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: **YC012**

DATE VERIFIED: **February 11, 2013**

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: YC012

PIN: 2320100049

Subdivision, Tract, Business or Owner Name (if known): Norge Neighborhood

Property Description: Vacant Lot adjacent to Norge Center Condominiums; 7151 Richmond Road

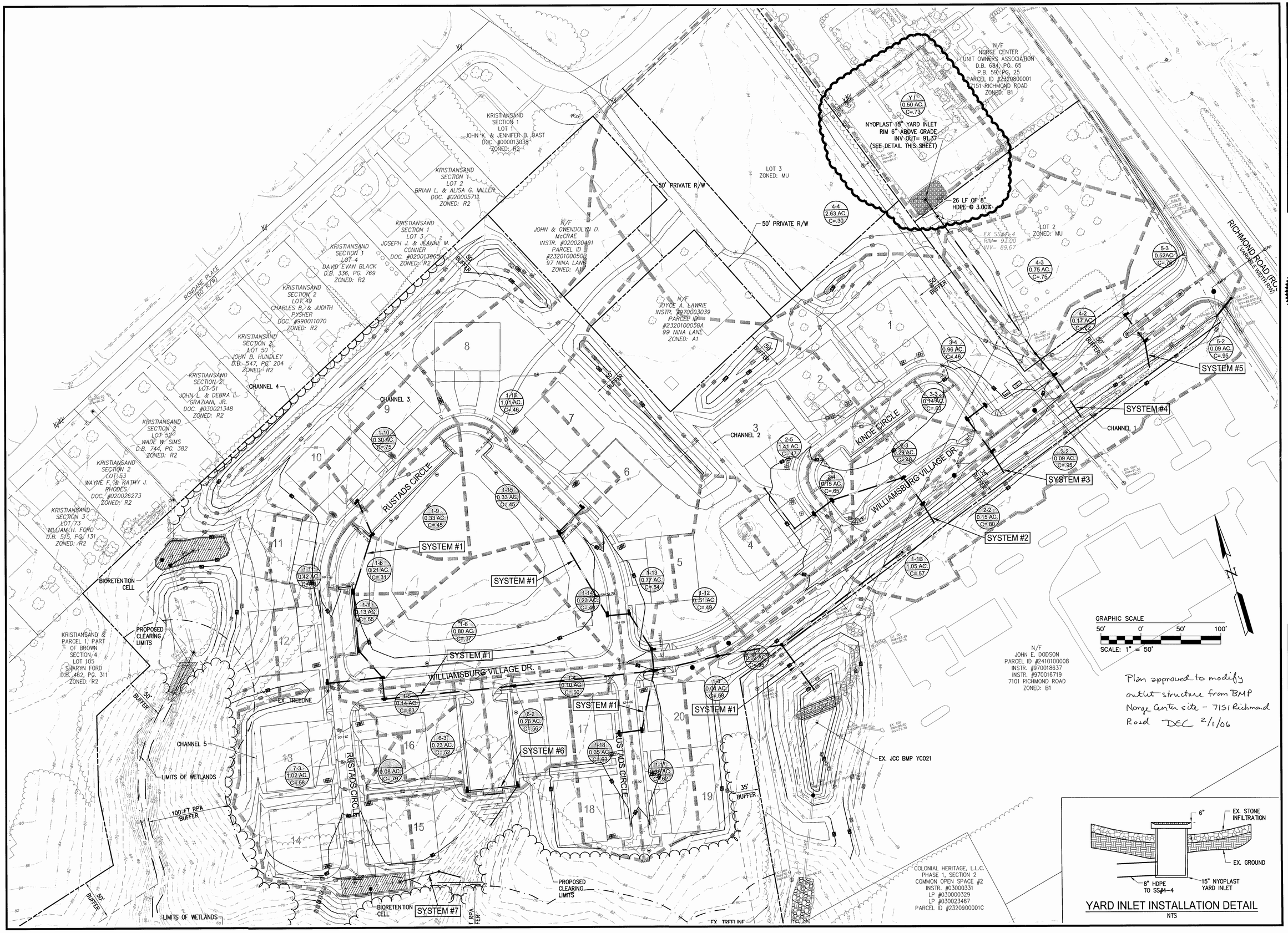
Site Address: 7147 Richmond Road

(For internal use only) **Box** 24 **Drawer:** 9

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

Comments

No.	DATE	REVISION / COMMENT / NOTE	BY
2	5/05	FIRE SUPPRESSION LINES ADDED	JAG
2	8/20/04	REVISIONS PER JCC COMMENTS DATED 8/3/04	VMB
1	7/2/04	REVISIONS PER JCC COMMENTS DATED 5/28/04	VMB



Plan approved to modify outlet structure from BMP Norge Center site - 7151 Richmond Road DEC 2/1/06

YARD INLET INSTALLATION DETAIL
NTS

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

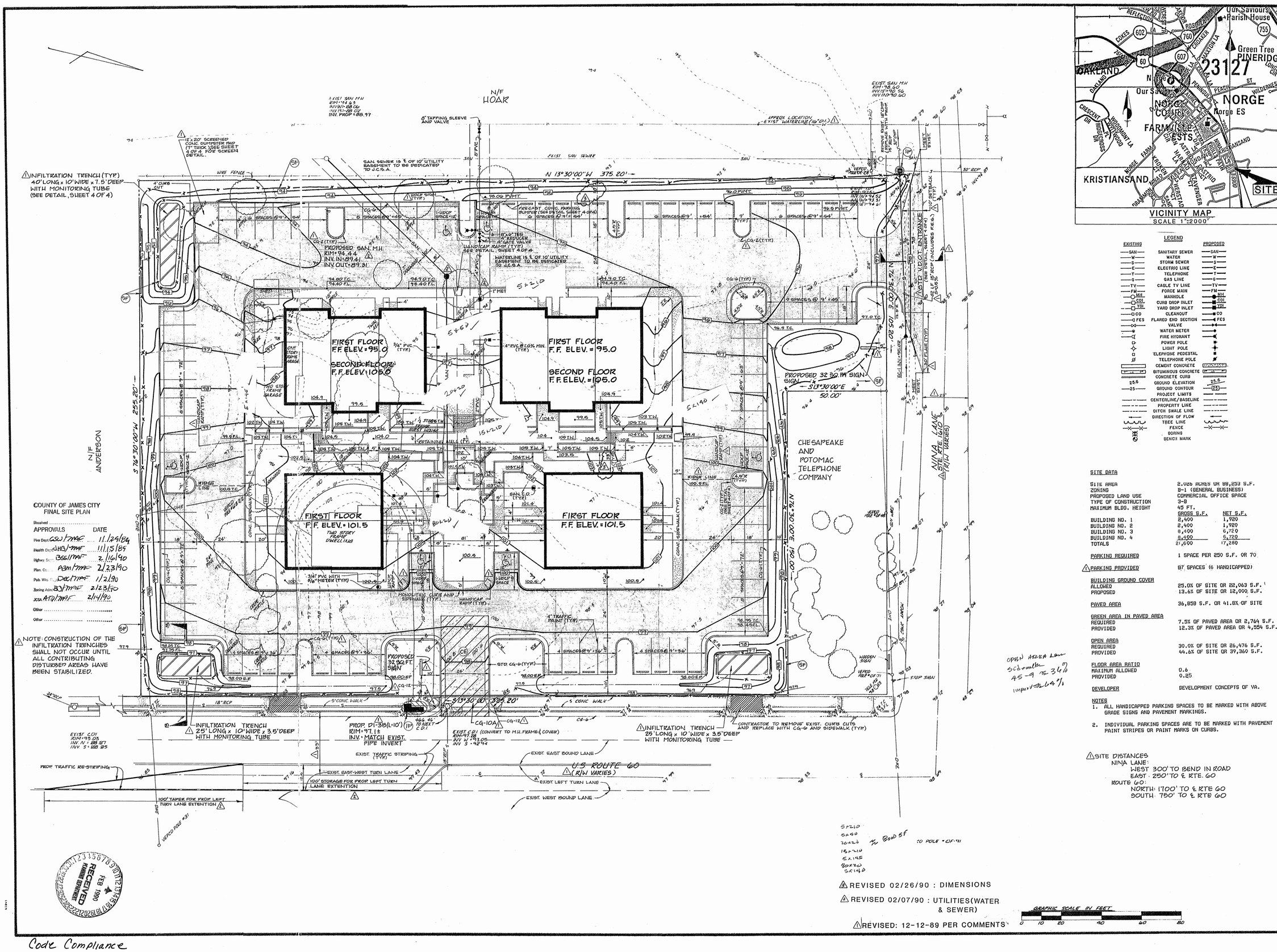
DRAINAGE AREAS

NORGE NEIGHBORHOOD

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG	SRL
Scale	Date
1"=50'	4/28/04
Project No.	
9286-01	
Drawing No.	
9	

YC012_NORGE_OFFICE_PARK - 003



LEGEND

EXISTING		PROPOSED
SAN	SANITARY SEWER	SAN
W	WATER	W
S	STORM SEWER	S
E	ELECTRIC LINE	E
T	TELEPHONE	T
G	GAS LINE	G
TV	CABLE TV LINE	TV
FM	FORCE MAIN	FM
MH	MANHOLE	MH
CDI	CURB DROP INLET	CDI
YDI	YARD DROP INLET	YDI
CO	CLEANOUT	CO
FES	FLARED END SECTION	FES
	VALVE	
	WATER METER	
	FIRE HYDRANT	
	POWER POLE	
	LIGHT POLE	
	TELEPHONE PEDESTAL	
	TELEPHONE POLE	
	CEMENT CONCRETE	
	BITUMINOUS CONCRETE	
	CONCRETE CURB	
25.0	GROUND ELEVATION	25.0
25	GROUND CONTOUR	25
	PROJECT LIMITS	
	CENTERLINE/BASELINE	
	PROPERTY LINE	
	DITCH SWALE LINE	
	DIRECTION OF FLOW	
	TREE LINE	
	FENCE	
	BORING	
	BENCH MARK	

SITE DATA

SITE AREA	2.026 ACRES OR 88,253 S.F.
ZONING	B-1 (GENERAL BUSINESS)
PROPOSED LAND USE	COMMERCIAL OFFICE SPACE
TYPE OF CONSTRUCTION	3-B
MAXIMUM BLDG. HEIGHT	45 FT.

	GROSS S.F.	NET S.F.
BUILDING NO. 1	2,400	1,920
BUILDING NO. 2	2,400	1,920
BUILDING NO. 3	8,400	6,720
BUILDING NO. 4	8,400	6,720
TOTALS	21,600	17,280

PARKING REQUIRED	1 SPACE PER 250 S.F. OR 70
△PARKING PROVIDED	87 SPACES (6 HANDICAPPED)
BUILDING GROUND COVER	
ALLOWED	25.0% OF SITE OR 22,063 S.F.
PROPOSED	13.6% OF SITE OR 12,000 S.F.
PAVED AREA	36,858 S.F. OR 41.8% OF SITE
GREEN AREA IN PAVED AREA	
REQUIRED	7.5% OF PAVED AREA OR 2,764 S.F.
PROVIDED	12.3% OF PAVED AREA OR 4,554 S.F.
OPEN AREA	
REQUIRED	30.0% OF SITE OR 26,476 S.F.
PROVIDED	44.6% OF SITE OR 39,360 S.F.
FLOOR AREA RATIO	
MAXIMUM ALLOWED	0.6
PROVIDED	0.25
DEVELOPER	DEVELOPMENT CONCEPTS OF VA.

NOTES
1. ALL HANDICAPPED PARKING SPACES TO BE MARKED WITH ABOVE GRADE SIGNS AND PAVEMENT MARKINGS.
2. INDIVIDUAL PARKING SPACES ARE TO BE MARKED WITH PAVEMENT PAINT STRIPES OR PAINT MARKS ON CURBS.

△SITE DISTANCES
NINA LANE:
WEST 300' TO BEND IN ROAD
EAST 250' TO ℄ RTE. 60
ROUTE 60:
NORTH: 1700' TO ℄ RTE 60
SOUTH 750' TO ℄ RTE 60

OPEN AREA less sidewalk 45-9 = 36% impervious 64%

△REVISED 02/26/90 : DIMENSIONS
△REVISED 02/07/90 : UTILITIES (WATER & SEWER)
△REVISED: 12-12-89 PER COMMENTS

GRAPHIC SCALE IN FEET 0 10 20 40 60 80

Langley and McDonald
A PROFESSIONAL CORPORATION
ENGINEERS • PLANNERS • SURVEYORS
VIRGINIA BEACH - WILLIAMSBURG, VIRGINIA

DES.	R.E.D.
DWN.	B.S.G.
CHK.	N.H.M.
DATE	11/8/89

SITE AREA 88,253 SF
SIDEWALK RTC
8000 / 88,253 = 9%

NORGE OFFICE PARK
JAMES CITY COUNTY, VIRGINIA
SITE PLAN

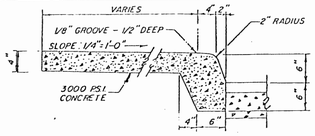
PROJ. NO.	85014
SCALE:	1"=20'
SHEET	1 OF 4
DWG.	3487W

RECEIVED FEB 4 1990 PLANNING DIVISION

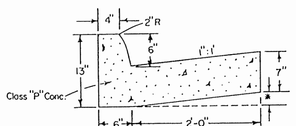
GENERAL NOTES

1. ALL WORK TO BE IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION, "ROAD AND BRIDGE SPECIFICATIONS", DATED 1987, AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION, "ROAD DESIGN AND BRIDGE STANDARDS", 1986 UNLESS OTHERWISE NOTED.
2. VERTICAL CONTROL IS 0.00 NATIONAL OCEAN SURVEY M.S.L.
3. HORIZONTAL CONTROL BASED UPON VIRGINIA PLANE COORDINATE GRID SYSTEM SOUTH ZONE.
4. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR IS DIRECTED TO NOTIFY ALL APPLICABLE OWNERS OF UTILITIES OF THE LIMITS OF IMPENDING CONSTRUCTION IN ORDER THAT THE UTILITY COMPANIES MAY SAFEGUARD THEIR FACILITIES.

   ALL VIRGINIA POWER AND C&P FACILITIES REQUIRING RELOCATION ARE TO BE DONE SO BY AFOREMENTIONED UTILITIES AT CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR TO STRIP TOPSOIL MATERIAL UNDER ROADWAY AND BUILDING LOCATIONS, STRIPPED TOPSOIL TO BE STOCKPILED ON SITE AT LOCATIONS DESIGNATED BY OWNER. STRIPPING NOT TO BE CARRIED OUT WHEN SOIL IS ABNORMALLY WET. REMOVE ALL TRASH AND OTHER EXTRANEOUS MATTER FROM TOPSOIL WHEN STOCKPILING. STRAW BALE BARRIERS SHALL BE PLACED AT THE TOE OF THE STOCKPILE AFTER STRIPPING OF TOPSOIL IS COMPLETE.
6. ALL EROSION CONTROL MEASURES (SEDIMENT BASINS, DIKES, ETC.) SHALL HAVE BEEN INSTALLED PRIOR TO OR DURING STRIPPING.
7. ALL STORM WATER MANAGEMENT FACILITIES INCLUDING EROSION CONTROL STONE ARE TO BE INSTALLED AND MADE OPERATIONAL WITHIN 30 DAYS FOLLOWING THE START OF CLEARING OPERATIONS INCLUDING THE START OF CLEARING OPERATIONS INCLUDING APPROVED SEDIMENT BASINS. THE INSTALLATION OF DRAINAGE FACILITIES SHALL TAKE PRECEDENCE OVER ALL OTHER UNDERGROUND UTILITIES.
8. ALL STORM SEWER PIPES AND DROP INLETS TO BE CLEANED OF DEBRIS AND ERODED MATERIAL AT LAST STAGES OF CONSTRUCTION.
9. ALL DRAINAGE STRUCTURES TO CONFORM TO VIRGINIA DEPARTMENT OF TRANSPORTATION, "ROAD DESIGNS AND STANDARDS," 1986 UNLESS OTHERWISE INDICATED.
10. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT.
11. ALL AREAS DESIGNATED FOR PAVING UNDERGROUND UTILITIES AND STRUCTURAL USE SHALL BE STABILIZED AS SOON AS PRACTICAL BUT NOT EXCEEDING 30 DAYS FOLLOWING INSTALLATION. NO MORE THAN 300' OF SANITARY SEWER OR STORM SEWER ARE TO BE OPEN AT ANY ONE TIME. BASE COURSE MATERIAL SHALL BE PLACED IN ALL PARKING AND STREET AREAS WITHIN 30 DAYS OF FINAL GRADING.
12. SEDIMENT TRAPS OR BALED STRAW ARE TO BE INSTALLED AT THE PERIMETER OF ALL DROP INLETS.
13. ALL MANHOLE RIMS TO BE FLUSH WITH GROUND, RIM ELEVATION MAY VARY SLIGHTLY TO SUIT EXISTING UNDISTURBED GROUND.
14. SURFACE DRAINAGE NOT TO BE ALLOWED TO ENTER SANITARY SEWER SYSTEM AT ANY TIME.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAYS, WALKS, CURBS, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.
16. ALL CONCRETE TO BE CLASS "A-3" AIR ENTRAINED (3000 PSI).
17. ALL DIMENSIONS ARE TO FACE OF CURB, FACE OF BUILDING, EDGE OF PAVEMENT UNLESS OTHERWISE INDICATED.
18. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE 1980 VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK, SYMBOLS USED ON THIS PLAN CONFORM TO THE HANDBOOK SYMBOLS.
19. WHERE SANITARY SEWER STUBS OR WATER SYSTEM PLUGS ARE NOTED ON PLANS, CONTRACTOR TO MARK LOCATIONS AND DEPTH WITH 2" P.V.C. DRIVEN INTO GROUND. SEWER LATERALS ARE TO BE MARKED BY A CLEAN-OUT EXTENDING 6" ABOVE FINISHED GRADE.
20. ALL SANITARY SEWER CONSTRUCTION, MATERIALS AND STRUCTURES TO BE IN ACCORDANCE WITH SPECIFICATIONS, STANDARDS, AND DETAILS OF JAMES CITY COUNTY SERVICE AUTHORITY
21. ALL WATER LINE CONSTRUCTION, MATERIALS, AND STRUCTURES TO BE IN ACCORDANCE WITH SPECIFICATIONS, STANDARDS, AND DETAILS OF JAMES CITY SERVICE AUTHORITY.
22. ALL NEW AND RELOCATED UTILITIES ARE TO BE PLACED UNDERGROUND.

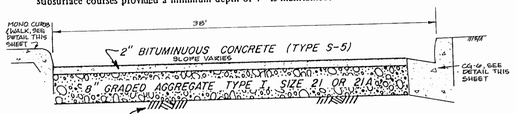


MONOLITHIC CURB AND SIDEWALK DETAIL
N.T.S.

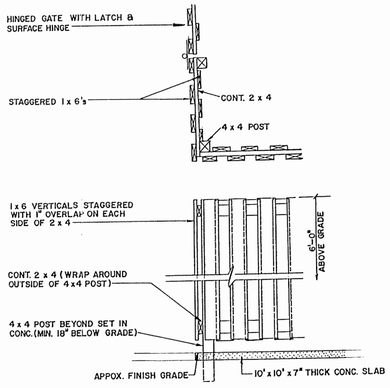


CG-6 DETAIL
N.T.S.

*The bottom of the curb and gutter may be constructed parallel to the slope of subsurface courses provided a minimum depth of 7" is maintained.

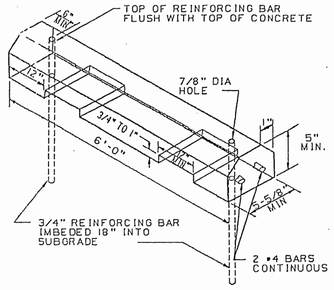


TYPICAL PAVEMENT SECTION
N.T.S.

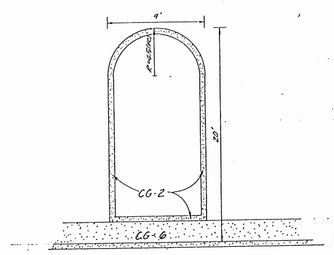


NOTE: ALL MATERIAL PRESSURE TREATED.

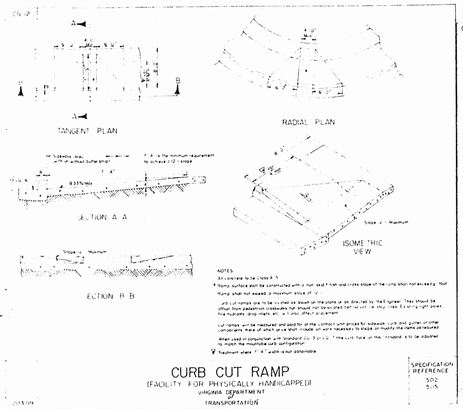
⚠ DUMPSTER SCREEN
N.T.S.



PARKING BUMPER
(PRECAST CONCRETE)

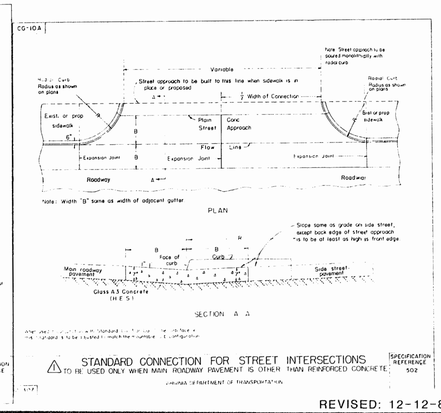


TYPICAL CURB ISLAND WITH STD. CG-6
N.T.S.



CURB CUT RAMP
(FACILITY FOR PHYSICALLY HANDICAPPED)
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 502 505



⚠ STANDARD CONNECTION FOR STREET INTERSECTIONS
TO BE USED ONLY WHEN MAIN ROADWAY PAVEMENT IS OTHER THAN REINFORCED CONCRETE

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 502

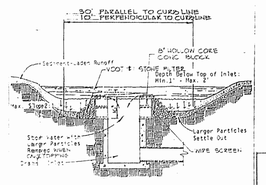
REVISED: 12-12-89 PER COMMENTS

(IP) INLET PROTECTION AT CURB DROP INLETS.

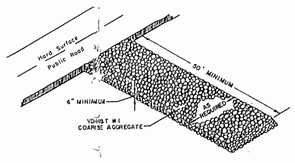
INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET STRUCTURE.

A. IF THE TOP OF THE CURB INLET IS SET AT THE SAME TIME AS THE INLET BASE, INLET PROTECTION MAYBE IN ACCORDANCE WITH EITHER PLATE 1.08g OR PLATE 1.08h.

B. IF THE TOP OF THE INLET STRUCTURE IS TO BE INSTALLED AT A DATE AFTER CONSTRUCTION OF THE INLET BASE, THEN INLET PROTECTION SHALL BE IN ACCORDANCE WITH "INLET PROTECTION DETAIL." AFTER THE TOP OF THE INLET IS SET THEN INLET PROTECTION SHALL BE INSTALLED IN ACCORDANCE WITH PARAGRAPH A.



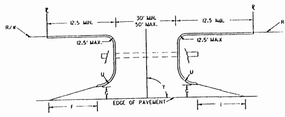
INLET PROTECTION DETAIL (IP)



(CE) CONSTRUCTION ENTRANCE
N.T.S.

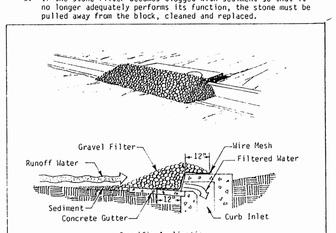
⚠ COMMERCIAL ENTRANCE DESIGNS ALONG HIGHWAYS WITH SHOULDERS

SINGLE TWO - WAY ENTRANCE



LETTER SYMBOL	DIMENSIONS
A	As determined by the Engineer
B	150' minimum
F	30' minimum
G	Equal width of one approach lane with a minimum of 10'
U	12.5' minimum 25' desirable minimum
Y	45° minimum 90° desirable

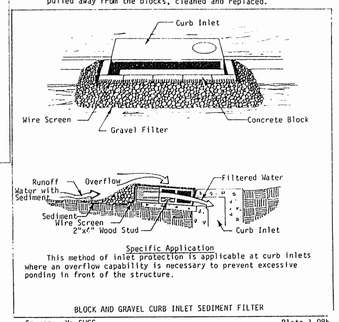
7. GRAVEL CURB INLET SEDIMENT FILTER
   a. Hardware cloth or comparable wire mesh with 1/2-inch openings shall be placed over the curb inlet opening so that at least 12 inches of wire extends across the inlet cover and at least 12 inches of wire extends across the concrete gutter from the inlet opening, as illustrated in Plate 1.08g.
   b. Stone shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely. VDH&T No.1 Coarse Aggregate shall be used.
   c. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the block, cleaned and replaced.



GRAVEL CURB INLET SEDIMENT FILTER

Source: Va SWCC — Plate 1.08g

8. BLOCK & GRAVEL CURB INLET SEDIMENT FILTER
   a. Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening.
   b. A 2-inch by 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.
   c. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks as illustrated in Plate 1.08h.
   d. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Chicken wire or hardware cloth with 1/2-inch openings shall be used.
   e. VDH&T No.1 Coarse Aggregate shall be piled against the wire to the top of the barrier as shown in Plate 1.08h.
   f. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.

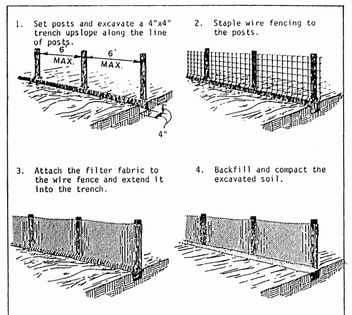


BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER

Source: Va SWCC — Plate 1.08h

Maintenance

1. The structure shall be inspected after each rain and repairs made as needed.
2. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
3. Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.



CONSTRUCTION OF A SILT FENCE

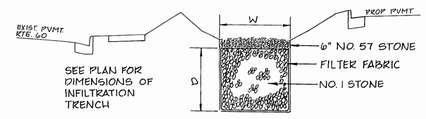
Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant — Plate 1.06c

(SF) SILT FENCE
N.T.S.

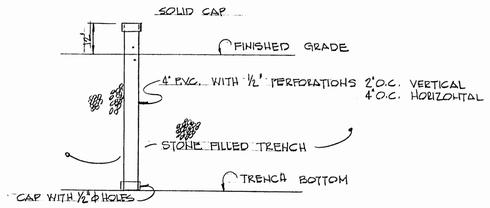
EROSION AND SEDIMENT CONTROL NOTES

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.

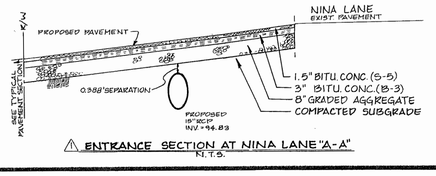
1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK". THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN WHICH MAY BE PERTINENT TO THIS PROJECT.
2. ALL POINTS OF CONSTRUCTION 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 CONTROL DEVICES, SUCH AS SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, CHECK DAMS OR OTHER MEASURES NOT LOCATED IN PROPOSED FILL OR EXCAVATION AREAS, SHALL BE CONSTRUCTED PRIOR TO ALL OTHER LAND DISTURBANCE. AN ON-SITE PRE-CONSTRUCTION MEETING WILL BE HELD BETWEEN THE DEPARTMENT OF CODE COMPLIANCE AND THE CONTRACTOR TO IDENTIFY THOSE MEASURES TO BE INITIALLY INSTALLED.
4. MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK". MAINTENANCE WILL 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 PUBLIC WORKS 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 FLOW TRANSVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY LOWER WATER DOWNSLOPE WITHOUT CAUSING EROSION. A TEMPORARY FILL DIVERSION (STD. & SPEC. 1.16) 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. DEPARTMENT OF CODE COMPLIANCE APPROVAL WILL BE REQUIRED FOR OTHER DEVIATIONS FROM THE APPROVED PLANS.
7. THE CONTRACTOR SHALL STRIP AND PILE TOPSOIL AT THE LOCATIONS SHOWN ON THIS PLAN OR AS DIRECTED BY THE ENGINEER. SILT FENCE SHALL BE PLACED AT THE TOE OF THE STOCKPILE AFTER STRIPPING OF TOPSOIL IS COMPLETE.
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.
9. TEMPORARY VEGETATIVE COVER SHALL BE PROVIDED IN ALL AREAS WHICH ARE NOT DESIGNATED FOR PAVING, UNDERGROUND UTILITIES OR STRUCTURAL USES IN ACCORDANCE WITH SPECIFICATION 1.65, TEMPORARY SEEDING. SUCH AREAS SHALL NOT BE EXPOSED FOR PERIODS EXCEEDING 30 DAYS. TEMPORARY VEGETAL COVER MAY BE ELIMINATED IN FAVOR OF FINAL VEGETAL COVER IF CONSTRUCTION AND SEASONAL CONDITIONS PERMIT.
10. ALL AREAS DESIGNATED FOR PAVING, UNDERGROUND UTILITIES, AND STRUCTURAL USE SHALL BE STABILIZED AS SOON AS POSSIBLE, BUT NOT EXCEEDING 15 DAYS FOLLOWING INSTALLATION. NO MORE THAN 300' OF SANITARY SEWER, STORM SEWER, OR WATER LINES ARE TO BE OPEN AT ONE TIME.
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 1.75. SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.
12. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION, ON THIS 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 1.66, 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 1.75, MULCHING AND MANUFACTURER'S INSTRUCTIONS.
14. INLET PROTECTION IN ACCORDANCE WITH SPECIFICATION 1.08 SHALL BE PROVIDED FOR ALL STORM DRAIN INLETS AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION OF SAME.
15. BASE COURSE MATERIAL SHALL BE PLACED IN ALL STREET AREAS WITHIN 30 DAYS OF FINAL GRADING.
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 JAMES CITY COUNTY PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.



SECTION B-B
⚠ INFILTRATION TRENCH (TYPICAL)
N.T.S.



WATER LEVEL MONITORING TUBE DETAIL
N.T.S.



⚠ ENTRANCE SECTION AT NINA LANE "A-A"
N.T.S.

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DES.
DWN. B.S.G.
CHK. N.H.M.
DATE 11/8/89

NORGE OFFICE PARK
JAMES CITY COUNTY, VIRGINIA
DETAIL SHEET

PROJ. NO. 85014
SCALE:
SHEET 4 OF 4
DWG. 3484W

YC012_NORGE_OFFICE_PARK - 005

Langley and McDonald
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VIRGINIA BEACH - WILLIAMSBURG, VIRGINIA

Subject: Norge Office Park Infiltration Trench
Computed By: RED Checked By:

Project No. 85-14-29
Client: Design Concepts
Date: 11-7-89 Sheet No. 1

Infiltration Trench

Design Criteria: Infiltration trench volume equal to difference between existing site - bean field at runoff coefficient of 0.5 and proposed site - office complex at runoff coefficient of 0.7.

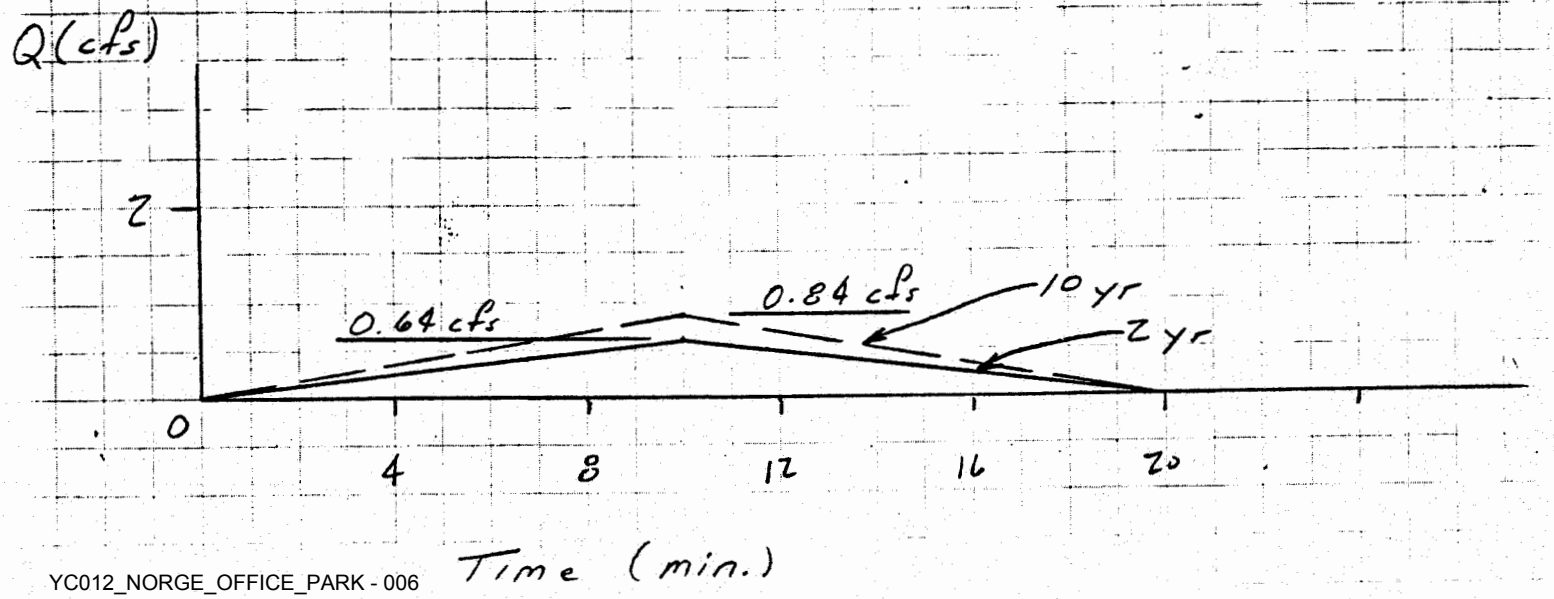
Drainage Area 1 & 2 = 0.28 Ac. each

t_c = 10 minutes (existing & proposed)

Volume of Runoff (existing)

$Q_2 = CIA = 0.5 \times 0.28\ Ac \times i_2 = 0.14 \times 4.6 = \underline{0.64\ cfs}$

$Q_{10} = \quad = 0.5 \times 0.28\ Ac \times i_{10} = 0.14 \times 6.0 = 0.84\ cfs$



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Subject _____
Computed By _____ Checked By _____

Project No. _____
Client _____
Date _____ Sheet No. 2

$V_2 = \frac{1}{2}(20\ min \times 0.64\ cf/sec) = 6.4\ cf \cdot min/sec \times \frac{60\ sec}{min}$

$V_2 = 384\ c.f.$

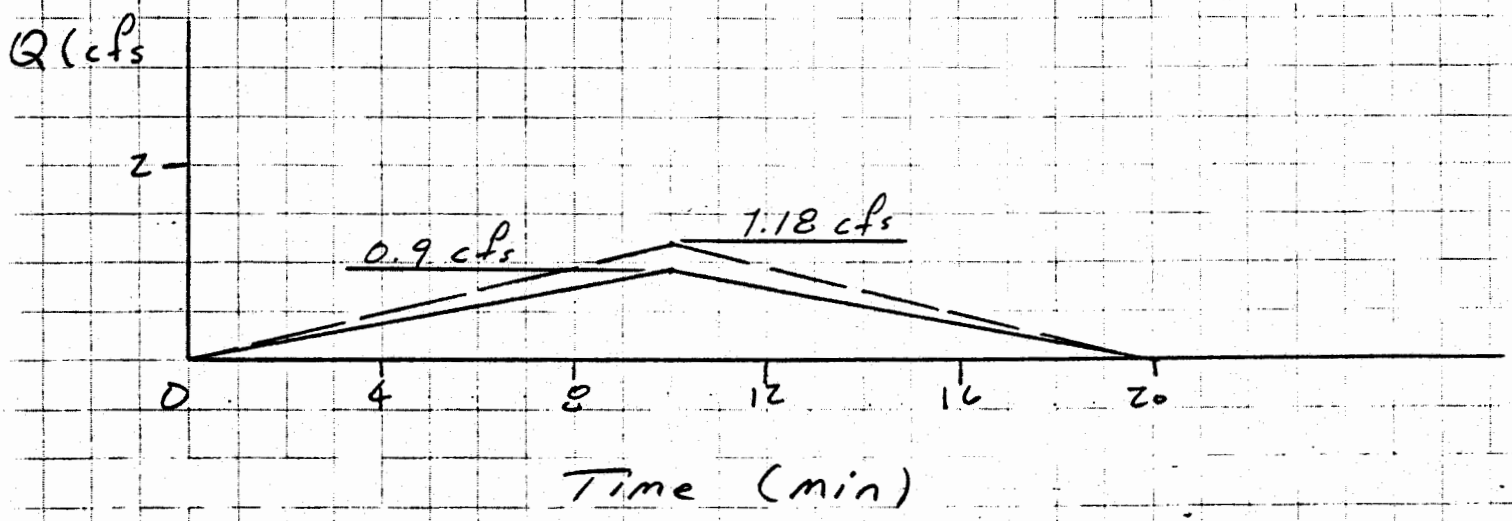
$V_{10} = \frac{1}{2}(20\ min \times 0.84\ cf/sec) \times \frac{60\ sec}{min} =$

$V_{10} = 504\ c.f.$

Volumn of Runoff (proposed)

$Q_2 = CIA = 0.7 \times 0.28 \times 4.6 = 0.9\ cfs$

$Q_{10} = \quad = 0.7 \times 0.28 \times 6.0 = 1.18\ cfs$

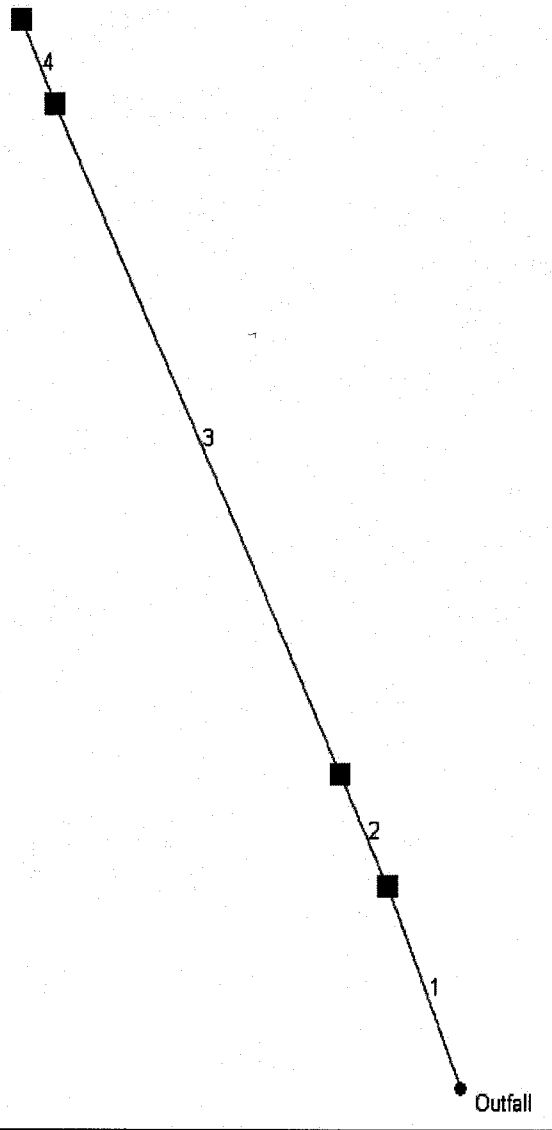


$V_2 = \frac{1}{2}(20\ min. \times 0.9\ cfs) \times 60\ sec/min = 540\ c.f.$

$V_{10} = \frac{1}{2}(20\ min. \times 1.18\ cfs) \times 60\ sec/min = 708\ c.f.$

Hydraflow Plan View

REVISED STORM SYSTEM



Project File: 9286-01 SS4 REVISED.stm	No. Lines: 4	01-18-2006

Hydraflow Storm Sewers 2005

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	62.0	0.17	4.05	0.72	0.12	1.85	5.0	15.9	5.0	9.30	11.78	5.46	18	1.26	86.28	85.50	87.60	87.20	90.45	86.00	SS4-2 - SS4-1
2	1	35.0	0.75	3.88	0.75	0.56	1.73	6.0	15.8	5.0	8.71	7.94	4.93	18	0.57	86.48	86.28	88.21	87.96	91.00	90.45	SS4-3 - SS4-2
3	2	210.0	2.63	3.13	0.30	0.79	1.17	10.0	15.1	5.1	6.00	7.96	5.35	15	1.52	89.67	86.48	90.65	88.40	93.00	91.00	SS4-4 - SS4-3
4	3	26.0	0.50	0.50	0.76	0.38	0.38	15.0	15.0	5.1	1.95	2.09	5.60	8	3.00	90.45	89.67	91.37	90.69	93.50	93.00	15in YARD INLE

Project File: 9286-01 SS4 REVISED.stm | Number of lines: 4 | Run Date: 01-18-2006

NOTES: Intensity = 143.72 / (Inlet time + 19.20) ^ 0.94; Return period = 10 Yrs.

Hydraflow Storm Sewers 2005

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VIRGINIA BEACH • WILLIAMSBURG, VIRGINIA

Subject _____
Computed By _____ Checked By _____

Project No. _____
Client _____
Date _____ Sheet No. 3

Increased Volumn from Existing to Proposed

$Vol_2 = V_2$ Proposed $- V_2$ Existing

$Vol_2 = 540$ c.f. $- 384$ c.f. $=$ ~~156 c.f.~~
227 ft^3 / .4 = 567 ft^3

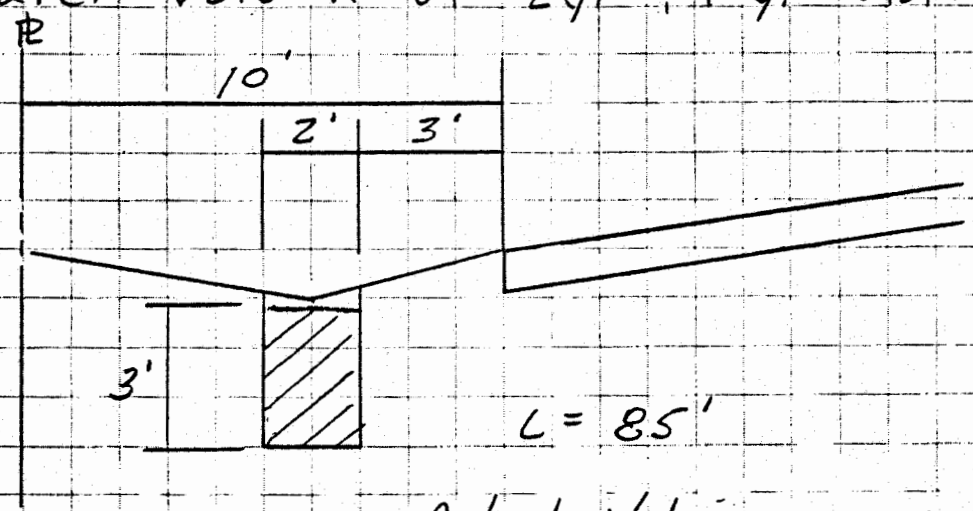
$Vol_{10} = V_{10}$ Proposed $- V_{10}$ Existing

$Vol_{10} = 708$ c.f. $- 504$ c.f. $=$ ~~204 c.f.~~
307 ft^3 / .4 = 768 ft^3

1" Vol = 711.5 ft^3 ✓ 50 YR = 619 ft^3 ✓

Therefore Volumn of Infiltration Trench = 204 c.f.

(The Greater Volumn of 2yr & 10yr Storms)



L = 85'

Actual Volumn = 2.5 x 204 c.f. = 510 c.f.

X-tion Area = 510 c.f. ÷ 85 ft = 6 s.f.

Width = 6 s.f ÷ 3 ft = 2' wide

2 x 3 x 94 ft – 2 year each
128 ft – 10 yr each
50 yr each

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Subject _____
Computed By _____ Checked By _____

Project No. _____
Client _____
Date _____ Sheet No. 4

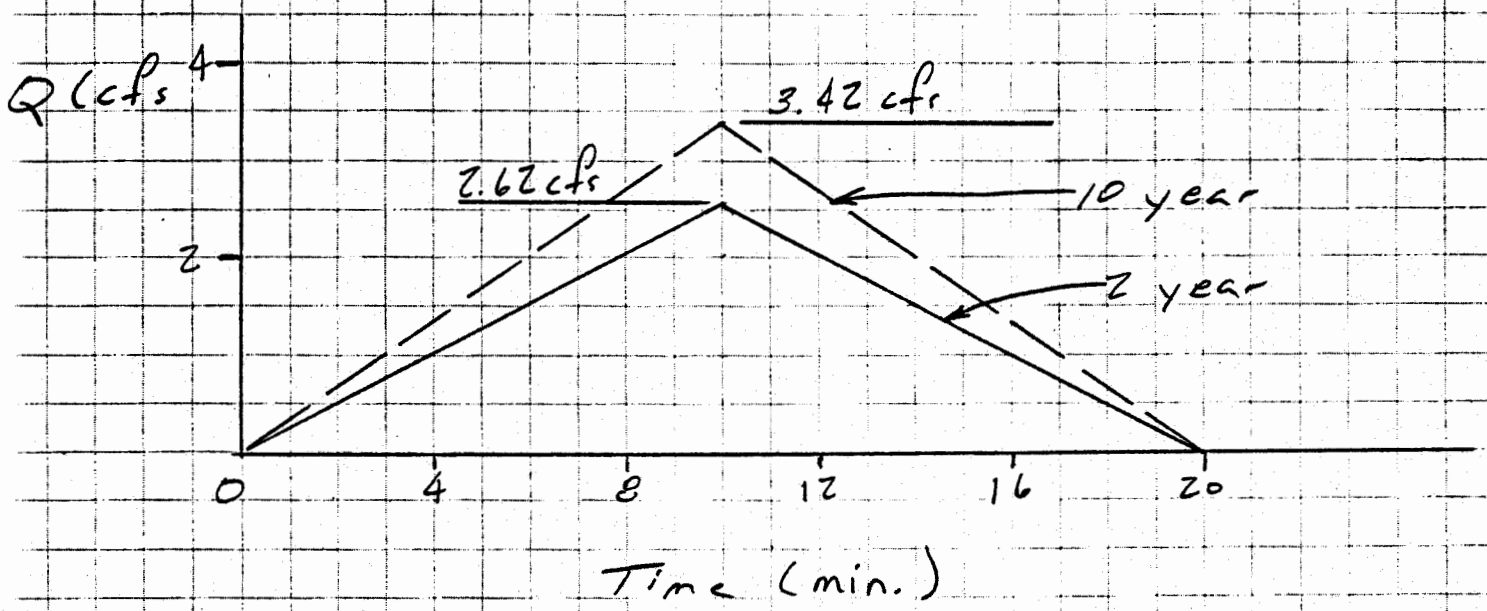
Drainage Area 3 = 1.13 Acres

t_c = 10 min. (existing & proposed)

Volumn of Runoff (existing)

$Q_2 = CIA = 0.5 \times 1.13\ Ac \times I_2 = 0.57 \times 4.6 = 2.62$ cfs

$Q_{10} = \quad = 0.5 \times 1.13\ Ac \times I_{10} = 0.57 \times 6.0 = 3.42$ cfs



$V_2 = 1/2\ (20\ min \times 2.62\ cf/sec.) \times 60\ sec/min =$

$V_2 = 1572$ c.f.

$V_{10} = 1/2\ (20\ min \times 3.42\ cf/sec.) \times 60\ sec/min =$

$V_{10} = 2{,}052$ c.f.

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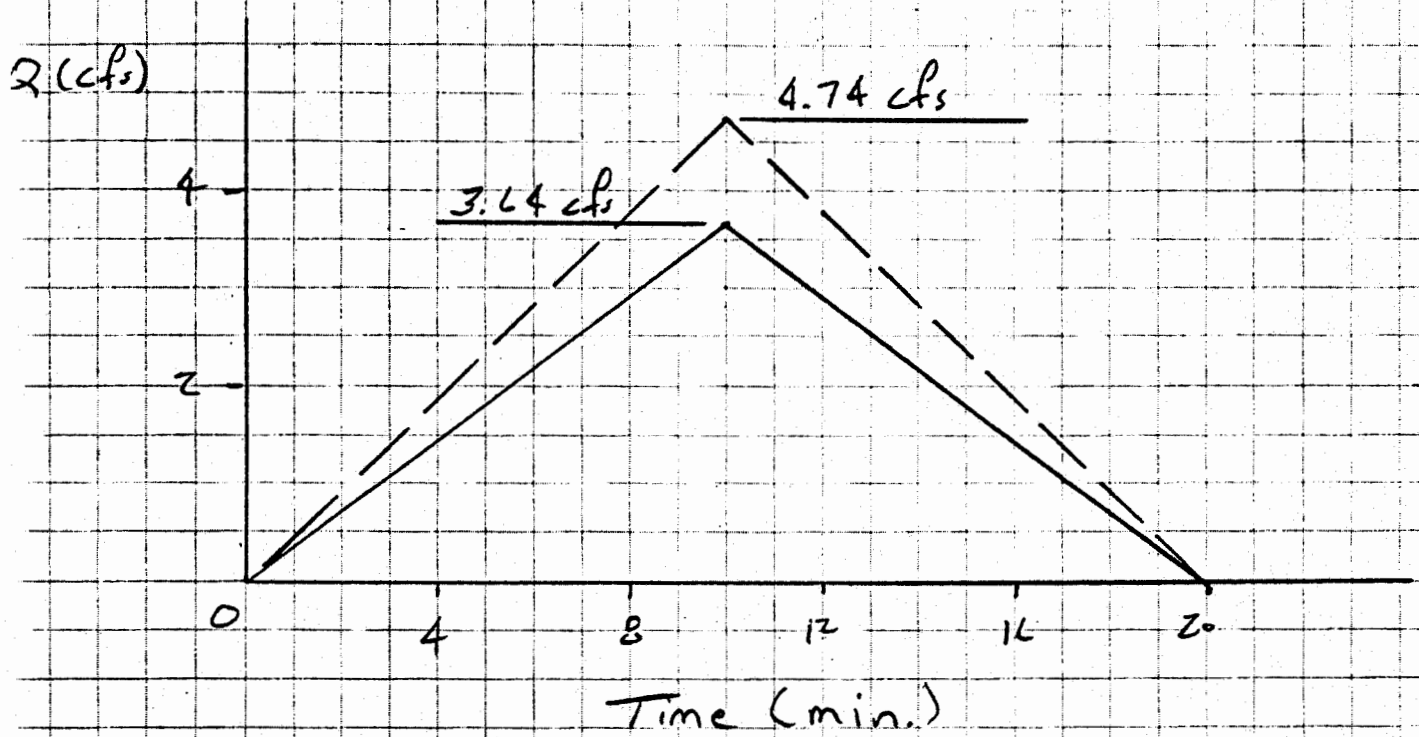
Subject _____
Computed By _____ Checked By _____

Project No. _____
Client _____
Date _____ Sheet No. 5

Volume of Runoff (Proposed)

$Q_2 = 0.7 \times 1.13 Ac \times i_2 = 0.79 \times 4.6 = 3.64$ cfs

$Q_{10} = 0.7 \times 1.13 Ac \times i_{10} = 0.79 \times 6.0 = 4.74$ cfs



$V_2 = \frac{1}{2}(20 \text{ min} \times 3.64 \text{ cf/sec}) \times 60 \text{ sec/min} =$

$V_2 = 2{,}184$ cf

$V_{10} = \frac{1}{2}(20 \text{ min} \times 4.74 \text{ cf/sec}) \times 60 \text{ sec/min} =$

$V_{10} = 2{,}844$ cf

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Subject _____
Computed By _____ Checked By _____

Project No. _____
Client _____
Date _____ Sheet No. 6

Increased Volume from existing to proposed

Vol_2 = 2,184 c.f. − 1,572 cf = 612 c.f.
882 cf − @ 17 min Tc

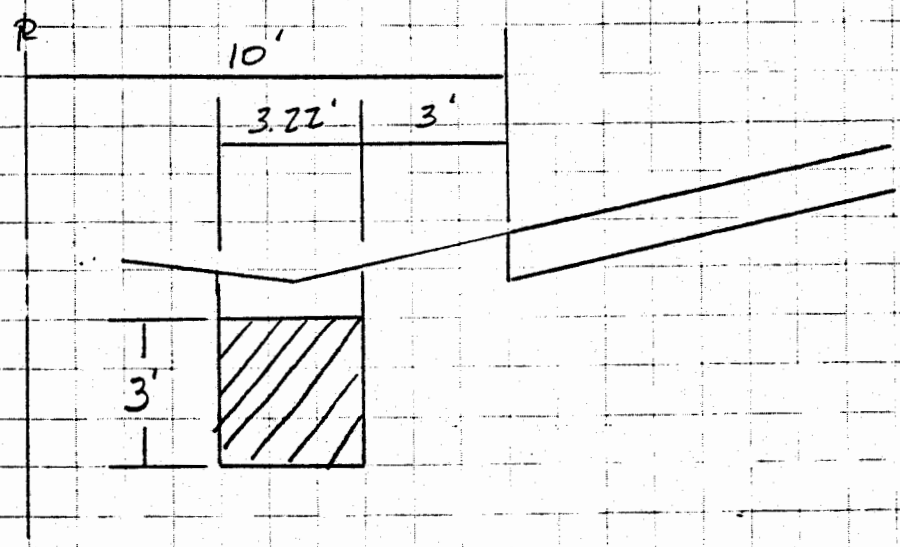
Vol_{10} = 2,844 c.f. − 2,052 cf = 792 cf
1210 ft^3
1' Vol = 2871 ft^3

Therefore volume of Infiltration Trench = 792 cf

Actual Volume = 2.5 × 792 cf = 1,980 cf

X-tion Area = 1,980 cf ÷ 205 ft = 9.66 sf

Width = 9.66 sf ÷ 3 ft = 3.22 ft wide



Soil Type 19B - Kempsville -

Assume 60 min / inch perc rate
Depth 36"
Drawdown Time - 36" × 60 min / inc = 36 hours
36 hrs < 5 days - O.K. -
Actual field test should be performed to establish

AES CONSULTING ENGINEERS
Engineering, Surveying and Planning
5248 Olde Towne Road, Suite 1
WILLIAMSBURG, VIRGINIA 23188

(757) 253-0040
FAX (757) 220-8994

LETTER OF TRANSMITTAL

DATE 1/19/06	JOB NO. 9286-1
ATTENTION DARRYL COOK	
RE: Norge Neighborhood / Norge Office Park	

TO JCC ENVIRONMENTAL

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
2			PLAN REVISION + REV. CALC

RECEIVED
JAN 19 2006
ENVIRONMENTAL DIVISION

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

Darryl -
The attached plan change is in response to a request by James Neal from the Norge Office Park. The added inlet is to help relieve current flooding issues. Please call if you have any questions.

Thanks

COPY TO _____ SIGNED: JASON GRIMES

If enclosures are not as noted, kindly notify us at once.

Date Record Created:

Created By:

WS_BMPNO: YC012

Print Form

PRINTED ON:
Saturday, March 13, 2010
3:17:51 PM

WATERSHED	YC
BMP ID NO	012
PLAN NO	
TAX PARCEL	
PIN NO	2320800201
CONSTRUCTION DATE	
PROJECT NAME	Norge Office Center
FACILITY LOCATION	7151 Richmond Road
CITY-STATE	Williamsburg, VA
CURRENT OWNER	Norge Center Unit Owners Association
OWNER ADDRESS	PO Box 338
OWNER ADDRESS 2	
CITY-STATE-ZIP CODE	Toano, VA 23168
OWNER PHONE	
MAINT AGREEMENT	No
EMERG ACTION PLAN	No

MAINTENANCE PLAN	No	CTRL STRUC DESC	PVC
SITE AREA acre	0	CTRL STRUC SIZE inches	2
LAND USE		OTLT BARRL DESC	
old BMP TYP	Infiltration Basin	OTLT BARRL SIZE inch	
JCC BMP CODE	C3 Infiltration Basin .5		
POINT VALUE		EMERG SPILLWAY	No
		DESIGN HW ELEV	
		PERM POOL ELEV	
SVC DRAIN AREA acres	3	2-YR OUTFLOW cfs	0.90
		10-YR OUTFLOW cfs	1.18
		REC DRAWING	No
SERVICE AREA DESCRI			
IMPERV AREA acres		CONSTR CERTIF	No
RECV STREAM			
EXT DET-WQ-CTRL	No	LAST INSP DATE	11/2/2000
WTR QUAL VOL acre-ft	0	INTERNAL RATING	4
CHAN PROT CTRL	No		
CHAN PROT VOL acre-ft	0	MISC/COMMENTS	
SW/FLOOD CONTROL	No	Infiltration Pit	
GEOTECH REPORT	No		

Inspected by:

Get Last BMP No

Return to Menu

Additional Comments:

IMPORTANT MESSAGE

FOR PAT

DATE 8/1 TIME 8:45 A.M. P.M.

WHILE YOU WERE OUT

M Karen Plemley - Automated Business Solns -

OF Norgl Office Park - ~~564~~ Suite 302

PHONE NO. 564-6324

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		RUSH	

RETURNED YOUR CALL

MESSAGE ~~[illegible]~~

DRA Assoc. - James Neal

Infiltration trench does not have adequate overflow -

SIGNED

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