CERTIFICATE OF AUTHENTICITY

THIS IS TO CERTIFY THAT THE FOLLOWING ELECTRONIC RECORDS ARE TRUE AND ACCURATE REPRODUCTIONS OF THE ORIGINAL RECORDS OF JAMES CITY COUNTY GENERAL SERVICES DEPARTMENT- STORMWATER DIVISION; WERE SCANNED IN THE REGULAR COURSE OF BUSINESS PURSUANT TO GUIDELINES ESTABLISHED BY THE LIBRARY OF VIRGINIA AND ARCHIVES; AND HAVE BEEN VERIFIED IN THE CUSTODY OF THE INDIVIDUAL LISTED BELOW.

BMP NUMBER: **PC101**

DATE VERIFIED: **July 10, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: March 13, 2010

TO: Michael J. Gillis, Virginia Correctional Enterprises Document Management Services

FROM: Jo Anna Ripley, Stormwater

PO: 270712

RE: Files Approved for Scanning

General File ID or BMP ID: PC101

PIN: 3230100001

Subdivision, Tract, Business or Owner Name (if known): Williamsburg James City County Schools

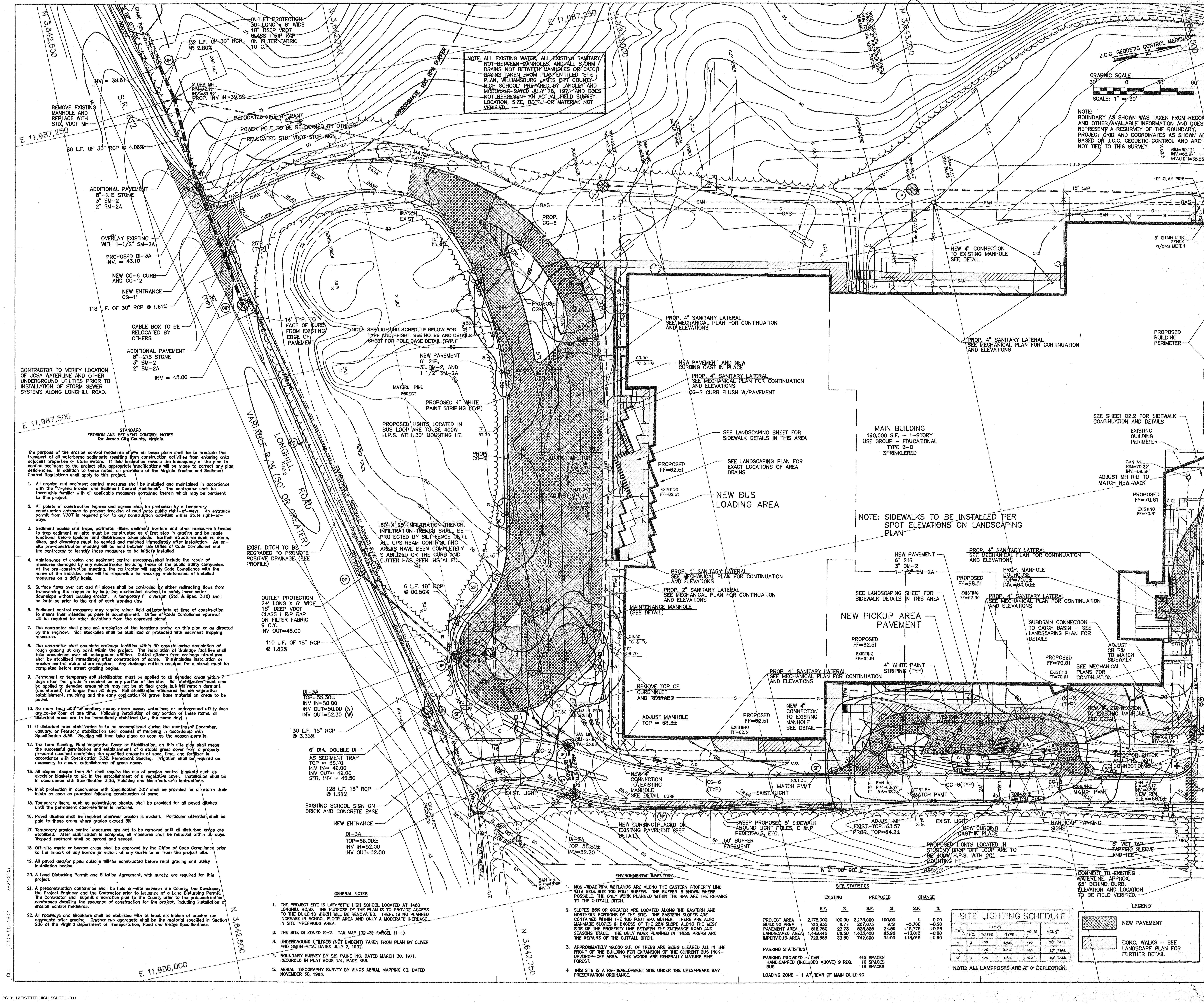
Property Description: Lafayette High School

Site Address: 4460 Longhill Road

(For internal use only) **Box** 2 **Drawer:** 2

Agreements: (in file as of scan date) **N** **Book or Doc#:** **Page:**

Comments



STANDARD
EROSION AND SEDIMENT CONTROL NOTES
for James City County, Virginia

The purpose of the erosion control measures shown on these plans shall be to preclude the transport of all waterborne sediments resulting from construction activities from entering onto adjacent properties or State waters. If field inspection reveals the inadequacy of the plan to confine sediment to the project site, appropriate modifications will be made to correct any plan deficiencies. In addition to these notes, all provisions of the Virginia Erosion and Sediment Control Regulations shall apply to this project.

1. All erosion and sediment control measures shall be installed and maintained in accordance with the "Virginia Erosion and Sediment Control Handbook". The contractor shall be thoroughly familiar with all applicable measures contained therein which may be pertinent to this project.
2. All points of construction ingress and egress shall be protected by a temporary construction entrance to prevent tracking of mud onto public right-of-ways. An entrance permit from VDOT is required prior to any construction activities within State right-of-ways.
3. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment on-site must be constructed as a first step in grading and be made functional before upslope land disturbance takes place. Earthen structures such as dams, dikes, and diversions must be seeded and mulched immediately after installation. An on-site pre-construction meeting will be held between the Office of Code Compliance and the contractor to identify those measures to be initially installed.
4. Maintenance of erosion and sediment control measures shall include the repair of measures damaged by any subcontractor including those of the public utility companies. At the pre-construction meeting, the contractor will supply Code Compliance with the name of the individual who will be responsible for ensuring maintenance of installed measures on a daily basis.
5. Surface flows over cut and fill slopes shall be controlled by either redirecting flows from transversing the slopes or by installing mechanical devices to safely lower water downslope without causing erosion. A temporary fill diversion (Std. & Spec. 3.10) shall be installed prior to the end of each working day.
6. Sediment control measures may require minor field adjustments at time of construction to insure their intended purpose is accomplished. Office of Code Compliance approval will be required for other deviations from the approved plans.
7. The contractor shall place soil stockpiles at the locations shown on this plan or as directed by the engineer. Soil stockpiles shall be stabilized or protected with sediment trapping measures.
8. The contractor shall complete drainage facilities within 30 days following completion of rough grading at any point within the project. The installation of drainage facilities shall take precedence over all underground utilities. Outfall ditches from drainage structures shall be stabilized immediately after construction of same. This includes installation of erosion control stone where required. Any drainage outfalls required for a street must be completed before street grading begins.
9. Permanent or temporary soil stabilization must be applied to all denuded areas within 7 days after final grade is reached on any portion of the site. Soil stabilization must also be applied to denuded areas which may not be at final grade but will remain dormant (undisturbed) for longer than 30 days. Soil stabilization measures include vegetative establishment, mulching and the early application of gravel base material on areas to be paved.
10. No more than 300' of sanitary sewer, storm sewer, waterlines, or underground utility lines are to be open at one time. Following installation of any portion of these items, all disturbed areas are to be immediately stabilized (i.e., the same day).
11. If disturbed area stabilization is to be accomplished during the months of December, January, or February, stabilization shall consist of mulching in accordance with Specification 3.35. Seeding will then take place as soon as the season permits.
12. The term Seeding, Final Vegetative Cover or Stabilization, on this site plan shall mean the successful germination and establishment of a stable grass cover from a properly prepared seedbed containing the specified amounts of seed, lime, and fertilizer in accordance with Specification 3.32, Permanent Seeding. Irrigation shall be required as necessary to ensure establishment of grass cover.
13. All slopes steeper than 3:1 shall require the use of erosion control blankets such as excelsior blankets to aid in the establishment of a vegetative cover. Installation shall be in accordance with Specification 3.35, Mulching and Manufacturer's Instructions.
14. Inlet protection in accordance with Specification 3.07 shall be provided for all storm drain inlets as soon as practical following construction of same.
15. Temporary liners, such as polyethylene sheets, shall be provided for all paved ditches until the permanent concrete liner is installed.
16. Paved ditches shall be required wherever erosion is evident. Particular attention shall be paid to those areas where grades exceed 3%.
17. Temporary erosion control measures are not to be removed until all disturbed areas are stabilized. After stabilization is complete, all measures shall be removed within 30 days. Trapped sediment shall be spread and seeded.
18. Off-site waste or borrow areas shall be approved by the Office of Code Compliance prior to the import of any borrow or export of any waste to or from the project site.
19. All paved and/or piped outfalls will be constructed before road grading and utility installation begins.
20. A Land Disturbing Permit and Siltation Agreement, with surety, are required for this project.
21. A preconstruction conference shall be held on-site between the County, the Developer, the Project Engineer and the Contractor prior to issuance of a Land Disturbing Permit. The Contractor shall submit a narrative plan to the County prior to the preconstruction conference detailing the sequence of construction for the project, including installation of erosion control measures.
22. All roadways and shoulders shall be stabilized with at least six inches of crusher run aggregate after grading. Crusher run aggregate shall be the material specified in Section 206 of the Virginia Department of Transportation, Road and Bridge Specifications.

GENERAL NOTES

1. THE PROJECT SITE IS LAFAYETTE HIGH SCHOOL LOCATED AT 4460 LONGHILL ROAD. THE PURPOSE OF THE PLAN IS TO PROVIDE ACCESS TO THE BUILDING WHICH WILL BE RENOVATED. THERE IS NO PLANNED INCREASE IN SCHOOL FLOOR AREA AND ONLY A MODERATE INCREASE IN SITE IMPERVIOUS AREA.
2. THE SITE IS ZONED R-2. TAX MAP (32-3) PARCEL (1-1).
3. UNDERGROUND UTILITIES (NOT EVIDENT) TAKEN FROM PLAN BY OLIVER AND SMITH A.I.A. DATED JULY 7, 1992.
4. BOUNDARY SURVEY BY E.E. PAINE INC. DATED MARCH 30, 1971, RECORDED IN PLAT BOOK 131, PAGE 486.
5. AERIAL TOPOGRAPHY SURVEY BY WINGS AERIAL MAPPING CO. DATED NOVEMBER 30, 1993.

ENVIRONMENTAL INVENTORY

1. NON-TIDAL RPA WETLANDS ARE ALONG THE EASTERN PROPERTY LINE WITH REQUISITE 100 FOOT BUFFER. THE BUFFER IS SHOWN WHERE POSSIBLE. THE ONLY WORK PLANNED WITHIN THE RPA ARE THE REPAIRS TO THE OUTFALL DITCH.
2. SLOPES 25% OR GREATER ARE LOCATED ALONG THE EASTERN AND NORTHERN PORTIONS OF THE SITE. THE EASTERN SLOPES ARE CONTAINED WITHIN THE 100 FOOT RPA BUFFER. THERE ARE ALSO MANMADE SLOPES IN EXCESS OF THE 25% SLOPE ALONG THE WEST SIDE OF THE PROPERTY LINE BETWEEN THE ENTRANCE ROAD AND SEASONS TRACE. THE ONLY WORK PLANNED IN THESE AREAS ARE THE REPAIRS OF THE OUTFALL DITCH.
3. APPROXIMATELY 19,000 S.F. OF TREES ARE BEING CLEARED ALL IN THE FRONT OF THE BUILDING FOR EXPANSION OF THE CURRENT BUS PICK-UP/DROP-OFF AREA. THE WOODS ARE GENERALLY MATURE PINE FOREST.
4. THIS SITE IS A RE-DEVELOPMENT SITE UNDER THE CHESAPEAKE BAY PRESERVATION ORDINANCE.

SITE STATISTICS

	EXISTING S.F.	EXISTING %	PROPOSED S.F.	PROPOSED %	CHANGE S.F.	CHANGE %
PROJECT AREA	2,178,000	100.00	2,178,000	100.00	0	0.00
BUILDING AREA	212,835	9.77	207,075	9.51	-5,760	-0.26
PAVEMENT AREA	516,750	23.73	535,525	24.59	+18,775	+0.86
LANDSCAPED AREA	1,448,415	66.50	1,435,400	65.90	-13,015	-0.60
IMPERVIOUS AREA	729,585	33.50	742,600	34.00	+13,015	+0.60

PARKING STATISTICS

PARKING PROVIDED - CAR 415 SPACES
HANDICAPPED (INCLUDED ABOVE) 9 REQ. 10 SPACES
BUS 18 SPACES

LOADING ZONE - 1 AT REAR OF MAIN BUILDING

SITE LIGHTING SCHEDULE

TYPE	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	VOLTS	MOUNT
A	2	400	H.P.S.	480	20' TALL
B	1	400	H.P.S.	480	30' TALL
C	2	400	H.P.S.	480	30' TALL

NOTE: ALL LAMPPOSTS ARE AT 0° DEFLECTION.

LEGEND

NEW PAVEMENT

CONC. WALKS - SEE LANDSCAPE PLAN FOR FURTHER DETAIL

BOND
COMET
WESTMORELAND
HINER

207 West Broad Street
Richmond, Virginia 23220
804 788-4774

ALTERATIONS TO

LAFAYETTE HIGH SCHOOL

WILLIAMSBURG - JAMES CITY COUNTY, VA

STATE PROJECT # 131-9E

© Bond Comet Westmoreland + Hiner Architects, Inc.
Material included herein is covered by copyright. Use of this work in whole or in part is forbidden without the expressed written consent of Bond Comet Westmoreland + Hiner Architects, Inc.

PROJECT NUMBER: 9346

PROJECT MANAGER: RAC

DRAWN BY: EAW

ISSUE DATE: 23 AUGUST 1994

REVISIONS:
1. REVISED PER AGENCY COMMENTS 3/9/95 EMG
2. **REVISED PER J.C.C. COMMENTS 4/17/95 EMG**

COMMONWEALTH OF VIRGINIA RICHARD A. COSTELLO CERTIFICATE NO. 013250 CERTIFIED PROFESSIONAL ENGINEER

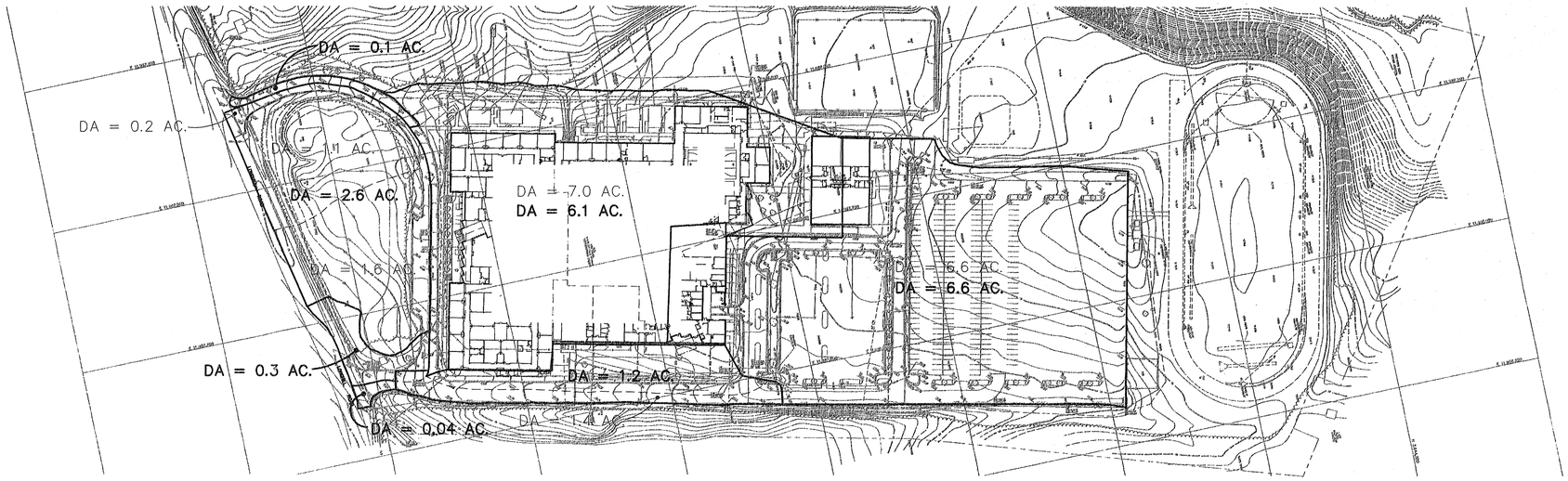
AES CONSULTING ENGINEERS

SHEET TITLE: SITE, GRADING, AND DRAINAGE PLAN SOUTH SIDE

SHEET NUMBER: C2.1

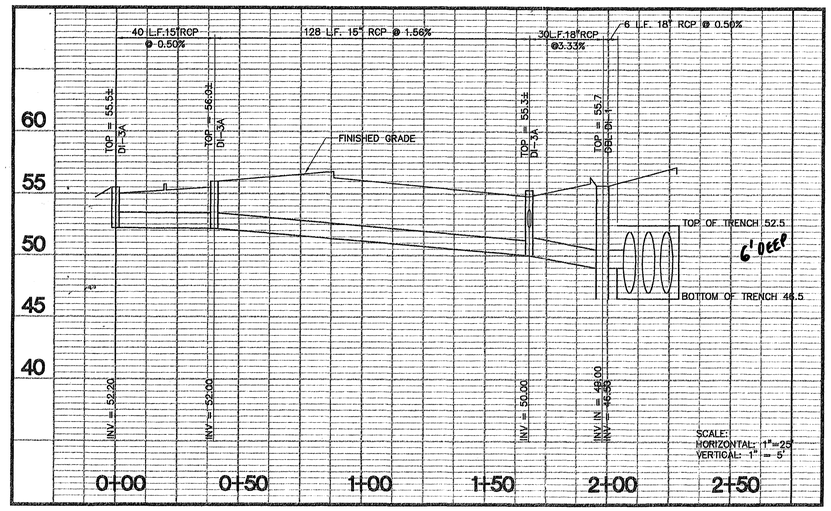
CLJ 03.09.95-16:01 79210C03

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

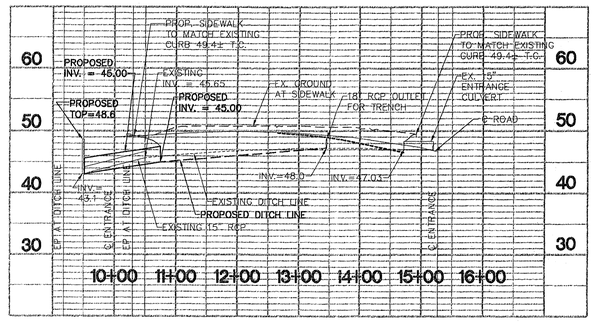


LEGEND

EXISTING DRAINAGE AREA	DA = 7.0 AC.
PROPOSED DRAINAGE AREA	DA = 6.1 AC.
EXISTING DRAINAGE AREA LIMITS	- - - - - - - -
PROPOSED DRAINAGE AREA LIMITS	————



STORM WATER PROFILE
SCALE: HORIZ.: 1" = 25'
VERT.: 1" = 5'



IMPROVEMENTS ALONG
LONG HILL ROAD
SCALE: HORIZ.: 1" = 100'
VERT.: 1" = 10'

ARCHITECTS

BOND COMET WESTMORELAND HINER

207 West Brood Street
Richmond, Virginia 23220
804 7 8 8 - 4 7 7 4

ALTERATIONS TO

LAFAYETTE HIGH SCHOOL

WILLIAMSBURG
JAMES CITY COUNTY, VA.

STATE PROJECT # 131-9E

© Bond Comet Westmoreland + Hiner Architects, Inc.
Materials included herein is covered by copyright. Use of this work in whole or in part is forbidden without the express written consent of Bond Comet Westmoreland + Hiner Architects Inc.

PROJECT NUMBER:
9346

PROJECT MANAGER:
RAC

DRAWN BY:
EAW

ISSUE DATE:
23 AUGUST 1994

REVISIONS:
1. REVISIONS FOR AGENCY COMMENTS 3/9/95

AES CONSULTING ENGINEERS

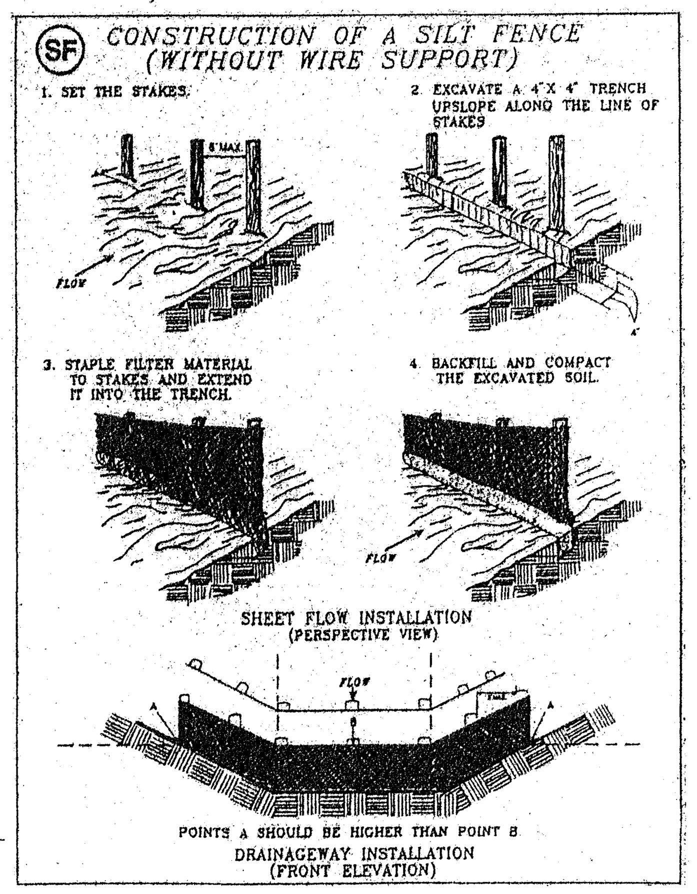
SHEET TITLE:
DRAINAGE AREA MAP AND PROFILES

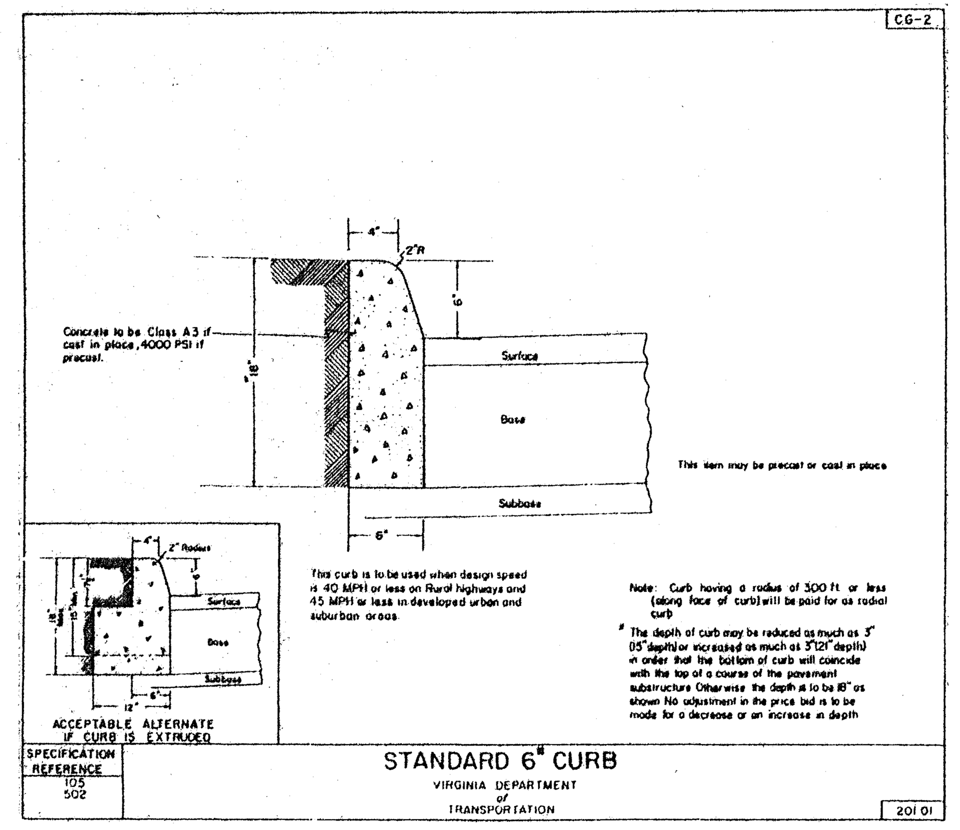
SHEET NUMBER:
C 3.1

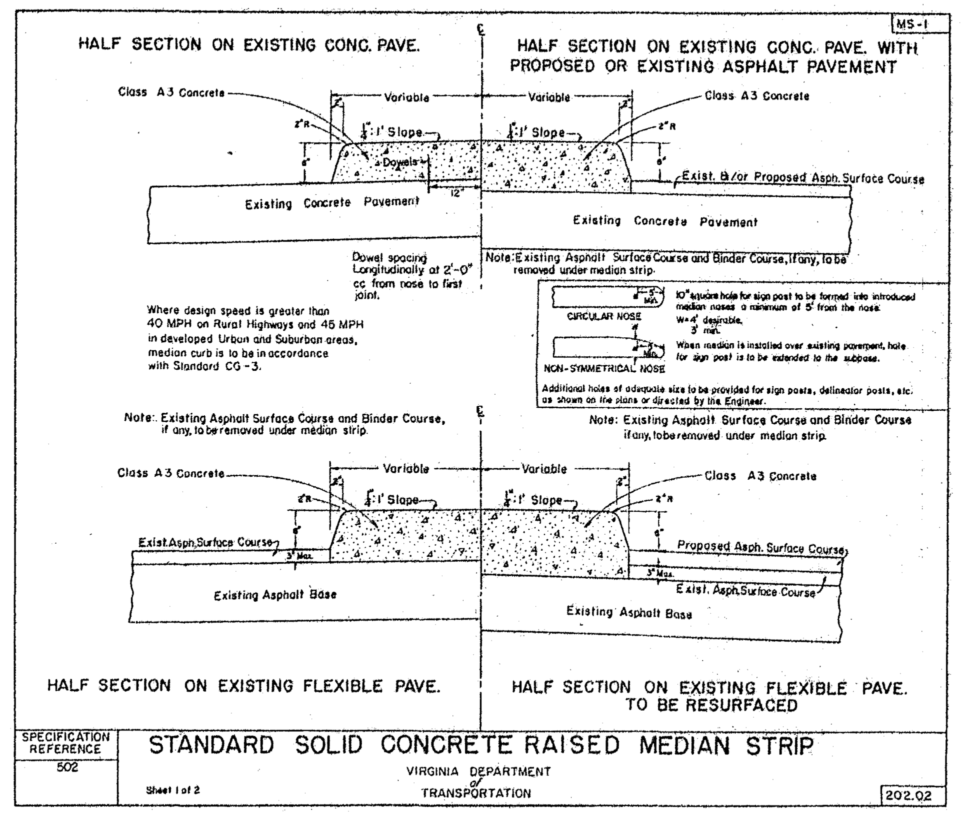
03.09.95--16:04 79210C05

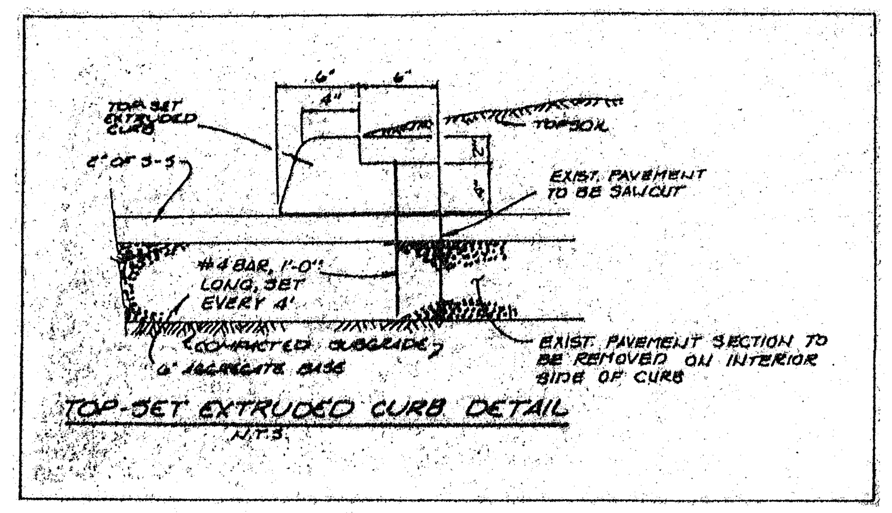
CJJ

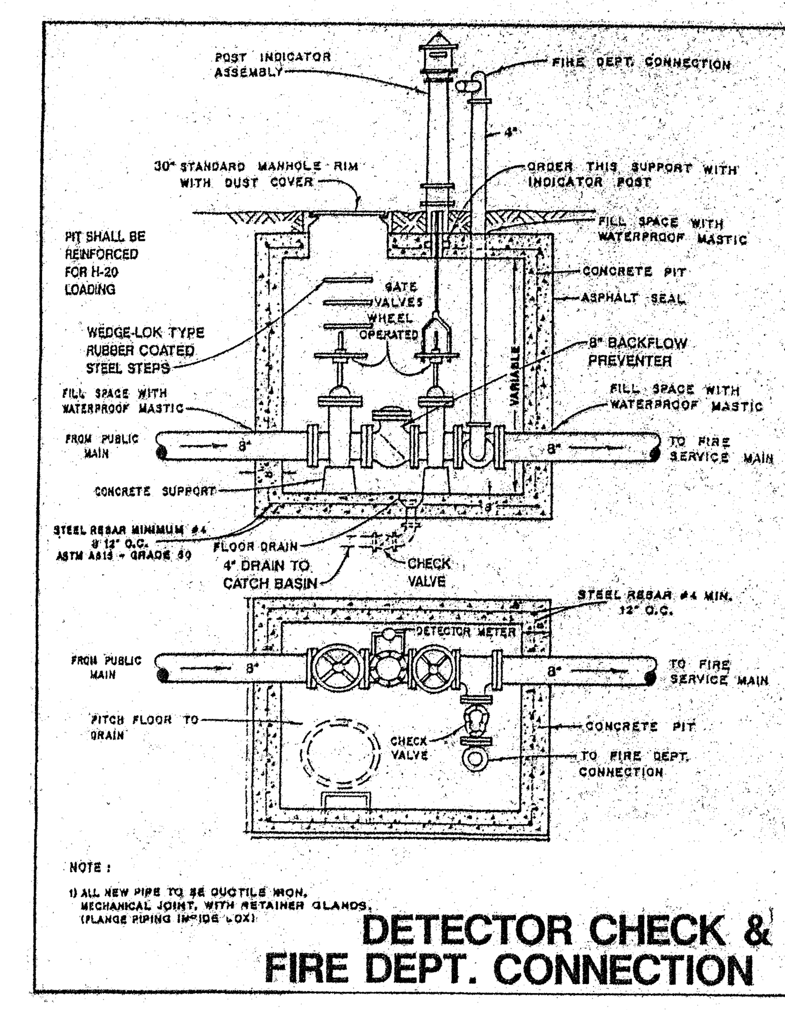
PC101_LAFAYETTE_HIGH_SCHOOL - 004





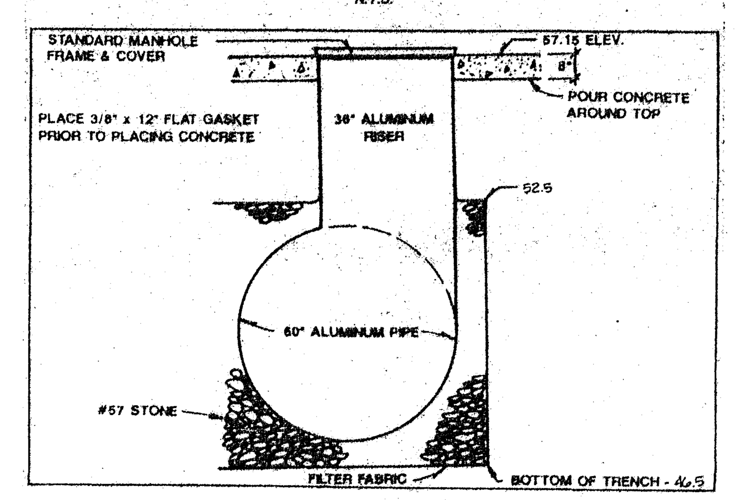


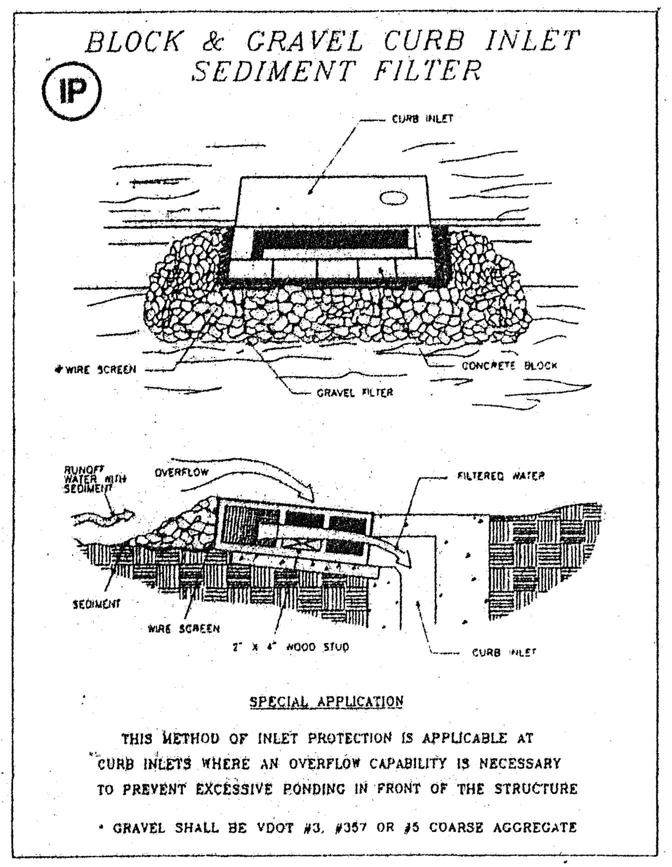


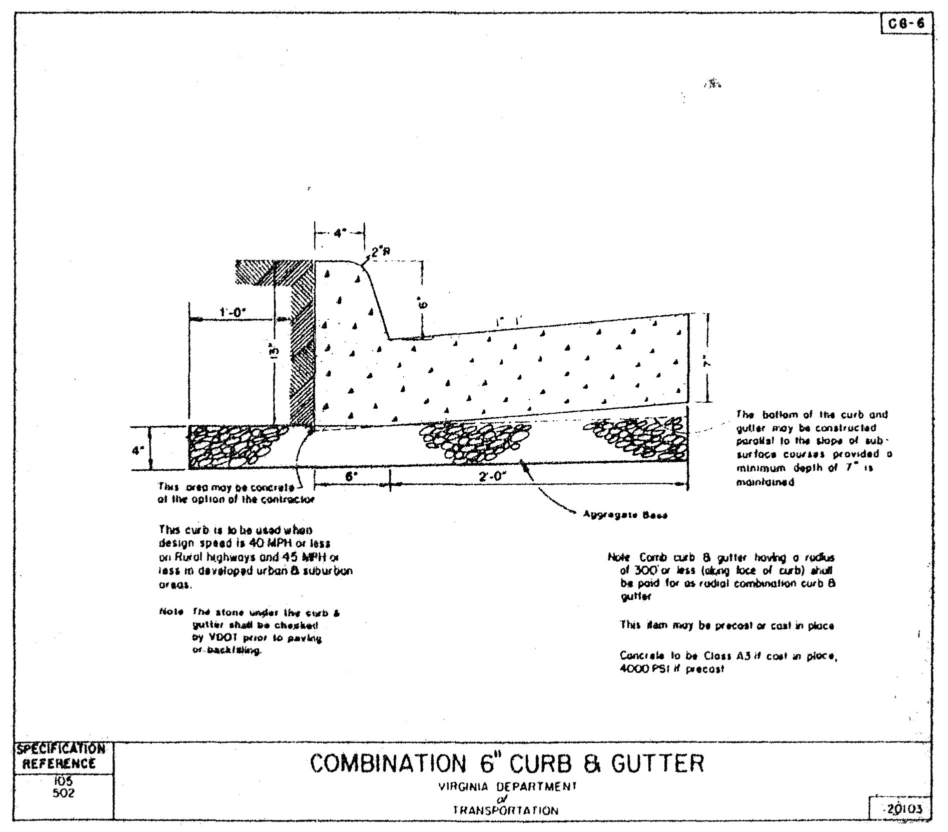


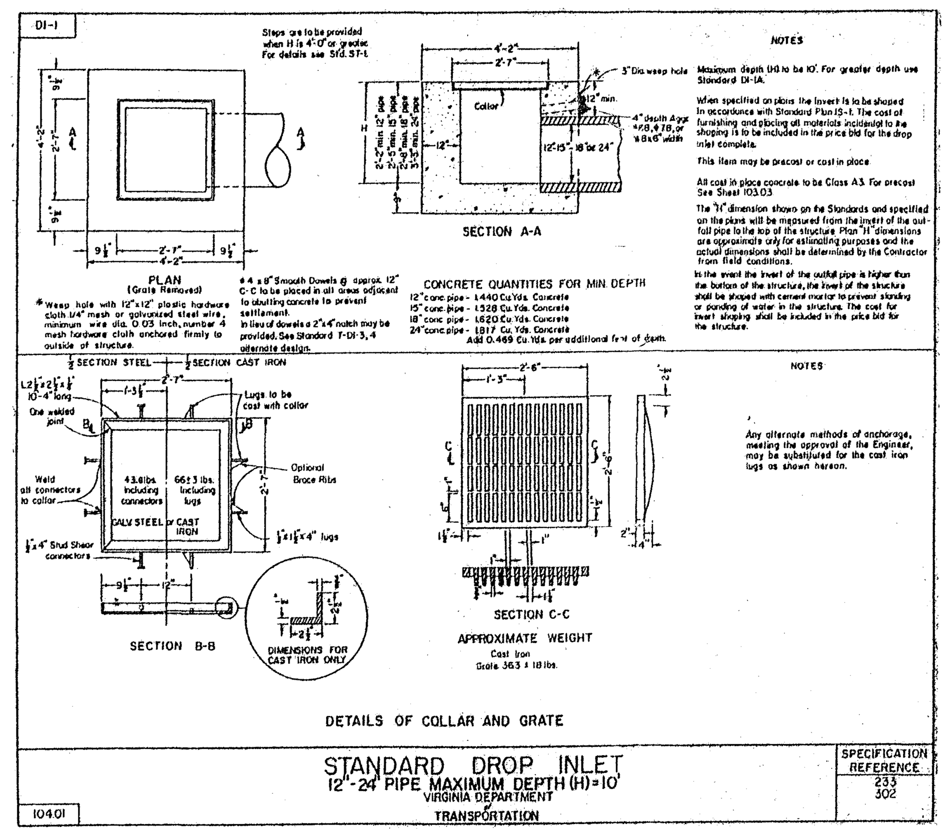
MAINTENANCE RISER DETAIL

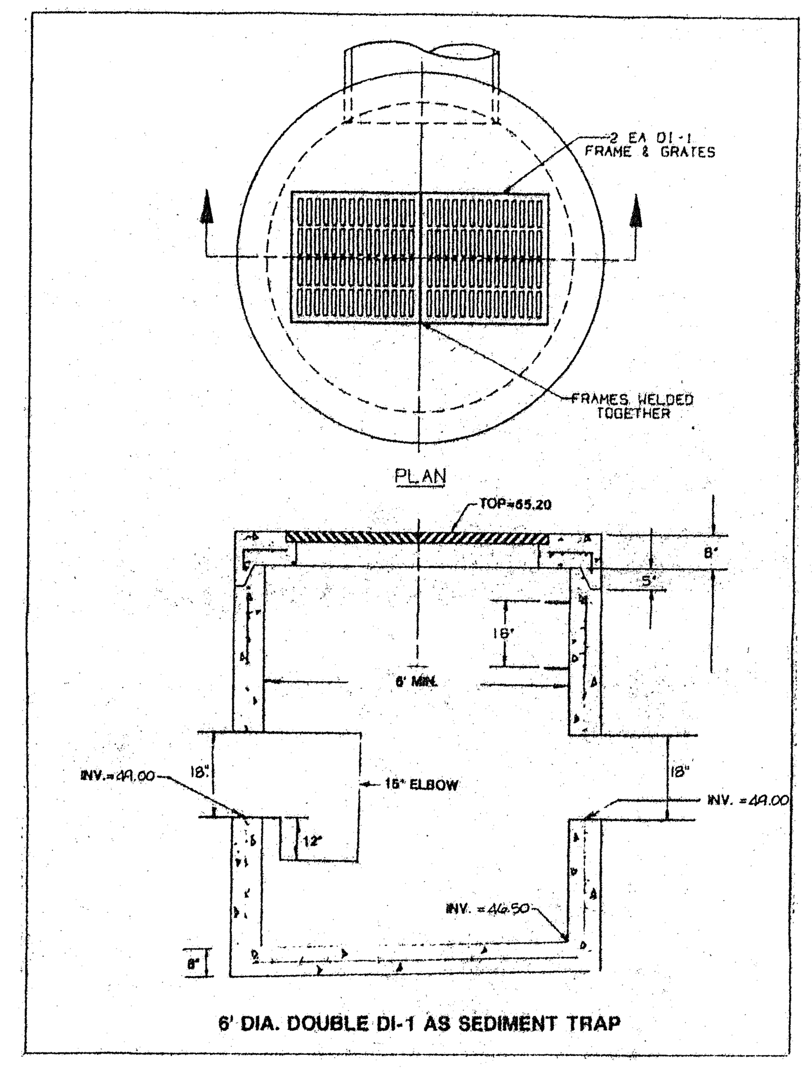
N.T.S.

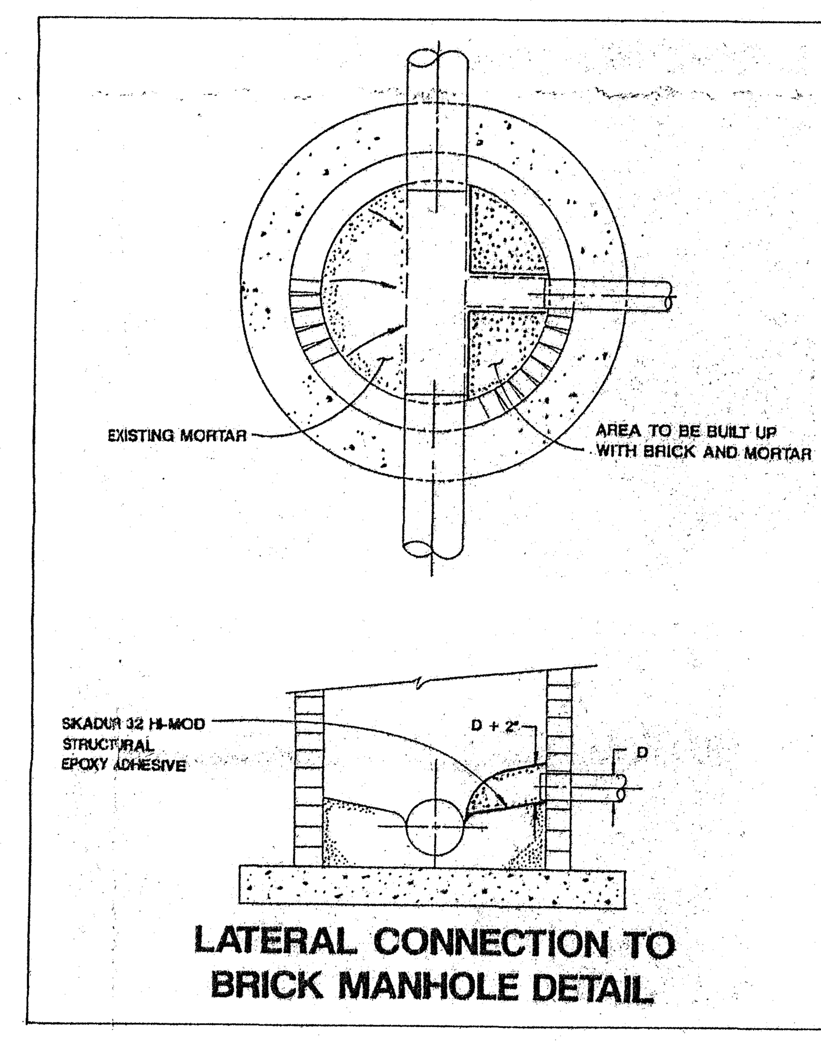


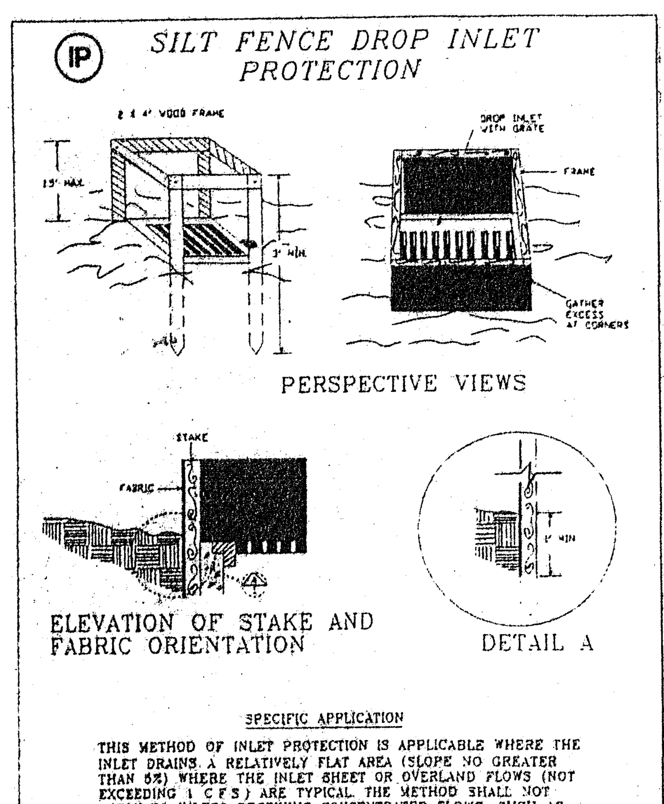


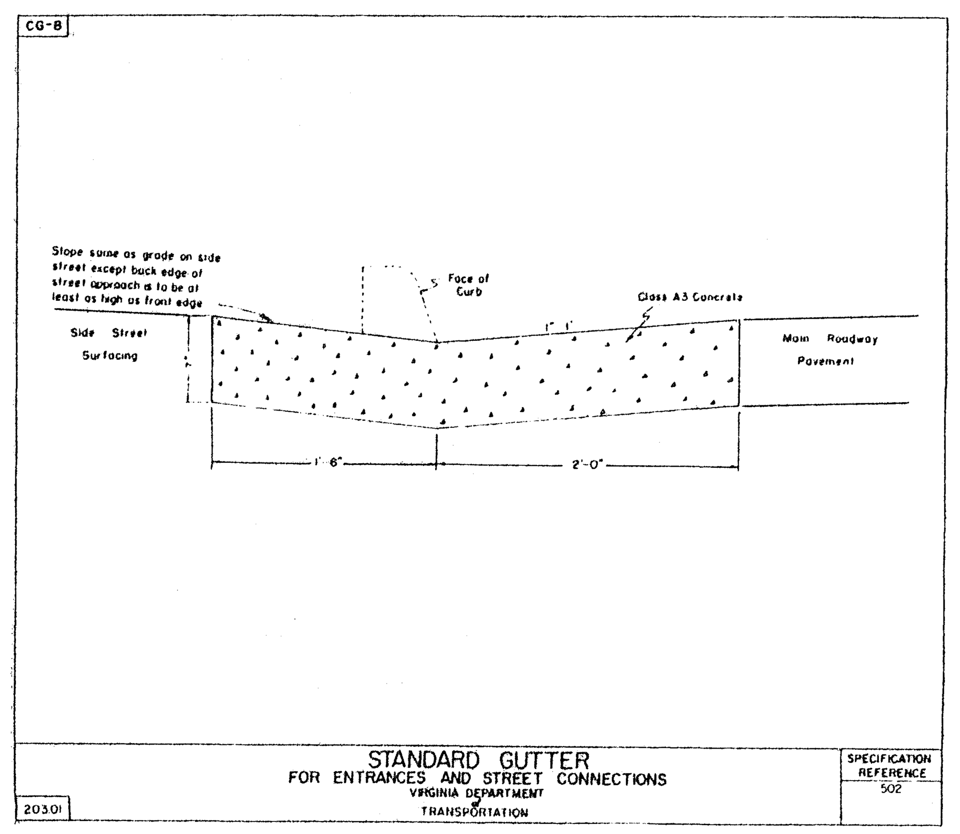


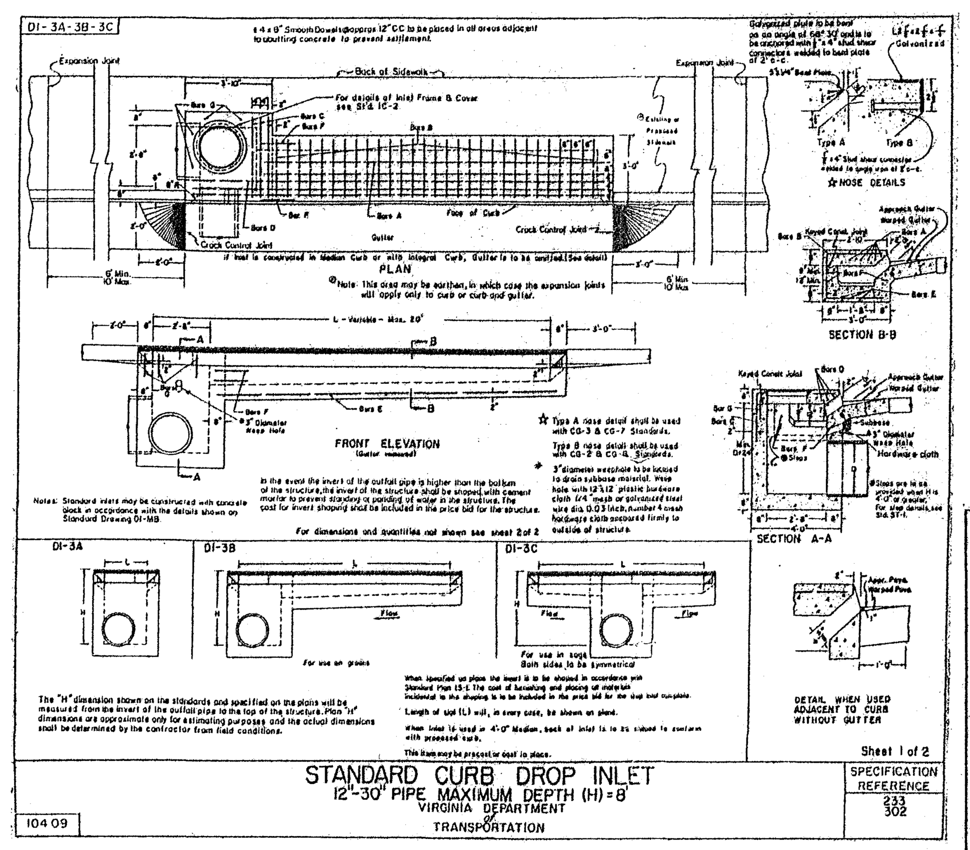


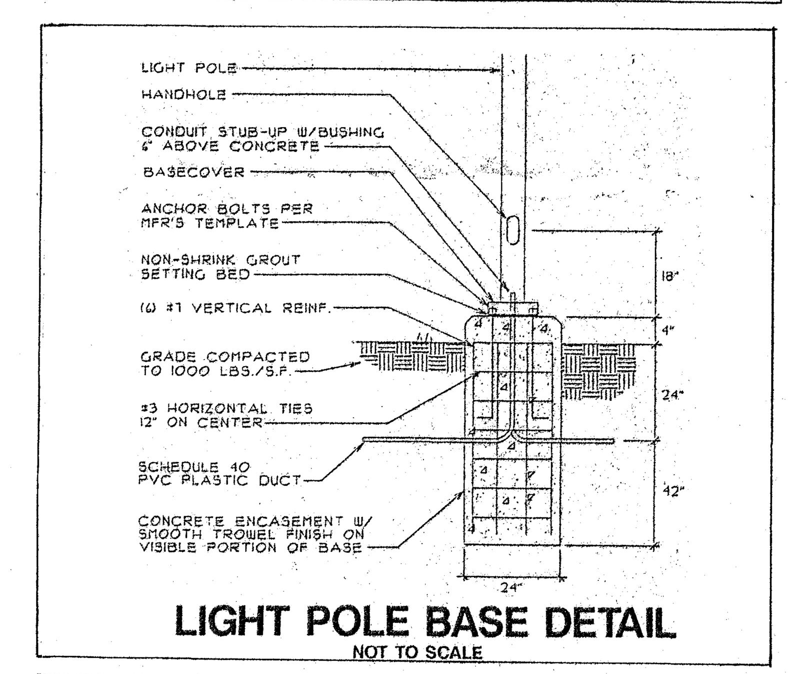


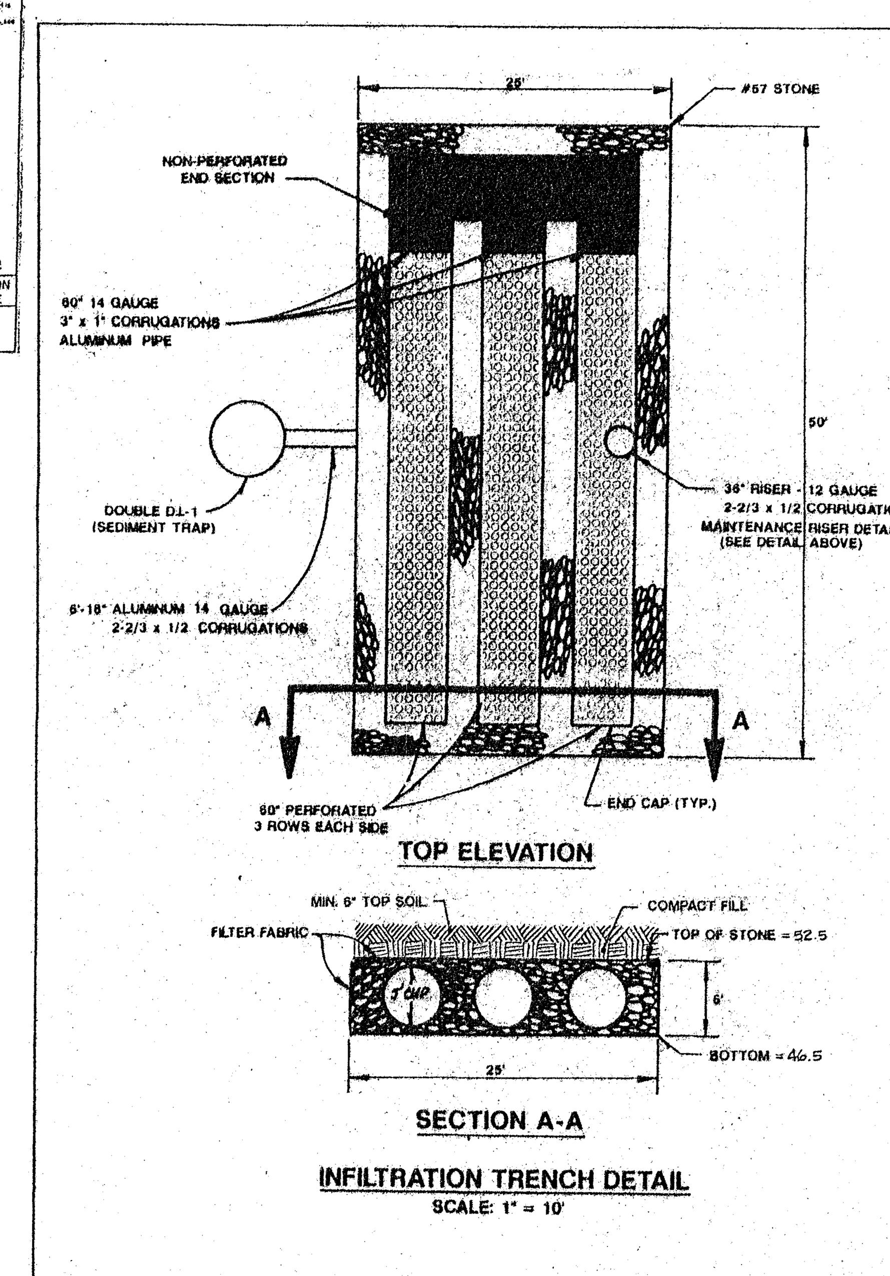


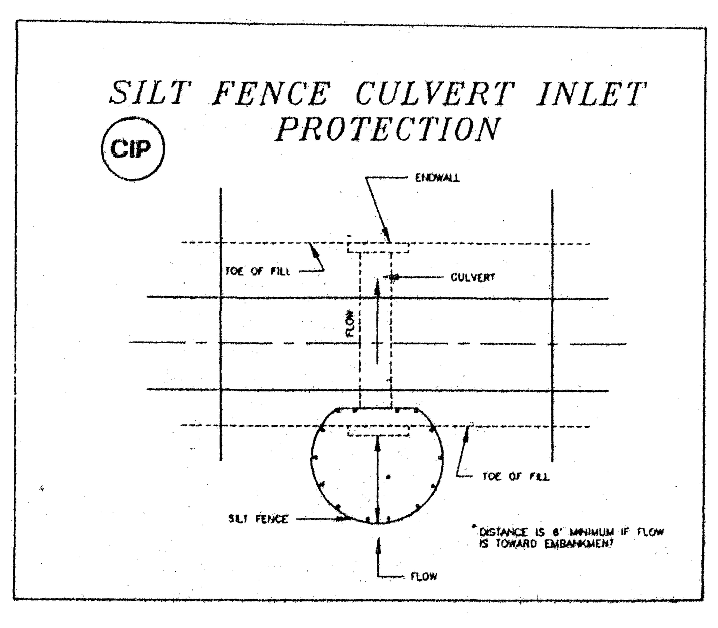


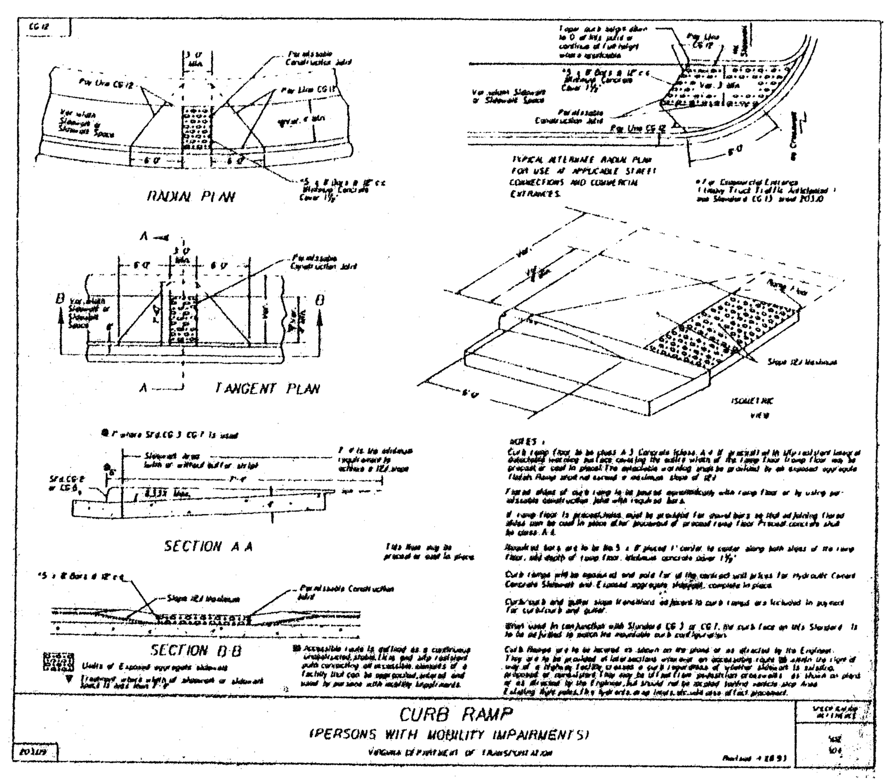


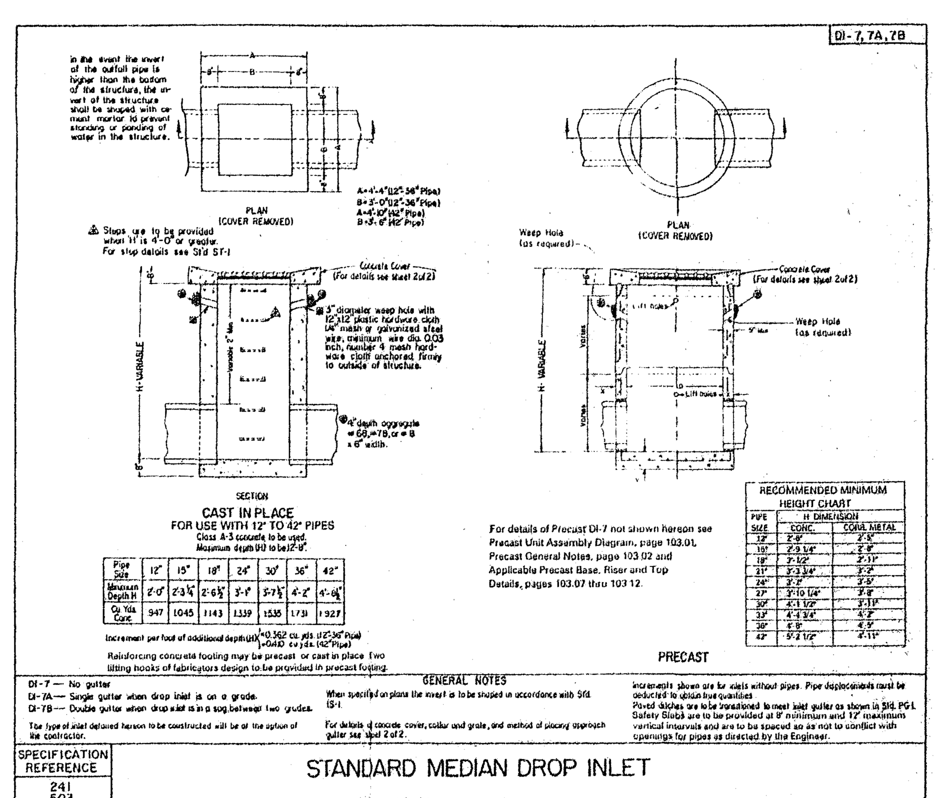


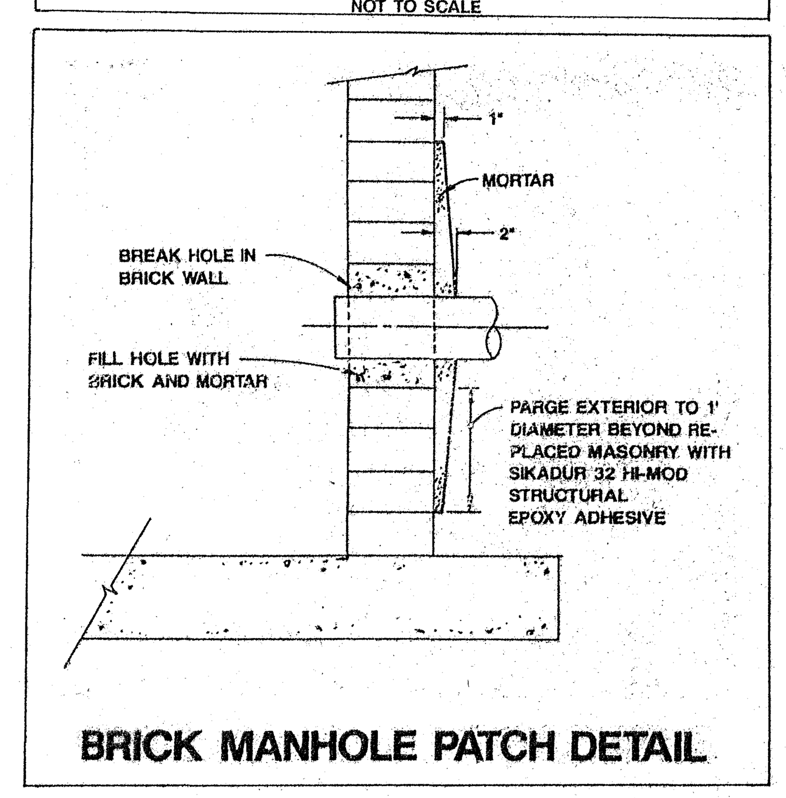












BOND COMET WESTMORELAND HINER

207 West Broad Street
Richmond, Virginia 23220
804 7 8 8 - 4 7 7 4

ALTERATIONS TO

LAFAYETTE HIGH SCHOOL

WILLIAMSBURG - JAMES CITY COUNTY, VA.

STATE PROJECT # 131-9E

© Bond Comet Westmoreland + Hiner Architects, Inc.

Material included herein is covered by copyright. Use of this work in whole or in part is forbidden without the expressed written consent of Bond Comet Westmoreland + Hiner Architects, Inc.

PROJECT NUMBER: 9346

PROJECT MANAGER: RAC

DRAWN BY: EAW

ISSUE DATE: 23 AUGUST 1994

REVISIONS:

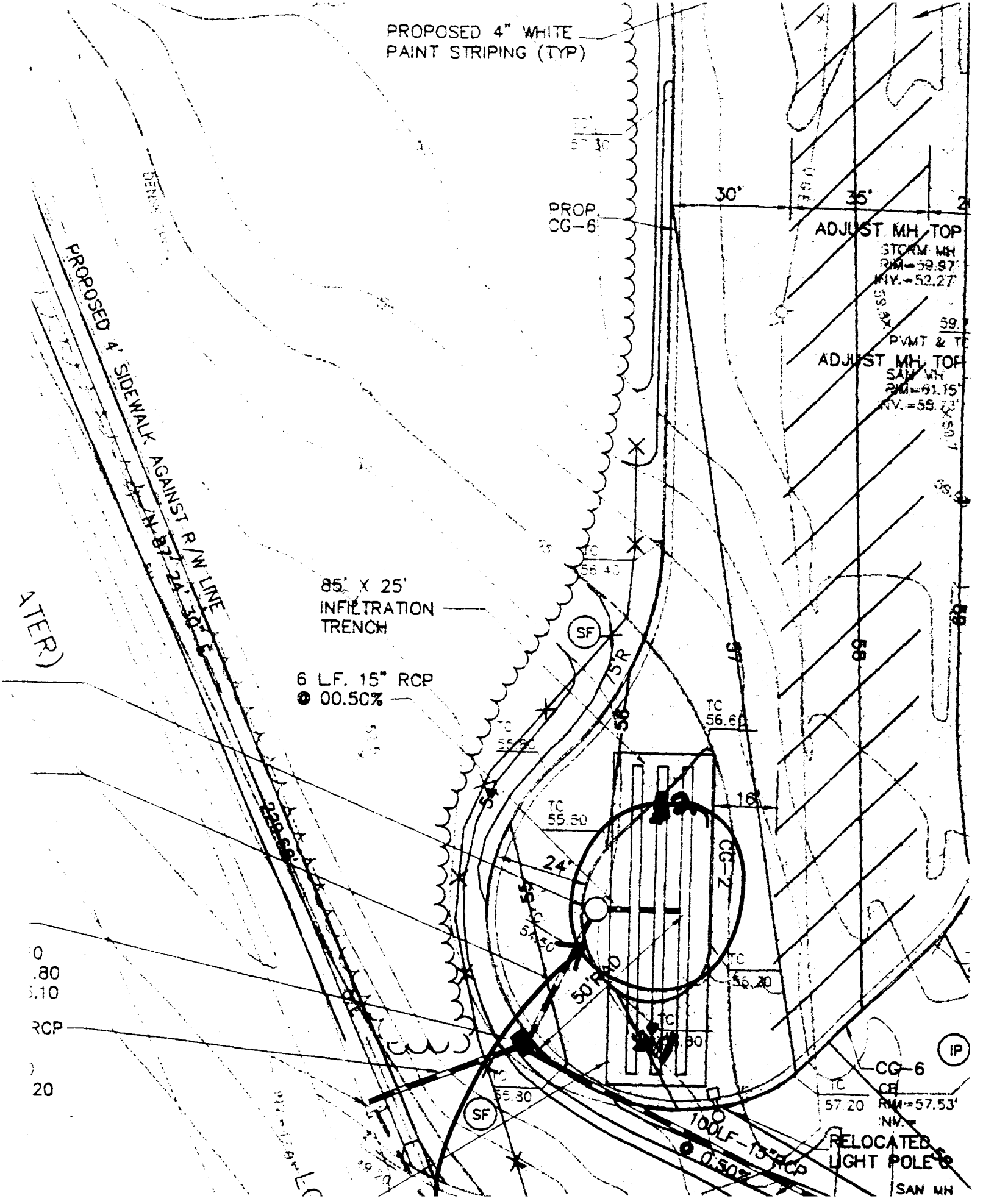
1. REVISED PER JCC COMMENTS 4/17/95 EMG

COMMONWEALTH OF VIRGINIA RICHARD A. COSTELLO CERTIFICATE NO. 013260 CERTIFIED PROFESSIONAL ENGINEER 3/8/95

SHEET TITLE: NOTES AND DETAILS

SHEET NUMBER:

TITLESHT 03.07.95-14:31 CLJ



PC101_LAFAYETTE_HIGH_SCHOOL - 006

STORM SEWER W/I
RIGHT-OF-WAY

S T O R M S E W E R D E T A I L E D R E P O R T

LINE 1

Line description	=	
Downstream line number	=	0

FLOW INFO:

Incremental area	=	0.13 ac
Runoff coefficient	=	0.900
Inlet time	=	5.00 min
Inlet intensity	=	6.75 in/h
Incremental CIA	=	0.79 cfs
Input flow	=	0.00 cfs
Weighted coefficient	=	0.900
Time of concentration	=	5.00 min
Total intensity	=	6.75 in/h
Total CIA	=	0.79 cfs
Total flow	=	37.29 cfs

PIPE INFO:

Pipe length	=	86.32 ft
Plan length	=	88.25 ft
Pipe diameter	=	30.00 in
Pipe type	=	Circular
Pipe n-value	=	0.016
Capacity at invert slope	=	67.10 cfs
Invert elevation upstream	=	43.10 ft
Invert elevation downstream	=	39.52 ft
Invert slope	=	4.057 %
Rim elevation upstream	=	48.60 ft
Rim elevation downstream	=	0.00 ft
Nat. ground slope	=	55.074 %
Crown elevation upstream	=	45.60 ft
Crown elevation downstream	=	42.02 ft

HYDRAULIC INFO:

Hydraulic grade elev. upstrm	=	44.43 ft
Hydraulic grade elev. dwnstrm	=	40.85 ft
Hydraulic grade slope	=	4.06 %
Energy grade elev. upstream	=	47.50 ft
Energy grade elev. downstream	=	43.92 ft
Energy grade slope	=	4.057 %
Critical depth	=	24.81 in
Depth upstream	=	15.97 in
Depth downstream	=	15.97 in
Velocity upstream	=	14.04 ft/s
Velocity downstream	=	14.04 ft/s
Area upstream	=	2.66 ft/
Area downstream	=	2.66 ft/
Kj (JLC)	=	1.000
Calculated junction loss	=	3.580

INLET INFO:

Inlet type	=	Curb
Gutter longitudinal slope	=	0.020 ft/ft
Normal gutter cross slope	=	0.083 ft/ft
Pavement cross slope	=	0.021 ft/ft
Gutter width	=	2.00 ft
Inlet n-value	=	0.016
Gutter depression	=	0.167 ft

S T O R M S E W E R D E T A I L E D R E P O R T

Depth at curb	=	0.20 ft
Depth at pvmnt/gutter joint	=	0.03 ft
Flow carryover	=	0.00 cfs
Flow captured	=	0.35 cfs
Flow bypassed	=	0.44 cfs
Pavement flow	=	0.02 cfs
Gutter flow	=	0.77 cfs
Pavement spread	=	1.45 ft
Total spread	=	3.45 ft
Gutter velocity	=	3.17 ft/s

End of LINE 1

S T O R M S E W E R D E T A I L E D R E P O R T

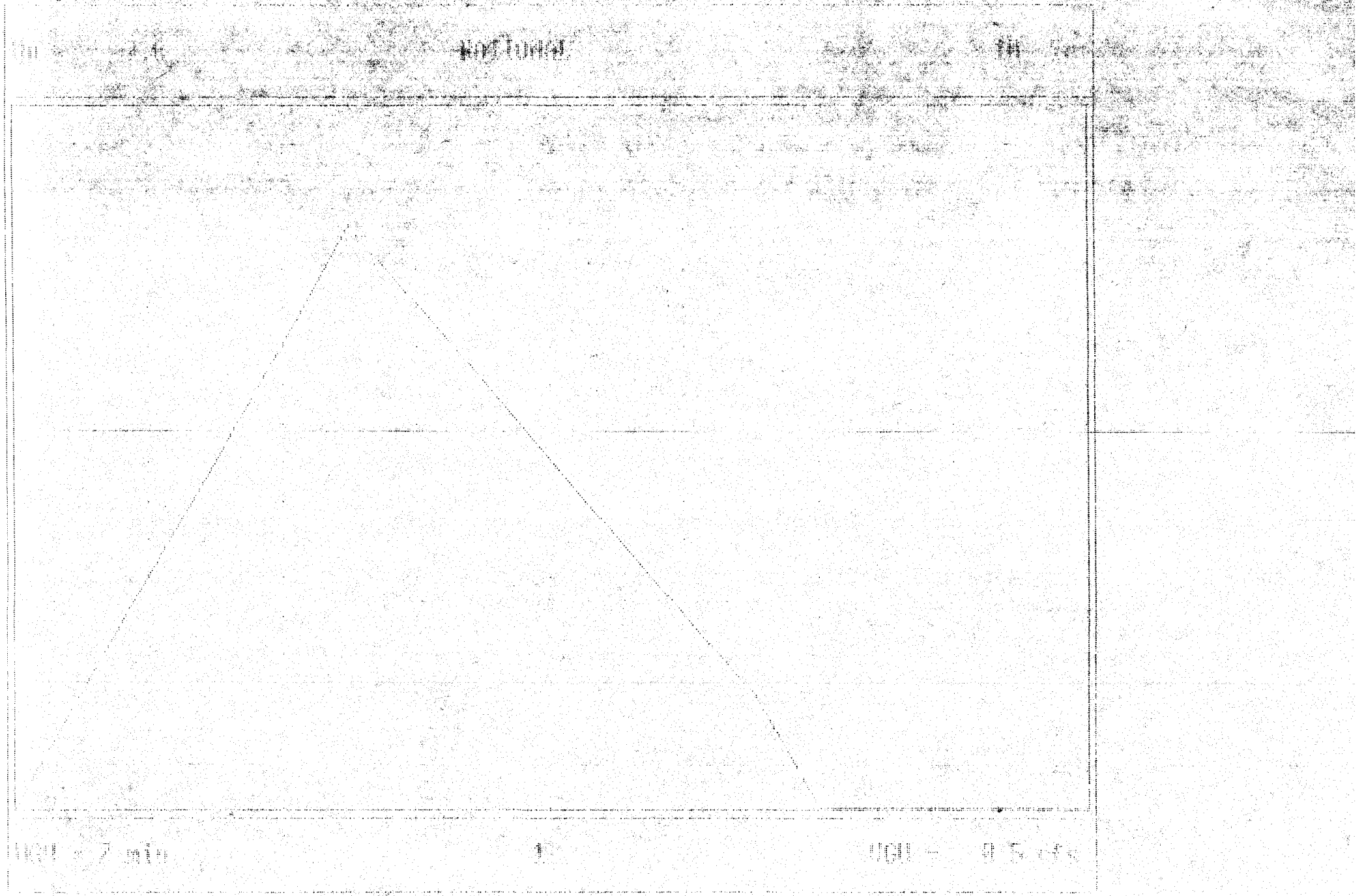
LINE 2

Line description	=	
Downstream line number	=	1
FLOW INFO:		
Incremental area	=	0.00 ac
Runoff coefficient	=	0.000
Inlet time	=	0.00 min
Inlet intensity	=	32.53 in/h
Incremental CIA	=	0.00 cfs
Input flow	=	36.50 cfs
Weighted coefficient	=	0.000
Time of concentration	=	0.00 min
Total intensity	=	32.53 in/h
Total CIA	=	0.00 cfs
Total flow	=	36.50 cfs
PIPE INFO:		
Pipe length	=	114.06 ft
Plan length	=	118.04 ft
Pipe diameter	=	30.00 in
Pipe type	=	Circular
Pipe n-value	=	0.016
Capacity at invert slope	=	42.26 cfs
Invert elevation upstream	=	45.00 ft
Invert elevation downstream	=	43.10 ft
Invert slope	=	1.610 %
Rim elevation upstream	=	0.00 ft
Rim elevation downstream	=	48.60 ft
Nat. ground slope	=	-41.172 %
Crown elevation upstream	=	47.50 ft
Crown elevation downstream	=	45.60 ft
HYDRAULIC INFO:		
Hydraulic grade elev. upstrm	=	49.72 ft
Hydraulic grade elev. dwnstrm	=	47.50 ft
Hydraulic grade slope	=	1.39 %
Energy grade elev. upstream	=	50.58 ft
Energy grade elev. downstream	=	48.36 ft
Energy grade slope	=	1.838 %
Critical depth	=	24.58 in
Depth upstream	=	30.00 in
Depth downstream	=	30.00 in
Velocity upstream	=	7.44 ft/s
Velocity downstream	=	7.44 ft/s
Area upstream	=	4.91 ft/
Area downstream	=	4.91 ft/
Kj (JLC)	=	1.000
Calculated junction loss	=	2.223
INLET INFO:		
Inlet type	=	None
Gutter longitudinal slope	=	0.000 ft/ft
Normal gutter cross slope	=	0.020 ft/ft
Pavement cross slope	=	0.020 ft/ft
Gutter width	=	2.00 ft
Inlet n-value	=	0.016
Gutter depression	=	0.000 ft

S T O R M S E W E R D E T A I L E D R E P O R T

Depth at curb	=	0.00 ft
Depth at pvmnt/gutter joint	=	0.00 ft
Flow carryover	=	0.00 cfs
Flow captured	=	0.00 cfs
Flow bypassed	=	0.00 cfs
Pavement flow	=	0.00 cfs
Gutter flow	=	0.00 cfs
Pavement spread	=	0.00 ft
Total spread	=	0.00 ft
Gutter velocity	=	0.00 ft/s

end of LINE 2



ser Name: Ster
roject: F:\ET

Depth at curr
Depth at pvmnt
Flow carryover
Flow captured
Flow bypassed
Pavement flow
Gutter flow
Pavement spread
Total spread
Gutter velocity
nd of LINE

S E W E R D E T A I L E D R E P O R T

S T O R M S E W E R D E T A I L E D R E P O R T

Depth at curb	=	0.00 ft
Depth at pvmnt/gutter joint	=	0.00 ft
Flow carryover	=	0.00 cfs
Flow captured	=	0.00 cfs
Flow bypassed	=	0.00 cfs
Pavement flow	=	0.00 cfs
Gutter flow	=	0.00 cfs
Pavement spread	=	0.00 ft
Total spread	=	0.00 ft
Gutter velocity	=	0.00 ft/s

end of LINE 2

LAFAYETTE H.S
12-10-94

TRENCH BMP CALCULATIONS

10 POINT TRENCH = 1 INCH / IMP ACRE = 65% REMOVAL

1 IN = .0817 FEET

(.0817)(.86)(43560 S.F)(1.38 AC) = 4,214 C.F.
STORAGE REQUIRED

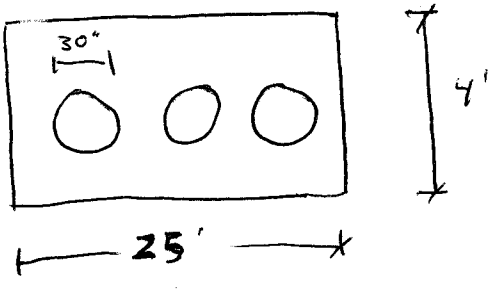
WITH 3-30" PERFORATED CMP'S 85' LONG

VOID SPACE = 1,251 C.F.

ADDN'L STORAGE REQUIRED = 4,214 - 1,251 = 2,963 C.F.

TRENCH DIMENSIONS:

85' LONG, 25' WIDE, 4' DEPTH
WITH 3-30" CMP'S



Area trench = 25' x 4' = 100 ft²

Area pipes = 3 x 4.91 ft²/ft = 14.73

100 - 14.73 = 85.27'

VOL STONE = 85.27 ft² x .4 x 85' = 2900 ft³

VOL PIPES = 14.73 x 85 = 1252

4352

10% imp 1.6 x 1.38 x .65 = 1.44 lbs removed

15% imp. 2.7 x 1.38 x .65 = 2.4 lbs removed

WORKSHEET B : REDEVELOPMENT

1 **Compile site-specific data.**

		PRE-DEVELOPMENT	POST-DEVELOPMENT
A*		= 1.38 acres	= 1.38 acres
I_a:	structures	= _____ acres	= _____ acres
	parking lot	= _____ acres	= _____ acres
	roadway	= _____ acres	= _____ acres
	other	= _____ acres	= _____ acres
		= _____ acres	= _____ acres
		= _____ acres	= _____ acres
	total I_a	= 1.24 acres	= 1.24 acres
$I = (\text{total } I_a / A) \times 100$		= 89.9 percent expressed in whole numbers	= 89.9 percent expressed in whole numbers
$R_v = 0.05 + (0.009 \times I)$		= .859 unitless	= .859 unitless
C:	$I \geq 20 = 1.08$ mg/l $I < 20 = 0.26$ mg/l	= 1.08 mg/l	= 1.08 mg/l

* Although the area subject to regulations may be only the area actually in a CBPA, some localities may require all of the site to comply with criteria.

2 **Set constants.**

P_j = unitless rainfall correction factor
= 0.9 for all of Tidewater Virginia

P = annual rainfall depth in inches
= 40 inches for Northern Virginia area
= 43 inches for Richmond Metropolitan area
= 45 inches for Hampton Roads area

12 and 2.72 are used in the equation as unit conversion factors.

3 **Calculate the pre-development load (L_{pre}).**

$L_{pre} = P \times P_j \times R_{v(pre)} \times C_{pre} \times A \times 2.72 / 12$

$= 44 \times 0.9 \times .859 \times 1.08 \times 1.38 \times 2.72 / 12$

$= 11.48$ pounds per year

4 **Calculate the post-development load (L_{post}).**

$L_{post} = P \times P_j \times R_{v(post)} \times C_{post} \times A \times 2.72 / 12$

$= \_\_\_ \times 0.9 \times \_\_\_ \times \_\_\_ \times \_\_\_ \times 2.72 / 12$

$=$ _____ pounds per year

5 **Calculate the pollutant removal requirement (RR).**

$RR = L_{post} - (0.9 \times L_{pre})$

$= 11.48 - (0.9 \times 11.48)$

$= 1.15$ pounds per year

$\%RR = (RR / L_{post}) \times 100$

$= (1.15 / 11.48) \times 100$

$= 10$ %

WORKSHEET C: COMPLIANCE

Select BMP options using screening tools and list them below. Then calculate the load removed for each option. DO NOT LIST BMPs IN SERIES HERE.

1

Selected Option	Removal Efficiency (%/100)	×	Fraction of CBPA Drainage Area Served (expressed in decimal form)	×	L_{post} (lbs/yr)	=	Load Removed (lbs/yr)
DESIGN 9	.65		1.24 / 138		11.48		6.7

2a **Estimate parameters for non-CBPA drainage areas on the project site (if the locality does not require complete compliance for the whole site). If the locality requires compliance for the whole site, omit this step.**

A (on site, non-CBPA) = _____ acres

I_a: structures = _____ acres
parking lot = _____ acres
roadway = _____ acres
other = _____ acres
= _____ acres
= _____ acres

total I_a = _____ acres

$I = (\text{total } I_a / A) \times 100$ = _____ %

$R_v = 0.05 + (0.009 \times I)$ = _____

C: $I \geq 20 = 1.08$ mg/l = _____ mg/l
$I < 20 = 0.26$ mg/l

When using VIRGINIA CHESAPEAKE BAY DEFAULT (F_{V_a} = 0.45 lbs/ac/yr), C=0.26 mg/l for all I_{site}.

2b **Calculate post-development load for on-site non-CBPAs.**

$L_{post(outside)} = P \times P_j \times R_v \times C \times A \times 2.72 / 12$

= ____ × 0.9 × ____ × ____ × ____ × 2.72 / 12

= _____ pounds per year

Revised 7/90

3 **Determine loadings for off-site areas if the locality allows this option.**

$I_{watershed}$ = from locality <u>OR</u> $I_{watershed} = I_{VA} = 16$

If $I_{watershed} < 20$, use $C_{offsite} = 0.26$ mg/l.
If $I_{watershed} \geq 20$, use $C_{offsite} = 1.08$ mg/l.
If $I_{watershed} = I_{VA}$ use $C_{offsite} = 0.26$mg/l.

$$L_{offsite} = P \times Pj \times [0.05 + (0.009 \times I_{watershed})] \times C_{offsite} \times A_{offsite} \times 2.72 / 12$$

$$= \_\_\_\_ \times 0.9 \times [0.05 + (0.009 \times \_\_\_\_)] \times \_\_\_\_ \times \_\_\_\_ \times 2.72 / 12$$

= _____ pounds per year

4 **Total non-CBPA pollutant loading.**

Step 3 + Step 4 = total non-CBPA loading

_____ + _____ = _____ pounds per year

5 **Calculate credits if the locality allows this option.**

Selected Option	Removal Efficiency (%/100)	×	L_{post} (lbs/yr)	=	Load Removed (lbs/yr)

6 **Calculate overall compliance.**

Step 1 + Step 5 = total load removed

_____ + _____ = _____ pounds per year

If total load removed > removal requirement, criteria are satisfied.

_____ > _____

Revised 7/90

LAFAYETTE HIGH SCHOOL

INFILTRATION TRENCH
CALCULATIONS
12-12-94
EMG

QUALITY:

1 INCH / IMPERVIOUS ACRE = 65% REMOVAL RATE
10 POINT BMP

GIVEN: 60,000 S.F. FLOW TO THE TRENCH
86 PERCENT IMPERVIOUS

TRENCH SIZE = (.083 FEET) (.86) (43,560 S.F./ACRE)(1.38 ACRES)
= 4290 C.F.
STORAGE REQUIRED

ASSUMING 40% VOID RATIO (#57 STONE)

DESIGN VOLUME (4290)(1/0.4) = 10,727 C.F.

PROP. TRENCH:

UTILIZE 3 - 30" PERFORATED CMP, 85' LONG
= VOID SPACE 1,251 C.F.

ADDITIONAL STORAGE REQUIRED
= 4,290 - 1,251 = 3,039 C.F.

TRENCH SIZE:
85' LONG x 25' WIDE x 1.4' DEEP
WITH 30" PIPE
TOTAL DEPTH = 4 FEET DEEP

TOTAL SITE IMPERVIOUS AREA = 742,600 S.F.
TOTAL INCREASE IN IMPERVIOUS AREA = 13,015 S.F. ≈ 1.2% inc.

% OF SITE IMPERVIOUS AREA TREATED = 8%
% OF INCREASED IMPERVIOUS TREATED = 461%
(SEE GUIDANCE CALCULATIONS)

QUANTITY:

2 YEAR STORM

= (3 INCHES) (13,015 S.F. INCREASED IMPERVIOUS AREA)

= 3254 C.F.

STORAGE PROVIDED >> STORAGE REQUIRED

8% treated x .65 = 5.2% reduction in imp. area contribution

STORM SEWER DESIGN / ANALYSIS

Return Period = 2 Yrs
Rainfall file: JCCN

Run Date: 12-14-1994
File: c:LAFYET.ST3

LINE 1 / Q = 6.50 / HT = 18 / WID = 18 / N = .013 / L = 6 / JLC = 0

trench to basin / Outfall

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	52.42	8.81	51.69	7.56	53.31	18.00	N/A	0.86
UPSTRM	52.52	8.81	51.79	7.56	53.41	18.00	1.9	0.86

Drainage area (ac) =	0.03	Slope of invert (%) =	1.6667
Runoff coefficient =	0.35	Slope energy grade line (%) =	1.6667
Time of conc (min) =	6.02	Critical depth (in) =	11.68
Inlet time (min) =	5.00	Natural ground elev. (ft) =	55.20
Intensity (in/hr) =	5.33	Upstream surcharge (ft) =	0.00
Cumulative C*A =	1.22	Additional Q (cfs) =	0.00
Q = CA * I (cfs) =	6.50	Line capacity (cfs) =	13.56
Q catchment (cfs) =	0.06	Inlet length (ft) =	0.00
Q carryover (cfs) =	6.90	Gutter slope (ft/ft) =	0.0000
Q captured (cfs) =	0.00	Cross slope (ft/ft) =	0.0000
Q bypassed (cfs) =	6.96	Ponding width (ft) =	N/A

Note: Normal depth assumed

LINE 2 / Q = 6.54 / HT = 15 / WID = 15 / N = .013 / L = 43 / JLC = 0

basin to loop / DNLN = 1

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	52.81	12.28	51.79	6.08	53.39	13.57	2.15	1.08
UPSTRM	53.39	15.00	51.80	5.33	53.83	0.00	2.25	1.23

Drainage area (ac) =	0.55	Slope of invert (%) =	0.0233
Runoff coefficient =	0.90	Slope energy grade line (%) =	1.0281
Time of conc (min) =	5.78	Critical depth (in) =	12.28
Inlet time (min) =	5.00	Natural ground elev. (ft) =	55.30
Intensity (in/hr) =	5.41	Upstream surcharge (ft) =	0.34
Cumulative C*A =	1.21	Additional Q (cfs) =	0.00
Q = CA * I (cfs) =	6.54	Line capacity (cfs) =	0.98
Q catchment (cfs) =	2.82	Inlet length (ft) =	0.00
Q carryover (cfs) =	4.08	Gutter slope (ft/ft) =	0.0000
Q captured (cfs) =	0.00	Cross slope (ft/ft) =	0.0000
Q bypassed (cfs) =	6.90	Ponding width (ft) =	N/A

LINE 3 / Q = 4.01 / HT = 15 / WID = 15 / N = .013 / L = 100 / JLC = 0

loop to rd1 / DNLN = 2

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	53.39	15.00	51.80	3.27	53.56	0.00	2.25	1.23
UPSTRM	53.78	15.00	52.30	3.27	53.94	0.00	2.45	1.23

Drainage area (ac)	= 0.63	Slope of invert (%)	= 0.5000
Runoff coefficient	= 0.90	Slope energy grade line (%)	= 0.3865
Time of conc (min)	= 5.22	Critical depth (in)	= 9.62
Inlet time (min)	= 5.00	Natural ground elev. (ft)	= 56.00
Intensity (in/hr)	= 5.61	Upstream surcharge (ft)	= 0.23
Cumulative C*A	= 0.72	Additional Q (cfs)	= 0.00
Q = CA * I (cfs)	= 4.01	Line capacity (cfs)	= 4.57
Q catchment (cfs)	= 3.23	Inlet length (ft)	= 0.00
Q carryover (cfs)	= 0.85	Gutter slope (ft/ft)	= 0.0000
Q captured (cfs)	= 0.00	Cross slope (ft/ft)	= 0.0000
Q bypassed (cfs)	= 4.08	Ponding width (ft)	= N/A

LINE 4 / Q = 0.85 / HT = 15 / WID = 15 / N = .013 / L = 40 / JLC = 0

rd1 to rd2 / DNLN = 3

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	53.78	15.00	52.30	0.69	53.78	0.00	2.45	1.23
UPSTRM	53.78	15.00	52.50	0.69	53.79	0.00	2.25	1.23

Drainage area (ac)	= 0.17	Slope of invert (%)	= 0.5000
Runoff coefficient	= 0.90	Slope energy grade line (%)	= 0.0172
Time of conc (min)	= 5.00	Critical depth (in)	= 4.42
Inlet time (min)	= 5.00	Natural ground elev. (ft)	= 56.00
Intensity (in/hr)	= 5.70	Upstream surcharge (ft)	= 0.03
Cumulative C*A	= 0.15	Additional Q (cfs)	= 0.00
Q = CA * I (cfs)	= 0.85	Line capacity (cfs)	= 4.57
Q catchment (cfs)	= 0.85	Inlet length (ft)	= 0.00
Q carryover (cfs)	= 0.00	Gutter slope (ft/ft)	= 0.0000
Q captured (cfs)	= 0.00	Cross slope (ft/ft)	= 0.0000
Q bypassed (cfs)	= 0.85	Ponding width (ft)	= N/A

WORKSHEET B : REDEVELOPMENT

1 **Compile site-specific data.**

		PRE-DEVELOPMENT	POST-DEVELOPMENT
A*		= 50.0 acres	= 50.0 acres
I_a:	structures	= _____ acres	= _____ acres
	parking lot	= _____ acres	= _____ acres
	roadway	= _____ acres	= _____ acres
	other	= _____ acres	= _____ acres
		= _____ acres	= _____ acres
		= _____ acres	= _____ acres
	total I_a	= 16.75 acres	= 17.05 acres
$I = (\text{total } I_a / A) \times 100$		= 33.5 percent expressed in whole numbers	= 34.1 percent expressed in whole numbers
$R_v = 0.05 + (0.009 \times I)$		= .351 unitless	= .357 unitless
C:	$I \geq 20 = 1.08$ mg/l $I < 20 = 0.26$ mg/l	= 1.08 mg/l	= 1.08 mg/l

* Although the area subject to regulations may be only the area actually in a CBPA, some localities may require all of the site to comply with criteria.

2 **Set constants.**

P_j = unitless rainfall correction factor
= 0.9 for all of Tidewater Virginia

P = annual rainfall depth in inches
= 40 inches for Northern Virginia area
= 43 inches for Richmond Metropolitan area
= 45 inches for Hampton Roads area

12 and 2.72 are used in the equation as unit conversion factors.

3 **Calculate the pre-development load (L_{pre}).**

$L_{pre} = P \times P_j \times R_{v(pre)} \times C_{pre} \times A \times 2.72 / 12$

$= 44 \times 0.9 \times .351 \times 1.08 \times 50 \times 2.72 / 12$

$= 170$ pounds per year

4 **Calculate the post-development load (L_{post}).**

$L_{post} = P \times P_j \times R_{v(post)} \times C_{post} \times A \times 2.72 / 12$

$= 44 \times 0.9 \times .357 \times 1.08 \times 50 \times 2.72 / 12$

$= 173$ pounds per year

5 **Calculate the pollutant removal requirement (RR).**

$RR = L_{post} - (0.9 \times L_{pre})$

$= 173 - (0.9 \times 170)$

$= 20$ pounds per year

$\%RR = (RR / L_{post}) \times 100$

$= (20 / 173) \times 100$

$= 12\ \%$

WORKSHEET C: COMPLIANCE

Select BMP options using screening tools and list them below. Then calculate the load removed for each option. DO NOT LIST BMPs IN SERIES HERE.

1

Selected Option	Removal Efficiency (%/100)	×	Fraction of CBPA Drainage Area Served (expressed in decimal form)	×	L_{post} (lbs/yr)	=	Load Removed (lbs/yr)
DESIGN 9	.65		1.38/50		173		3.1

2a **Estimate parameters for non-CBPA drainage areas on the project site (if the locality does not require complete compliance for the whole site). If the locality requires compliance for the whole site, omit this step.**

A (on site, non-CBPA) = _____ acres

I_a: structures = _____ acres
parking lot = _____ acres
roadway = _____ acres
other = _____ acres
= _____ acres
= _____ acres

total I_a = _____ acres

$I = (\text{total } I_a / A) \times 100$ = _____ %

$R_v = 0.05 + (0.009 \times I)$ = _____

C: $I \geq 20 = 1.08$ mg/l = _____ mg/l
$I < 20 = 0.26$ mg/l

When using VIRGINIA CHESAPEAKE BAY DEFAULT (F_{V_a} = 0.45 lbs/ac/yr), C=0.26 mg/l for all I_{site}

2b **Calculate post-development load for on-site non-CBPAs.**

$L_{post(outside)} = P \times P_j \times R_v \times C \times A \times 2.72 / 12$

= ____ × 0.9 × ____ × ____ × ____ × 2.72 / 12

= _____ pounds per year

Revised 7/90

3 **Determine loadings for off-site areas if the locality allows this option.**

$I_{watershed}$ = from locality <u>OR</u> $I_{watershed} = I_{VA} = 16$

If $I_{watershed} < 20$, use $C_{offsite} = 0.26$ mg/l.
If $I_{watershed} \geq 20$, use $C_{offsite} = 1.08$ mg/l.
If $I_{watershed} = I_{VA}$ use $C_{offsite} = 0.26$mg/l.

$L_{offsite} = P \times Pj \times [0.05 + (0.009 \times I_{watershed})] \times C_{offsite} \times A_{offsite} \times 2.72 / 12$

= _____ × 0.9 × [0.05 + (0.009 × _____)] × _____ × _____ × 2.72 / 12

= _____ pounds per year

4 **Total non-CBPA pollutant loading.**

Step 3 + Step 4 = total non-CBPA loading

_____ + _____ = _____ pounds per year

5 **Calculate credits if the locality allows this option.**

Selected Option	Removal Efficiency (%/100)	×	L_{post} (lbs/yr)	=	Load Removed (lbs/yr)

6 **Calculate overall compliance.**

Step 1 + Step 5 = total load removed

_____ + _____ = 3.1 pounds per year

If total load removed > removal requirement, criteria are satisfied.

3.1 X 20

Revised 7/90

LINE 3 / Q = 7.49 / HT = 15 / WID = 15 / N = .013 / L = 128 / JLC = 0

/ DNLN = 2

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	50.95	11.45	50.00	7.45	51.82	12.75	4.04	1.00
UPSTRM	52.95	11.45	52.00	7.45	53.82	12.75	2.75	1.00

Drainage area (ac) =	0.70	Slope of invert (%) =	1.5625
Runoff coefficient =	0.90	Slope energy grade line (%) =	1.5625
Time of conc (min) =	5.22	Critical depth (in) =	13.28
Inlet time (min) =	5.00	Natural ground elev. (ft) =	56.00
Intensity (in/hr) =	6.93	Upstream surcharge (ft) =	0.00
Cumulative C*A =	1.08	Additional Q (cfs) =	0.00
Q = CA * I (cfs) =	7.49	Line capacity (cfs) =	8.07
Q catchment (cfs) =	4.41	Inlet length (ft) =	0.00
Q carryover (cfs) =	3.15	Gutter slope (ft/ft) =	0.0000
Q captured (cfs) =	0.00	Cross slope (ft/ft) =	0.0000
Q bypassed (cfs) =	7.56	Ponding width (ft) =	N/A

Note: Normal depth assumed

LINE 4 / Q = 3.15 / HT = 15 / WID = 15 / N = .013 / L = 40 / JLC = 0

/ DNLN = 3

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	52.95	11.45	52.00	3.13	53.11	13.10	2.75	1.00
UPSTRM	53.04	10.05	52.20	3.60	53.24	14.11	2.04	0.87

Drainage area (ac) =	0.50	Slope of invert (%) =	0.5000
Runoff coefficient =	0.90	Slope energy grade line (%) =	0.3313
Time of conc (min) =	5.00	Critical depth (in) =	8.52
Inlet time (min) =	5.00	Natural ground elev. (ft) =	55.50
Intensity (in/hr) =	7.00	Upstream surcharge (ft) =	0.00
Cumulative C*A =	0.45	Additional Q (cfs) =	0.00
Q = CA * I (cfs) =	3.15	Line capacity (cfs) =	4.57
Q catchment (cfs) =	3.15	Inlet length (ft) =	0.00
Q carryover (cfs) =	0.00	Gutter slope (ft/ft) =	0.0000
Q captured (cfs) =	0.00	Cross slope (ft/ft) =	0.0000
Q bypassed (cfs) =	3.15	Ponding width (ft) =	N/A

STORM SEWER DESIGN / ANALYSIS

Return Period = 10 Yrs
Rainfall file: JCC

Run Date: 04-10-1995
File:

LINE 1 / Q = 8.13 / HT = 18 / WID = 18 / N = .013 / L = 6 / JLC = 0

/ Outfall

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	47.56	13.05	46.47	5.92	48.10	15.33	N/A	1.37
UPSTRM	47.70	14.35	46.50	5.38	48.15	14.47	7.7	1.51

Drainage area (ac) =	0.00	Slope of invert (%) =	0.5000
Runoff coefficient =	0.00	Slope energy grade line (%) =	0.7207
Time of conc (min) =	6.10	Critical depth (in) =	13.05
Inlet time (min) =	0.00	Natural ground elev. (ft) =	55.70
Intensity (in/hr) =	6.69	Upstream surcharge (ft) =	0.00
Cumulative C*A =	1.21	Additional Q (cfs) =	0.00
Q = CA * I (cfs) =	8.13	Line capacity (cfs) =	7.43
Q catchment (cfs) =	0.00	Inlet length (ft) =	0.00
Q carryover (cfs) =	8.50	Gutter slope (ft/ft) =	0.0000
Q captured (cfs) =	0.00	Cross slope (ft/ft) =	0.0000
Q bypassed (cfs) =	8.50	Ponding width (ft) =	N/A

LINE 2 / Q = 8.18 / HT = 18 / WID = 18 / N = .013 / L = 30 / JLC = 0

/ DNLN = 1

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	47.70	14.35	46.50	5.41	48.15	16.07	7.7	1.51
UPSTRM	51.09	13.10	50.00	5.94	51.64	16.03	3.79	1.38

Drainage area (ac) =	0.15	Slope of invert (%) =	11.6667
Runoff coefficient =	0.90	Slope energy grade line (%) =	11.6259
Time of conc (min) =	5.93	Critical depth (in) =	13.10
Inlet time (min) =	5.00	Natural ground elev. (ft) =	55.30
Intensity (in/hr) =	6.73	Upstream surcharge (ft) =	0.00
Cumulative C*A =	1.21	Additional Q (cfs) =	0.00
Q = CA * I (cfs) =	8.18	Line capacity (cfs) =	35.87
Q catchment (cfs) =	0.94	Inlet length (ft) =	0.00
Q carryover (cfs) =	7.56	Gutter slope (ft/ft) =	0.0000
Q captured (cfs) =	0.00	Cross slope (ft/ft) =	0.0000
Q bypassed (cfs) =	8.50	Ponding width (ft) =	N/A

ANN L. RUFF

SOIL SCIENTIST

Ref.# 482
March 8. 1995

Ms Elizabeth Mertz-Guinn
AES
5248 Olde Towne Road
Williamsburg, Va 23185

Reg: Lafayette High School, James City County

Dear Ms Mertz-Guinn:

At your request, I have performed a soil evaluation on the above mentioned property. The purpose of the evaluation was to determine the infiltration rate of soil for the proposed infiltration trench.

The soil was evaluated to a depth of 6 feet at either end of the proposed trench. Enclosed please find the soil profile descriptions with the estimated infiltration rates given in minutes per inch, and the site plan showing the hole locations.

If you have any questions or need any further information please do not hesitate to contact me.

Sincerely,

Ann L Ruff

Ann L. Ruff
Certified Professional Soil Scientist

Enclosure

P.O. Box 395 WILLIAMSBURG, VA 23187 (804)566-1552

ANN L. RUFF

SOIL SCIENTIST

PROFILE DESCRIPTION
SOIL EVALUATION REPORT

Ref: 482, Lafayette High School, James City County

Hole#	Hzn	Depth	Description of color,texture,etc.	Rate min/inch
1	A	0-4	Brown sandy loam	25
	E	4-18	Light yellowish brown sandy loam	30
	B1	18-48	Strong brown sandy clay loam	40
	B2	48-72	Yellowish brown sandy loam	20
2	A	0-4	Brown sandy loam	25
	E	4-24	Light yellowish brown sandy loam	25
	B1	24-48	Strong brown sandy clay loam	40
	B2	48-60	Reddish yellow sandy loam	25
	C	60-72	Yellow loamy sand	15

P.O. Box 395 WILLIAMSBURG, VA 23187 (804)566-1552

INFILTRATION TRENCH
CALCULATIONS
12-12-94
EMG

QUALITY:

1 INCH / IMPERVIOUS ACRE = 65% REMOVAL RATE
10 POINT BMP

GIVEN: 60,000 S.F. FLOW TO THE TRENCH
86 PERCENT IMPERVIOUS

TRENCH SIZE = (.083 FEET) (.86) (43,560 S.F./ACRE)(1.38 ACRE)
= 4290 C.F.
STORAGE REQUIRED

ASSUMING 40% VOID RATIO (#57 STONE)

DESIGN VOLUME (4290)(1/0.4) = 10,727 C.F.

PROP. TRENCH:

UTILIZE 3 - 30" PERFORATED CMP, 85' LONG
= VOID SPACE 1,251 C.F.

ADDITIONAL STORAGE REQUIRED
= 4,290 - 1,251 = 3039 C.F.

TRENCH SIZE:
85' LONG x 25' WIDE x 1.4' DEEP
WITH 30" PIPE
TOTAL DEPTH = 4 FEET DEEP

TOTAL SITE IMPERVIOUS AREA = 742,600 S.F.
TOTAL INCREASE IN IMPERVIOUS AREA = 13,015 S.F.

% OF SITE IMPERVIOUS AREA TREATED = 8%
% OF INCREASED IMPERVIOUS TREATED = 461%
(SEE GUIDANCE CALCULATIONS)

QUANTITY:

2 YEAR STORM

= (3 INCHES)(13,015 S.F. INCREASED IMPERVIOUS AREA)

= 3254 C.F.

STORAGE PROVIDED >> STORAGE REQUIRED

LAFAYETTE H.S.
1-20-95
REVISED TRENCH
CALCS

7921

NEW TRENCH SIZE 25' x 50'

- UTILIZE 3 - 54" PERFORATED CMP, 45' LONG

= VOID SPACE = 2,146 C.F.

ADDITIONAL STORAGE REQUIRED

= 4290 - 2146 = 2,144

- UTILIZE 3 - 60" PERFORATED CMP, 45' LONG

= VOID SPACE = 2,650 C.F.

ADDITIONAL STORAGE REQUIRED

= 4290 - 2650 = 1640 C.F

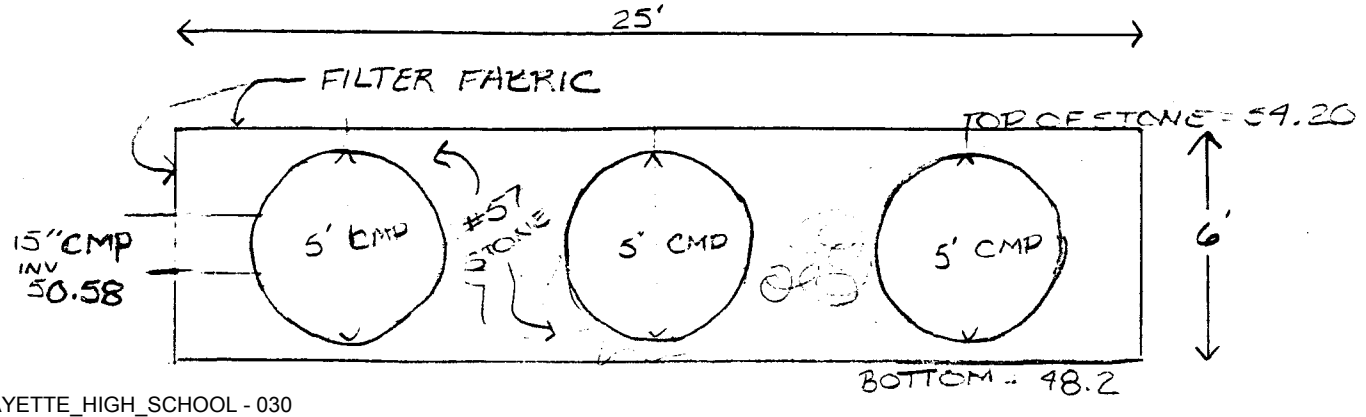
TRENCH SIZE:
50' LONG x 25' WIDE x 1.3' DEEP

TOTAL TRENCH DEPTH = 6 FEET

TRENCH STORAGE:

25' x 50' x 6' = 7500 C.F. - 2650 = (4850)(.40) = 1940 C.F.

1,940 C.F. >> 1,640 C.F
PROVIDED REQUIRED
STORAGE
IN STONE



LAFAYETTE HIGH SCHOOL
1-26-95

FLOW TO PIPE CULVERT AT MAIN ENTRANCE

OVERLAND FLOW = 1.94

DIST = 270
SLOPE = 5.31
T_c = 16 MIN
I_{10} = 4.5 IN/HR
Q = CIA = (.40)(4.5)(1.94) = 3.5 CFS

OVER FLOW FROM TRENCH DURING 10 YEAR STORM

A = 1.25 AC.
I_{10} = 7.0 IN/HR
C = .90

2816 C.F. (SEE HYDROGRAPH ATTACHED)

STORAGE CAPACITY OF TRENCH 1940 C.F

2816 C.F. - 1940 C.F = 876 C.F.

OUTLET PIPE = 40 L.F. 18" @ 9.75
MAX = 33 CFS
@ 18 FPS

33 CFS + 3.5 CFS = 36.5 CFS TOTAL TO CULVERT

James City County Environmental Division
Stormwater Management / BMP Inspection Report
Subsurface Detention and Infiltration Facilities

Database Inventory No. (if known): PC 101

Name of Facility: Subsurface Infilt. Facility BMP No.: 1 of 1 Date: 07/27/00

Location: South End of Bus Loading Area

Name of Owner: Williamsburg - James City County Schools

Inspector: Scott J. Thomas / Rick Hall JCC Env. Div.

Type of Facility: Subsurface Infilt. Facility (Chambers) County Type C

Weather Conditions: Sunny, Mid 80's (ie. following several days of rain)

SITE PLAN S-142-94

If an inspection item is not applicable, mark NA, otherwise mark the appropriate column.

O.K. - The item checked is in adequate condition and the maintenance program is currently satisfactory.
Routine - The item checked requires attention, but does not present an immediate threat to the function of the BMP.
Urgent - The item checked requires immediate attention to keep the BMP operational and prevent damage to the facility.

Provide an explanation and details in the comment column, if routine or urgent are marked.

Facility Item	O.K.	Routine	Urgent	Comments
Accessibility:				
Roads	X			
Parking Areas	X			
Gates				Not Applicable.
Locks				Not Applicable.
Safety Fencing				Not Applicable.
Access Points:				
Trap Doors	X			
Manhole Covers	X			Large Size Maint. Riser, East of BMP.
Grates				Not Applicable
Steps	X			Aluminum
Pretreatment Devices: ☑ Inlet ☐ Sump ☐ Forebay ☐ Other				Double DI-1 Drop Inlet
Sediment		X		Minor in depth, 6" estimated.
Trash & Debris		X		Leaves on Grates, Plastic Bottles in sump.
Structure	X			
Other		X		Standing Pool of water < 2', Normal.

Facility Item	O.K.	Routine	Urgent	Comments
Primary Storage/ Infiltration Area Structure (Pipe, Stone, etc):				
Trash & Debris	X			
Sediment	X			None observed. Pipe Clean
Ponding / Drawdown	X			No WATER, WET ATMOSPHERE
Cracks	X			None
Joints	X			Joints & Aluminum Perf. Pipe EXCELL. COND
Seams	X			
Coating	X			Pipe WALL Clean, Smooth, EXCELL. COND.
Aesthetics	X			VERY CLEAN.
Other		X		HEAVY AIR, DIFFICULT TO BREATH.
Inlet Structure # 1 (Describe Location):	DI-3A INLET WEST OF BMP ⇒ TO Double DI's			
Condition of Structure	X			
Erosion	X			
Trash and Debris	X			Minor.
Sediment		X		Sediment to INVERT OF PIPE TO BMP.
Aesthetics	X			
Other	X			About 1' water in basin.
Inlet Structure # 2 (Describe Location):	OVERLAND, GRASSED ISLAND ⇒ TO Double DI's.			
Condition of Structure	X			
Erosion		X		Minor BARE SPOTS IN GRASS
Trash and Debris	X			None.
Sediment	X			None.
Aesthetics	X			GRASS GOOD CONDITION.
Other	X			
Inlet Structure # 3 (Describe Location):	N/A			
Condition of Structure				
Erosion				
Trash and Debris				
Sediment				
Aesthetics				
Other				
Outlet - Principal Overflow or Bypass Structure (Describe Location):	DI-3A is BYPASS OVERFLOW			
Condition of Structure	X			
Erosion	X			
Trash and Debris	X			
Sediment		X		Sediment to invert of pipe to BMP.

Facility Item	O.K.	Routine	Urgent	Comments
Other	X			About 1' water in CATCH BASIN.
Nusiance Type Conditions:				
Mosquito Breeding	X			None
Animals, Rodents	X			No signs.
Graffiti	X			None.
Other	X			
Perimeter (Contributing Drainage Area) Conditions:				
Stabilization	X			Perimeter Grass/Parking Well-Groomed.
Vegetation Condition	X			Good Condition.
Trash and Debris	X			OK.
Aesthetics	X			Good Condition.
Other	X			

Remarks:

- CARE MUST BE TAKEN GOING INTO MAINTENANCE RISER. CONFINED SPACE CONDITIONS. NEED SPOTTER.
- OVERALL FACILITY IS FUNCTIONING PROPERLY, EVEN FOLLOWING SEVERAL DAYS OF HEAVIER RAIN.

Overall Environmental Division Internal Rating: 4

Signature: Scott J. Thomas, P.E. **Date:** 07/28/00

Title: JCC Environmental Div. Civil Engineer

SWMProg\BMP\CoInspProg\SubDetInfil.wpd

CODE COMPLIANCE REVIEW COMMENTS
LAFAYETTE HIGH SCHOOL ALTERATIONS
PLAN NO. SP-142-94
March 22, 1995 DEC

1. Clarify, by way of a detail, the placement of the riprap at the paved flume at the outfall of the existing 48-inch pipe storm drain that receives drainage from the rear of the building. The riprap adjacent to the flume needs to be placed so that it is shaped to contain the flow from the pipe, a "bowl" needs to be formed.

2. Provide a profile of the DI and pipe system that conveys water to the infiltration trench. It is unclear how the system will work to divert water to the trench and then allow for outflow of the excess storm flows. Also, provide at least 2.5 feet of storage below the pipe inverts in the double DI structure.

3. Add at the end of the note that discusses the protection of the infiltration trench the phrase "or the curb and gutter has been installed."

4. Revise Section A-A of the infiltration trench detail to show the placement of at least 6 inches of topsoil over the top of the trench.