



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-001

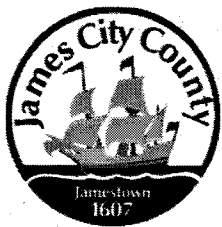
DATE VERIFIED: March 15, 2012

QUALITY ASSURANCE TECHNICIAN:

Leah Hardenbergh

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA



Stormwater Division

MEMORANDUM

DATE: March 11, 2010
TO: Michael J. Gillis, Virginia Correctional Enterprises Document Management Services
FROM: Tina Cantwell, Stormwater
PO: 270712
RE: Files Approved for Scanning

General File ID or BMP ID: CC001

PIN: 5020100030A

Subdivision, Tract, Business or Owner

Name (if known):

Southland Corporation

Property Description:

7-11 Convenience Store / Gas Pumps

Site Address:

7337 Pocahontas Trail

(For internal use only)

Box 11

Drawer: 6

Agreements: (in file as of scan date) N

Book or Doc#:

Page:

Comments

CC001

Contents for Stormwater Management Facilities As-built Files

Each file is to contain:

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

TRANSMITTAL

DATE: January 16, 1992

TO: REAL ESTATE ASSESSMENTS*
CODE COMPLIANCE, Darryl Cook; HEALTH
JCSA VDOT

FROM: Mike Freda, Planner

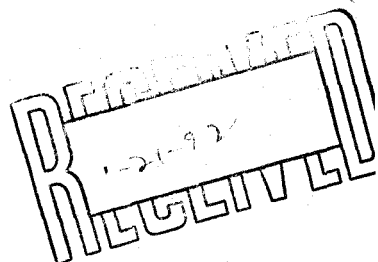
SUBJECT: SP-94-91. Pocahontas Trail 7-11 Gas Pumps

ITEMS ATTACHED: Approved site plan for your files.
*case file

INSTRUCTIONS: *forward case file to Records Management

RETURN REQUIRED BY:

AGENCY'S COMMENTS:



**WATERWAY SURVEYS
& ENGINEERING, LTD.**
321 Cleveland Place
VIRGINIA BEACH, VIRGINIA 23462
(804) 490-1691

JOB James City Co. 7-11 Rt 60
SHEET NO. 1 OF 9
CALCULATED BY MW DATE 12/12/91
CHECKED BY _____ DATE _____
SCALE _____

CC001

Design Analysis
for
Compliance
with
CBPA
for
The Southland Corp.
Rt 60
James City County

I. Current pollutant load = 4.68 pounds/year
(see attached calculations)

II. To comply with the CBPA pollutant loads must be reduced by 10%.

A. Site will incorporate a day well capture system to channel roof runoff into the ground.

B. Calculations shown on attached sheets show the pollutant loads after day well installation.

Pollutant loading before day wells = 4.68 lbs/yr

Pollutant loading after day wells installed = 4.15 lbs/yr

$$\% \text{ Reduction} = \frac{4.68 - 4.15}{4.68} = 11.3\%$$

$\therefore$ day well will be sufficient to meet CBPA.

GUIDANCE CALCULATION PROCEDURE

WORKSHEET B : REDEVELOPMENT

1 Compile site-specific data.

	Before day-well PRE-DEVELOPMENT	After day-well POST-DEVELOPMENT
A*		
I _i :		
structures	STORES = <u>.71299</u> acres	PARKING = <u>.71299</u> acres
parking lot	PARKING = <u>.058795</u> acres	PARKING = <u>.425895</u> acres
roadway	= _____ acres	= _____ acres
other	= _____ acres	= _____ acres
	= _____ acres	= _____ acres
	= _____ acres	= _____ acres
total I _i	= <u>.484664</u> acres	= <u>.425895</u> acres
I = (total I _i / A) × 100	= <u>.68%</u> percent expressed	= <u>59.7</u> percent expressed
R _v = 0.05 + (0.009 × I)	= <u>.662</u> in whole numbers	= <u>.5873</u> in whole numbers
	= <u>.662</u> unitless	= <u>.5873</u> unitless
C:		
I ≥ 20 = 1.08 mg/l		
I < 20 = 0.26 mg/l	= <u>1.08</u> mg/l	= <u>1.08</u> 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_i = 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})~~ ^{Before day-well load.}

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

$$= 45 \times 0.9 \times .662 \times 1.08 \times .71299 \times 2.72 / 12$$

$$= 4.68 \text{ pounds per year}$$

$$\text{Bldg} = 45 \times .9 \times .95 \times .0588 \times 1.08 \times \frac{2.72}{12}$$

$$= 0.55 \text{ lbs}$$

4 Calculate the ~~post-development load (L_{post})~~ ^{After day-well load.}

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

$$= 45 \times 0.9 \times .5873 \times 1.08 \times .71299 \times 2.72 / 12$$

$$= 4.15 \text{ pounds per year}$$

$$4.68 - 10\% = \underline{\underline{0.47 \text{ lbs}}}$$

5 Calculate the pollutant removal requirement (RR)

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

$$= \underline{\quad\quad\quad} - (0.9 \times \underline{\quad\quad\quad})$$

$$= \underline{\quad\quad\quad} \text{ pounds per year}$$

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

$$10 = (\underline{\quad\quad\quad} / \underline{\quad\quad\quad}) \times 100$$

$$= \underline{\quad\quad\quad} \%$$

Day Well Design

- Ref: 1. Cedergren, H.R., 1977, Seepage, Drainage and Flow Nets: John Wiley & Sons, New York, N.Y.
2. Hough, B.K., 1957, Basic Soils Engineering: The Ronald Press Co., New York, N.Y.
3. Johnson Division, UOP Inc., 1975, Groundwater and Wells: Johnson Division, UOP Inc., St. Paul Minn.
4. Pettyjohn, W.A., 1981, Introduction to Artificial Groundwater Recharge, National Water Well Association, Worthington, Ohio.
5. Baahze, William J, 1982, Drainage Analysis, A.J. Overholt Property, Rhema Geosciences, Norfolk Virginia.

I. The procedure used for day well design is the method incorporated and used at several sites in Virginia Beach, VA. These sites used infiltration trenches with excellent results. These sites include the A.J. Overholt property and the Bodie-Nowell property. Each site has soil characteristic very similar the soils present at the James City County site.

II. Previous soils analysis show that the soil present in the Area and at the depth of the proposed dry well is light brown, reddish brown and light gray, moist, medium dense, clayey fine to medium sand (SC). See attached sheets.

III. Dry well design

A. Calculate peak runoff from roof. (Q_p)

from previous (original) stormwater runoff calculations for this site.

$$t_c = 5 \text{ min}$$

$$i = 6.9 \text{ in/hr (10 yr storm)}$$

$$\text{Area roof} = 80(32) = 0.05877 \text{ acres}$$

$$Q_p = CIA \quad C \text{ for roof} = 1.0$$

$$= 1.0(6.9)(0.05877)$$

$$= \underline{0.41 \text{ cfs}}$$

B. Determine surface area required to drain peak discharge ($0.41 \text{ cfs @ } 5 \text{ min}$) through in situ unsaturated soils.

$$\text{Use Darcy Equation} = q = k i A$$

$$\therefore k = 4.9 \text{ ft/day for SC class soils.}$$

$$A = ?$$

$$q = \text{peak discharge rate}$$

$$k = \text{Avg permeability}$$

$$i = \text{hydraulic gradient (equal 1 for vertical percolation)}$$

$$A = q / ki$$

$$A = \frac{0.41 \text{ cfs}}{(4.9 \text{ ft/day}) \left(\frac{\text{day}}{86,400 \text{ sec}} \right) (1)}$$

$$A = \underline{7229 \text{ ft}^2}$$

Existing Aquifer is this large
therefore enough AREA to absorb water

C. Determine surface AREA required to drain
peak discharge through backfilled clean gravel.

$$A = q / ki$$

$k = 1500 \text{ ft/day}$ for
clean gravel.

$$= \frac{.41 \text{ A/s}}{1500 \text{ ft/day} \left(\frac{\text{day}}{86,400 \text{ sec}} \right) (1)}$$

$$A = \underline{23.6 \text{ ft}^2}$$

D. Compare storage potential of gravel backfill
versus volume of peak discharge.

$$\text{Total volume} = V_T = \text{AREA} (\text{depth})$$

USE well depth = 4 ft.

$$V_T = 23.6 (4) = 94 \text{ ft}^3$$

Volume of voids for storage = $V_v = V_T n$ $n = .4$ (porosity)

$$V_v = 94 (.4) = 38 \text{ ft}^3$$

JOB _____

SHEET NO. 7 OF 9

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

$$Q = .41 \text{ A}^3/\text{s} (5 \text{ min} \cdot \frac{60 \text{ s}}{\text{min}}) = 123 \text{ A}^3$$

E. Determine required surface area to store peak discharge.

$$\text{Volume Req'd} = V_T = \frac{V_1}{0} = \frac{123 \text{ A}^3}{.4} = \underline{308 \text{ A}^3}$$

$$A_{\text{avg}} = \frac{308 A^3}{4A} = 77 A^2$$

OR since we will split flow between two wells $AA3A \text{ per well} = 39A^2$

∴ Use well dimensions of 7'x7'x4' deep

Total volume provided = $392 \text{ ft}^3 > 308 \text{ ft}^3$ (required)

$$\frac{1'' \times 80' \times 32' \times \frac{1}{12}}{\frac{1}{2}} = 213 \text{ ft}^3 \div .4 = 533 \text{ ft}^3$$

$$\text{Vol Provided} = 392 \text{ ft}^3 \times .4 = 157 \text{ ft}^3$$

CLIENT Waterway Surveys & Engineering, Ltd.

JOB NO. 26-33182

PROJECT NAME 7-Eleven Food Store; Route 60

START DATE 7/5/83

PROJECT LOCATION James City County, Virginia

FINISH DATE 7/5/83

BORING LOCATION _____

BORING METHOD HSA

FOREMAN Davis

ROCK CORE DIA. _____ IN.

INSPECTOR Spiro

SHELBY TUBE DIA. _____ IN.

SOIL DESCRIPTION	STRATUM DEPTH, FT.	DEPTH, FT.	SAMPLE NO.	STD. PENETRATION		SHELBY TUBE NO.	BORING AND SAMPLING NOTES
				BLOWS/6 IN. THREE 6 IN. INCREMENTS	RECOVERY IN.		
TOPSOIL 8"							
Light brown, moist, medium dense, Silty fine SAND (SM-ML)	2.0		1	10/10 13/6 8/8	18		
Light brown, reddish brown and light gray, moist, medium dense, Clayey fine to medium SAND (SC)	7.5		2	10/9 6/7 8/8	24		
		5	3		18		
Reddish brown and light gray, moist to very moist, medium stiff, fine Sandy SILT with little Clay (ML-CL)	12.0		4	3 5/4	18		
		10					
Light brown, moist, loose, Clayey fine to medium SAND (SC)			5	4 5/4	18		
		15					
Light brown, moist, loose, fine to medium SAND with trace Clay (SP)	19.0		6	4 4/5	18		
	20.0	20					
Bottom of boring 20.0'							

WATER LEVEL OBSERVATIONS

NOTED ON RODS N/A FT.

AT COMPLETION N/A FT.

CC001 7-11_ROUTE 60_SP_94_91_INFIL - 012

BORING METHOD

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
MD - MUD DRILLING
RC - ROCK CORING
C - CASING ADVANCED

*THESE SHELBY TUBE SAMPLES OBTAINED IN AN AUXILIARY BORING DRILLED A FEW FEET FROM THIS BORING

7 of 1

Atec Associates

Geotechnical and Materials Engineers

CLIENT Waterway Surveys & Engineering

FILE NUMBER 26-33182

SHEET 1 OF 1

DATE July 1983

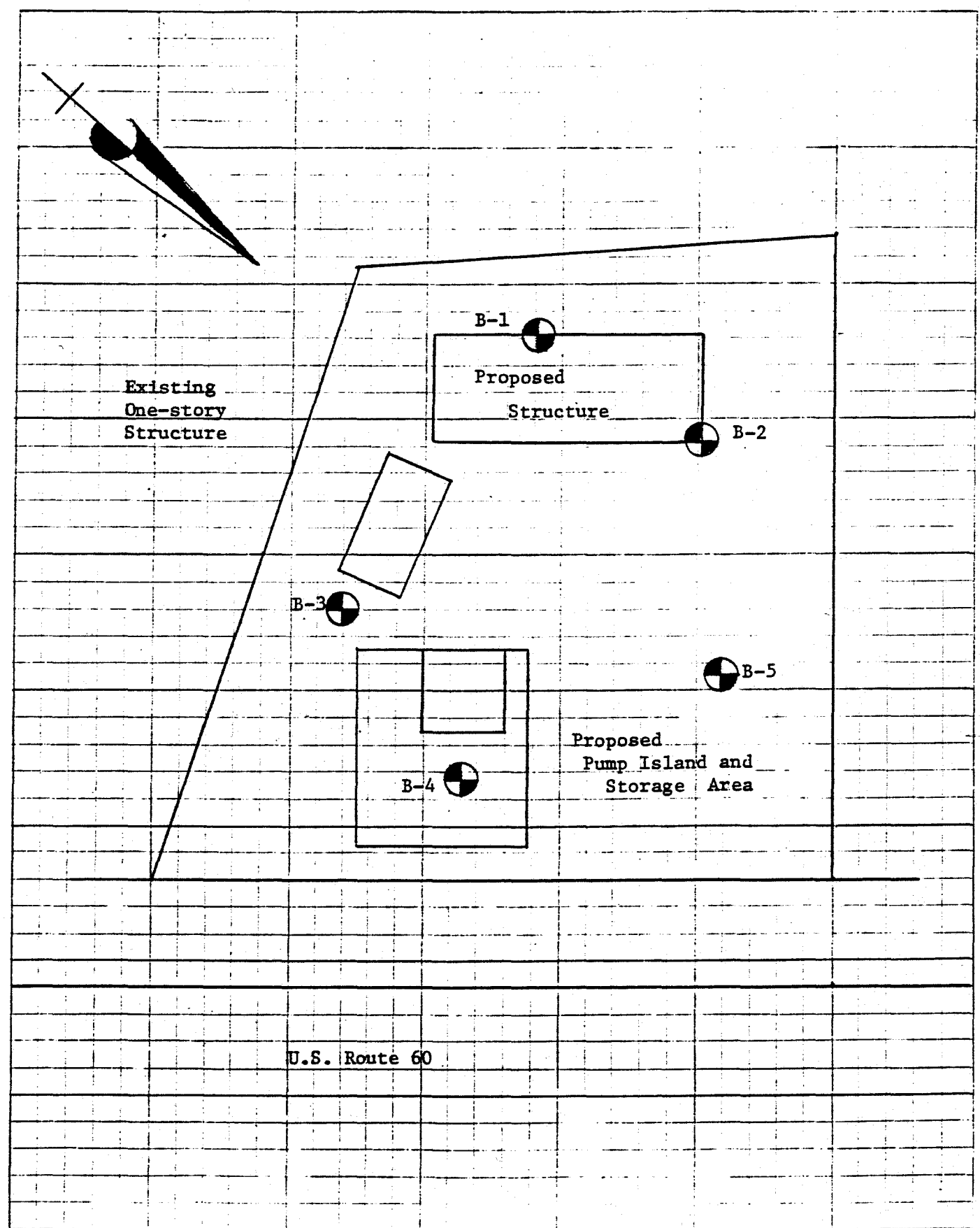
PROJECT 7-Eleven Food Store; Route 60

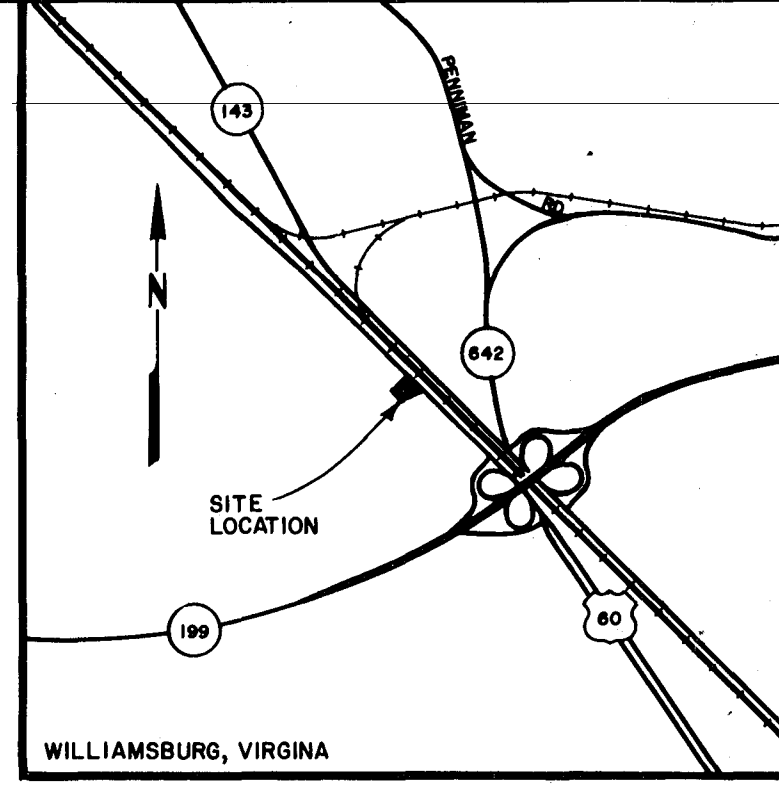
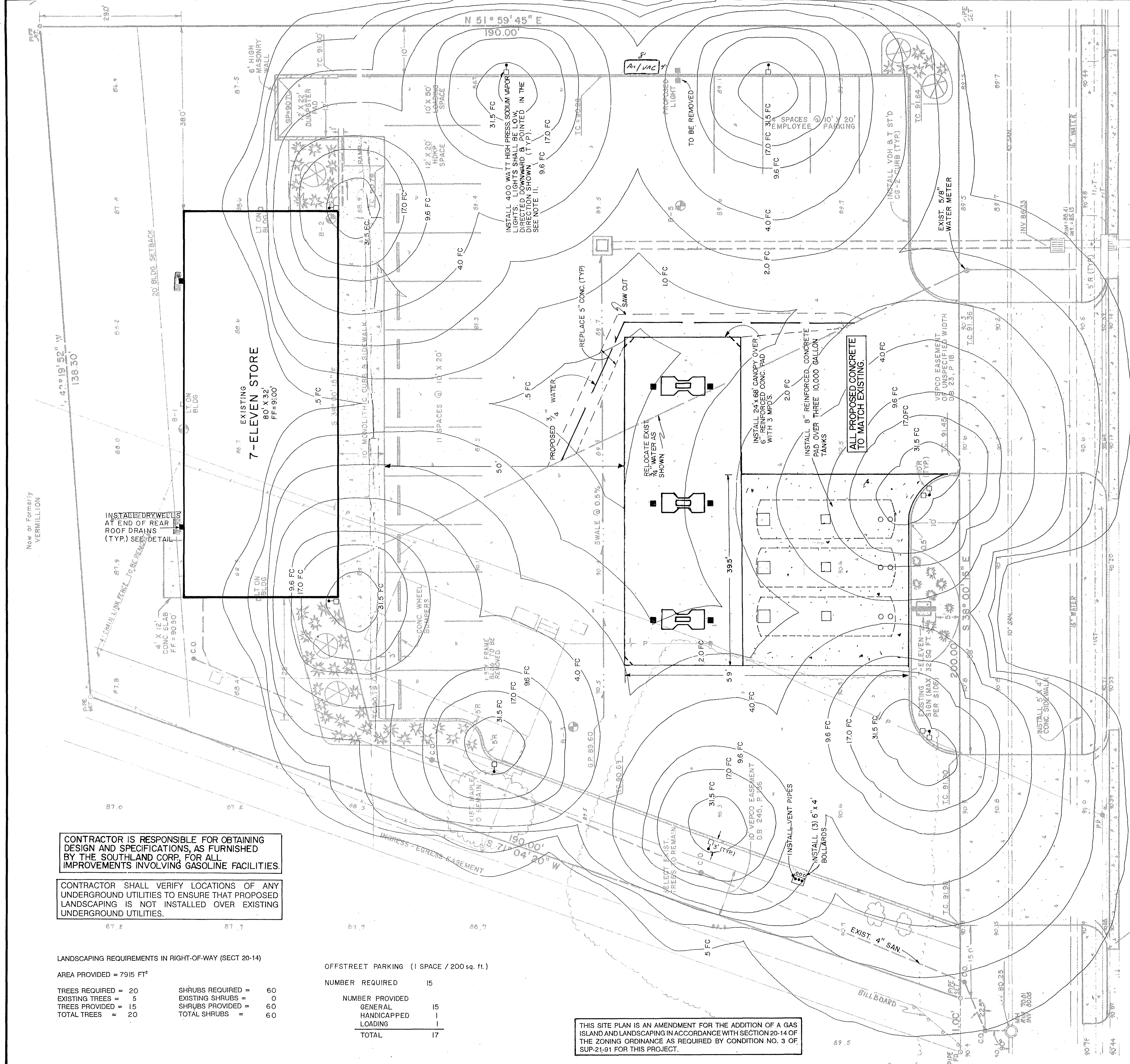
COMPUTED BY BRS

CHECKED BY _____

TEST BORING LOCATION SKETCH

Approximate scale: 1" = 40'





- NOTES:
1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO JAMES CITY COUNTY STANDARDS AND TO BE IN STRICT ACCORDANCE WITH THE SOUTHLAND CORPORATION SPECIFICATIONS FOR 7-ELEVEN STORE BUILDING INCLUDED IN THE CONTRACT DOCUMENTS.
 2. PRIOR TO ANY CONSTRUCTION, CONTRACTOR TO CONTACT "MISS UTILITY" OF TIDEWATER AT 1-800-552-7001 TO VERIFY LOC. OF ALL UTILITIES.
 3. EROSION AND SEDIMENT TO BE CONTROLLED AS PER VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK AND IN ACCORDANCE WITH THE SEDIMENT CONTROL PROVISIONS SHOWN ON THIS SITE PLAN.
 4. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE GRADED AND SEEDED IN ACCORDANCE WITH THE SOUTHLAND CORPORATION'S LANDSCAPING SPECIFICATIONS AND JAMES CITY COUNTY LANDSCAPING SPECIFICATIONS.
 5. BENCH MARK IS LOCATED ON THE TOP VALVE BOLT OF FIRE HYDRANT LOCATED ON THE SOUTH SIDE OF RTE. 60, 36 FEET FROM THE NORTHEAST CORNER OF SITE. ELEV. 93.37 N.G.V.D.
 6. CURRENT OWNER IS THE SOUTHLAND CORPORATION D.B. 238, PG. 187 D.B. 238, PG. 190.
 7. HEIGHT OF CANOPY IS 13'6".
 8. ALL REQUIRED PLANTINGS SHALL CONFORM WITH THE MOST RECENT EDITION OF THE AMERICAN STANDARD OF NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND SHALL BE PLANTED IN ACCORDANCE WITH THE MOST RECENT EDITION OF GUIDELINES FOR PLANTING LANDSCAPE TREES AND PLANTING AND CARE OF TREES AND SHRUBS PUBLISHED BY THE VIRGINIA COOPERATIVE EXTENSION SERVICE.
 9. DURING CONSTRUCTION, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
 10. INLET PROTECTION SHALL BE PROVIDED FOR ALL STORM DRAIN INLETS.
 11. PROPOSED LIGHTS SHALL BE NO MORE THAN 20' HIGH. HEAD OF LIGHTS SHALL NOT BE MORE THAN 15' FROM HORIZONTAL.

RECEIVED
PLANNING DEPARTMENT
DEC 1991

COUNTY OF JAMES CITY
FINAL SITE PLAN

APPROVALS	DATE
Fire Dept. <i>PM/MAE</i>	11/17/91
Health Dept. <i>HE/MAE</i>	11/16/91
Highway Dept. <i>BES/MAE</i>	12/5/91
Plan. Comm. <i>MAE</i>	1/14/92
Pub. Wks. Dept. <i>MAE</i>	1/13/92
Zoning Admin. <i>MAE</i>	1/13/92
JCSA <i>MAE/MAE</i>	11/11/91
Other	

- LEGEND:
- 91.50' PROPOSED ELEVATION
 - 90.2 EXISTING ELEVATION
 - PROPERTY LINES
 - PROPOSED BITUMINOUS PAVEMENT
 - STRAW BALE SEDIMENT BARRIER
 - TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
 - SOIL BORING LOCATION
 - PROPOSED CONCRETE

REV	DATE	DESCRIPTION	BY	APP
5	12/17/91	REVISED AS REQUESTED BY CITY	J.L.R.	D.M.W.
4	10/24/91	REVISED AS PER SUP-21-91	J.L.R.	D.M.W.
3	5/24/91	REVISED GASOLINE FACILITIES	C.E.W.	D.M.W.
2	7/27/83	ADDED PARKING LOT LIGHT & FILL CAPS	J.C.D.	J.L.O.
1	7/22/83	MADE CHANGES REQUESTED BY JAMES CITY COUNTY	L.G.G.	J.L.O.
THE SOUTHLAND CORPORATION 7-ELEVEN FOOD STORES, DIVISION 1049 REFLECTIONS 3, SUITE 400 VIRGINIA BEACH, VIRGINIA 23452				
SURVEYED W.C.H.				
DESIGNED J.L.O./R.C.B.				
DRAWN L.G.G.				
REVIEWED J.B.W.				
SCALE 1" = 10'	DATE JULY 1, 1983	FILE NO. 300-102	SHEET NO. 1 OF 2	
	DRAWING NO. 300-102.2	LOCATION NO. 1003-25186		

CONTRACTOR IS RESPONSIBLE FOR OBTAINING DESIGN AND SPECIFICATIONS, AS FURNISHED BY THE SOUTHLAND CORP. FOR ALL IMPROVEMENTS INVOLVING GASOLINE FACILITIES.

CONTRACTOR SHALL VERIFY LOCATIONS OF ANY UNDERGROUND UTILITIES TO ENSURE THAT PROPOSED LANDSCAPING IS NOT INSTALLED OVER EXISTING UNDERGROUND UTILITIES.

LANDSCAPING REQUIREMENTS IN RIGHT-OF-WAY (SECT 20-14)

AREA PROVIDED = 7915 FT²

TREES REQUIRED = 20	SHRUBS REQUIRED = 60
EXISTING TREES = 5	EXISTING SHRUBS = 0
TREES PROVIDED = 15	SHRUBS PROVIDED = 60
TOTAL TREES = 20	TOTAL SHRUBS = 60

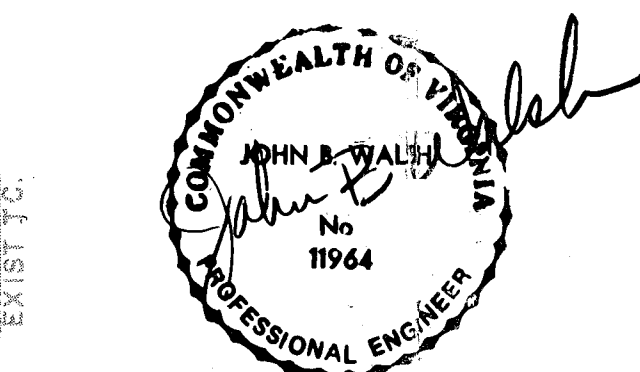
OFFSTREET PARKING (1 SPACE / 200 sq. ft.)

NUMBER REQUIRED	15
NUMBER PROVIDED	15
GENERAL	15
HANDICAPPED	1
LOADING	1
TOTAL	17

THIS SITE PLAN IS AN AMENDMENT FOR THE ADDITION OF A GAS ISLAND AND LANDSCAPING IN ACCORDANCE WITH SECTION 20-14 OF THE ZONING ORDINANCE AS REQUIRED BY CONDITION NO. 3 OF SUP-21-91 FOR THIS PROJECT.

SEE SHEET 2 FOR LANDSCAPING PLAN

ROUTE 60 80' R/W (POCAHONTAS TRAIL)

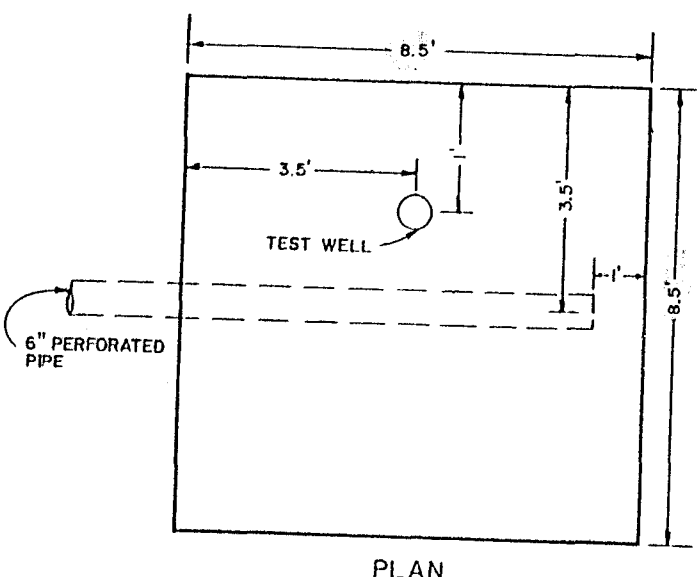
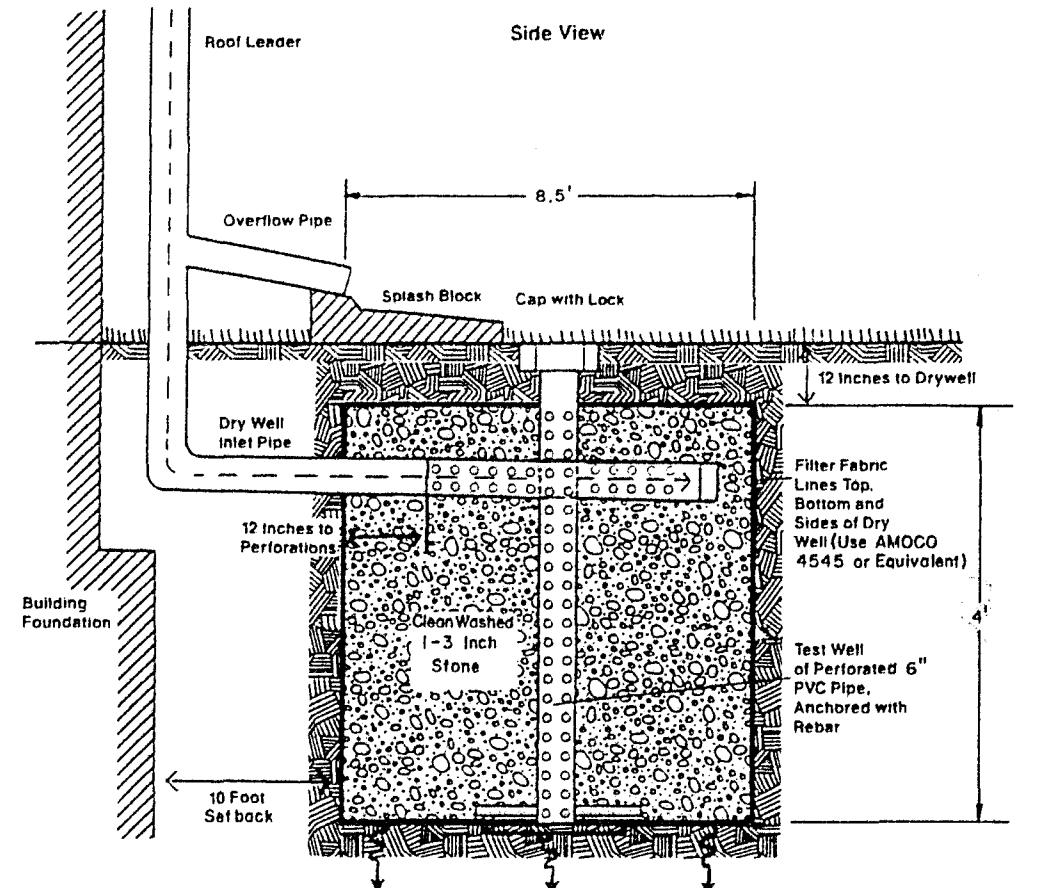
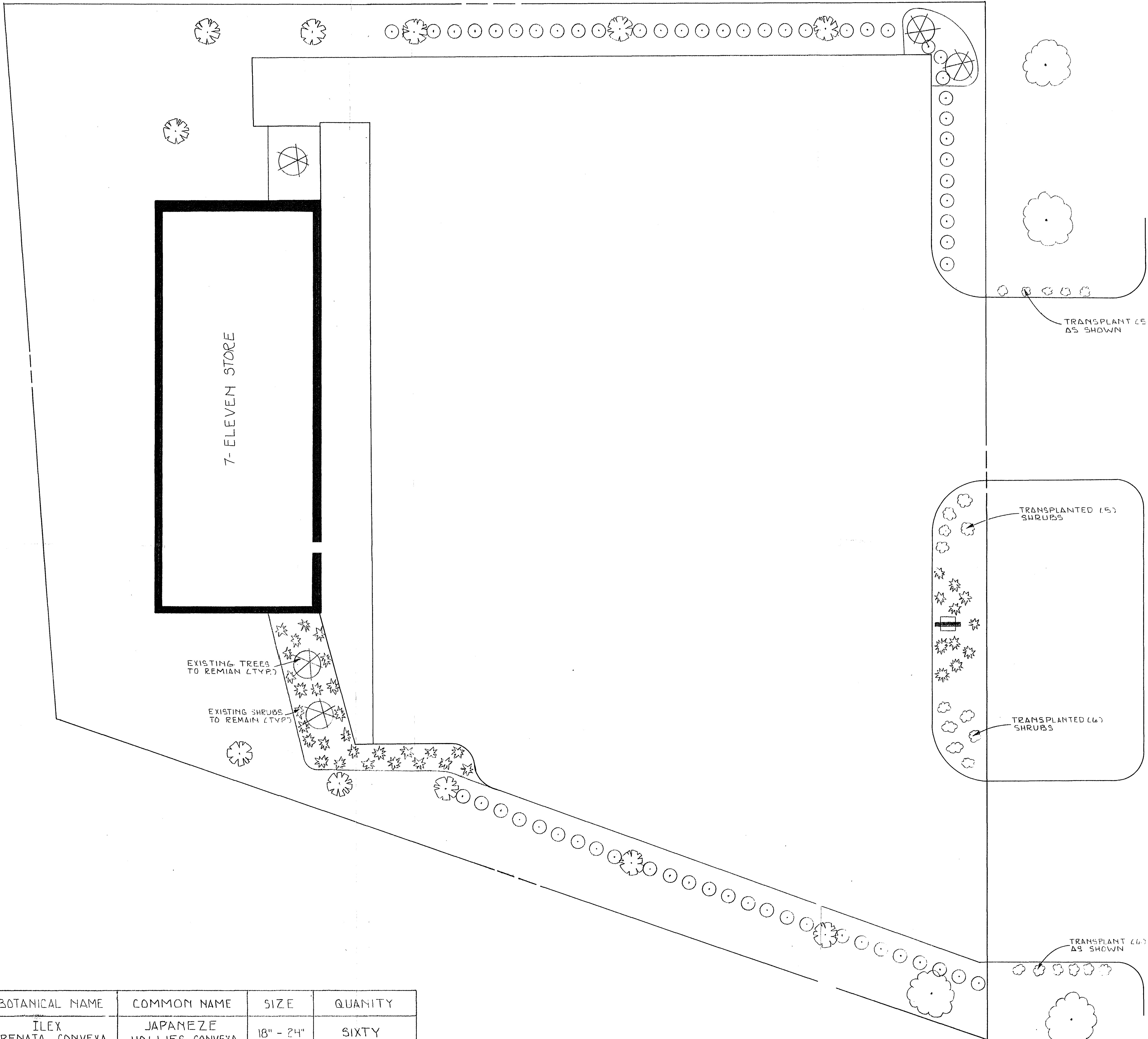


Waterway
Surveys & Engineering, Ltd.
Virginia Beach, Virginia
10 5 0 10 20
scale feet

SP-94-91

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
	ILEX CRENATA CONVEXA	JAPANESE HOLLIES CONVEXA	18" - 24"	SIXTY
	PYRUS CALLERYANA "BRADFORD"	BRADFORD PEAR	11-13 FEET 2 1/2" - 3" CALIPER	FOUR
	PINUS	VIRGINIA PINE	6-8 FEET 1 1/2" - 2 1/2" CALIPER	ELEVEN

LANDSCAPING BY:
THREE RIVERS SERVICES
1425 SAND BAG TERRACE
MIDDLETOWN, VIRGINIA 23113
(804) 379-2304



DRY WELL DETAILS
(N.T.S.)

COUNTY OF JAMES CITY
FINAL SITE PLAN

APPROVALS	DATE
Received	
Fire Dept.	
Health Dept.	
Highway Dept.	
Plan. Comm.	
Pub. Works Dept.	
Zoning Adm.	
JCSA	
Other	
Other	



REV.	DATE	DESCRIPTION	BY	APP.
2	1-3-92	REVISIONS REQUEST BY CITY	J.L.F., II	D.M.W.
1	12-5-91	REVISIONS REQUEST BY CITY	J.L.F., II	D.M.W.

THE SOUTHLAND CORPORATION 7-ELEVEN FOOD STORES, DIVISION 1049 REFLECTIONS 3, SUITE 400 VIRGINIA BEACH, VIRGINIA 23452	JAMES CITY COUNTY, VIRGINIA LANDSCAPE PLAN FOR 7-ELEVEN FOOD STORES PARCEL A PATRICK HENRY INN, INC. & T.R. VERMILION PROPERTY MB 38, P. 60 0.71299 ac. ZONED B-1
SURVEYED W.C.H.	DESIGNED J.L.O./R.C.B.
DRAWN J.L.F., II	REVIEWED J.B.W.
SCALE 1" = 10'	DATE SEPTEMBER 26, 1991
DRAWING NO. 300-102-00.06C	LOCATION NO. 1003-25186
FILE NO. 300-102-00	SHEET NO. 2 OF 2

Waterway
Surveys & Engineering, Ltd.
Virginia Beach, Virginia



SD-94-91

Date Record Created:		WS_BMPNO:		Print Record	
Created By:		CC001			
PRINTED ON Thursday, March 11, 2010 9:06:49 AM					
WATERSHED		CC		MAINTENANCE PLAN	
BMP ID NO		001		No	
PLAN NO		SP-94-91		SITE AREA acre	
TAX PARCEL		(50-2)(1-30A)		0	
PIN NO		50201000030A		LAND USE	
CONSTRUCTION DATE		12/16/1992		Convenience/Gas	
PROJECT NAME		7-11 Route 60 (Pocahontas Trail)		Infiltration	
FACILITY LOCATION		7337 Pocahontas Trail		C3 Infiltration Basin .5	
CITY-STATE		Williamsburg, VA		POINT VALUE	
CURRENT OWNER		The Southland Corporation		9	
OWNER ADDRESS		Tax Dept. #25186		SVC DRAIN AREA acres	
OWNER ADDRESS 2		PO Box 711		0.0587	
CITY-STATE-ZIP CODE		Dallas, TX 75221		SERVICE AREA DESCRI	
OWNER PHONE				Building Roof Area	
MAINT AGREEMENT		No		IMPERV AREA acres	
EMERG ACTION PLAN		No		0.06	
				RECV STREAM	
				UT of College Creek	
				EXT DET-WQ-CTRL	
				Yes	
				WTR QUAL VOL acre-ft	
				0.007	
				CHAN PROT CTRL	
				No	
				CHAN PROT VOL acre-ft	
				0	
				SW/FLOOD CONTROL	
				No	
				GEOTECH REPORT	
				No	
				CTRL STRUC DESC	
				#57 stone	
				CTRL STRUC SIZE inches	
				102"x102"	
				OTLT BARRL DESC	
				Perf Pipe	
				OTLT BARRL SIZE inch	
				6	
				EMERG SPILLWAY	
				No	
				DESIGN HW ELEV	
				na	
				PERM POOL ELEV	
				na	
				2-YR OUTFLOW cfs	
				10-YR OUTFLOW cfs	
				REC DRAWING	
				Yes	
				CONSTR CERTIF	
				No	
				LAST INSP DATE	
				8/10/2004	
				Inspected by:	
				INTERNAL RATING	
				3	
				MISC/COMMENTS	
				Dual dry wells at rear bldg; size 8.5 ft square x 4' deep; 308 cf req	
Get Last BMP No		Return to Menu			
				Additional Comments:	