

Septic Permit (over site)



Brunswick County Health Department
25 Courthouse Drive N.E.
Post Office Box 9
Belivia, North Carolina 28422-0009
Belivia 253-2250 Leland 763-1312 Southport 437-5281

Donald J. Yousey
Health Director

7/25/02

G. Kelly Dixon
Land Management Group Inc
PO Box 2522 Wilmington NC 28402

RE: BCHD file: Seascape at Holden Plantation Lot 39 01/56766, and Seascape at Holden Plantation
Lot 363 01/56767.

Mr. Dixon,

The design plans for the above referenced site have been approved. Prior to issuing an
Authorization for Wastewater Construction, a recorded perpetual easement must be approved. The
recorded perpetual easement must match the design plans where applicable. If you have any
questions please call me at 253-2309.

Respectfully,

James A. Davis RS

Cc: David Stanley MPH RS

LAND MANAGEMENT GROUP, INC.
P.O. BOX 2532
WILMINGTON, NC 28402 910-452-0001

6/13/02

LPP WASTEWATER TREATMENT AND DISPOSAL SYSTEM
CALCULATION SHEET FOR LPP SYSTEM

LOT # 359
NHCHO FILE # 01-26700
APPLICANT NAME: G. Kelly Dixon
LOCATION: Seescape at Holden Plantation

I. DESIGN PARAMETERS

- A. DETERMINE WASTE FLOW
OF BEDROOMS: 3
OF BDRMS X 120 GPD/BDRM = 360 GPD FLOW
- B. SELECT TANK SIZED FROM RULES
MINIMUM SEPTIC TANK CAPACITY: 1000 GALLONS
MINIMUM PUMP TANK CAPACITY: 1000 GALLONS
- C. APPLICATION RATE FOR SITE
LTAR: 0.5 GALLONS/DAY/SQUARE FOOT
- D. SUPPLY LINE SPECS.
DIAMETER: 2 INCH
LENGTH: 667 FEET
- E. LATERAL LINE SPECS
DIAMETER: 1.25 INCH
- F. MANIFOLD LINE SPECS
DIAMETER: 3 INCH

II. SYSTEM CALCULATION

- A. SYSTEM LAYOUT:
DETERMINE AREAS NEEDED FOR ABSORPTION AREA
AREA = DAILY FLOW/LTAR = 720 SQ. FT.
SET LATERAL SPACING DISTANCE = 5 FEET ON CENTERS
DETERMINE SHAPE OF FIELD
TOTAL LENGTH(TL) OF DISTRIBUTION LATERALS
TL = AREA/LATERAL SPACING = 144 LINEAR FEET OF LATERALS
PLEASE ENTER THE LATERAL LENGTH YOU WANT: 36 FEET
- B. DOSING AND DISTRIBUTION



SELECT HOLE SPACING _____ 5 FT.
 SELECT HOLE SIZE _____ 0.156 INCH 0.156 INCH
 SELECT PRESSURE HEAD _____ 3 FT. OF HEAD

TOTAL # OF HOLES = TOTAL LENGTH/HOLE SPACING
 32 = TOTAL # OF HOLES

HOLES PER LINE = TOTAL # HOLES/NUMBER OF LINES
 HOLES PER LINE = 8

SUMMARY

HOLES PER 36 FOOT LATERAL ON 5 FT. CENTERS AT 3 FT. OF HEAD
 FIRST HOLE 1.5 FEET FROM MANIFOLD
 DETERMINE FLOW RATE FROM CHART: 0.490 GPM
 FLOW RATE X # OF HOLES = 16.0 GPM

C. PUMP SELECTION:

DETERMINE TOTAL HEAD 8% ELEV

1. ELEVATION HEAD = 4.5 FT @ TANK
 + 0.0 FT FROM PUMP TO SUPPLY
 ELEV. HEAD = 4.5 FT.
 2. PRESSURE HEAD = 3.0 FT.
 3. FRICTION HEAD =
 867 FT. OF SUPPLY LINE WITH 2 IN. DIAM.
 AND A FLOW OF 16 GPM
 PIPE FRICTION = 4.836 FT. X 12
 = 5.823 FT.
 4. TOTAL HEAD = 13.4 FT.

PUMP REQUIRED MUST HAVE CAPACITY
 16 GPM AGAINST 13.4 FT. OF HEAD

PUMP SPECIFIED x ZOELLER 53 "Mighty Mate"
 SPECIFICATION OF PUMP ATTACHED YES NO

D. DOSE VOLUME (DV):

DV VOL. SUPPLY LINE + 5 X VOL. OF LATERALS
 SUPPLY LINES 108.6 GALLONS
 LATERALS 9.2 GALLONS
 DV = 154.7 GALLONS

ESTIMATED DOSES PER DAY = DAILY FLOW/VOLUME PER DOSE
 = 2.3 DOSES PER DAY

ESTIMATED DOSING DEPTH
 DEPTH = DOSE VOL / TANK VOL. X DEPTH OF LIQUID IN TANK

0.62 FEET OR 7 INCHES
 FLOAT SWITCH FOR PUMP ON/OFF SET FOR 7 INCH
 DRAW DOWN TO PROVIDE 154.7 GAL PER DOSE 2.3 TIMES/DAY

CHECKLIST

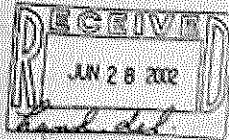
DAILY FLOW	360 GALLONS PER DAY	
SEPTIC TANK SIZE	1000 GALLONS	
PUMP TANK SIZE	1000 GALLONS	
EFFLUENT LOADING RATE	0.5 GALLONS/DAY/SQ FT.	
ABSORPTION AREA	720 SQUARE FEET	
TOT. LENGTH OF LATERALS	144 LINEAR FEET	
LATERAL DIAMETER	1.25 INCH	
LATERAL CONFIGURATION	END	
SUPPLY LINE LENGTH	667 FEET	
MANIFOLD DIAMETER	3.0 INCH	
MANIFOLD PLACEMENT	END	
HOLE SIZE	5/32 INCH	
HOLE SPACING	5 FEET	
# OF HOLES	32	
PRESSURE HEAD	3.0 FEET	
FLOW PER HOLE	0.499 GPM	
TOTAL FLOW	154.7 GAL/DOSE	
ELEVATION HEAD	4.5 FEET	
FRICTION HEAD	5.8 FEET	
PRESSURE HEAD	3.0 FEET	
TOTAL HEAD	13.4 FEET	
PUMP REQUIREMENTS	16 GPM @ 13.4 FT. OF HEAD	
STORAGE VOL. IN LATERALS	9.2 GALLONS	
STORAGE VOL. IN SUPPLY LINE	108.8 GALLONS	
TOTAL STORAGE VOLUME	118.0 GALLONS	
DOSING VOLUME	154.7 GALLONS	
PUMPING DEPTH	7.737 INCHES or 0.6448 FEET	
PUMPING VELOCITY	1.634	
PUMP RUN TIME	9.571 MINUTES	

NOTES: ***NO PIGGYBACK WIRING SHALL BE ALLOWED!

Seascope Subdivision

Low Pressure Pipe Pump Plans Fittings Lists

Fittings	334		342		343		351		352		359		360	
	01-56862	01-56759	01-56781	01-56782	02-56787	01-56788	01-56787	02-56787	01-56788	01-56787	01-56788	01-56787	01-56788	01-56787
Pipe diameter and length	885' (2')	680' (2')	785' (2')	1081' (1.5')	1025' (2')	667' (2')	945' (2')							
Gate Valves	2	2	2	2	2	2	2							
Check Valves	1	1	1	1	1	1	1							
Quick Disconnect	1	1	1	1	1	1	1							
90 deg elbows	7	7	7	7	7	7	5							
45 deg elbows		2	2				2							
reducers	1, 2-3" T	1, 2-3" T	1, 2-3" T	1, 1.5"-3" T	1, 2-3" T	1, 2-3" T	1, 1.5"-3" T							



Brunswick County Health Department
Environmental Health Section
Wastewater Collection, Treatment
and Subsurface Disposal System

Application # 01/56766
Tax Parcel #
Type 4a

IMPROVEMENT PERMIT
FOR WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL SYSTEM

In accordance with the provisions of Article 11 of Chapter 130A, General Statutes of North Carolina, 15A NCAC 18A 1900 et seq., and other applicable Laws and Rules

PERMISSION IS HEREBY GRANTED TO

Owner Seacrest at Holden Plantation
Address 3710 Stone Chimney Road
Supply NC 28462
Phone _____

FOR THE

Installation of a wastewater collection, treatment, and disposal system to serve

Residential X Bedroom 3 Commercial N/A Employees N/A Max Occupancy 5
Comments/Use 3 bedroom home

pursuant to 15A NCAC 18A.1900 as amended and in conformity with the application and other supporting data subsequently filed and approved by the DEHNR or the Brunswick County Health Department and considered a part of this permit.

Facility to be served Name Seacrest Subdivision
Address/Location or 354
Description initial septic system for pressure pipe septic system type 4a. 4 laterals 20 feet long, off site location. Six inch fill pad required. See fill plan. Repair area Type 5a pad filter for treatment septic system. 12 x 30. Design plans required. Certified Operator required. See attached diagram for off site location.

The owner shall be subject to the following conditions, limitations, and construction requirements for the installation and operation of this system:

1. This permit is effective only with respect to the specific design flow facilities, and the nature and volume of waste described in the Permit Application, and other supporting data. Changes in the proposed use, waste flow, nature or volume of waste render this Permit void.
2. All documents, including but not limited to site evaluation, design review plans and specifications, Triparty Agreements, Easements, and other legal agreements will become a part of the Permit. This includes operation and maintenance procedures and other pertinent documents relating to system operation and maintenance.
All legal documents must be recorded with the Brunswick County Register of Deeds, and proof of filing submitted before the Operations Permit or Authorization to Construct is issued, conditional on recordation and enforcement of easement.
3. The designated repair area is to have no parking, driveways, or other impervious material located on it.
4. The issuance of this permit does not preclude the permittee from complying with any and all statutes, regulations, or ordinances which may be imposed by other government agencies which have jurisdiction, or any other permits issued by this department.
5. The permit shall become invalid if the information submitted in the application was falsified or changed, if the permit was based on inaccurate or incomplete information, or if the designated site is altered.
6. Before Authorization to Construct a Wastewater Treatment and Disposal System is issued, all site modifications, plans, specifications, draft legal paperwork must be completed and approved.
7. Sites requiring complex designs for wastewater systems, may require approval of plans and specifications before the Improvements Permit is issued.

PERMIT ISSUED THIS 26th DAY OF JUNE 2001

DATE OF PERMIT EXPIRATION valid without expiration
BRUNSWICK COUNTY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH DIVISION

Am. A. Reed R.S.

PERMIT STA

11/5/97

(910) 253-4281 / 763-1812 / 457-5281

File No. 01/56766

BRUNSWICK COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
PO BOX 9, BOLIVIA, NC 28422

FILL PLAN FOR WASTEWATER SYSTEM

FILL
In some cases your property can be modified in order to install a conventional or modified conventional septic tank system. A commonly accepted modification is the use of fill.
Fill is a specific amount of soil (sand to loamy loam) placed in an area designated for the septic system to overcome limitations of the soil and site due to shallow soils, shallow seasonal high water tables, restrictive soil horizons and other soil characteristics. Fill may be placed on a site to raise the area for the modification drain lines at the suitable shallow soils can be utilized. The area and depth of the fill will vary due to the limiting soil conditions.
The following fill plan is for your proposed site and may be subjected to revision if the information changes or your Improvement Plan.

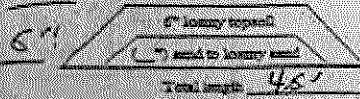
FILL Plan for Sansscope at Hobbs Plantation Lot 359 Pump off site

FILL Proposed by Janez Davis Date to area G 6/26/01
Tip view (not to scale)

- Design Flow/day 360 GPD
- Application rate 0.50 GPD
- Total depth of fill 6"
- Total area of fill 25' x 46'
- System and Receiver sizes 2.5' x 46'
- Length of Side slope N/A



Drain features (not to scale)



FILL Procedures

1. Prior to installation of fill, remove vegetation and roots and clear fill area.
2. After the addition of 6" to 8" of sand or loamy sand fill, clear fill site again to provide a site of fill and natural soil to a depth of 6" below the natural ground surface.
3. Add enough additional sand or loamy sand fill to achieve a depth of () in system installation and buffer zone area. The area including side slopes shall be covered with an additional 6" of sandy loam to loamy loam to establish vegetative ground cover. Total depth of fill is ().
4. Construct a 1-4 side slope as shown from the top edge of the fill tapered down to the natural ground surface.
5. Achieve level grade along long side of fill.
6. The fill system shall be checked to shed surface water.
7. Call for re-inspection by Health Department.
8. After installation of the sewage system, the fill area shall be mulched to shed surface water and seeded with grass to establish vegetative ground cover.

Notes: Home site may need to be modified to insure gravity flow to system. Any setbacks required are measured from the outer edge of the fill.

HEHS Signature _____ Date _____

This signature attests that the fill as described above has been checked and approved by the above Environmental Health Specialist.

***** SEE FILL PLAN SKETCH *****
FILL PAD MUST BE INSTALLED IN AREA DESIGNATED BY HEALTH DEPT

Page ___ of ___

Fill Plan By: James A. Davis RLS
Date: 6/26/09

File No: 61/50766

Brunswick County Health Department
Fill Plan Sketch (Not to Scale)

Fill pad must be located in specific area indicated. Variations may result in the revocation of the Improvement Permit.

Not to Scale!

SYSTEM REQUIREMENTS

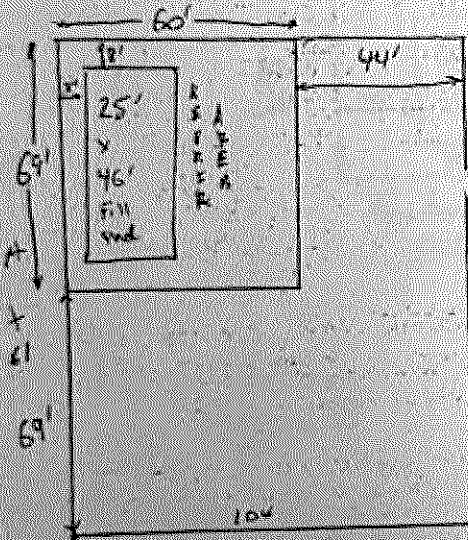
System Type: SA Low Pressure Vitr
Number of Bedrooms: 3
Type of Business: n/a
Number of Employees: n/a
Septic Tank Size: 300 Gallon Pump Tank/Leach
L.T.A.R.: 0.50 Sq. Ft. 320
No. Lines: 4 Length Ea. 36'
Line Width: 1.8" Line Center: 5'
Line Depth: 6" 1.8" with 1/2" Fill Pad
Fill Depth: 6"
Fill Area: 25' x 46'

CONDITIONS!!!

- 1) Read fill plan very carefully!
- 2) Properly prepare approved septic location for required fill to be added.
- 3) Landscaping of site by addition of fill only!
- 4) Place fill on site in EXACT location shown. MINIMUM number of fill over system area and buffer zone. Slope as required. Call for a FILL CHECK when ready.
- 5) Retain plumbing of structure to allow sufficient gravity flow to septic system in fill.
- 6) No driving over any part of the septic system or repair area!!!
- 7) No decks, porches, sheds, patios, pools, etc. over any part of septic system or repair area.
- 8) Keep all setbacks as shown!!!
- 9) Repair Area Type SA Part Fill w/ particular system

- 10) _____
- 11) _____

Page ___ of ___



FRONT PORCH ST

01/56766

Lot 359

Home site

Septic system

Pump

off-site

SEE

Fill plan

Maintain all

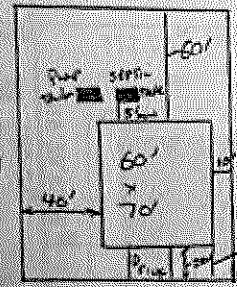
setback

requirements

Rear
112.05'

Right
150.04'

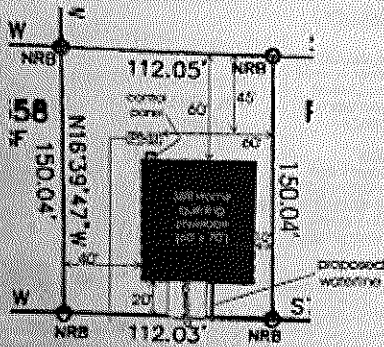
150.04
Left



Augustine Ave.
112.03'

Seascape Subdivision
 Proposed Septic System Site Plan
 Lot 359
 June 6, 2002

Scale 1" = 60'



Augustine Avenue



all sewer lines in
 road designed in
 accordance with
 Rule 1950

Wastewater Treatment System
 -1000 gal septic tank
 -1000 gal pump tank
 -Effluent pumped off-site
 to Drainfield G
 for final treatment

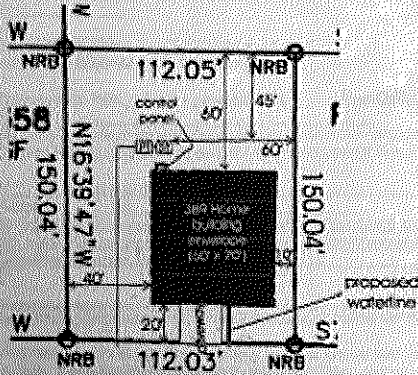
This proposed site plan is based on
 a survey prepared by Thomas
 Morgan, PLS. See Recorded Plat

*sewerage pumping system designed after
 improvement permit issued

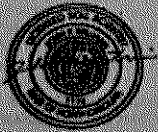
Land Management Group, Inc.

Seascope Subdivision
 Proposed Septic System Site Plan
 Lot 359
 June 6, 2002

Scale 1" = 60'



Augustine Avenue



all sewer lines in
 road designed in
 accordance with
 Rule 1950

Wastewater Treatment System
 - 1000 gal septic tank
 - 1000 gal pump tank
 - Effluent pumped off-site
 to Drained G
 for final treatment

*sewage pumping system designed after
 improvement permit issued

This proposed site plan is based on
 a survey prepared by Thomas
 Morgan, P.L.S. See Recorded Plat.

Land Management Group, Inc

Brunswick County Health Department
Environmental Health Section
Wastewater Collection, Treatment
and Subsurface Disposal System

Application # 01/567
Tax Parcel #
Type 4a

IMPROVEMENT PERMIT
FOR WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL SYSTEM

In accordance with the provisions of Article 11 of Chapter 130A, General Statutes of North Carolina, 15A NCAC 18A . 1900
seq. and other applicable Laws and Rules

PERMISSION IS HEREBY GRANTED TO:

Owner Seascapes at Holden Plantation
Address 3710 Stone Chimney Road
Suway NC 28452
Phone _____

FOR THE

Installation of a wastewater collection, treatment, and disposal system to serve:

Residential 1 Bedroom 3 Commercial N/A Employees N/A Max Occupancy 5

Comments Use 3 bedroom home
pursuant to 15A NCAC 18A.1900 as amended and in conformity with the application and other supporting data subsequently filed or
approved by the DEHNR for the Brunswick County Health Department and considered a part of this permit.

Facility to be served Name Seascapes Subdivision
Address/Location lot 364
Description initial septic system low-pressure pipe septic system type 4a 4 intercepts 35 feet long at
site location. Six inch fill pad required. See fill plan. Repair area Type 4a peat filter pretreatment septic system 12'x 30' Division
required. Certified Operator required. See attached diagram for off site location.

The owner shall be subject to the following conditions, limitations, and construction requirements for the installation and operation of
system:

1. This permit is effective only with respect to the specific design flow facilities, and the nature and volume of waste described in the
Permit Application, and other supporting data. Changes in the proposed use, waste flow, nature or volume of waste render this
Permit void.
2. All documents, including but not limited to site evaluation, design review plans and specifications, Triparty Agreements, Easements,
and other legal agreements will become a part of the Permit. This includes operation and maintenance procedures and other
pertinent documents relating to system operation and maintenance.
All legal documents must be recorded with the Brunswick County Register of Deeds, and proof of filing submitted with
the Operations Permit or Authorization to Construct, if issued, conditional on recordation and enforcement of easements.
3. The designated repair area is to have no parking, driveways, or other impervious material located on it.
4. The issuance of this permit does not preclude the permittee from complying with any and all statutes, regulations, or ordinances
which may be imposed by other government agencies which have jurisdiction, or any other permits issued by this department.
5. The permit shall become invalid if the information submitted in the application was falsified or changed, if the permit was based
on inaccurate or incomplete information, or if the designated site is altered.
6. Before Authorization to Construct a Wastewater Treatment and Disposal System is issued, all site modifications, plans,
specifications, draft legal paperwork must be completed and approved.
7. Sites requiring complex designs for wastewater systems, may require approval of plans and specifications before the Improvement
Permit is issued.

PERMIT ISSUED THIS 26th DAY OF June 2001
DATE OF PERMIT EXPIRATION valid without expiration
BRUNSWICK COUNTY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH DIVISION

Jim A. Davis R.S.

(810) 253-4381 / 763-1312 / 457-5281

File No. 01/56766

BRUNSWICK COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
PO BOX 9, BOLIVIA, NC 28422

FILL PLAN FOR WASTEWATER SYSTEM

Fill

In some cases your property can be modified in order to install a conventional or modified conventional septic tank system. Commonly accepted site modifications to the site of fill:

Fill is a specific amount of soil (sand or loamy sand) placed in an area designated for the septic system to overcome limits of the soil and site due to shallow soils, shallow seasonal high water tables, restrictive soil horizons and other soil characteristics. It is placed on a site to raise the area for the installation from times to the variable shallow soils can be utilized. The area and depth of fill will vary due to the limiting soil conditions.

The following fill plan is for your proposed site and may be subjected to revision if the information changes on your Improvement Permit.

Fill Plan for SURSCOPE at Holden Plantation Lot 359 Prop #11
Fill Proposal by JAMES DAVIS Date 10 AREA G 6/26/01
Design Flow/day 360 GPD Top view (not to scale)
Application rate 0.50 LPP
Total depth of fill 6"
Total area of fill 25'x45'

1. System and Buffer zone 25'x45'
2. Length of Rate slope N/A



Cross sections (not to scale)



Fill Procedure:

1. Prior to installation of fill, remove vegetation and rock mat and clear fill area.
2. After the addition of 4" to 6" of sand or loamy sand fill, clear fill site again to provide a grade of fill and natural soil to a depth of 6" below the natural ground surface.
3. Add enough additional sand or loamy sand fill to achieve a depth of () in system installation and buffer zone area. The soil including side slopes shall be covered with an additional 6" of sandy loam to loamy topsoil to establish vegetative ground cover. Total depth of fill is ().
4. Construct a 1:1 side slope as shown from the top edge of the fill toward down to the natural ground surface.
5. Achieve level grade along long side of fill.
6. The fill system shall be aligned to shed surface water.
7. Call for re-inspection by Health Department.
8. After installation of the sewage system, the fill area shall be regraded to shed surface water and seeded with grass to establish vegetative ground cover.

Notes: Home site may need to be modified to assure gravity flow to system. Any setbacks required are measured from the rear edge of the fill.

EHHS Signature _____ Date _____
This signature affirms that the fill as described above has been checked and approved by the above Environmental Health Specialist.

***** SEE FILL PLAN SKETCH *****
FILL PAD MUST BE INSTALLED IN AREA DESIGNATED BY HEALTH DEPT

Fill Plan By: James A. Davis RLS
Date: 6/7/07

File No. 01/56766

Brunswick County Health Department
Fill Plan Sketch (Not to Scale)

Fill pad must be located in specific area indicated. Variations may result in the revocation of the Improvement Permit.

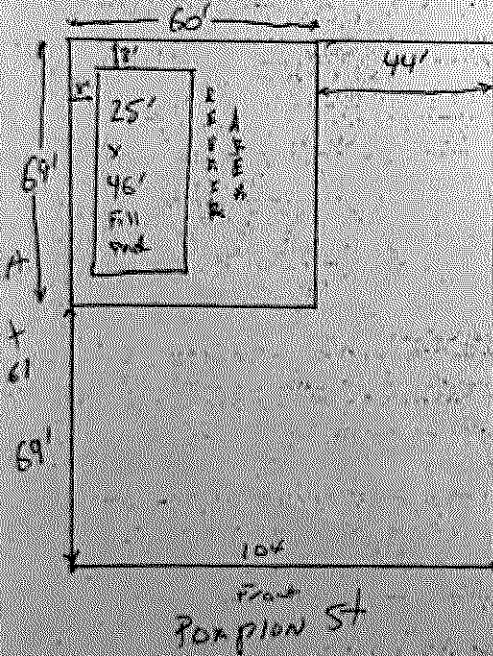
Not to Scale!

SYSTEM REQUIREMENTS:

System Type: 4a Low Pressure
Number of Bedrooms: 3
Type of Business: n/a
Number of Employees: n/a
Septic Tank Size: 900 Gallon Pump Tank
LFAR: 0.50 Sq. Ft. 720
No. Lines: 4 Length Ea. 36'
Line Width: 1 1/2" Line Center: 5'
Line Depth: 1 1/2" with 1/2" Fill Pad
Fill Depth: 6"
Fill Area: 25' x 46'

CONDITIONS!!!

- 1) Read fill plan very carefully!
- 2) Properly prepare approved septic location. In required fill to be added.
- 3) Landscaping of site by addition of fill only!
- 4) Place fill on site in EXACT location shown. LEVEL surface of fill over system area and buffer zone. Slope as required. Call for a FILL CHECK when ready.
- 5) Route plumbing of structure to allow sufficient gravity flow to septic system in fill.
- 6) No driving over any part of the septic system or repair area!!
- 7) No decks, porches, sheds, patios, pools, etc. over any part of septic system or repair area.
- 8) Keep all setbacks as shown!!!
- 9) Repair Area Type 5a Part 5/La protected system
- 10) _____
- 11) _____



Page ___ of ___