E.** complies with the requirements of the *Code of Virginia* and the *Regulations for Alternative Onsite Sewage Systems* and grants permission to install the system as designed in the area shown on the attached plans and specifications.

If modifications or revisions are necessary between now and when the system is constructed, please contact the PE who designed the system upon which this permit is based. Should revisions be necessary during construction, your contractor should consult with the PE. The PE is authorized to make minor adjustments in the location or design of the system provided that adequate documentation is provided to the Northampton County Health Department.

The PE that submitted the design for this permit is required by the *Sewage Handling and Disposal Regulations* to conduct a final inspection of this sewage system when it is installed and to submit an inspection report and completion statement to the Northampton County Health Department. The health department is not required to inspect the installation, but may do so at its sole discretion. The sewage system may not be placed into operation until you have obtained an Operation Permit from the Northampton County Health Department. If your PE did not submit an Operation and Maintenance Manual for review and approval with the plan package, then (s)he will be required to do so prior to issuance of an Operation Permit.

This Construction Permit is null and void if site and soil conditions are changed from those shown on your application or if conditions are changed from those shown on the attached plans and specifications. VDH may revoke or modify any permit if, at a later date, it finds that the system would threaten public health or the environment.

This permit approval has been issued in accordance with applicable regulations based on the information and materials provided at the time of application. There may be other local, state, or federal laws or regulations that apply to the proposed construction of this onsite sewage system. The owner is responsible at all times for complying with all applicable local, state, and federal laws and regulations. If you have any questions, please contact me.

This permit expires **April 6, 2016**. This permit is not transferable to another owner or location.

Sincerely,



Cathy Plant
Environmental Health Technical Specialist

C: Cooley, Grant Merrill, Mr., P.E.

WHAT YOU WILL NEED TO GET YOUR SEPTIC SYSTEM OPERATION PERMIT

- Your system must have a **satisfactory inspection** at the time of installation. This will be done by the designer of your permitted system, a private OSE or PE. Your OSE or PE must submit a copy of the inspection results, complete with an as-built diagram, to the Health Department.
- Please ensure that your contractor turns in a **Completion Statement** to the local Health Department after installation.

IF YOUR PERMIT IS FOR BOTH A SEPTIC SYSTEM AND WELL YOU WILL ALSO NEED

- Your well must have **satisfactory inspection** results after installation. Please give the Health Department several days notice to schedule this inspection before your Operation Permit will be requested.
- The Health Department must receive a copy of your **water sample test result** being negative/satisfactory for coliform bacteria. You are responsible for performing this test and ensuring the results are received at the Health Department
- Please ensure that your Well Driller submits a **Uniform Water Well Completion Statement or GW-2** to the Health Department, including documentation of a proper well abandonment if required by permit

Allow 5 business days after the last piece of documentation is received for the Operation Permit to be issued. To avoid delays, clearly label each piece of documentation with the property Tax Map number and HDID number shown above and on your construction permit. *Please note that due to the individual circumstances of your permit there may be additional required items not covered by this checklist.*

If you have any questions about any of the items on this list, please do not hesitate to contact the Northampton County Health Department at (757) 442-6228.

OSE/PE Report for:

Construction Permit Certification Letter Subdivision Approval

Property Location:
 911 Address: 32442 LANEFORD Highway City: Cape Charles
 Lot _____ Section _____ Subdivision _____
 GPIN or Tax Map # 117-A-25 Health Dept ID # 14-165-0134
 Latitude 37° 08' 00" N Longitude 75° 58' 45" W

Applicant or Client Mailing Address:
 Name: Chesapeake Bay Bridge And Tunnel District
 Street: 32386 LANEFORD Highway
 City: Cape Charles State VA Zip Code 23310

Prepared by:
 OSE Name GRANT Cooley License # 1361
 Address P.O. Box 354
 City MELFA, VA State VA Zip Code 23410
 PE Name: Charles E. Cooley License # _____
 Address P.O. Box 354
 City MELFA State VA Zip Code 23410

Date of Report 9-29-14 Date of Revision #1 _____
 OSE/PE Job # 102-0714-F0 Date of Revision #2 _____

Contents/Index of this report (e.g., Site Evaluation Summary, Soil Profile Descriptions, Site Sketch, Abbreviated Design, etc.)

<u>1 Application</u>	<u>5 DESIGN CALCULATIONS</u>
<u>2 SOIL SITE SKETCH</u>	<u>6 CONSTRUCTION SPECIFICATIONS</u>
<u>3 SOIL SUMMARY</u>	<u>7 SITE PLAN</u>
<u>4 SOIL EVALUATION</u>	<u>8 CERTIFICATION</u>

Certification Statement
 I hereby certify that the evaluations and/or designs contained herein were conducted in accordance with the Sewage Handling and Disposal Regulations (12 VAC5-610), the Private Well Regulations (12 VAC5-630) and all other applicable laws, regulations and policies implemented by the Virginia Department of Health. I further certify that I currently possess any professional license required by the laws and regulations of the Commonwealth that have been duly issued by the applicable agency charged with licensure to perform the work contained herein.

The work attached to this cover page has been conducted under an exemption to the practice of engineering, specifically the exemption in Code of Virginia Section 54.1-402.11

I recommend that a (select one): construction permit certification letter subdivision approval
 be (select one) issued denied .

OSE/PE Signature [Signature] Date 9-29-14

Commonwealth of Virginia

Application for a Sewage Disposal System Construction Permit

Type of sewage system: Repair X (VDH Use) Date _____

Northampton County Health Department Tax Map # 117-A-25

Health Department ID # 14-165-0134

To Be Completed By The Applicant

Owner Chesapeake Bay Bridge and Tunnel District Address 32386 Lankford Highway Phone 757-331-2960
c/o Richard Denniston Cape Charles, VA 23310

Agent Grant M. Cooley Address P.O. Box 354 Phone 757 787 2773
AOSE#1361 Meifa VA 23410

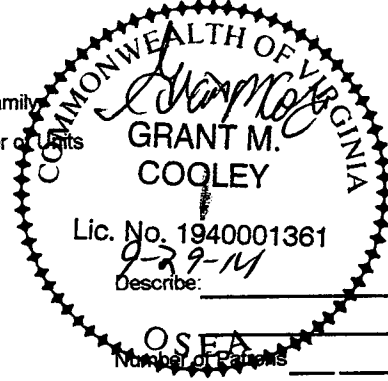
Directions to Property: Site is the Maintenance Building of the Chesapeake Bay Bridge and Tunnel District - 32442 Lankford Highway- on the west side of U.S. 13 at the south toll plaza.

Subdivision _____ Section _____ Block _____ Lot _____

Other Property Identification western system at Maint. Bldg Tax Map No. 117-A-25

Dimension/Size of Lot/Property _____

Building/facility	_____ New	<u>X</u> Existing	
Intermittent Use	_____ Yes	<u>X</u> No	If yes, describe _____
Residential Use	_____ Yes	<u>X</u> No	
Termite Treatment	<u>X</u> Yes	_____ No	
	_____ Single Family	_____ Multi-family	
	_____ Number of bedrooms	<u>1</u> Number of Units	
Basement	_____ Yes	<u>X</u> No	
Fixtures in Basement	_____ Yes	<u>X</u> No	
Commercial Use	<u>X</u> Yes	_____ No	
Commercial Wastewater	_____ Yes	<u>X</u> No	



If yes, give volumes and describe previously permitted for 600 gpd (HDID#165-90-0326)

Proposed Sewage Disposal Method:

Onsite Sewage Disposal System: X Septic Tank & Drainfield _____ LPD _____ Mound _____ Other*

Water Supply:

X Public _____ New x Existing
 _____ Private _____ New _____ Existing

Describe: Existing Deep well

The property lines, building location, and sewage disposal system site are clearly marked and the property is sufficiently visible to see the topography. I give permission to the Department to enter onto the property described for the purpose of processing this application.

Grant M. Cooley
 Signature of Owner/Agent

9-29-14
 Date

SITE SKETCH - REPAIR

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT
32442 LANKFORD HWY. - MAINTENANCE BLDG.

(WESTERN SYSTEM NORTH OF MAINTENANCE BLDG.)

SCALE: 1" = 100'

SLOPE OVER DISPOSAL AREA = 1-2%

PERC. RATE = 25-30 MPI

NORTHWEST SIDE OF MAINTENANCE BLDG.

20-30 EMPLOYEES @ 20 GPD = 600 GPD

AREA REQUIRED = 948 SQ.FT.

DRAINFIELD REPAIR DESIGN:

5 LINES @ 65' L X 3' WIDE, 9' D.C. = 975 SQ.FT.

INSTALL DRAINLINES @ 50' DEPTH

INSTALL NEW 6 PORT D-BOX

INSTALL NEW 1250 GALLON S.T.

EXISTING 1000 GALLON S.T. TO BE ABANDONED

(PUMP, CRUSH, FILL)

EXISTING DEEP WELL

e.p. (TYP.)

OPEN

EXISTING DEEP WELL

WOODED

DRAINFIELD:
5 LINES @ 65' L
3' W, 9' D.C.
= 975 SQFT.
INSTALL @ 50'

NEW 6 PORT D-BOX

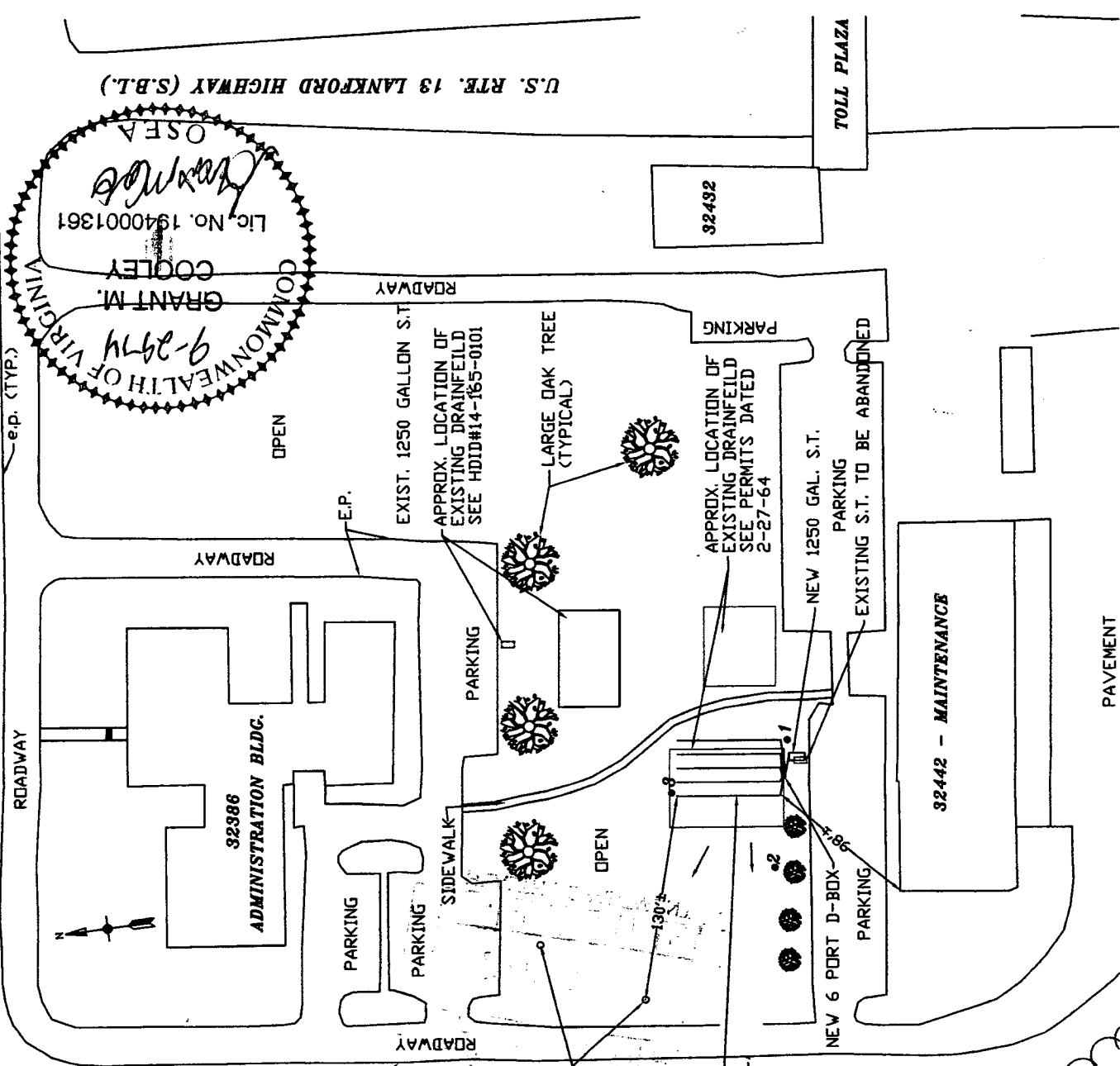
NEW 1250 GAL. S.T.

EXISTING S.T. TO BE ABANDONED

PARKING

32442 - MAINTENANCE

PAVEMENT



APPROX. LOCATION OF
EXISTING DRAINFIELD
SEE HDID#165-13-0082

e.p. (TYP.)

COMMONWEALTH OF VIRGINIA

Lic. No. 1940001361

GRANT M.
COOLEY

OPEN

E.P.

ROADWAY

EXIST. 1250 GALLON S.T.

APPROX. LOCATION OF
EXISTING DRAINFIELD
SEE HDID#14-165-0101

LARGE OAK TREE
(TYPICAL)

APPROX. LOCATION OF
EXISTING DRAINFIELD
SEE PERMITS DATED
2-27-64

NEW 1250 GAL. S.T.
PARKING

EXISTING S.T. TO BE ABANDONED

NEW 6 PORT D-BOX

PARKING

32442 - MAINTENANCE

PAVEMENT

U.S. RTE. 13 LANKFORD HIGHWAY (S.B.T.)

TOLL PLAZA

32432

Commonwealth of Virginia Soil Summary Report

Health Department ID# 14-165-0134 (VDH Use)

GENERAL INFORMATION

Date 9/18/2014 Submitted to: Northampton County Health Department

Applicant Chesapeake Bay Bridge and Tunnel District Address P.O. Box 15 Phone 442-5555
c/o Bundick Well & Pump, Co. Painter, Va. 23420

Owner Chesapeake Bay Bridge and Tunnel District Address 32386 Lankford Highway Phone 757-331-2960
c/o Richard Denniston Capeville, VA

Directions to Property: 32442 Lankford Highway - Maintenance Building -

Subdivision _____ Section _____ Block _____ Lot _____

Other Property Identification west side behind maintenance bldg. Tax Map No. 117-A-25

SOIL INFORMATION SUMMARY

1. Position in landscape satisfactory: Yes No Describe: open, little slope over d.f. area

2. Slope: 1-2%

3. Depth to rock or impervious strata: _____ Max _____ Min None

4. Depth to apparent seasonal water table: No _____ Yes _____ Inches

5. Free water present: No _____ Yes _____ Range (inches)

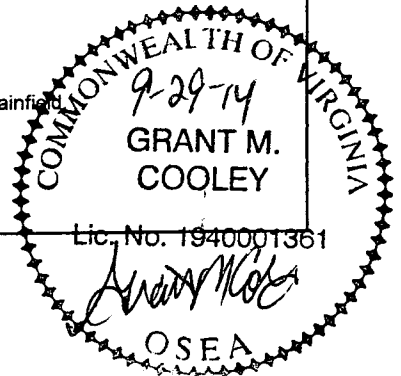
6. Soil percolation rate estimated: _____ No Yes Texture Group II Rate 25-30 mpi

7. Percolation test performed: No _____ Yes Measured Rate _____ mpi

Site Approved
 Site Disapproved

Drainlines to be placed at: 50" inches depth on site designated on permit.

- Reason for rejection:
- Position in landscape subject to flooding or periodic saturation.
 - Insufficient depth of suitable soil over hard rock.
 - Insufficient depth of suitable soil over seasonal/apparent seasonal water table.
 - Rates of absorption too slow.
 - Insufficient area of acceptable soil for required Primary and/or Reserve Area Drainfield.
 - Proposed system too close to well.
 - Other:



Date of Evaluation 13-Jul-14

Profile Description
SOIL EVALUATION REPORT

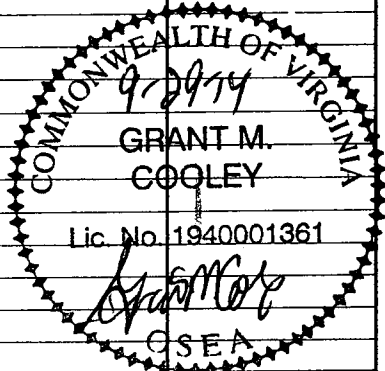
Health Department Identification No. 14-165-0134

CBBT maintenance Building 32442 Lankford Hwy. west side - drainfield repair 4 of 8

Profile holes and sketch of the area investigated including all structural features eg., sewage disposal systems, wells, etc. Within 100' of the site is shown on

- See construction permit See application sketch See attached site plan

Hole #	Horizon	Depth	Description of color, texture, etc.	Texture Group
1	Ap	0"-10"	10YR 4/6 Dark Yellowish Brown Loamy Sand	I
	BC	10"-22"	10YR 5/6 Yellowish Brown Loamy Sand - some gravel - fill	I
	Bt1	22"-32"	10YR 5/6 Yellowish Brown Fine Sandy Loam w/ 10yr 6/3 redox - fill	II
	Bt2	32-44	10YR 5/6 Yellowish Brown Sandy Loam	II
	C1	44-48	10YR 6/4 Light Yellowish Brown Sand	I
	C2	48-54	10YR 6/6 Brownish Yelliow Sand	I
	C3	54-62	10YR 5/6 Yellowish Brown Sand	I
2	Ap	0-8	10YR 4/6 Dark Yellowish Brown Loamy Sand	I
	Bt1	8"-30"	10YR 5/6 Yellowish Brown Sandy Loam - some gravel - fill	II
	BC	30"-36"	10YR 5/6 Yellowish Brown Loamy Sand - some gravel - fill	I
	C1	36"-46"	10YR 5/6 Yellowish Brown Sand	I
	C2	46"-52"	10YR 6/6 Brownish Yelliow Sand	I
	C3	52"-72"	2.5Y 6/4 Light Yellowish Brown Sand	I
	3	Ap	0-8	10YR 4/6 Dark Yellowish Brown Loamy Sand
Bt1		8"-35"	10YR 5/6 Yellowish Brown Sandy Loam - mixed soil	II
Bt2		35"-42"	10YR 5/6 Yellowish Brown Sandy Loam	II
BC		42"-48'	10YR 5/6 Yellowish Brown Loamy Sand	I
		48"	auger refusal at drainfield gravel	



Remarks: site has up to 36" of fill over original ground in area of drainfield and repair - fill is consistently uniform in color

Commonwealth of Virginia Design Calculations

Health Department ID# 14-165-0134 (VDH Use)

PROPERTY IDENTIFICATION

Name of property / site: Chesapeake Bay Bridge and Tunnel District- 32442 Lankford Hwy.
 Subdivision _____ Section _____ Block _____ Lot _____
 Other Property Identification maintenance building - west side system Tax Map No. 117-A-25

DESIGN BASIS

A. Estimated percolation rate: 25-30 mpi
 B. Trench bottom square footage required: _____ (based on x Gravity or _____ LPD)
 Per bedroom: _____
 Per 100-gallons: 158
 C. Number of bedrooms: _____ (at _____ gallons/bedroom) Total flow from bedrooms: _____ gpd
 Other: 20-30 (at 20 gpd) Total flows from other sources: 600 gpd
employees (at _____ gpd) Total Sewage Flows = 600 gpd
 _____ (at _____ gpd)

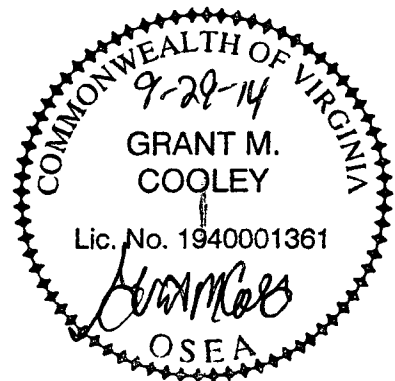
AREA CALCULATIONS

D. Length of trenches: 65 ft (length of available area 65 ft)
 E. Width of trenches: 3 ft
 F. Number of trenches: 5
 G. Center-to-center spacing: 9 ft
 H. Required width of drainfield: 39 ft (width of available area 39 ft)
 I. Total area required: 948 sf
 J. Square footage in design: 975 sf

K. Is a reserve area required? Yes x No: _____ **Drainfield for repair**

Size: _____ % Area provided: _____

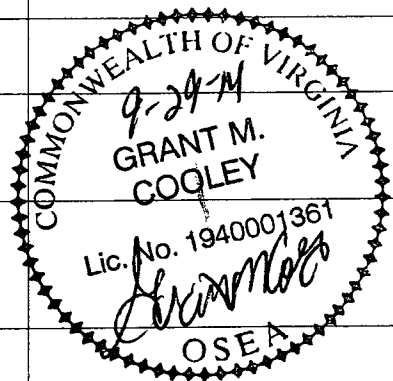
Type: **TL1 Gravity sewage system**



Sewage Disposal System Construction Specifications

General Information

Northampton County Health Department		ID #	14-165 <u>0134</u>
		Map reference	117-A-25
New <input type="checkbox"/>	Repair <input checked="" type="checkbox"/>	Expanded <input type="checkbox"/>	
Owner	<u>Chesapeake Bay Bridge and Tunnel District</u>		Telephone <u>757-331-2960</u>
Address	<u>P.O. Box 761 Warrington, PA 18976</u>		
For a Type	<u>I</u> Sewage disposal system which is to be constructed on/at <u>32442 Lankford Highway - maintenance Bldg. - west system</u>		
Subdivision	Section	Block	Lot
Actual or estimated water use:	<u>600 gpd</u>		
			NOTES
Water supply, existing: (describe) <u>existing deep wells</u>			
To be installed: class <u> </u> cased <u> </u> grouted <u> </u>			
Building Sewer: <u>4"</u> I.D. PVC Schedule 40, or equivalent Slope <u>1.25</u> " per 10' (minimum). <input type="checkbox"/> Other: <u> </u>			
Septic tank: Capacity <u>1250</u> gallons (minimum). <input type="checkbox"/> Other: <u>new 1250 gallon septic tank</u>			
Inlet-Outlet structures: PVC Schedule 40, 4" tees or equivalent <input type="checkbox"/> Other: <u> </u>			
Pump and pump station: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> describe and show design: If yes: <u> </u>			
Gravity mains: 3" or larger I.D., minimum 6" fall per 100', 1500 lb. Crush strength or eq. <input type="checkbox"/> Other: <u> </u>			
Distribution Box: Precast concrete with <u>6</u> ports. <input type="checkbox"/> Other: <u> </u>			
Header lines: Material: 4" I.D. 1500 lb. Crush strength plastic or equivalent from distribution box to 2' into trench. Slope <u>2"</u> minimum <input type="checkbox"/> Other: <u> </u>			
Percolation lines: Gravity 4" plastic 1000 lb. Per foot bearing load or equivalent, slope 2"-4" (min. max) per 100'. <input type="checkbox"/> Other: <u> </u>			
Absorption trenches:			
Depth of aggregate:		<u>13"</u>	Trench length: <u>65'</u>
Square feet required:		<u>975</u>	Trench width: <u>3'</u>
Depth from ground surface to bottom of trench:		<u>50"</u>	Number of trenches: <u>5</u>



Inspected by: _____

Date: _____

14-165-0134

SITE PLAN - REPAIR

SHEET 7 OF 8

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT 32442 LANKFORD HWY. - MAINTENANCE BLDG. (WESTERN SYSTEM NORTH OF MAINTENANCE BLDG.)

SCALE: 1" = 100'

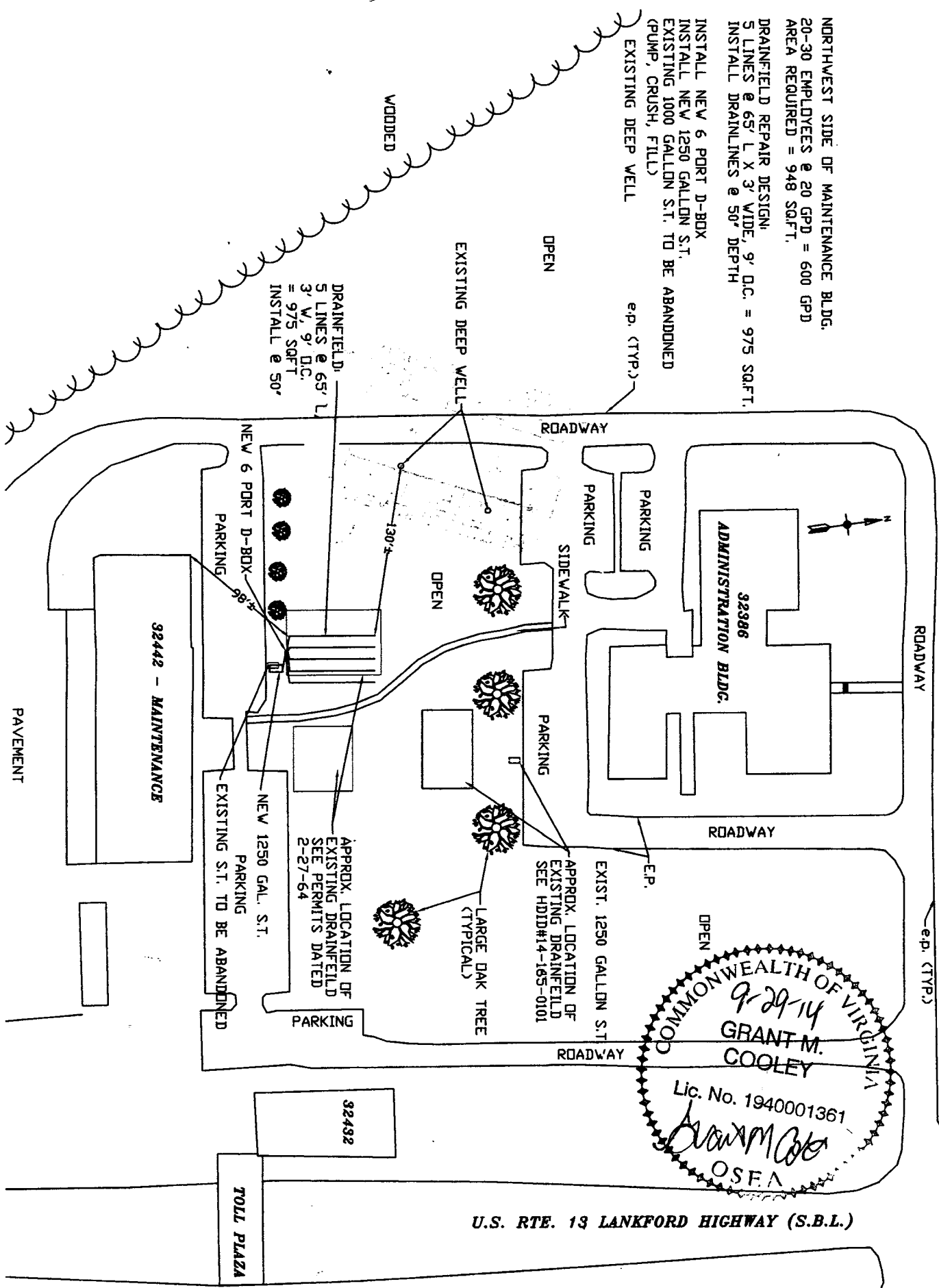
APPROX. LOCATION OF
EXISTING DRAINFIELD
SEE HDD#165-13-0082

NORTHWEST SIDE OF MAINTENANCE BLDG.
20-30 EMPLOYEES @ 20 GPD = 600 GPD
AREA REQUIRED = 948 SQ.FT.

DRAINFIELD REPAIR DESIGN:
5 LINES @ 65' L X 3' WIDE, 9' D.C. = 975 SQ.FT.
INSTALL DRAINLINES @ 50' DEPTH

INSTALL NEW 6 PORT D-BOX
INSTALL NEW 1250 GALLON S.T.
EXISTING 1000 GALLON S.T. TO BE ABANDONED
(PUMP, CRUSH, FILL)
EXISTING DEEP WELL

DRAINFIELD:
5 LINES @ 65' L
3' W, 9' D.C.
= 975 SQ.FT.
INSTALL @ 50'



U.S. RTE. 13 LANKFORD HIGHWAY (S.B.L.)

PAVEMENT

TOLL PLAZA

Commonwealth of Virginia Certification Statement

Health Department ID# 14-165-0134 (VDH Use)

PROPERTY IDENTIFICATION

County: Northampton County Date: _____

Name of property / site: Chesapeake Bay Bridge and Tunnel District

Subdivision _____ Section _____ Block _____ Lot _____

Other Property Identification 32442 Lankford Highway-Maintenance Bldg. Tax Map No. 117-A-25

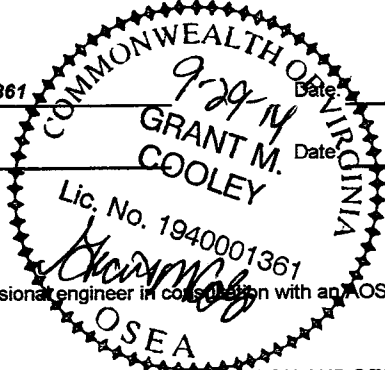
Submitted by: Grant M. Cooley AOSE #1361

CERTIFICATION OF WORK

This is to certify according to S32.1-163.5 of the *Code of Virginia* that work submitted for the referred property is in accordance to and complies with the *Sewage Handling and Disposal Regulations* of the Virginia Department of Health. I recommend this lot be approved for a Certification Letter.

AOSE Grant M. Cooley AOSE# 1361 Date: 9-29-14

Soil Consultant _____ Date: _____



If the submission contains a certification by a professional engineer in consultation with an AOSE, the following statement shall be signed and sealed:

CERTIFICATION OF EVALUATION AND DESIGN

I hereby certify that the evaluations and designs contained herein (refer to subdivision, lot, etc.) were conducted in accordance with the *Sewage Handling and Disposal Regulations* (12 VAC 5-610-10 et seq., the "Regulations") and the policies of the Virginia Department of Health for implementation of those *Regulations*. Furthermore, I certify that the evaluations and designs comply with the minimum requirements of the *Regulations*.

I recommend a permit / certification letter / subdivision approval be approved.

Licensed PE: Charles E. Cooley Date: 9/29/14

SEAL

