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: **CC-009**

DATE VERIFIED: **March 22, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: March 10, 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: CC009

PIN: 5020100046

Subdivision, Tract, Business or Owner Name (if known): Storyland Properties

Property Description: VIP & Celebrity Limo

Site Address: 7346 Merrimac Trail

(For internal use only) **Box** 10 **Drawer:** 6

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

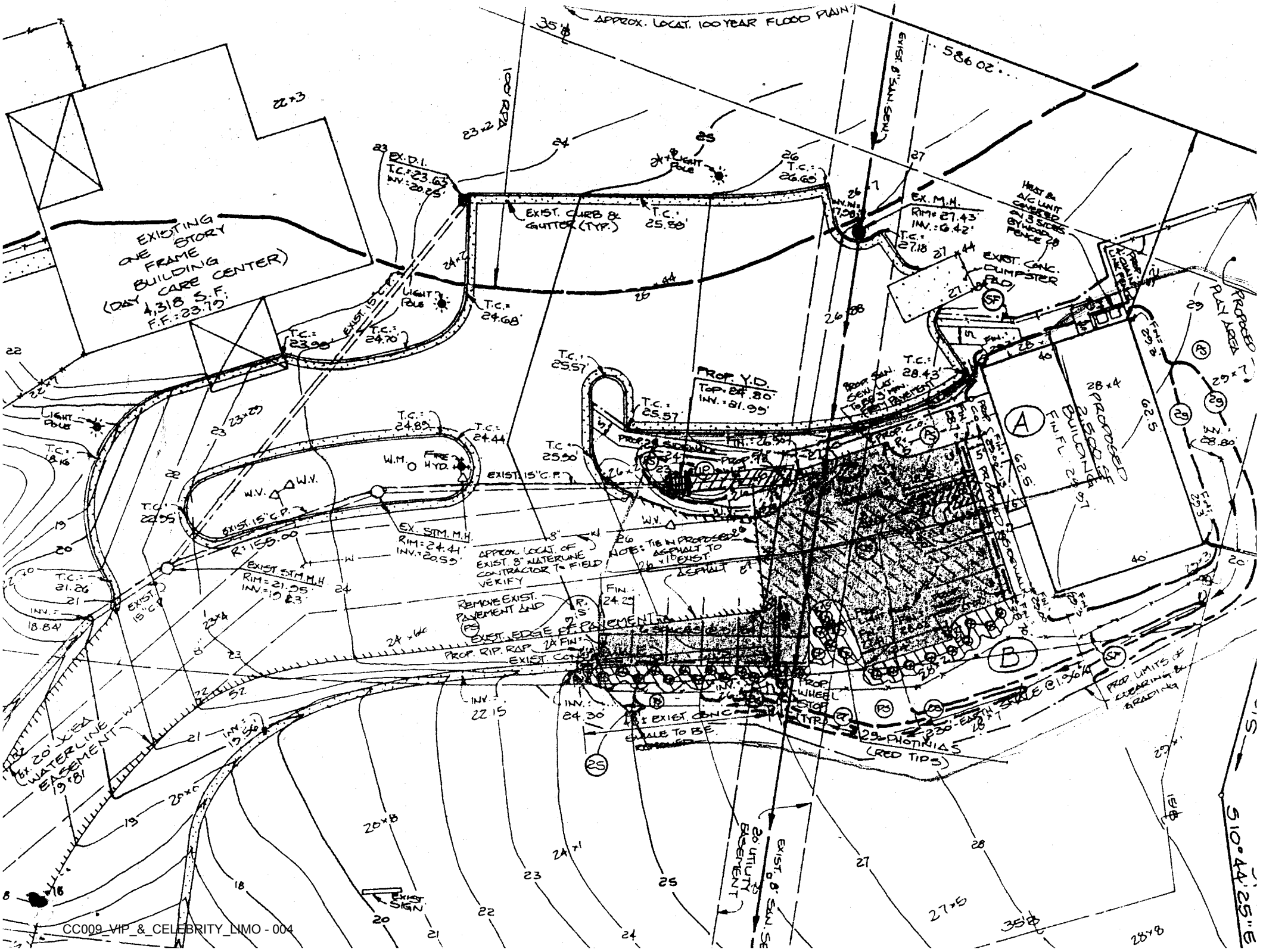
Comments

CC009

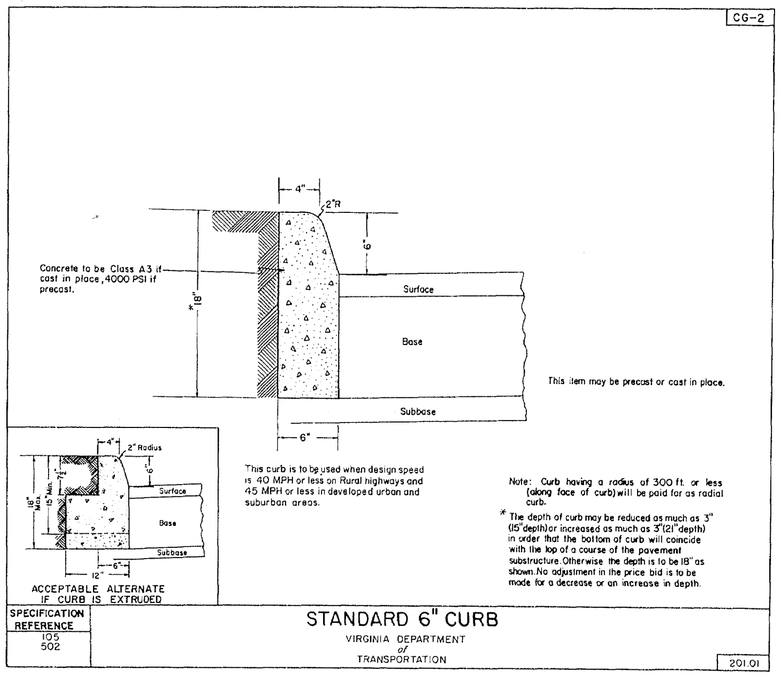
Contents for Stormwater Management Facilities As-built Files

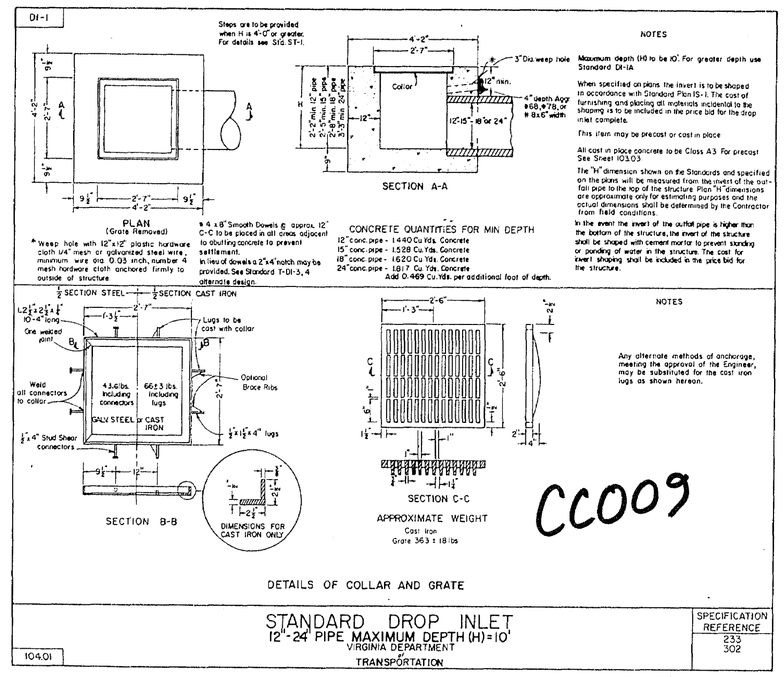
Each file is to contain:

1. As-built plan
2. Completed construction certification
3. Construction Plan
4. Design Calculations
5. Watershed Map
6. Maintenance Agreement
7. Correspondence with owners
8. Inspection Records
9. Enforcement Actions

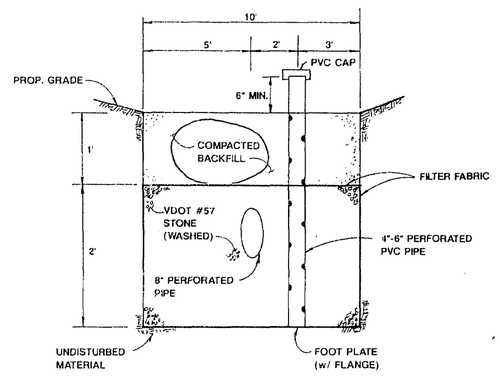


CC009_VIP_&_CELEBRITY_LIMO - 004

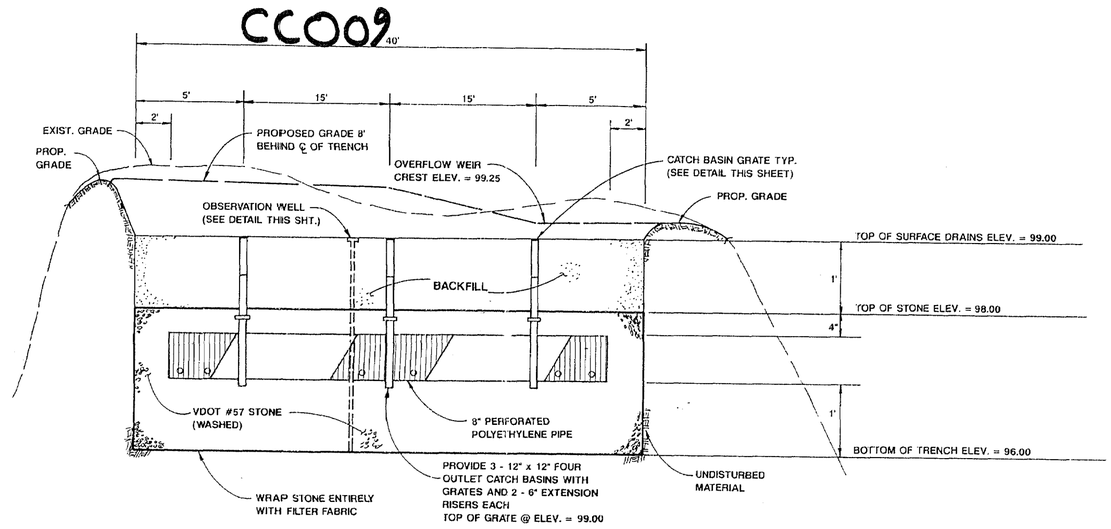




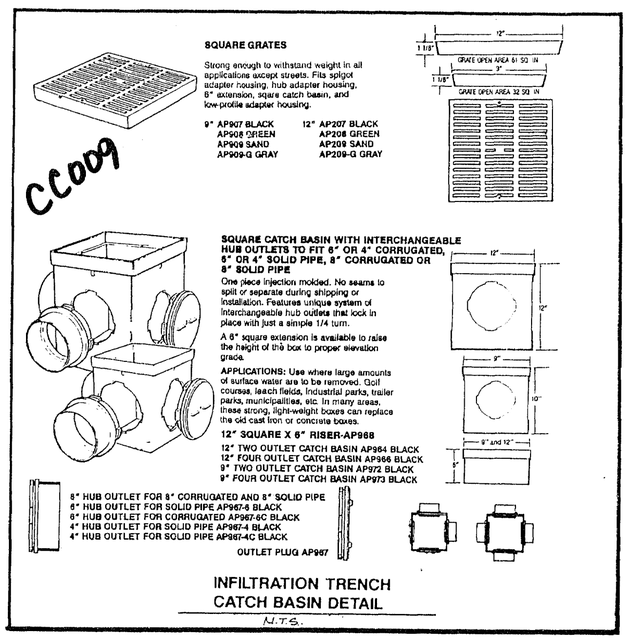
CC009



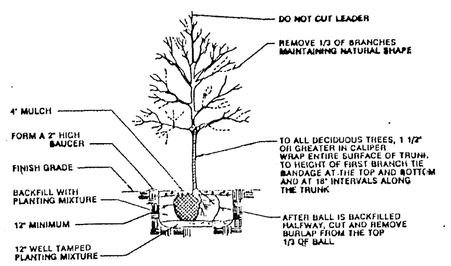
OBSERVATION WELL
FOR INFILTRATION TRENCH
SECTION B-B
NTS



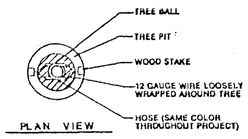
INFILTRATION TRENCH
SECTION A-A
NTS



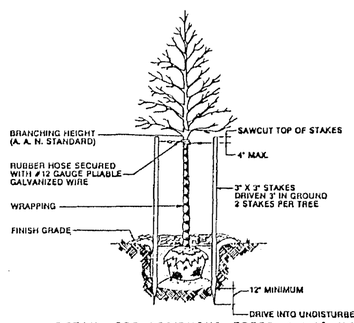
INFILTRATION TRENCH
CATCH BASIN DETAIL
N.T.S.



PLANTING METHODS FOR TREES
N.T.S.

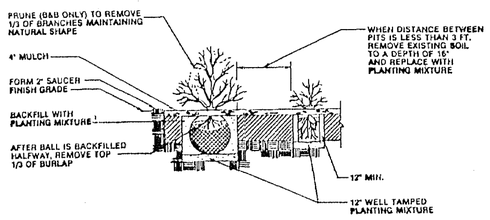


PLAN VIEW



DETAIL FOR DECIDUOUS TREES 1 1/2" TO 3 1/2" CALIPER, EVERGREEN TREES 4' TO 8' HIGH

BALLED AND BURLAPPED CONTAINER GROWN



PLANTING METHODS FOR SHRUBS
N.T.S.

GENERAL NOTES:

1. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THEY DID IN THEIR PREVIOUS LOCATION.
2. IN PLANTING BEDS, ELIMINATE THE COMPACTED EARTH SAUCER AND COVER THE ENTIRE BED WITH MULCH (2" MIN. DEPTH)
3. WHERE PLANTING BEDS ABUTT WALKS AND CURBS, TOPS OF MULCHED BEDS SHALL BE DEPRESSED 2".
4. WHERE BOTTOM OF PITS ARE ROCK OR CLAY BREAK UP AN ADDITIONAL 12" TO ALLOW WATER TO DRAIN.

No.	DATE	REVISION / COMMENT / NOTE	BY
1	1/18/95	REVISED PER J.C.C. COMMENTS	CAH

COMMONWEALTH OF VIRGINIA
RICHARD A. COSTELLO
CERTIFICATE NO. 043250
CERTIFIED PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(804) 253-0040
Fax (804) 220-8994
CONSULTING ENGINEERS

NOTES AND DETAILS
V.I.P. & CELEBRITY LIMOUSINES, INC.
OWNER/DEVELOPER: ROBERT E. WHITE
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
RAC/CAH	KEG
Scale	Date
NTS	12/94

Project No. 7858

Drawing No. C3

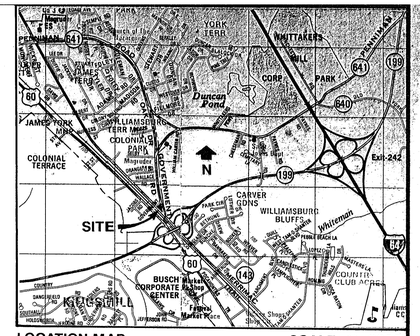
ENVIRONMENTAL INVENTORY NOTES

1. THERE ARE NO WETLAND AREAS EXISTING ON THE PROPOSED SITE.
2. NO HYDRIC SOILS EXIST ON THE PROPOSED SITE.
3. NO AREAS OF SLOPES 25% OR GREATER EXIST ON THE PROPOSED SITE.
4. THE PROPOSED SITE DOES NOT FALL WITHIN THE RPA BOUNDARY OR BUFFER AREA.
5. NO CLEARING OF TREES IS PROPOSED FOR THE DEVELOPMENT OF THIS SITE.

GENERAL NOTES

1. THE SITE IS LOCATED AT 7346 MERRIMAC TRAIL AND IS ZONED B-1, GENERAL BUSINESS. THE TAX PARCEL NO. IS (50-2)(1-46).
2. PUBLIC WATER AND SEWER ARE TO BE UTILIZED FOR THIS SITE.
4. BUILDING SETBACK VARIANCE: (JCC CASE NO. 24-11-93)
   30 FT. ON MERRIMAC TRAIL.
   45 FT. ON GOVERNMENT ROAD.
   28 FT. ON OLD GOVERNMENT ROAD.
5. THE PROPOSED BUILDING WILL BE UTILIZED FOR THE STORAGE OF LIMOUSINES AND VANS, AND INCLUDES 2,100 S.F. OF OFFICE SPACE.
6. THE PROPOSED BUILDING IS ONE-STORY WITH MEZZANINE, AND IS 24' HIGH.
7. THE USE GROUPS ARE S-1 AND B, CONSTRUCTION TYPE 2-C.
8. PARKING STATISTICS:
   PARKING REQUIRED:
   2,100 S.F. OFFICE SPACE/250 = 9 SPACES
   PARKING PROVIDED:
   8 - 9' X 18' SPACES
   1 - VAN ACCESSIBLE H.C. SPACE
   PROVIDED ≥ REQUIRED.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, JANUARY 1994 EDITION AND REVISIONS THEREOF, UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL NOTIFY MISS UTILITY (1-800-552-7001) AND JCSA PRIOR TO ANY EXCAVATION OR DEMOLITION WITHIN UTILITY CORRIDORS.
11. CONTRACTOR TO ACQUIRE A VDOT HIGHWAY PERMIT FOR ALL WORK PERFORMED IN THE RIGHT-OF-WAY.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF CONSTRUCTION EFFORTS WITH VIRGINIA NATURAL GAS, VIRGINIA POWER, C & P TELEPHONE, APPROPRIATE TELEVISION CABLE COMPANY, AND OTHERS THAT MAY BE REQUIRED.
13. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE WORK OUTLINED.
14. ALL UTILITIES TO BE INSTALLED IN ACCORDANCE WITH CURRENT JCSA STANDARDS AND SPECIFICATIONS FOR SANITARY SEWER AND WATER DISTRIBUTION SYSTEMS.
15. THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
16. THE DESIGN OF THE BUILDING SHALL BE GENERALLY IN ACCORDANCE WITH THE DESIGN SHOWN ON GUERNSEY/TINGLE ARCHITECTS PROJECT 94012 TITLED V.I.P. & CELEBRITY LIMOUSINES, INC., DATED 8/1/94.
17. THE CONTRACTOR SHALL HAVE AS-BUILT DRAWINGS PREPARED IN ACCORDANCE WITH JAMES CITY COUNTY STANDARDS FOR THE COMPLETED DETENTION/INFILTRATION FACILITY.

NOTE:
1.) SEE DEMOLITION PLAN (SHEET 2) FOR DETAILED INFORMATION ON EXISTING FEATURES TO BE REMOVED AND AREAS WHERE EX. ASPHALT IS TO BE OVERLAID.
2.) SEE LANDSCAPING PLAN FOR SITE LIGHTING INFORMATION.
3.) SEE SHEET C4 FOR LIGHTING DETAILS.



LOCATION MAP SCALE: 1"=2000'

No.	DATE	REVISION / COMMENT / NOTE	CAH
1	1/18/95	REVISED PER J.C.C. COMMENTS	

SITE STATISTICS

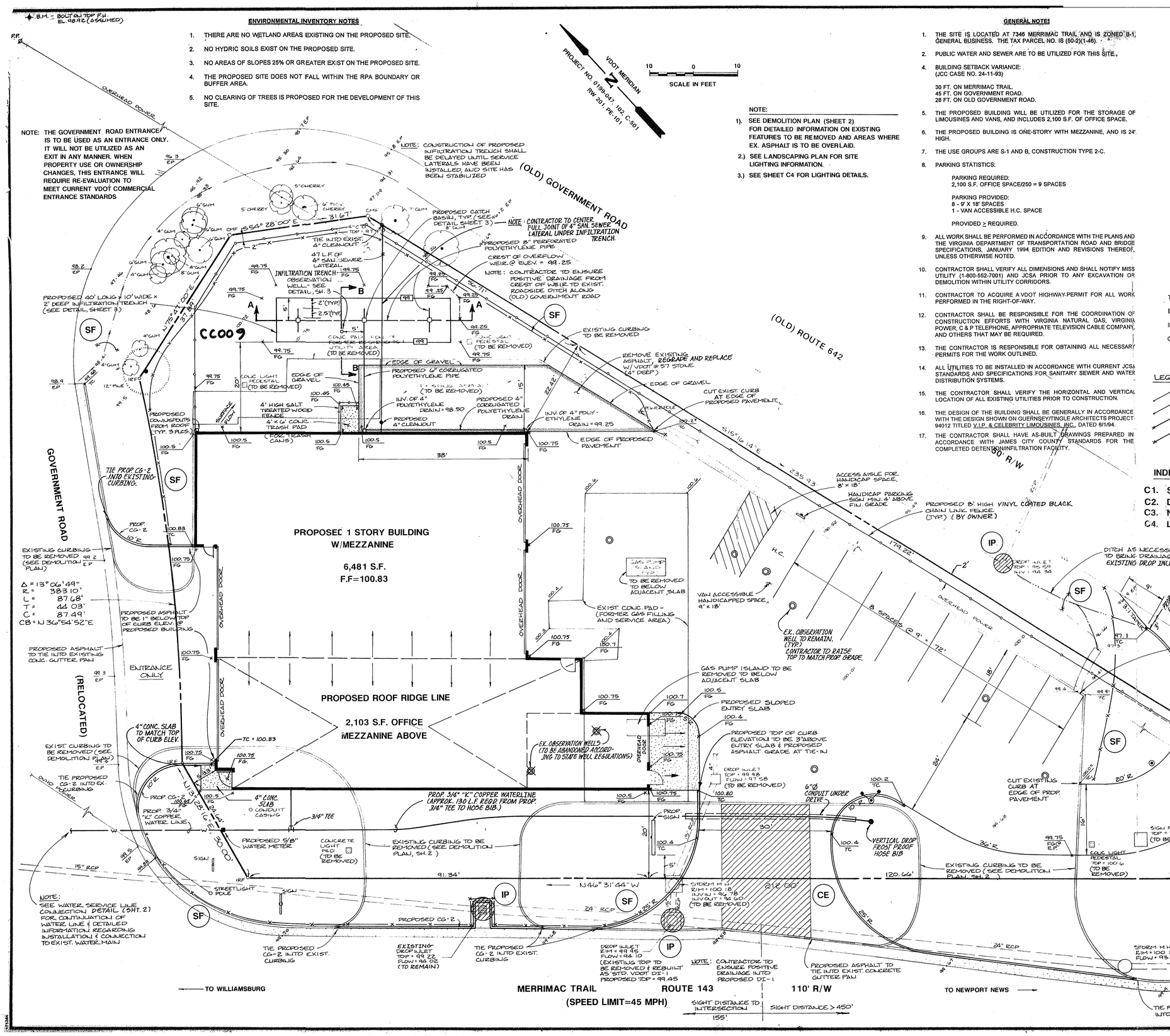
	AREA	% OF SITE
TOTAL SITE AREA	23,735 S.F. (0.545 AC.)	100.0
BUILDING AREA	6,481 S.F. (0.149 AC.)	27.3
IMPERVIOUS AREA	16,195 S.F. (0.353 AC.)	68.2
GREEN SPACE	7,540 S.F. (0.192 AC.)	31.8

LEGEND

- 100.0 — EXISTING GRADE
- 101.0 TC — EXISTING TOP OF CURB
- 100.0 FG — PROPOSED GRADE
- 101.0 TC — PROPOSED TOP OF CURB
- EX. OBSERVATION WELL TO REMAIN
- EX. OBSERVATION WELL TO BE ABANDONED

INDEX OF SHEETS

C1. SITE, UTILITY, DRAINAGE & EROSION CONTROL PLAN
C2. DEMOLITION AND WATER SERVICE CONNECTION PLAN
C3. NOTES & DETAILS
C4. LANDSCAPING PLAN



5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(804) 253-0040
Fax (804) 220-8994
CONSULTING ENGINEERS

SITE, UTILITY, DRAINAGE & EROSION CONTROL PLAN
V.I.P. & CELEBRITY LIMOUSINES, INC.
OWNER/DEVELOPER: ROBERT E. WHITE
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

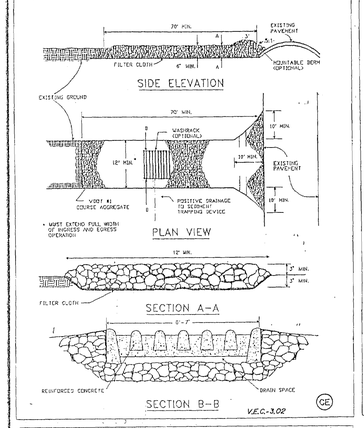
Designed	Drawn
CAH/RAC	RMJ
Scale	Date
1"=10'	12/94
Project No.	
7858	
Drawing No.	
C1	

SP-138-94

RECEIVED JAN 1995 PLANNING DEPARTMENT

CC009_VIP_&_CELEBRITY_LIMO - 006

STONE CONSTRUCTION ENTRANCE



CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

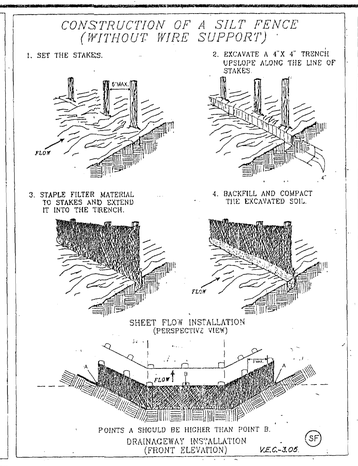


TABLE 3.32-D

SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

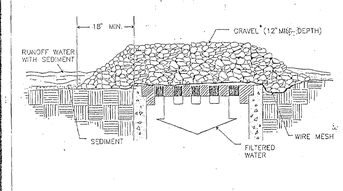
	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	
- Kentucky 31 or Turf-Type Tall Fescue	175-200 lbs.
or	
- Common Bermudagrass **	75 lbs.
High-Maintenance Lawn	
- Kentucky 31 or Turf-Type Tall Fescue	200-250 lbs.
or	
- Hybrid Bermudagrass (seed) **	40 lbs. (unhulled) 30 lbs. (hulled)
or	
- Hybrid Bermudagrass (by other vegetative establishment method, see Std. & Spec. 3.34)	
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Tall Fescue	93-108 lbs.
- Common Bermudagrass **	0-15 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Serices Lespedeza **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:
February, March through April ..... Annual Rye
May 1st through August ..... Foxtail Millet
September, October through November 15th ..... Annual Rye
November 16th through January ..... Winter Rye

** May through October, use hulled seed. All other seeding periods, use unhulled seed. Weeping Lovegrass may be added to any slight or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

V.E.C.-3.32

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

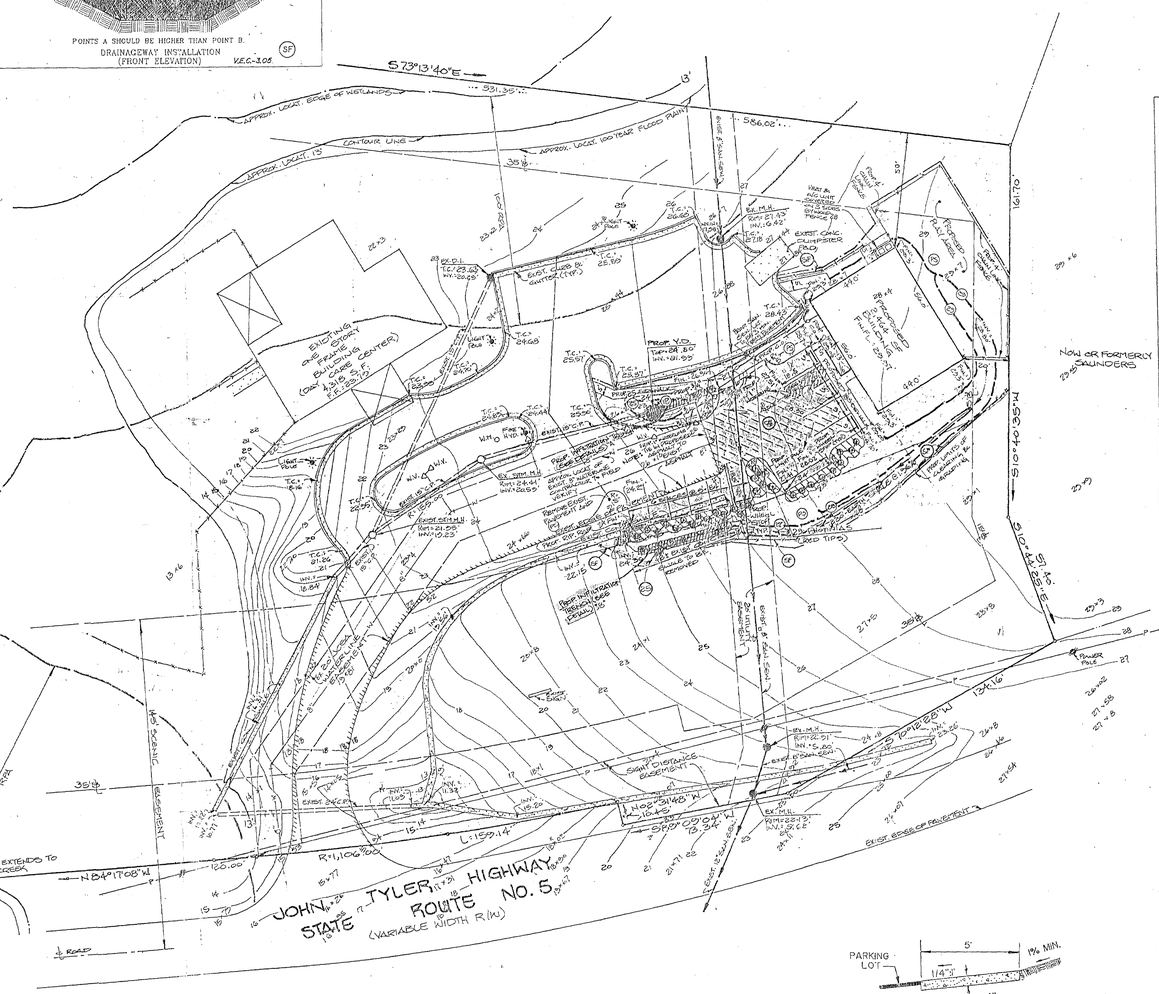


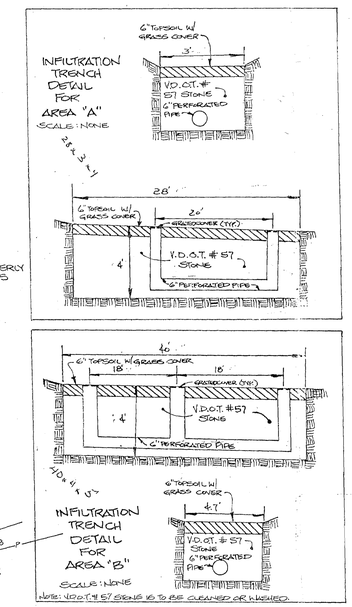
SPECIFIC APPLICATION

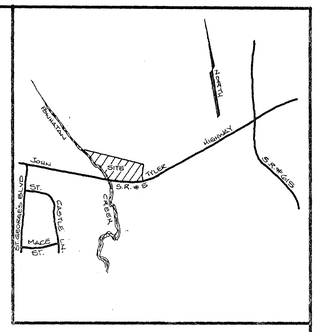
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

V.E.C.#3.07







VICINITY MAP

SCALE : 1" = 1,000'

GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
2. ANY ERRORS OR DISCREPANCIES SHALL BE REPORTED TO THE SURVEYOR BEFORE PROCEEDING WITH WORK.
3. BEFORE DIGGING CONTACT "MISS UTILITY" @ 1-800-522-2001.
4. ALL EXTERIOR LIGHTING IS TO BE DESIGNED AS TO DIRECT LIGHT AND GLARE AWAY FROM ADJOINING PROPERTY AND RIGHT-OF-WAYS.
5. LIMITS OF CLEARING AND GRADING AS SHOWN ON PLANS.
6. AREA OF DISTURBANCE = 11,790 S.F. OR 0.2707 AC. A LAND DISTURBANCE PERMIT IS REQUIRED.
7. SIGNS SHALL REQUIRE A SEPARATE PERMIT FROM THE ZONING ADMINISTRATOR.
8. CONTRACTOR SHALL CONTACT COMMUNITY DEVELOPMENT PRIOR TO BEGINNING ANY CONSTRUCTION OR TESTING TO INSURE THAT AN INSPECTOR WILL BE PRESENT.
9. DEVELOPER: BRIGHT HORIZON LEARNING CENTER
   4300 JOHN TYLER HWY.
   WILLIAMSBURG, VA. 23185
   (804)253-2562
10. PROPOSED BUILDING AREA = 2,464 S.F.
    PROPOSED PARKING LOT AREA = 3,735 S.F.
    PROPOSED SIDEWALK AREA = 285 S.F.
    TOTAL IMPERVIOUS AREA = 6,484 S.F.
    TOTAL LOT AREA = 2.0 AC.
11. PROPOSED BUILDING USE-DAY CARE CENTER
12. PARKING SPACES PROVIDED: 16 (5 STANDARD; 1 HANDICAP)
13. HANDICAP PARKING SIGN TO BE 4' (FEET) BUT NOT TO EXCEED 7' (FEET) ABOVE GROUND LEVEL.
14. CITY WATER AND SEWER AVAILABLE TO THE SITE.
15. BOUNDARY INFORMATION SHOWN HEREON COMPILED FROM PLATS PREPARED BY CERTIFIED LAND SURVEYORS.
16. ALL LANDSCAPE MATERIALS SHOWN HEREON ARE SUBJECT TO CHANGE DUE TO NURSERY STOCK AND AVAILABILITY.
17. THE PROPOSED BUILDING SHALL BE OF SIMILAR ARCHITECTURAL STYLE AND COLORS AS THE EXISTING BUILDING AND SHALL BE CONSTRUCTED OF SIMILAR MATERIALS AS REQUIRED BY THE SPECIAL USE PERMIT CONDITION.
18. THE PROPOSED EXTERIOR LIGHT FIXTURES SHALL BE OF SIMILAR DESIGN AND STYLE AS THE EXISTING EXTERIOR LIGHT FIXTURES.
19. A "W1" WARNING SIGN IS REQUIRED FOR THIS SITE (WATCH FOR TURNING VEHICLES). THIS SIGN SHALL BE INSTALLED 550' FROM THE ENTRANCE FOR THE EASTBOUND LANE IN ACCORDANCE WITH VDOT STANDARDS AND SPECIFICATIONS.
20. ALL WATER AND SEWER CONNECTIONS ARE TO BE MADE IN ACCORDANCE THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS. THE WATER VALVE AT THE END OF THE EXISTING 8" (MIN) WATER LINE IS A CROSS END BLOW-OFF. THE TAP FOR THE WATER SERVICE TO THIS PROJECT MUST BE MADE BETWEEN THE LAST MAIN LINE VALVE AND THE BLOW-OFF AS SHOWN ON THIS PLAN.
21. THE INFILTRATION TRENCH WILL NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
22. LUMINARIES SHALL BE MOUNTED ON LIGHT POLES HORIZONTALLY AND SHALL BE RECESSED FIXTURES WITH NO BULB, LENS OR SLIDE EXTENDING BELOW THE CASING, AS PER THE JAMES CITY COUNTY ZONING ORDINANCE.

COUNTY OF JAMES CITY
FINAL SITE PLAN

		DATE
Finalized ... 11/21/96		
APPROVALS		
Fire Dept.	HP/mm	11/4/96
Health Dept.	WJ/mm	11/2/96
Highway Dept.	RCB/mm	11/8/96
Plan. Comm.		11/5/96
Pub. Wks. Dept.	DEC/mm	11/29/96
Zoning Adm.	DT/mm	11/5/96
JCSA	JCB/mm	11/5/96
Other	LWB/mm	12/27/95
Other		

PRELIMINARY
SITE DEVELOPMENT PLAN
OF

BRIGHT HORIZON LEARNING CENTER

JAMES CITY COUNTY, VIRGINIA

SCALE : 1" = 30' DATE : 29 MARCH 1995
REVISED : 2 MAY 1995
(DELETED PRIVATE R/W)

RECEIVED JAN 1996 PLANNING DEPARTMENT

REVISED : 29 OCT. 95
REVISED : 5 JAN. 96

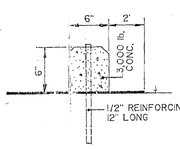
DAVIS & ASSOCIATES
SURVEYORS - PLANNERS
4033 GEORGE WASHINGTON MEMORIAL HIGHWAY
YORKTOWN, VIRGINIA 23692
PHONE : (804) 898-9414

COMMONWEALTH OF VIRGINIA
DONALD W. DAVIS
No. 1402b
3/95/95
LAND SURVEYOR

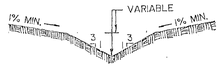
94-0691

SHEET 1 OF 2

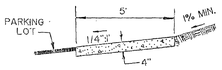
TYPICAL PAVEMENT SECTION
SCALE : NONE



TYPICAL WHEEL STOP DETAIL
SCALE : NONE



TYPICAL EARTH SWALE DETAIL
SCALE : NONE



TYPICAL SIDEWALK DETAIL
SCALE : NONE
NOTE: THE SIDEWALK AND THE PARKING AREA ARE AT THE SAME GRADE AND THEREFORE NO HANDICAP RAMP IS REQUIRED.

-SYMBOLS-

- DENOTES EXISTING CONC.
- DENOTES EXISTING ASPHALT
- DENOTES PROPOSED ASPHALT
- DENOTES FIRE HYDRANT
- DENOTES POWER POLE
- DENOTES LIGHT POLE
- DENOTES WATER METER
- DENOTES WATER VALVE
- DENOTES STORM SEW. MANHOLE
- DENOTES SAN. SEW. MANHOLE
- DENOTES PROPOSED SHRUB
- DENOTES PROPOSED MULCHED BED
- DENOTES CONSTRUCTION ENTRANCE
- DENOTES SILT FENCE

S-94-95

CC009_VIP_&_CELEBRITY_LIMO - 007

BMP ANALYSIS AND INFILTRATION TRENCH DESIGN FOR V.I.P. AND CELEBRITY LIMOUSINE

(AES JOB # 7858)

11/27/94

VIP LIMOUSINE

#1058
11/27/94
CAH

POLLUTANT LOADING/EMP ANALYSIS

* KEYSTONE POLLUTANT = TOTAL PHOSPHORUS

→ IMPERVIOUSNESS FOR LAND COVER CONDITIONS

① PARKING LOT/BUILDING AREA = 90% IMPERVIOUS

② OPEN/GREEN SPACE = 16% IMPERVIOUS

→ SITE STATISTICS

* PRE-DEVELOPMENT

→ PAVED AREA (EX. ASPHALT & CONC.) = 16,606 SF = 0.381A

→ GREEN/OPEN AREA = 7,129 SF = 0.164 AC.

* POST DEVELOPMENT

→ PARKING/ENTRANCE AREA = 9,714 SF = 0.223 AC.

→ BUILDING AREA = 6,481 SF = 0.149 AC.

→ GREEN/OPEN AREA = 7,540 SF = 0.173 AC.

TOTAL SITE AREA = 23,735 SF = 0.545 AC

WORKSHEET B : REDEVELOPMENT

1 **Compile site-specific data.**

		PRE-DEVELOPMENT	POST-DEVELOPMENT
A*		= 0.545 acres	= 0.545 acres
I_a:	structures	= — acres	= 0.134 acres
	parking lot	= 0.343 acres	= 0.201 acres
	~~roadway~~	= — acres	= — acres
	other	= 0.026 acres	= 0.028 acres
	(GREEN SPACE)	= _____ acres	= _____ acres
		= _____ acres	= _____ acres
	total I_a	= 0.369 acres	= 0.363 acres
$I = (\text{total } I_a / A) \times 100$		= 67.7 percent expressed in whole numbers	= 66.6 percent expressed in whole numbers
$R_v = 0.05 + (0.009 \times I)$		= 0.659 unitless	= 0.649 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}).**

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

$= 45 \times 0.9 \times 0.659 \times 1.08 \times 0.545 \times 2.72 / 12$

$= 3.56$ pounds per year

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

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

$= 45 \times 0.9 \times 0.649 \times 1.08 \times 0.545 \times 2.72 / 12$

$= 3.51$ pounds per year

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

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

$= 3.51 - (0.9 \times 3.56)$

$= 0.31$ pounds per year

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

$= (0.31 / 3.51) \times 100$

$= 8.83\ \%$

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_{pass} (lbs/yr)	=	Load Removed (lbs/yr)
INFILTRATION TRENCH DESIGN 9	0.65		0.226		3.51		0.52

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_{Va} = 0.45 lbs/ac/yr), C=0.26 mg/l for all I_{site}.

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

$L_{post(on\text{-}site)} = P \times P_j \times R_v \times C \times A \times 2.72 / 12$

= _____ × 0.9 × _____ × _____ × _____ × 2.72 / 12

= _____ pounds per year

Revised 7/90

CC009_VIP_&_CELEBRITY_LIMO - 011

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

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

If $I_{_____} < 20$, use $C_{off\text{-}site} = 0.26$ mg/l.
If $I_{_____} \geq 20$, use $C_{off\text{-}site} = 1.08$ mg/l.
If $I_{_____} = L_{VA}$ use $C_{off\text{-}site} = 0.26$mg/l.

$L_{off\text{-}site} = P \times Pj \times [0.05 + (0.009 \times I_{_____})] \times C_{off\text{-}site} \times A_{off\text{-}site} \times 2.72 / 12$

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

= _____ 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_{pre} (lbs/yr)	=	Load Removed (lbs/yr)

6 **Calculate overall compliance.**

Step 1 + Step 5 = total load removed

0.52 + 0 = 0.52 pounds per year

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

0.52 > 0.31 ✓

Revised 7/90

VIP LIMOUSINE

INFILTRATION TRENCH DESIGN

(DESIGN TYPE 9) – 1" RUNOFF PER IMPERVIOUS ACRE

DA = 5,368 SF = 0.123 AC

IMPERVIOUSNESS

ROOF = 3,768 SF @ 90% IMP.

GRASSED "BUFFER" = 1,600 SF @ 16% IMP.

→ 3,768 SF = 0.0865 AC @ 90% IMP = ~~0.0779~~ = 0.0865 IMP. AC.

→ 1,600 SF = 0.0367 AC @ 16% IMP = ~~0.0059~~ 0 IMP. AC.

∴ DA TO TRENCH CONSISTS OF 0.084 IMPERVIOUS ACRES ok

∴ DESIGN VOLUME OF RUNOFF =

$$0.084 \text{ IMP. ACRES} \left(\frac{43{,}560 \text{ SF}}{1 \text{ ACRE}}\right)(1'')\left(\frac{1'}{12''}\right) = \underline{\underline{305 \text{ CF}}}$$

* ASSUME TRENCH EMPLOYS #57 STONE FILTER W/ 40% VOID RATIO

∴ REQUIRED MIN. TRENCH VOLUME = $\frac{305}{0.40}$ = 763 CF

$\boxed{\text{TRENCH SIZE} = 10' \times 40' \times 2'}$

800 CF > 763 CF ✓

TABLE 3

WORKSHEET FOR BMP POINT SYSTEM

A. STRUCTURAL BMP POINT ALLOCATION

BMP	BMP Points		Fraction of Site Served by BMP		Weighted BMP Points
INFILTRATION (1)	9	x	100 %	=	9
GRASS SWALE	2	x	70 %	=	1.4
		x		=	
		x		=	

TOTAL WEIGHTED STRUCTURAL BMP POINTS: 10.4

B. NATURAL OPEN SPACE CREDIT

Fraction of Site		Natural Open Space Credit (0.1 per 1%)		Points for Natural Open Space
N.A.	x		=	

C. TOTAL WEIGHTED POINTS

10.4	+		=	10.4
Structural BMP Points		Natural Open Space Points		TOTAL

INFILTRATION TRENCH
BRIGHT HORIZON
LEARNING CENTER
JAMES CITY COUNTY, Va.
JOHN TYLER HIGHWAY - STATE Route 5
AREA "A"

SITE AREA SERVED BY B.M.P. — 0.09 ACRE
IMPERVIOUS — 0.80
STORM WATER RUN-OFF VOLUME = 0.5 INCH/IMPROVED ACR
WATER TABLE DEPTH — SEE SOILS TEST BY HERBERT & ASSOC.

VOLUME REQUIRED $= \frac{0.5}{12} \times 0.09 \times 0.80 \times 43{,}560$
VOLUME REQUIRED $= 130.7\ FT^3$

VDOT #57 STONE VOID FACTOR = 0.4

$130.7\ FT^3 \div 0.4 = 326.8\ FT^3$

VOLUME PROVIDED — $3.0' \times 4.0' \times 28' = 336\ FT^3$

Water Plans
No Lin

WIDTH - 3.0'
DEPTH - 4.0'
LENGTH - 28'

INFILTRATION TRENCH
BRIGHT HORIZON
LEARNING CENTER
JAMES CITY COUNTY, Va.
JOHN TYLER HIGHWAY - STATE ROUTE 5
AREA "B"

SITE AREA SERVERED BY B.M.P. - 0.30 ACRE
IMPERVIOUS - 0.55
STORM WATER RUN-OFF VOLUME = 0.5 INCH/IMPROVED ACRE
WATER TABLE DEPTH - SEE SOILS. TEST BY HERBERT & ASSOC.

VOLUME REQUIRED = $\frac{0.5}{12} \times 0.30 \times 0.55 \times 43,560$
VOLUME REQUIRED = 299.5 FT^3

VDOT #57 STONE VOID FACTOR - 0.4
299.5 FT^3 ÷ 0.4 = 748.8 FT^3

VOLUME PROVIDED — 4.7' x 4.0' x 40' = 752 FT^3

WIDTH - 4.7'
DEPTH - 4.0'
LENGTH - 40'

ANN L. RUFF

SOIL SCIENTIST

Ref.# 449
December 2, 1994

Mr. Andy Herr
AES
5248 Olde Towne Road, Suite 1
Williamsburg, Va 23185

Reg: VIP Limousine, James City County

Dear Mr. Herr:

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 8 and 9 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

Date of Evaluation

Health Department
Identification No.

Hole#	Hzn	Depth	Description of color,texture,etc.	Min/Inch
1	A	0-6	Brown sandy loam	
	B	6-36	Reddish yellow sandy clay loam mottled with gray, light yellowish brown and yellowish brown	45
	Ab	36-40	Dark grayish brown sandy clay loam	45
	B1	40-60	Yellowish brown clay loam mottled with gray and reddish yellow	65
	C1	60-84	Yellowish brown, gray and light yellowish brown sandy clay	80
	C2	84-108	Yellowish brown, gray and light yellowish brown heavy clay loam	75
2	A	0-4	Brown sandy loam	
	B	4-36	Reddish yellow sandy clay loam	45
	Ab	36-40	Dark grayish brown sandy loam	
	B1	40-48	Yellowish brown sandy clay loam	45
	B2	48-60	Yellowish brown sandy clay loam mottled with gray	50
	C1	60-72	Yellowish brown sandy clay loam mottled with gray, light yellowish brown and reddish yellow	65
	C2	72-96	Yellowish brown sandy clay mottled with gray and light yellowish brown	80

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

Date Record Created:

Created By:

WS_BMPNO: CC009

Print Record

PRINTED ON
Wednesday, March 10, 201
2:32:27 PM

WATERSHED	CC
BMP ID NO	009
PLAN NO	SP-138-94
TAX PARCEL	(50-2)(1-46)
PIN NO	50201000046
CONSTRUCTION DATE	1/1/1996
PROJECT NAME	VIP and Celebrity Limousines
FACILITY LOCATION	7346 Merrimac Trail
CITY-STATE	Williamsburg, VA
CURRENT OWNER	Merrimac Trail Associates
OWNER ADDRESS	209 River's Edge
OWNER ADDRESS 2	
CITY-STATE-ZIP CODE	Williamsburg, VA 23185
OWNER PHONE	
MAINT AGREEMENT	Yes
EMERG ACTION PLAN	No

MAINTENANCE PLAN	No	CTRL STRUC DESC	
SITE AREA acre	0.6	CTRL STRUC SIZE inches	
LAND USE	COMM	OTLT BARRL DESC	N/A
old BMP TYP	Infiltration Trench	OTLT BARRL SIZE inch	0
JCC BMP CODE	C1 Infiltration Trench .5		
POINT VALUE	10	EMERG SPILLWAY	No
		DESIGN HW ELEV	
		PERM POOL ELEV	
SVC DRAIN AREA acres	0.1	2-YR OUTFLOW cfs	
		10-YR OUTFLOW cfs	
		REC DRAWING	No
SERVICE AREA DESCRI	NONE		
IMPERV AREA acres	0.08	CONSTR CERTIF	No
RECV STREAM	COLLEGE CK TRIB		
EXT DET-WQ-CTRL	No	LAST INSP DATE 1/31/2001	Inspected by:
WTR QUAL VOL acre-ft	0.02	INTERNAL RATING	4
CHAN PROT CTRL	No	MISC/COMMENTS	
CHAN PROT VOL acre-ft	0		
SW/FLOOD CONTROL	No		
GEOTECH REPORT	No		

Get Last BMP No

Return to Menu

Additional Comments: