

Attachment 5

Septic Design



Albert Frick Associates, Inc
Environmental Consultants
95A County Road Gorham, Maine 04038
(207) 839-5563 FAX (207) 839-5564
www.albertfrick.com info@albertfrick.com

Albert Frick, SS, SE
James Logan, SS, SE
Matthew Logan, SF
Brady Frick, SE
Bryan Jordan, SE
William O'Connor, SE
Noel Dunn, Office Manager

September 15, 2014

Mr. Lee Allen, P.E.
Northeast Civil Solutions
153 US Route 1
Scarborough, ME 04074

Re: GBT Realty site, Route 5 & Chadbourne Ridge Road, Waterboro

Dear Mr. Allen:

We have completed a septic design for the proposed retail store at the above-referenced site, which is enclosed for review and use in obtaining approval and permits for the project.

The soils on-site are uniform outwash sands and consist of Adams soils. These are somewhat excessively drained, with no evidence of seasonal high water table or hard pan within 6' of the mineral soil surface.

Infiltration rates for typical Adams soil series are generally 6"-20"/hour in most horizons, and these are favorable for design of stormwater systems.

I trust you will find this and the enclosed septic design helpful in furthering the project. Should you have further questions or matters for discussion regarding the site, please do not hesitate to call.

Sincerely,

James Logan
Certified Soil Scientist #213
Licensed Site Evaluator #237
Wetland Scientist

JRFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, Station 10 SHS
(207) 287-5672 FAX (207) 287-4172

City, Plantation
WATERBORO

Street, Road Subdivision
ROUTE 5 & CHADBOURNE RIDGE ROADS

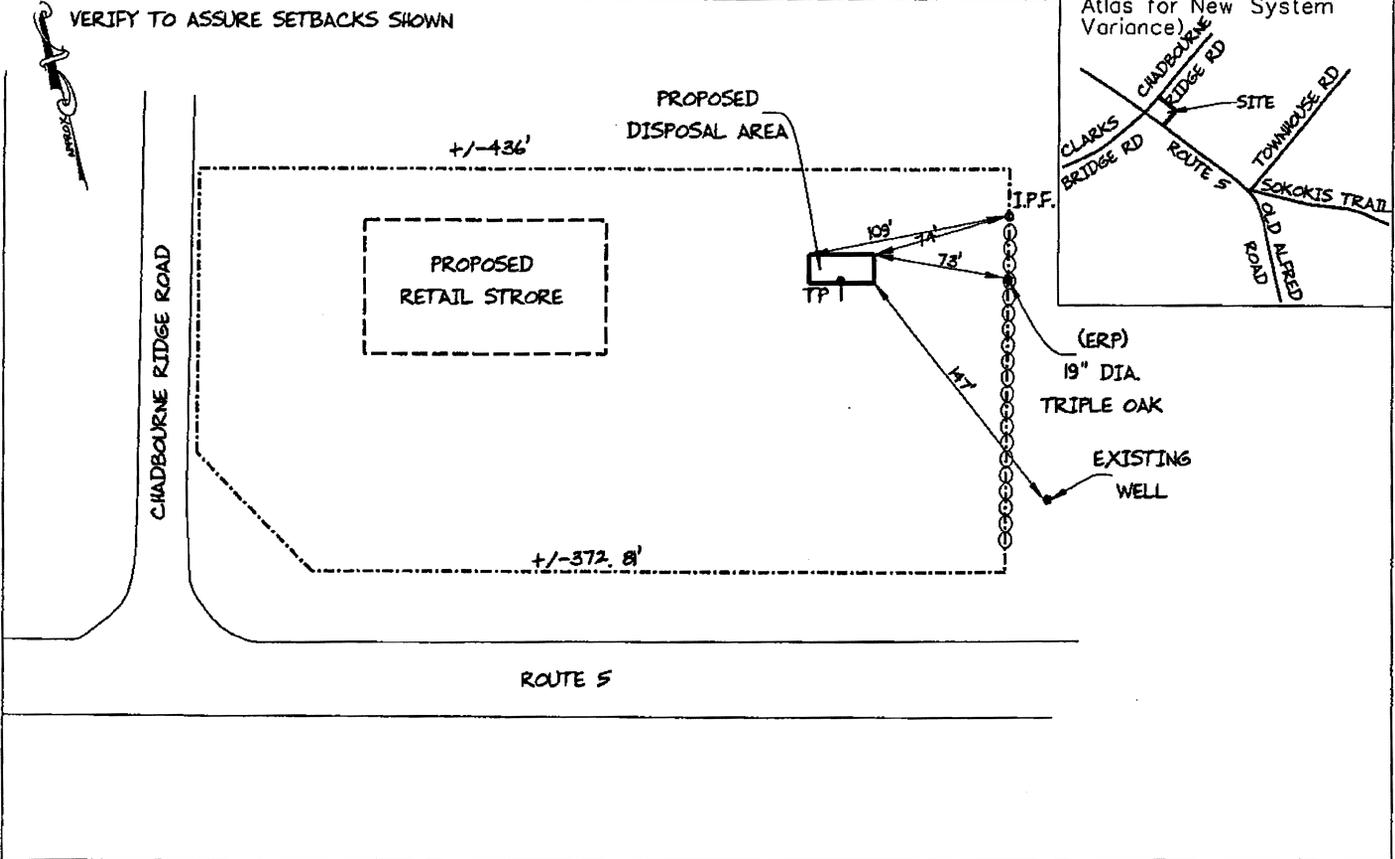
Owner's Name
GBT REALTY

PROPERTY INFORMATION PER TOWN
TAX MAP AND AERIAL PHOTOGRAPH
VERIFY TO ASSURE SETBACKS SHOWN

SITE PLAN

Scale 1" = 100 Ft.
or as shown

SITE LOCATION PLAN
(Attach Map from Maine Atlas for New System Variance)



SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 1 Test Pit Boring
" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0	SANDY		DARK	
	LOAM		BROWN	
10	COBBLY		DARK	
	LOAMY	FRIABLE	YELLOWISH	NONE
20	SAND		BROWN	EVIDENT
	FINE		YELLOWISH	
	AND		BROWN	
30	MEDIUM			
	SANDS		LIGHT	
			YELLOWISH	
40			BROWN	
50				
	LIMIT OF EXCAVATION			

Soil Classification S B Slope 0-3 %
Profile Condition
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Observation Hole Test Pit Boring
" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

Soil Classification Slope %
Profile Condition
 Ground Water
 Restrictive Layer
 Bedrock
 Pit Depth

Albert Frick
Site Evaluator Signature

163
SE

9/8/2014
Date

SURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, Station 10 SHS
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

WATERBORO

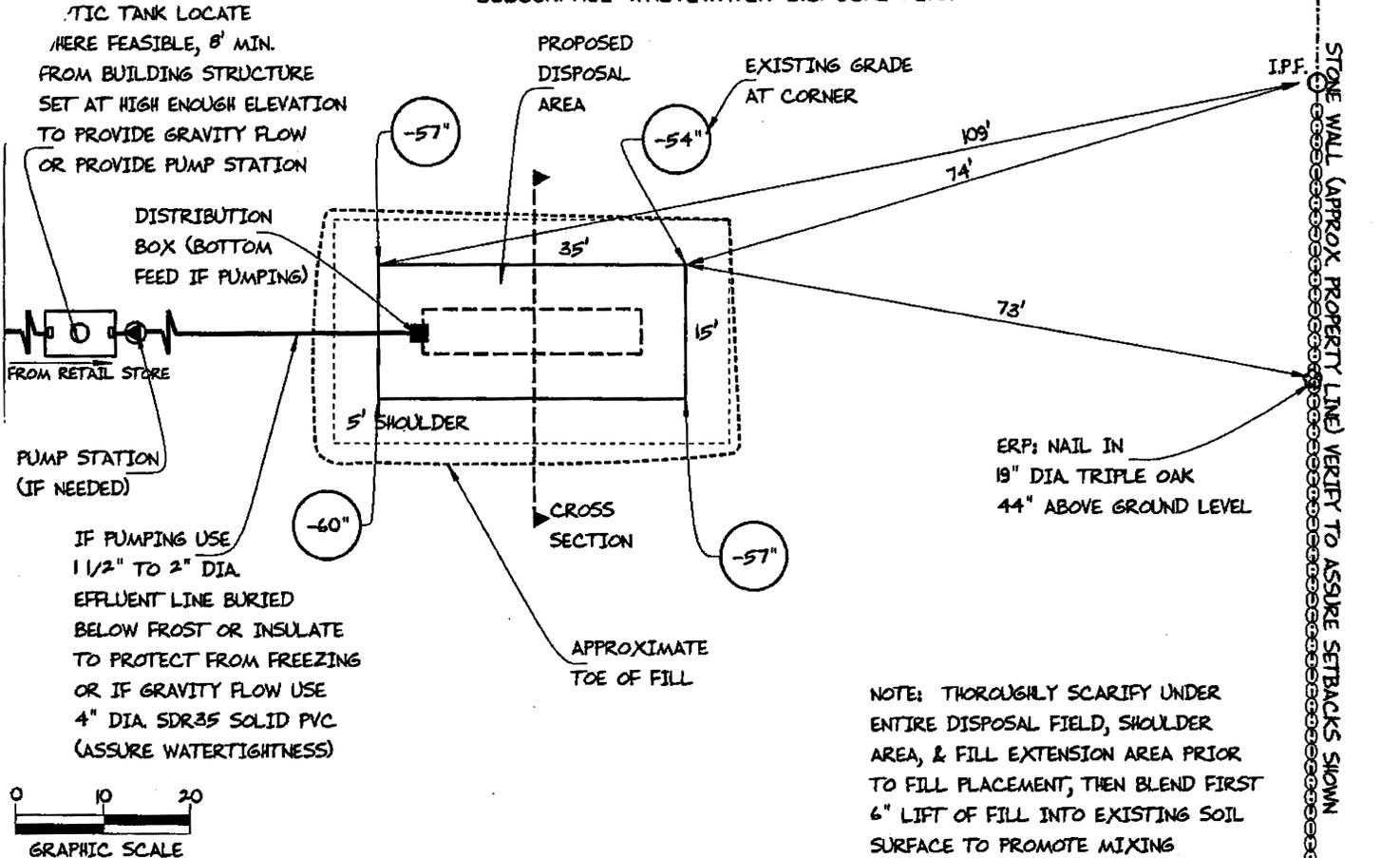
ROUTE 5 & CHADBOURNE RIDGE ROADS

GBT REALTY

1000 GALLON CONCRETE

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20' FT.



FILL REQUIREMENTS

Depth of Fill (Upslope) : 0" - 3"
Depth of Fill (Downslope) : 3" - 6"
DEPTHS AT CROSS-SECTION (shown below)

CONSTRUCTION ELEVATIONS

Finished Grade Elevation
Top of Distribution Pipe or Proprietary Device
Bottom of Disposal Area

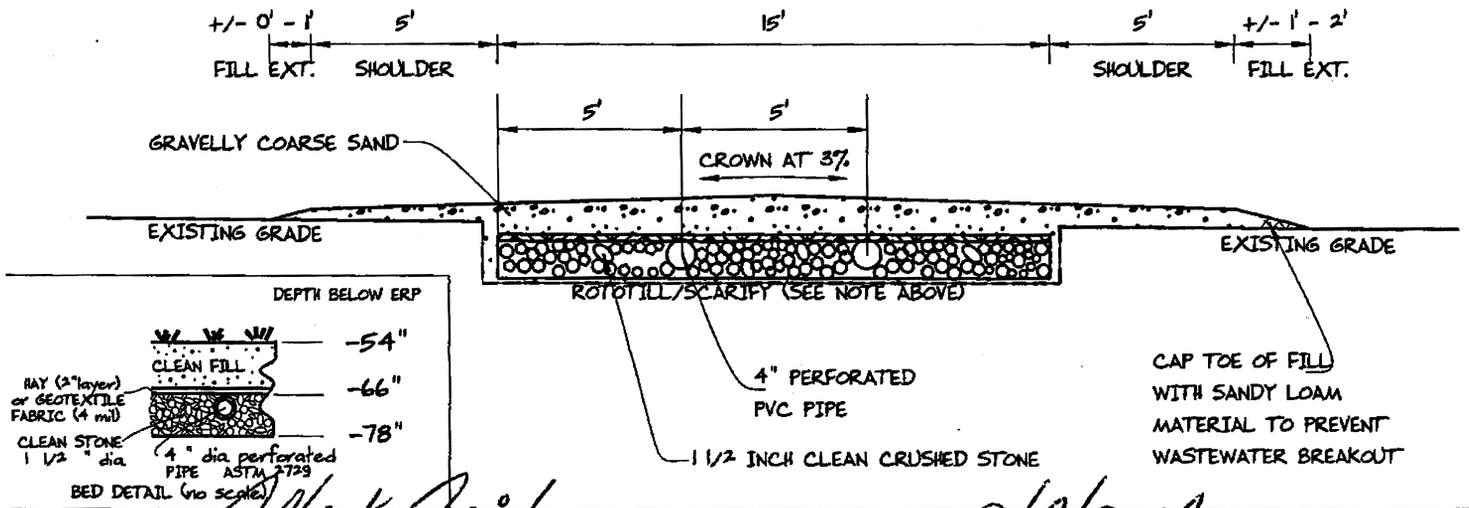
SEE
DETAIL
BELOW

ELEVATION REFERENCE POINT

Location & Description 19" DIA TRIPLE OAK, NAIL 44" ABOVE BASE
Reference Elevation is: 0.0" or -----

DISPOSAL AREA CROSS SECTION

SCALE:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 5 FT



Albert Frick
Site Evaluator Signature

163
SE #

9/8/2014
Date

Dollar General #11881
23021 Coshocton Road Mount Vernon, OH 43050

Knox County Water & Wastewater Department

Billing Period	Consumption (gallons)	Days In Billing Cycle	Consumption (gal/day)
6/27/11 - 7/19/11	1100	22	50.0
9/19/11 - 10/19/11	1400	30	46.7
10/19/11 - 11/18/11	1300	30	43.3
11/18/11 - 12/08/11	800	20	40.0
12/08/11 - 1/19/12	1900	42	45.2
1/19/12 - 2/17/12	1100	29	37.9
2/17/12 - 3/19/12	1500	30	50.0
3/19/12 - 4/19/12	1300	31	41.9
4/19/12 - 5/19/12	1400	30	46.7
5/19/12 - 6/19/12	1700	31	54.8
Average Consumption (gal/day)			45.7

Dollar General #11611
602 Elm Street Racine, OH 45771

Racine Village Municipal Collection

Billing Period	Consumption (gallons)	Days In Billing Cycle	Consumption (gal/day)
6/24/11 - 7/21/11	1000	27	37.0
7/21/11 - 8/24/11	0	34	0.0
8/24/11 - 9/23/11	1000	30	33.3
9/23/11 - 10/24/11	1000	31	32.3
10/24/11 - 11/23/11	1000	30	33.3
11/23/11 - 12/21/11	1000	28	35.7
12/21/11 - 1/24/12	1000	34	29.4
1/24/12 - 2/23/12	1000	30	33.3
2/23/12 - 3/22/12	0	27	0.0
3/22/12 - 4/24/12	2000	33	60.6
4/24/12 - 5/24/12	1000	30	33.3
5/24/12 - 6/25/12	1000	32	31.3
Average Consumption (gal/day)			30.0

Dollar General #11529
66780 Belmont-Morristown Road, St. Clairsville OH 43950

Belmont County Sanitary Sewer District

Billing Period	Consumption (gallons)	Days In Billing Cycle	Consumption (gal/day)
5/27/11 - 6/28/11	2000	32	62.5
6/28/11 - 7/27/11	1000	29	34.5
7/27/11 - 8/30/11	1000	34	29.4
8/30/11 - 10/04/11	2000	35	57.1
10/04/11 - 10/27/11	1000	23	43.5
10/27/11 - 11/28/11	1000	32	31.3
11/28/11 - 1/04/12	2000	37	54.1
1/04/12 - 1/27/12	1000	23	43.5
1/27/12 - 2/27/12	2000	31	64.5
2/27/12 - 4/03/12	2000	35	57.1
4/03/12 - 4/26/12	1000	23	43.5
4/26/12 - 5/29/12	1000	33	30.3
5/29/12 - 7/03/12	2000	35	57.1
Average Consumption (gal/day)			45.5



Albert Frick Associates, Inc.
Soil Scientists & Site Evaluators
95A County Road Garham, Maine 04638
(207) 839-5563

WATERBORO

ROUTE 5 & CHADBOURNE RIDGE ROADS

GBT REALTY

TOWN

LOCATION

APPLICANT'S NAME

1) The Plumbing and Subsurface Wastewater Disposal Rules adopted by the State of Maine, Division of Health and Human Services pursuant to 22 M.R.S.A. § 42 (the "Rules") are incorporated herein by reference and made a part of this application and shall be consulted by the owner/applicant, the system installer and/or building contractor for further construction details and material specifications. The system Installer should contact Albert Frick Associates, Inc. 839-5563, if there are any questions concerning materials, procedures or designs. The system installer and/or building contractor installing the system shall be solely responsible for compliance with the Rules and with all state and municipal laws and ordinances pertaining to the permitting, inspection and construction of subsurface wastewater disposal systems.

2) This application is intended to represent facts pertinent to the Rules only. It shall be the responsibility of the owner/applicant, system Installer and/or building contractor to determine compliance with and to obtain permits under all applicable local, state and/or federal laws and regulations (including, without limitation, Natural Resources Protection Act, wetland regulations, zoning ordinances, subdivision regulations, Site Location of Development Act and Minimum Lot Size law) before installing this system or considering the property on which the system is to be installed a "buildable" lot. It is recommended that a wetland scientist be consulted regarding wetland regulations. Prior to the commencement of construction/installation, the local plumbing inspector or Code Enforcement Officer shall inform the owner/applicant and Albert Frick Associates, Inc of any local ordinances which are more restrictive than the Rules in order that the design may be amended. All designs are subject to review by local, state and/or federal authorities. Albert Frick Associates, Inc.'s liability shall be limited to revisions required by regulatory agencies pursuant to laws or regulations in effect at the time of preparation of this application.

3) All information shown on this application relating to property lines, well locations, subsurface structures and underground facilities (such as utility lines, drains, septic systems, water lines, etc.) are based upon information provided by the owner/applicant and has been relied upon by Albert Frick Associates, Inc. in preparing this application. The owner/applicant shall review this application prior to the start of construction and confirm this information. Well locations on abutting properties but not readily visible above grade should be confirmed by the owner/applicant prior to system installation to assure minimum setbacks.

4) Installation of a garbage (grinder) disposal is not recommended. If one is installed, an additional 1000 gallon septic tank or a septic tank filter shall be connected in series to the proposed septic tank. Risers and covers should be installed over the septic tank outlet per the "Rules" to allow for easy maintenance of filter.

5) The septic tank should be pumped within two years of installation and subsequently as recommended by the pump service, but in no event should the septic tank be pumped less often than every three years.

The system user shall avoid introducing kitchen grease or fats into this system. Chemicals such as septic tank cleaners and/or chlorine (such as from water treatment units) and controlled or hazardous substances shall not be disposed of in this system. Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life.

6) All septic tanks, pump stations and additional treatment tanks shall be installed to prevent ground water and surface water infiltration. Risers and covers should be properly installed to provide access while preventing surface water intrusion to within 6" of a finished ground surface.

Vehicle traffic over disposal system is prohibited unless specifically designed with H-20 rated components.

ATTACHMENT TO SUBSURFACE WASTEWATER DISPOSAL APPLICATION

WATERBORO

ROUTE 5 & CHADBOURNE RIDGE ROADS

GBT REALTY

TOWN

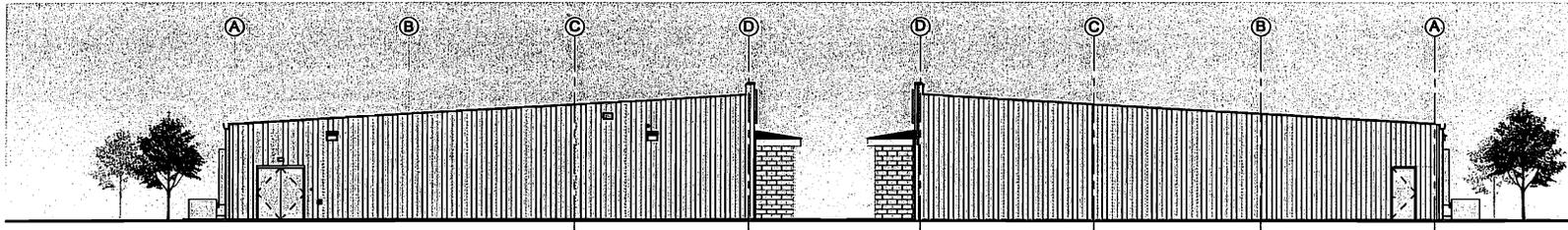
LOCATION

APPLICANT'S NAME

- 7) The actual waste water flow or number of bedrooms shall not exceed the design criteria indicated on this application without a re-evaluation of the system as proposed
- 8) The general minimum setbacks between a well (public or private) and septic system serving a single family residence is 100-300 feet, unless the local municipality has a more stringent requirement. A well installed by an abutter within the minimum setback distances prior to the issuance of a permit for the proposed disposal system may void this design.
- 9) When a gravity system is proposed: BEFORE CONSTRUCTION/INSTALLATION BEGINS, the system installer or building contractor shall review the elevations of all points given in this application and the elevation of the existing and/or proposed building drain and septic tank inverts for compatibility to minimum pitch requirements. In gravity systems, the invert of the septic tank(s) outlet(s) should be at least 4 inches above the invert of the distribution box outlet at the disposal area.
- 10) When an effluent pump is required: Pump stations should be sized per manufacturer's specifications to meet lift requirements and friction loss. Provisions shall be made to make certain that surface and ground water does not enter the septic tank or pump station, by sealing/grouting all seams and connections, and by placement of a riser and lid at or above grade. An alarm device warning of a pump failure shall be installed. Also, when pumping is required of a chamber system, install a 'T' connection in the distribution box and place 3 inches of stone or a splash plate in the first chamber. Insulate gravity pipes, pump lines and the distribution box as necessary to prevent freezing.
- 11) On all systems, remove the vegetation, organic duff and old fill material from under the disposal area and any fill extension. Additional fill beyond indicated on plan may be necessary to replace organic matter. On sites where the proposed system is to be installed in natural soil, scarify the bottom and sides of the excavated disposal area with a rake. Do not use wheeled equipment on the scarified soil surface. For systems installed in fill, scarify the native soil by roto-tilling or scarifying with teeth of backhoe to a depth of at least 8 inches over the entire disposal and fill extension area to prevent glazing and to promote fill bonding. Place fill in loose layers no deeper than 8 inches and compact before placing more fill (this ensures that voids and loose pockets are eliminated to minimize the chance of leakage or differential settling). Do not use wheeled equipment on the scarified soil area until after 12 inches of fill is in place. Keep equipment off proprietary devices. Divert the surface water away from the disposal area by ditching or shallow landscape swales.
- 12) Unless noted otherwise, fill shall be gravelly coarse sand, which contains no more than 5% fines (silt and clay). Crushed stone shall be clean and free of any rock dust from the crushing process.
- 13) Do not install systems on loamy, silty, or clayey soils during wet periods since soil smearing/glazing may seal off the soil interface.
- 14) Seed all filled and disturbed surfaces with perennial grass seed, with 4" min. soil or soil amendment mix suitable for growing, then mulch with hay or equivalent material to prevent erosion. Alternatively, bark or permanent landscape mulch may be used to cover system. Woody trees or shrubs are not permitted on the disposal area or fill extensions.
- 15) If an advanced wastewater treatment unit is part of the design, the system shall be operated and maintained per manufacturer's specifications.

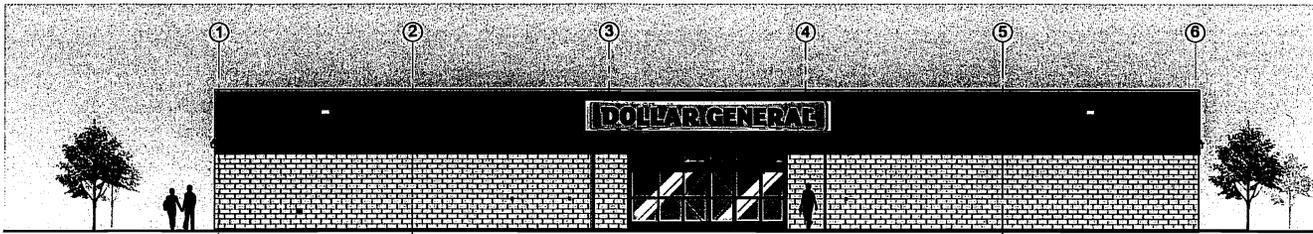


Albert Frick Associates, Inc.
 Soil Scientists & Site Evaluators
 95A County Road Gorham, Maine 04038
 (207) 839-5565

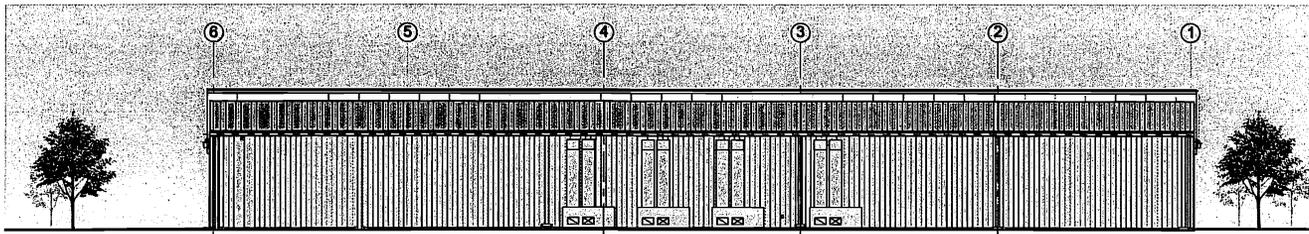


1 SOUTH ELEVATION (TRUCK SIDE)
A-2 1/8" = 1'-0"

2 NORTH ELEVATION
A-2 1/8" = 1'-0"



3 EAST ELEVATION
A-2 1/8" = 1'-0"



4 WEST SIDE ELEVATION
A-2 1/8" = 1'-0"

DOLLAR GENERAL

DOLLAR GENERAL

THE COLORS SHOWN IN THIS PENDING ARE CLOSE APPROXIMATIONS. DUE TO INK VARIATION AND DIFFERENCES IN FINISHES, EXACT COLOR MATCH CANNOT BE ACHIEVED. THE VIEWER IS ADVISED TO USE THE RENDERING AS A GUIDE FOR THE ARRANGEMENT OF COLORS ON THE BUILDING, AND TO THEN REFER TO THE ACTUAL COLOR OR MATERIAL SAMPLES PROVIDED.

GPD GROUP
Clous, Fry, Summers, Burns & Duffless, Inc.
1.800.955.4731
www.gpdgroup.com