PIEDMONT DESIGN ASSOCIATES, P.A.
Suite 101 Westfield Center
125 East Plaza Drive
Mooresville, North Carolina 28115-8812
Telephone (704) 664-7886 Fax (704) 664-1778

Engineering
Surveying
Planning

Project: **Tomlin Mill One Stop Septic System**

Job No. 2014-05-17-EH Date: 10/22/2014 Revision Date: 10/22/2014

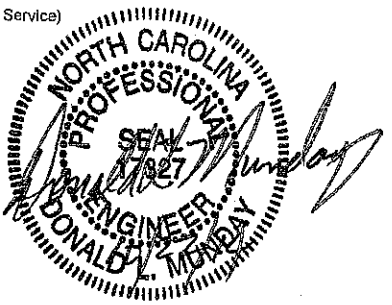
Existing Septic System Use: Convienence Store
Existing Septic System Sizing: Field A

Ex. Septic Tank Size:	1,500	Gallons
Ex. Drainfield Size:	555	LF
Ex. Drainfield Type:	Conventional with Gravel	
Ex, Design Flow:	500	G/D
Ex. LTAR:	0.30	G/D/SF

(Based on Non-24 Hr C-Store w/o Food Service)

Existing Septic System Sizing: Field B

Ex. Septic Tank Size:	2,000	Gallons
Ex. Drainfield Size:	521	LF
Ex. Drainfield Type:	25% Reduction (Chambers)	
Ex, Design Flow:	625	G/D
Ex. LTAR:	0.30	G/D/SF



Field B was installed to allow new fixtures installed in 2008 into new system and existing fixtures to remain plumbed to existing system.

New Fixtures included 1 toilet, 1 sink in womens restroom, 1 urinal in mens restroom and 1 toilet and 1 sink in managers office.

Total Existing System Design Flow:	1,125.00	Gallons per Day
Total Existing System LF:	1,076.00	LF Drainline @ 0.30 G/D/SF

Owner is proposing to add food service to C-Store serving breakfast and lunch. Onwer is proposing to add 12 seats. Design Flow for 12 seats is 40 G/D/Seat, therefore requiring additional drainfield to accomodate 480 Gal./Day. Flow Reduction allows for design flow reduction per seat from 40 G/D/Seat to 11 G/D/Seat.

FIELD A SIZING CALCULATIONS

Since the current plumbing system does not break out the domestic waste from future kitchen waste, we are proposing that the client demo a portion of the floor and re-plumb the kitchen waste to a new 1,000 gallon grease trap.

Engineer is proposing to send all kitchen waste through a new 1,000 gallon grease trap and all flow from kitchen to existing Field A

Total Flow from Kitchen:	40	G/D/Seat
Number of Seats:	12	Seats
Unreduced Flow from Kitchen Waste:	480	G/D
Reduced Flow from Kitchen:	11	G/D/Seat (From Flow Reduction Request sent to Trish)
Number of Seats:	12	Seats
Reduced Flow from Kitchen Waste:	132	G/D
Proposed LTAR:	0.25	G/D/SF
LF Required:	176.00	LF Required

Justin Henderson, ICHD has proposed to remove lowest (2) laterals in Field A because of fill placed over system for driveway shoulder.

Length of Laterals to be removed:	90	LF (Lateral #5)
	100	LF (Lateral #6)
	190	LF Total Removed
Remaining Lateral Length:	365	LF Remaining in Field A
Required LF:	176.00	LF
	273.75	Remaining Gallons to be allowed to Field A or
	0.12	G/D/SF Loading Rate for Proposed Kitchen Flow Only to Field A

Field A Tank Sizing Based on Unreduced Flow

	480.00	Gals./Day
	960.00	Gallons
Existing Tank	1,500.00	Gallons

Keep Existing Tank in Use. No Need to Add Additional Volume

FIELD B SIZING CALCULATIONS

The Engineer is proposing to send all from from the domestic waste to Field B septic system

Unreduced Flow from Domestic Waste:	1,125.00	G/D
Prop. Flow Reduction for Domestic:	724.20	G/D (From Flow Reduction Request sent to Trish)
Existing LTAR:	0.30	G/D/SF
Proposed LTAR:	0.25	G/D/SF
LF Required:	724.20	LF Required (Using 25% Accepted System)

Existing System Size	5	Laterals
	105	LF Each
	525	LF Total

Permit States Current System Size is 521 LF Total

Proposing to Add:	2	New Laterals
Length of Each New Lateral:	105	LF Each of 25% Accepted Laterals (Chambers)
	210	LF Total of New Laterals
	735	LF Total for Field B (Domestic Waste Only)

Engineer is Proposing to Replace Existing Effluent Spiller (per ICHD permit) & Replacewith New Orenco Flow Splitter with 1 Inlet 7 Outlet Option (See Plan Details) Contractor to Contact AQWA at 888-552-2792 for ordering information

New Laterals & Repair for the Entire System has Already Been Located in the Field, Shown on the Plan & Evaluated by Ashley Rollans, LSS and Justin Henderson with ICHD

Field B Tank Sizing Based on Unreduced Flow

	1,125.00	Gals./Day
	1,816.25	Gallons
Existing Tank	2,000.00	Gallons

Keep Existing Tank in Use. No Need to Add Additional Volume

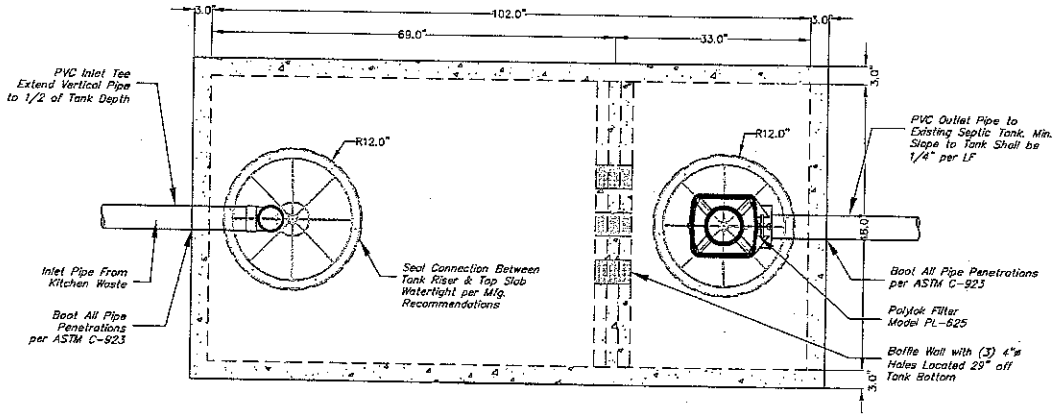
PUBLICATION OR REUSE OF THESE DRAWINGS OR ANY DETAILS WITHIN MUST BE WITH THE WRITTEN CONSENT OF PIEDMONT DESIGN ASSOCIATES, P.A.

Owner:

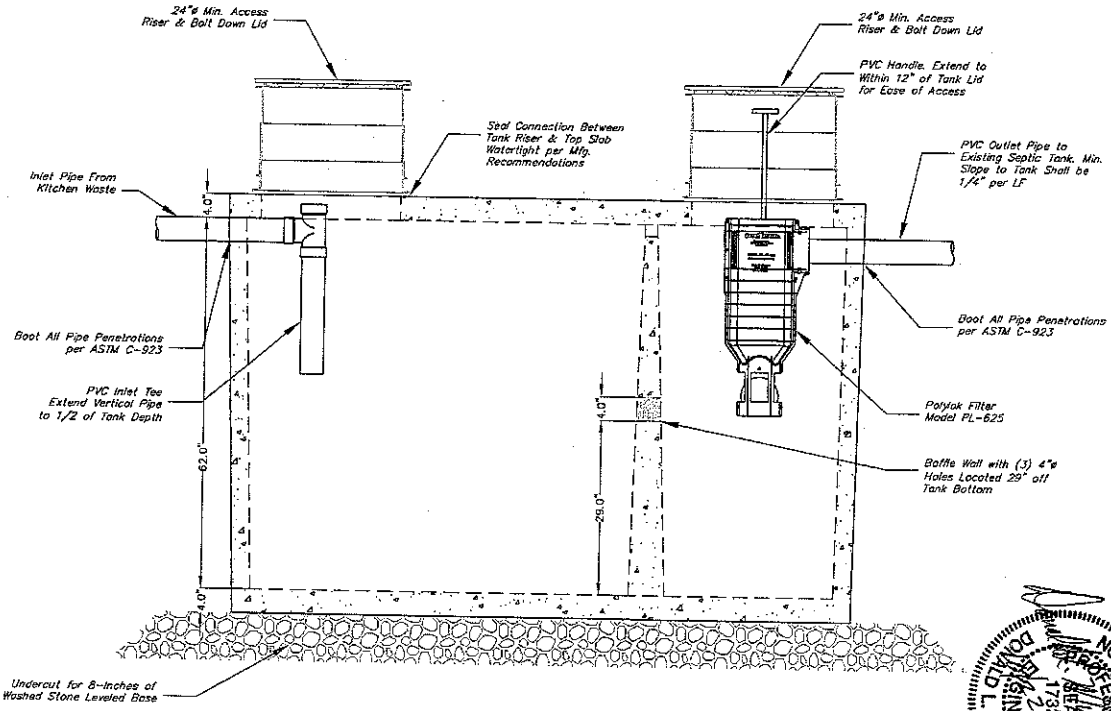
Approved:

GENERAL NOTES:

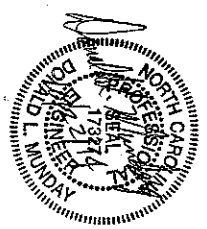
1. NOTIFY UNDERGROUND UTILITIES LOCATOR PRIOR TO ANY EXCAVATION. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL TRADES AND SUBCONTRACTORS. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS, ELEVATIONS, AND LOCATION OF ALL EXISTING CONDITIONS AND UTILITIES.
2. ALL PIPING SHALL BE SCH 40 PVC UNLESS OTHERWISE NOTED ON PLANS. ALL PVC PIPES SHALL BE BURIED A MINIMUM OF 3 FEET UNLESS SHOWN OTHERWISE.
3. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS.
4. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA, NCDOT, AND OTHER RELATED SAFETY REQUIREMENTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL CONSTRUCTION DAMAGE EXPEDITIOUSLY AND AT NO ADDITIONAL COST TO THE OWNER.
6. SEPTIC TANKS SHALL BE CONSTRUCTED WITH A BAFFLE WALL DIVIDING THE TANK INTERIOR 2/3rd TO 1/3rd. THE BAFFLE WALL SHALL BE CONSTRUCTED TO PERMIT PASSAGE OF EFFLUENT THROUGH A SLOT OR HOLES LOCATED BETWEEN 45 & 55 PERCENT OF THE INTERIOR DEPTH.
7. ALL TANKS SHALL HAVE A MINIMUM 28-DAY CONCRETE STRENGTH OF 4,500 PSI.
8. TANKS SHALL MEET REINFORCING REQUIREMENTS TO ACCOMMODATE 3,000 POUNDS PER SQ. FT. EITHER STEEL REINFORCING WIRE. REBAR OR APPROVED FIBER MAY BE USED.
9. ALL SERVICE ACCESS OPENINGS SHALL BE A MINIMUM OF 24 INCHES.
10. RISERS TO BE CAST IN PLACE AT TIME OF TANK CONSTRUCTION
11. ALL TANKS AND EFFLUENT FILTERS SHALL BE APPROVED BY ENGINEER & NCDHHS. EFFLUENT FILTERS SHALL BE SIZED FOR DESIGN FLOW AND EXTEND DOWN TO 50-PERCENT OF LIQUID LEVEL
12. ALL JOINTS (MID-SEAM, TOP-SEAM) SHALL BE SEALED USING CONCRETE SEALANTS BUTYL SEALANT # CS-102 MEETING ASTM C-990.
13. TANKS SHALL BE LEAK-TESTED PRIOR TO SYSTEM START UP BY APPLYING A VACUUM OF 5-INCHES OF MERCURY WITH RISER ASSEMBLIES IN PLACE OR A 24-HOUR STATIC WATER TEST IN ACCORDANCE WITH ASTM STANDARDS.
14. ALL PIPE PENETRATIONS THROUGH PRECAST CONCRETE TANKS SHALL BE PRESS-SEAL CAST-A-SEAL 402 RUBBER BOOTS AND GROUTED.
15. ALL TANK RISERS AND LIDS SHALL EXTEND A MINIMUM OF 6" ABOVE THE FINISHED GRADE.
16. ALL METAL INSTALLED IN TANKS SHALL BE STAINLESS STEEL.
17. ALL MANHOLES NOT INSTALLED NOT IN TRAFFIC AREAS SHALL HAVE TAMPER RESISTANT BOLTS ON LIDS.



PLAN VIEW: 1,000 GALLON GREASE TANK



SECTION VIEW: 1,000 GALLON GREASE TANK



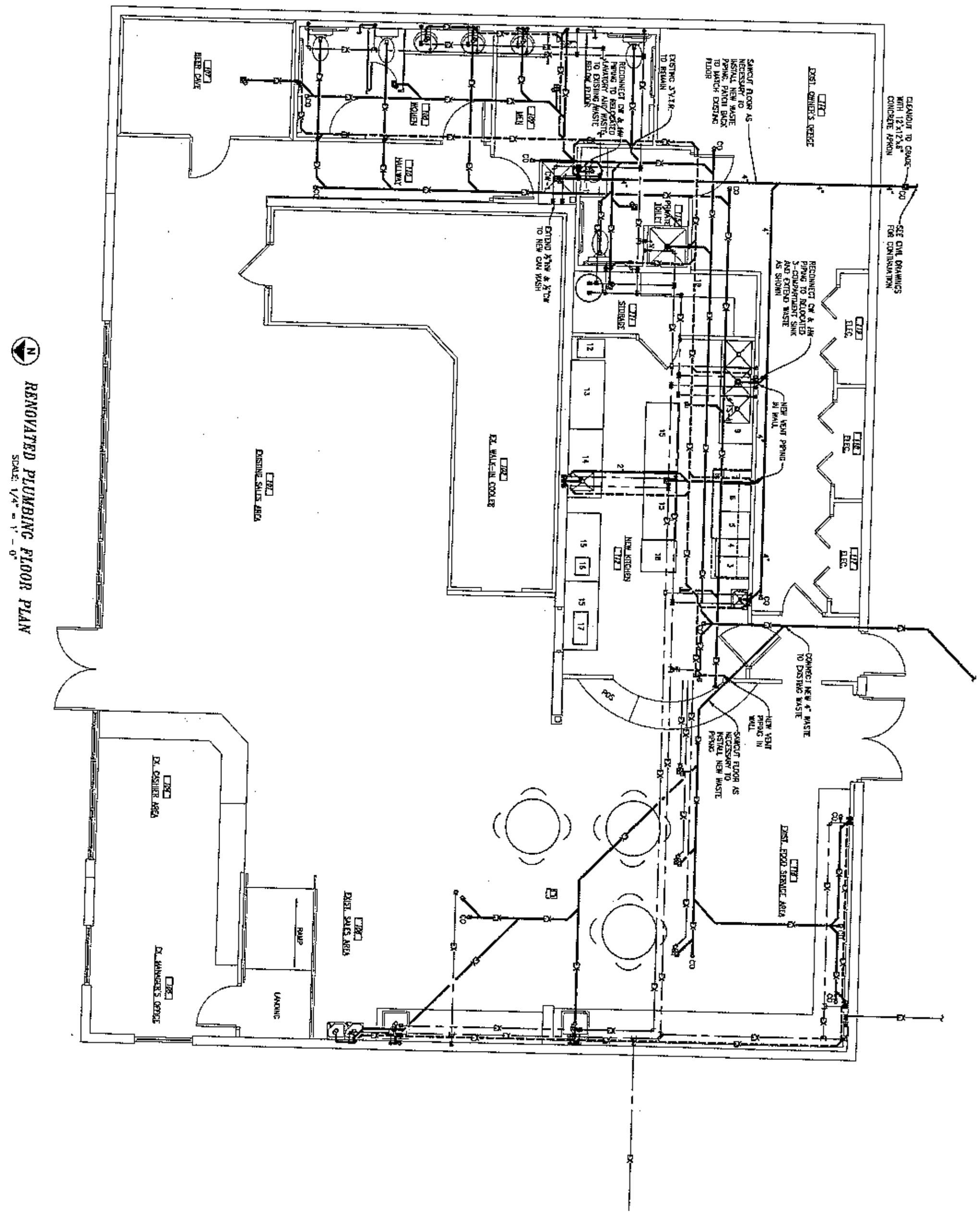
Sheet	Date	Scale	Checked	Drawn	Job
U-2	10/13/14	1"=20'-0"	DLM	AS SHOWN	Job#: 2014-

REVISIONS	BY

GREASE TRAP DETAIL
TOMLIN MILL ONE STOP SEPTIC SYSTEM
1477 TOMLIN MILL ROAD
IREDELL Co., NORTH CAROLINA

PREPARED FOR:
FRIENDSHIP HOLDINGS CORP.
1477 FRIENDSHIP ROAD
STATESVILLE, NC 28677
(704) 682-1474

PIEDMONT DESIGN Associates, P.A.
Suite 101 Westfield Center, 125 East Plaza Drive
Mooresville, North Carolina 28115
Phone:(704) 664-7888 Fax:(704) 664-1778 www.ndepa.com



WILLIAM G. ROBINSON, JR.
CONSULTING ENGINEER
WGR
3612 WEST MILL ROAD, SUITE-C
WINSTON-SALEM, NC 27103
(336) 765-8780

P-1	TMOS STATESVILLE, N.C.	
	PLUMBING FLOOR PLAN SCALE: AS NOTED	REVISIONS

APPROVED FOR CONTRACT

© DARDEN ENGINEERING SERVICES

DRAWN BY: KBS
CHECKED BY: W.C.L.
OCT 09 2014

DARDEN ENGINEERING SERVICES
162 BRAWLEY SCHOOL RD., SUITE 207
MOORESVILLE, N. C. 28117
PHONE NO. 704-663-7738
FAX NO. 704-663-0258