S&EC

Soil & Environmental Consultants, PA

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www.SandEC.com

October 17, 2004
Project # 9009.S1

Silverwood Inc.
Attention: Bob Hartford
5424 Hough Road
Hillsborough, NC 27278

Re: Detail Soil/Site Evaluation on 96-Acre Site on Lamont Norwood Road – Chatham County, NC

Dear Mr. Hartford:

Soil & Environmental Consultants, PA (S&EC) performed a detailed soil and site evaluation on the above referenced tract. This was performed at your request as part of the preliminary planning process in order to determine areas of soil that have potential for subsurface wastewater disposal. Fieldwork was performed on October 4 & 5, 2004.

S&EC traversed the property and observed landforms (slope, drainage patterns, past use, etc.) as well as soil conditions (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) through the use of hand auger borings. The site was evaluated during moist soil conditions. From these observations, an evaluation of the site was developed, relative to subsurface disposal of wastewater. Soil boundaries were flagged in the field and were located by S&EC using a GPS unit. The soil/site evaluation criteria used is that contained in 15 A NCAC 18A .1900 "Laws and Rules for Sewage Treatment and Disposal Systems".

FINDINGS

This site is located in the mixed felsic crystalline region of Chatham County. The upland soils on this tract are similar to the Wedowee, Cecil, Enon and Helena soil series. The Wedowee and Cecil soil series have a sandy loam surface material over a clay subsoil. These soils are at least 24 inches deep to prohibitive soil characteristics and are generally useable for subsurface septic systems. The Enon and Helena soils have expansive clays and indicators of a perched water and are generally unsuitable for conventional subsurface septic systems.

The accompanying GPS/AutoCAD map indicates the areas with potential use for subsurface wastewater disposal. The "hatched"units indicate areas of soils which are at least 24 to 30+ inches deep to prohibitive soil characteristics and these areas have potential for a conventional septic system, a modified conventional (shallow placed lines with no fill required over the disposal area) or a low pressure pipe system (LPP) and/or ultra-shallow conventional (shallow placed lines with fill required over the disposal field) system. Unit "UN" on the attached map indicates areas of soils that are less than 24 inches to prohibitive soil characteristics and are generally unsuitable for the type of systems mentioned above. However, they may be suitable for more expensive alternative septic systems, i.e. pretreatment drip or spray irrigation, etc. Such systems are expensive and, if requested, S&EC can provide additional information concerning these types of systems.

Charlotte Office:
236 LePhillip Court, Suite C
Concord, NC 28025
Phone: (704) 720-9405
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Greensboro Office:
3817-E Lawndale Drive
Greensboro, NC 27455
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Fax: (336) 540-8235

The site plan for each lot must ensure that adequate soil area for system and repair is unaffected by site elements (house placement, driveway, wells, patios, decks, etc.) on that or adjacent lots. The area ultimately designated by the health department on the site plan for the septic system and repair must remain undisturbed (no mechanical clearing, excavation, heavy traffic or other significant site disturbing activities) until authorized by the health department. A lot with initially adequate useable soil area may be rendered unusable as a result of improper site planning and/or disturbance. A field layout of the proposed septic systems may be required as part of the individual lot development process.

Upon completion of a subdivision plan, S&EC recommends reviewing the plan before recording the subdivision lots. It is important to note that any preliminary certification that a subdivision plan meets does not represent approval or a permit for any site work, nor does it guarantee issuance of an improvement permit for any lot. Final site approval for issuance of improvements is based on regulations in force at the time of permitting and is dependent on satisfactory completion of individual site evaluations following application for an improvement permit detailing a specific use and sitting.

GENERAL WASTEWATER CONSIDERATIONS

Once potentially useable areas are located through vertical borings, the next consideration is the horizontal extent of those areas. The size and configuration of the useable soil area dictate the utility of that area. The size of a subsurface disposal field is determined by: 1) the design flow from the source (120 gallons/bedroom/day in residences), and 2) the long term acceptance rate (LTAR) of the soil (based on the hydraulic conductivity of the soil, a function of the soil's texture, mineralogy, structure, porosity, etc.). The configuration must be such that an efficient layout of disposal lines (on contour) is possible. An additional consideration is the required setbacks for the system from various elements such as wells (100'), streams and ponds (50') or more (depending on watershed regulations), property lines (10'), top of embankment (15'), watershed buffers, etc. (see Attachment 1).

The utility of a potential useable soil area for a subsurface system is most accurately determined by an on-ground layout of the proposed system. The total area needed for system and repair areas will depend upon the system type, the layout of that system and the total design flow (factors mentioned above). A typical area needed for a 3-bedroom residence is approximately 12,000 to 15,000 ft^2 (could be more depending on site features) or 800 to 960 linear feet of conventional line (system and repair) or 1,440 linear feet of LPP line (system and repair). These estimates reference Laws and Rules for Sewage Treatment and Disposal Systems for North Carolina and use a LTAR of 0.25-0.3 gpd/ft^2 for conventional septic systems (.1955), a LTAR of 0.25-0.3 gpd/ft^2 for modified conventional (.1956) and 0.1 gpd/ft^2 for LPP septic systems (.1957a). The health department will determine the ultimate LTAR after their lot evaluation. S&EC will be glad to assist in any system layout or sizing calculations if requested.

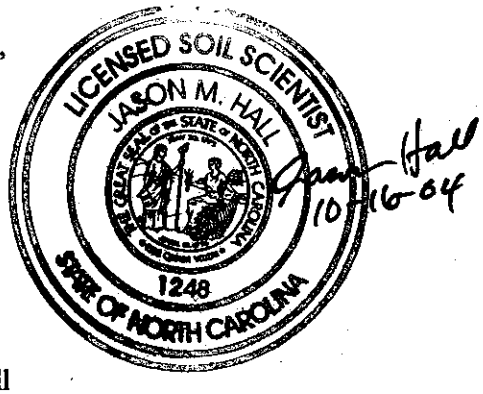
This report discusses the general location of potentially useable soils for on-site subsurface wastewater disposal and, of course, does not constitute or imply any approval or permit as needed by the client from the local heath department. S&EC is a professional consulting firm that specializes in the delineation of soil areas for wastewater disposal, and the layout and design of wastewater treatment systems. As a professional consulting firm, S&EC is hired for its professional opinion in these matters. The rules governing wastewater treatment (interpreted and governed by local and state agencies) are evolving constantly, and in many cases, affected by the opinions of individuals employed by these governing agencies. Because of this, S&EC cannot guarantee that areas delineated and/or systems designed will be permitted by the governing

agencies. As always, S&EC recommends that anyone making financial commitments on a tract be fully aware of individual permit requirements on that tract prior to final action.

An individual septic system permit will be required for each lot prior to obtaining a building permit. This will involve a detailed evaluation by the local health department to determine, among other things, system size and layout, well, drive and house location. Only after developing this information can a final determination be made concerning specifics of system design and site utilization.

Soil & Environmental Consultants, PA is pleased to be of service in this matter and we look forward to assisting in any site analysis needs you may have in the future. Please feel free to call with any questions or comments.

Sincerely,



Jason Hall
NC Licensed Soil Scientist

Encl: Attachment 1
Soil Suitability Map

Attachment 1

.1950 Location of Sanitary Sewage Systems

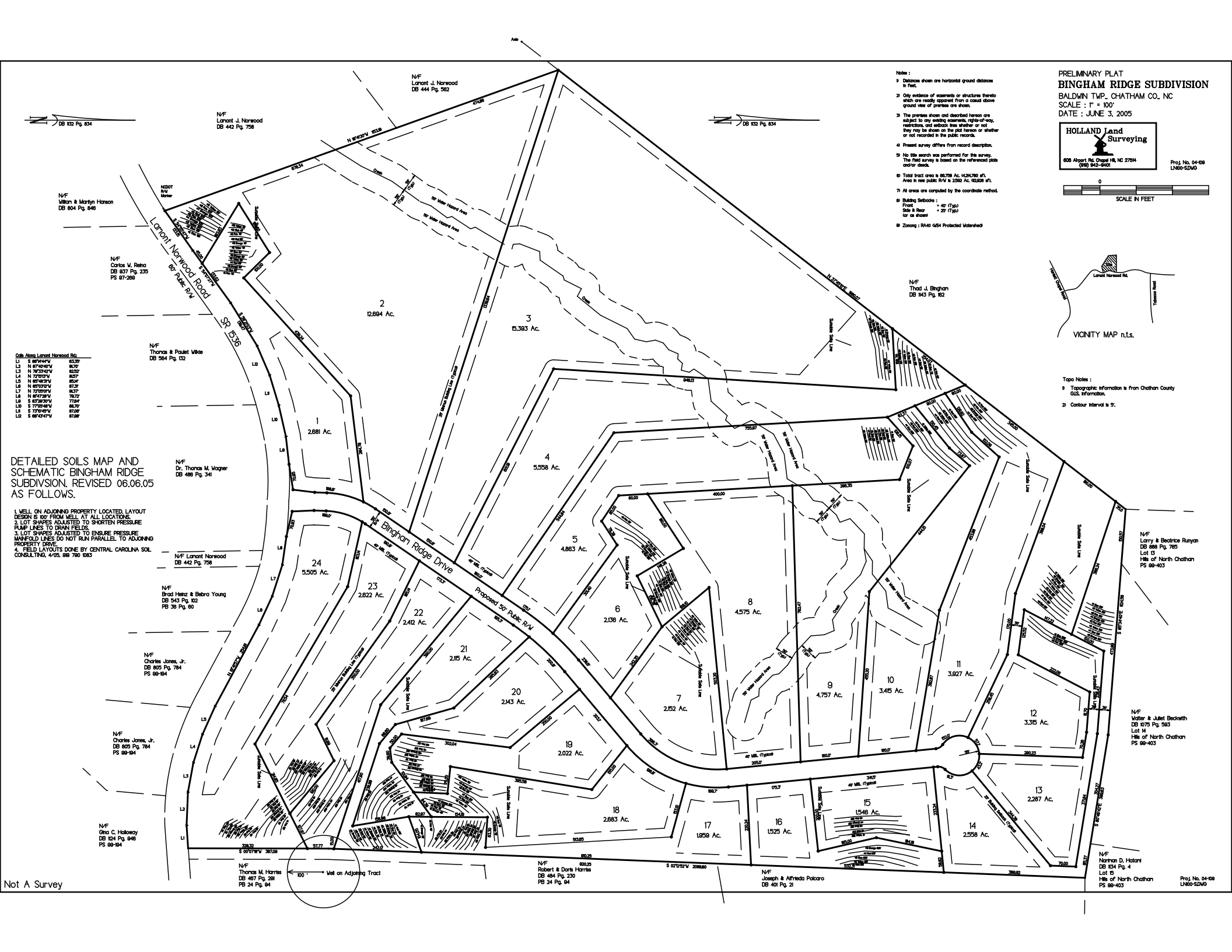
(c) Every sanitary sewage treatment and disposal system shall be located at least the minimum horizontal distance from the following:

(1)	any private water supply source including a well or spring	100 feet
(2)	any public water supply source	100 feet
(3)	streams classified as WS-I	100 feet
(4)	water classified as S.A.	100 feet from mean high water mark
(5)	Other coastal waters	50 feet from mean high water mark
(6)	any other stream, canal, marsh, or other surface waters	50 feet
(7)	any Class I or Class II reservoir	100 feet from normal pool elevation
(8)	any permanent storm water retention pond	50 feet from flood pool elevation
(9)	any other lake or pond	50 feet from normal pool elevation
(10)	any building foundation	5 feet
(11)	any basement	15 feet
(12)	any property line	10 feet
(13)	top of slope of embankments or cuts of 2 feet or more vertical height	15 feet
(14)	any water line	10 feet
(15)	drainage systems:	
	(A) Interceptor drains, foundation drains and storm water diversions	
	(i) upslope	10 feet
	(ii) sideslope	15 feet
	(iii) downslope	25 feet
	(B) Groundwater lowering ditched and devices	25 feet
(16)	any swimming pool	15 feet
(17)	any other nitrification field (except repair area)	20 feet

(b) Ground absorption, sewage treatment and disposal systems may be located closer than 100 feet from a private well supply, except springs and uncased wells located downslope and used as a source of drinking water, repairs, space limitations and other site-planning considerations but shall be located the maximum feasible distance and, in no case, less than 50 feet.

(c) Nitrification fields and repair areas shall not be located under paved areas or areas subject to vehicular traffic. If effluent is to be conveyed under areas subject to vehicular traffic, ductile iron or its equivalent pipe shall be used. However, pipe specified in Rule .1955 (e) may be used if a minimum of 30 inches of compacted cover is provided over the pipe.

Note: Systems over 3000 GPD or an individual nitrification fields with a capacity of 1500 GPD or more have more restrictive setback requirements, see .1950 (a) (17) (d) for specifics.


PRELIMINARY PLAT
BINGHAM RIDGE SUBDIVISION
BALDWIN TWP., CHATHAM CO., NC
SCALE : 1" = 100'
DATE : JUNE 3, 2005
HOLLAND Land Surveying
608 Airport Rd. Chapel Hill, NC 27514
(919) 942-9401
Proj. No. 04-109
LN100-SDWG
SCALE IN FEET
Notes :
1) Distances shown are horizontal ground distances in feet.
2) Only evidence of easements or structures thereto which are readily apparent from a casual above ground view of premises are shown.
3) The premises shown and described hereon are subject to any existing easements, rights-of-way, restrictions, and setback lines whether or not they may be shown on the plat hereon or whether or not recorded in the public records.
4) Present survey differs from record description.
5) No title search was performed for this survey. The field survey is based on the referenced plats and/or deeds.
6) Total tract area is 88.758 Ac. (4,234,780 sf). Area in new public R/W is 2.592 Ac. (112,928 sf).
7) All areas are computed by the coordinate method.
8) Building Setbacks :
Front = 40' (Typ.)
Side & Rear = 25' (Typ.)
(or as shown)
9) Zoning : RA40 &/&4 Protected Watershed
VICINITY MAP n.t.s.
Lanont Norwood Rd.
Tabcorp Road
Topo Notes :
1) Topographic information is from Chatham County G.I.S. information.
2) Contour interval is 5'.
Lanont Norwood Road
60' Public R/W
SR 1536
Bingham Ridge Drive
Proposed 50' Public R/W
N/F Lanont J. Norwood DB 444 Pg. 582
N/F Lanont J. Norwood DB 442 Pg. 758
N/F William & Marilyn Hanson DB 804 Pg. 646
N/F Carlos W. Reina DB 837 Pg. 235 PS 87-269
N/F Thomas & Paulet Wilkie DB 584 Pg. 132
N/F Dr. Thomas M. Wagner DB 486 Pg. 341
N/F Lanont Norwood DB 442 Pg. 758
N/F Brad Heinz & Debra Young DB 543 Pg. 102 PB 38 Pg. 60
N/F Charles Jones, Jr. DB 805 Pg. 784 PS 88-194
N/F Gina C. Holloway DB 1124 Pg. 948 PS 88-194
N/F Thomas M. Harriss DB 467 Pg. 281 PB 24 Pg. 84
N/F Robert & Doris Harriss DB 484 Pg. 230 PB 24 Pg. 84
N/F Joseph & Alfrieda Polcaro DB 401 Pg. 21
N/F Thad J. Bingham DB 1143 Pg. 162
N/F Larry & Beatrice Runyan DB 888 Pg. 785 Lot 13 Hills of North Chathan PS 88-403
N/F Walter & Juliet Beckwith DB 1075 Pg. 583 Lot 14 Hills of North Chathan PS 88-403
N/F Norman D. Hatani DB 1134 Pg. 4 Lot 15 Hills of North Chathan PS 88-403
Well on Adjoining Tract
DETAILED SOILS MAP AND SCHEMATIC BINGHAM RIDGE SUBDIVISION. REVISED 06.06.05 AS FOLLOWS.
1. WELL ON ADJOINING PROPERTY LOCATED. LAYOUT DESIGN IS 100' FROM WELL AT ALL LOCATIONS.
2. LOT SHAPES ADJUSTED TO SHORTEN PRESSURE PUMP LINES TO DRAIN FIELDS.
3. LOT SHAPES ADJUSTED TO ENSURE PRESSURE MANIFOLD LINES DO NOT RUN PARALLEL TO ADJOINING PROPERTY DRIVE.
4. FIELD LAYOUTS DONE BY CENTRAL CAROLINA SOIL CONSULTING, 4/05. 919 780 1083
Not A Survey
Proj. No. 04-109
LN100-SDWG

Bingham Ridge Subdivision
Lot 23
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		3.3		100.0			
INST. 1			103.3				
1	***Pink***			***2.8***	***100.5***	***56***	***55***
2	***Blue***			***4.1***	***99.2***	***75***	***75***
3	***Yellow***			***5.2***	***98.1***	***86***	***85***
4	***Orange***			***6.4***	***96.9***	***107***	***50***
5	***Red***			***7.3***	***96***	***50***	***105***
6	***Pink***			***8.3***	***95***	***50***	***50***
7	***Blue***			***9.3***	***94***	***50***	***50***
8	Pink			6.9	96.4	42	40
9	Red			7.4	95.9	51	50
10	Yellow			8.1	95.2	52	50
11	Blue			8.8	94.5	62	60
12	Orange			9.6	93.7	65	65
13	Pink			10.2	93.1	75	75
14	Red			10.9	92.4	73	70
					Total	894	*880*

	System	Repair
System Type	Lines 1-7 Innovative EZ-FLOW	Lines 4-8 Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.29	0.29
Total Line Length	420'	410'
Square Footage	1260	1230
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 22

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		2.0		100.0			
INST. 1			102.0				
1	***Red***			***0.5***	***101.5***	***150***	***150***
2	***Blue***			***1.5***	***100.5***	***140***	***140***
3	***Pink***			***2.4***	***99.6***	***130***	***130***
4	Orange			3.7	98.3	111	110
5	Red			4.8	97.2	105	105
6	Yellow			5.9	96.1	100	100
7	Blue			6.9	95.1	80	80
8	Pink			8.2	93.8	70	70
					Total	886	*885*

	System Lines 1-3	Repair Lines 4-8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.29	0.26
Total Line Length	420'	465'
Square Footage	1260	1395
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 21

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		3.6		100.0			
INST. 1			103.6				
1	***Pink***			***2.1***	***101.5***	***170***	***170***
2	***Blue***			***2.9***	***100.7***	***180***	***180***
3	***Yellow***			***3.7***	***99.9***	***200***	***200***
4	Orange			4.1	99.5	200	200
5	Red			4.8	98.8	200	200
6	Blue			5.4	98.2	80	0
					Total	1030	*950*

	System	Repair
System Type	Lines 1-3 Gravel	Lines 4-6 Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.29	0.3
Total Line Length	550'	400'
Square Footage	1650	1200
Proposed Trench Bottom	22"	22"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 20

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		2.9		100.0			
INST. 1			102.9				
1	Red			2.0	100.9	78	75
2	Yellow			2.3	100.6	83	80
3	Blue			2.7	100.2	95	95
4	Pink			3.4	99.5	120	120
5	***Orange***			***3.7***	***99.2***	***130***	***130***
6	***Yellow***			***4.3***	***98.6***	***145***	***145***
7	***Red***			***4.8***	***98.1***	***155***	***155***
8	Blue			5.2	97.7	92	90
					Total	898	*890*

	System	Repair
	Lines 5-7	Lines 1-4, 8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.28	0.25
Total Line Length	430'	460
Square Footage	1290	1380
Proposed Trench Bottom	24"	24"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 19

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		1.0		100.0			
INST. 1			101.0				
1	***Pink***			***4.4***	***96.6***	***70***	***70***
2	***Orange***			***5.0***	***96***	***85***	***85***
3	***Yellow***			***5.4***	***95.6***	***95***	***95***
4	***Red***			***6.1***	***94.9***	***102***	***100***
5	***Blue***			***7.0***	***94***	***120***	***120***
6	Orange			8.1	92.9	55	55
7	Red			8.6	92.4	55	55
8	Blue			9.1	91.9	75	75
9	Yellow			10.0	91	100	100
10	Orange			10.5	90.5	123	120
11	Red			10.9	90.1	102	100
12	Pink			11.6	89.4	67	65
					Total	1049	*1040*

	System Lines 1-5	Repair Lines 6-12
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.27	0.25
System Installation LTAR	0.26	0.24
Total Line Length	470	505'
Square Footage	1410	1515
Proposed Trench Bottom	18"	14"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: 6" of fill material required over repair drain fiel
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 18

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		3.2		100.0			
INST. 1			103.2				
1	***Orange***			***3.2***	***100***	***47***	***45***
2	***Red***			***3.4***	***99.8***	***71***	***70***
3	***Blue***			***3.7***	***99.5***	***95***	***95***
4	***Orange***			***3.7***	***99.5***	***105***	***105***
5	***Yellow***			***4.2***	***99***	***93***	***90***
6	***Red***			***4.6***	***98.6***	***107***	***105***
7	Blue			4.8	98.4	123	120
8	Pink			5.2	98	87	85
9	Orange			5.6	97.6	61	60
10	Yellow			6.2	97	50	50
11	Orange			5.6	97.6	78	75
12	Red			5.8	97.4	76	75
					Total	993	*975*

	System Lines 1-6	Repair Lines 7-12
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.24	0.26
Total Line Length	510'	465'
Square Footage	1530	1395
Proposed Trench Bottom	16"	16"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: 6" of fill material required over drain field
TBM top of cut in marked tree

Bingham Ridge Subdivision

Lot 17

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		2.7		100.0			
INST. 1			102.7				
1	***Orange***			***4.5***	***98.2***	***93***	***90***
2	***Pink***			***4.7***	***98***	***94***	***90***
3	***Blue***			***4.8***	***97.9***	***90***	***90***
4	***Red***			***4.9***	***97.8***	***89***	***85***
5	***Yellow***			***5.1***	***97.6***	***82***	***80***
6	Blue			5.4	97.3	84	80
7	Orange			5.6	97.1	66	65
8	Pink			5.8	96.9	70	70
9	Yellow			6.3	96.4	85	85
10	Red			6.5	96.2	88	85
11	Blue			6.7	96	70	70
12	Yellow			6.9	95.8	90	90
					Total	1001	*980*

	System	Repair
	Lines 1-5	Lines 6-11
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.27	0.26
Total Line Length	435'	455'
Square Footage	1305	1365
Proposed Trench Bottom	24"	20"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:

TBM top of marked stump

Bingham Ridge Subdivision
Lot 16

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	***Red***			***2.1***	***97.9***	***100***	***100***
2	***Yellow***			***3.0***	***97***	***180***	***180***
3	***Blue***			***3.4***	***96.6***	***238***	***150***
4	Red			4.1	95.9	210	200
5	Orange			4.9	95.1	235	200
					Total	963	*830*

	System	Repair
	Lines 1-3	Lines 4-5
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.28	0.3
Total Line Length	430'	400'
Square Footage	1290	1200
Proposed Trench Bottom	24"	20"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 15
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	***Yellow***			***2.5***	***97.5***	***190***	***190***
2	***Red***			***3.3***	***96.7***	***173***	***170***
3	***Blue***			***4.1***	***95.9***	***180***	***180***
4	Orange			5.3	94.7	184	180
5	Pink			6.3	93.7	180	180
					Total	907	*900*

	System	Repair
System Type	Lines 1-3 Innovative EZ-FLOW	Lines 3-5 Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.27	0.27
Total Line Length	440'	440'
Square Footage	1320	1320
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: Split line #3 into two 80' segments for system and repair
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 14

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	***Blue***			***2.7***	***97.3***	***100***	***100***
2	***Yellow***			***4.5***	***95.5***	***100***	***100***
3	***Pink***			***5.6***	***94.4***	***100***	***100***
4	***Orange***			***6.9***	***93.1***	***100***	***100***
5	Red			8.6	91.4	100	100
6	Yellow			10.3	89.7	100	100
7	Blue			12	88	100	100
8	Orange			14.1	85.9	100	100
					Total	800	*800*

	System Lines 1-4	Repair Lines 5-8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.30	0.3
Total Line Length	400'	400'
Square Footage	1200	1200
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 13
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	***Blue***			***2.9***	***97.1***	***300***	***300***
2	***Orange***			***5.0***	***95***	***300***	***290***
3	PInk			6.9	93.1	300	300
					Total	900	*890*

	System	Repair
System Type	Lines 1-2 Innovative EZ-FLOW	Lines 2-3 Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.27	0.27
Total Line Length	445'	445'
Square Footage	1335	1335
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: Line #2 shall be split for system and repai
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot # 12
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		2.7		100.0			
INST. 1			102.7				
1	**Yellow**			**5.2**	**97.5**	**100**	**100**
2	**Orange**			**7.3**	**95.4**	**100**	**100**
3	**Blue**			**8.9**	**93.8**	**100**	**100**
4	**Yellow**			**10.7**	**92**	**100**	**100**
5	Pink			12.4	90.3	100	100
6	Red			14.4	88.3	100	100
7	Blue			16.6	86.1	100	100
8	Red			19.1	83.6	100	100
					Total	800	800

	System	Repair
	Lines 1-4	Lines 5-8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.3	0.3
Total Line Length	400'	400'
Square Footage	1200	1200
Proposed Trench Bottom	24"	24"
Distribution Method	Pump to D-Box	Pump to D-Box

Notes:
TBM located on notch in marked tree

Bingham Ridge Subdivision
Lot # 11
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	**Red**			**1.3**	**98.7**	**215**	**200**
2	**Pink**			**2.4**	**97.6**	**210**	**200**
3	Orange			3.7	96.3	210	200
4	Blue			4.8	95.2	220	200
					Total	855	800

	System	Repair
	Lines 1-2	Lines 3-4
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.3	0.3
Total Line Length	400'	400'
Square Footage	1200	1200
Proposed Trench Bottom	24"	24"
Distribution Method	Pump to D-Box	Pump to D-Box

Notes:
TBM

	TOTAL LINE LENGTH	System LTAR	SYSTEM TYPE	INNOV. SYSTEM	SOIL MAX LTAR	DISTRIBUTION
System:	140'	0.24	Conv.		0.3	Pump to D-Box

Repair	140'	0.24	Conv.	0.3	Pump to D-Box

Trench bottom for sytem and repair shall be 22"

Bingham Ridge Subdivision
Lot # 10
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		6.3		100.0			
INST. 1			106.3				
1	**Red**			**1.9**	**104.4**	**230**	**200**
2	**Pink**			**3.9**	**102.4**	**230**	**200**
3	Yellow			5.7	100.6	230	200
4	Red			7.7	98.6	230	200
					Total	920	800

	System	Repair
	Lines 1-2	Lines 3-4
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.3	0.3
Total Line Length	400'	400'
Square Footage	1200	1200
Proposed Trench Bottom	24"	24"
Distribution Method	Pump to D-Box	Pump to D-Box

Notes:
TBM located on notch in marked tree

	TOTAL LINE LENGTH	System LTAR	SYSTEM TYPE	INNOV. SYSTEM	SOIL MAX LTAR	DISTRIBUTION
System:	140'	0.24	Conv.		0.3	Pump to D-Box

Repair	140'	0.24	Conv.	0.3	Pump to D-Box

Trench bottom for sytem and repair shall be 22"

Bingham Ridge Subdivision
Lot # 9
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		8.4		100.0			
INST. 1			108.4				
1	**Yellow**			**3.1**	**105.3**	**205**	**200**
2	**Pink**			**5.0**	**103.4**	**205**	**200**
3	Red			7.6	100.8	210	200
4	Blue			9.5	98.95	210	200
					Total	830	800

	System	Repair
	Lines 1-2	Lines 3-4
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.3	0.3
Total Line Length	400'	400'
Square Footage	1200	1200
Proposed Trench Bottom	24"	24"
Distribution Method	Pump to D-Box	Pump to D-Box

Notes:
TBM located on notch in marked tree

	TOTAL LINE LENGTH	System LTAR	SYSTEM TYPE	INNOV. SYSTEM	SOIL MAX LTAR	DISTRIBUTION
System:	140'	0.24	Conv.		0.3	Pump to D-Box

Repair	140'	0.24	Conv.	0.3	Pump to D-Box

Trench bottom for sytem and repair shall be 22"

Bingham Ridge Subdivision
Lot 8

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.9		100.0			
INST. 1			100.9				
1	***Pink***			***2.7***	***98.2***	***90***	***90***
2	***Orange***			***4.0***	***96.9***	***105***	***105***
3	***Yellow***			***5.3***	***95.6***	***120***	***120***
4	***Blue***			***6.7***	***94.2***	***122***	***120***
5	Red			8.3	92.6	123	120
6	Pink			9.4	91.5	120	120
7	Orange			10.8	90.1	100	100
8	Yellow			11.8	89.1	80	80
					Total	860	*855*

	System	Repair
	Lines 1-4	Lines 5-8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.27	0.28
Total Line Length	435'	420'
Square Footage	1305	1260
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: Rocky soil area, backhoe pits may be required
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 7

3-Bedroom Home (360 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		1.2		100.0			
INST. 1			101.2				
1	***Pink***			***3.1***	***98.1***	***105***	***90***
2	***Orange***			***4.4***	***96.8***	***91***	***105***
3	***Yellow***			***5.9***	***95.3***	***90***	***120***
4	***Blue***			***7.5***	***93.7***	***80***	***120***
5	Red			9.0	92.2	90	120
6	Pink			10.3	90.9	100	120
7	Orange			12	89.2	70	100
8	Yellow			13.7	87.5	60	80
					Total	686	*855*

	System Lines 1-4	Repair Lines 5-8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.25	0.28
Total Line Length	365'	320'
Square Footage	1095	960
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: Rocky soil area, backhoe pits may be required
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 6
3-Bedroom Home (360 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		6.6		100.0			
INST. 1			106.6				
1	Red			1.5	105.1	100	100
2	Orange			2.5	104.1	140	140
3	***Yellow***			***3.7***	***102.9***	***175***	***175***
4	***Blue***			***5.7***	***100.9***	***185***	***185***
5	Pink			6.8	99.8	82	80
					Total	682	*680*

	System	Repair
System Type	Lines 3-4 Innovative EZ-FLOW	Lines 1-2 & 5 Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.25	0.28
Total Line Length	360'	320'
Square Footage	1080	960
Proposed Trench Bottom	13"	113"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: 6" of fill material required over drain field
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot # 5
3-Bedroom Home (360 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		2.7		100.0			
INST. 1			102.7				
1	**Blue**			**4.6**	**98.1**	**85**	**85**
2	**Yellow**			**6.7**	**96**	**85**	**85**
3	**Red**			**9.2**	**93.5**	**85**	**85**
4	**Pink**			**10.6**	**92.1**	**85**	**85**
5	Orange			12.8	89.9	85	85
6	Blue			15.0	87.7	85	85
7	Red			17.1	85.6	85	85
8	Yellow			19.2	83.5	85	85
					Total	680	680

	System	Repair
	Lines 1-4	Lines 5-8
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.3	0.3
Total Line Length	340'	340'
Square Footage	1020	1020
Proposed Trench Bottom	18"	18"
Distribution Method	Pump to D-Box	Pump to D-Box

Notes:
TBM Notch in marked tree

Bingham Ridge Subdivision

Lot 4

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	Pink			0.8	99.2	65	65
2	Blue			2.0	98	73	70
3	Yellow			3.2	96.8	80	80
4	Red			4.2	95.8	95	95
5	Pink			5.4	94.6	107	105
6	***Blue***			***6.5***	***93.5***	***120***	***120***
7	***Yellow***			***8.0***	***92***	***137***	***135***
8	***Orange***			***9.9***	***90.1***	***140***	***140***
					Total	998	*965*

	System	Repair
	Lines 6-8	Lines 1-5
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.31	0.31
System Installation LTAR	0.31	0.29
Total Line Length	395'	415'
Square Footage	1185	1245
Proposed Trench Bottom	18"	18"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:

TBM

Bingham Ridge Subdivision

Lot 3

3-Bedroom Home (360 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	Orange			2.8	97.2	60	60
2	Blue			4.0	96	55	55
3	Yellow			5.5	94.5	65	65
4	Yellow			4.4	95.6	80	80
5	Pink			6.2	93.8	85	85
6	***Red***			***7.6***	***92.4***	***185***	***185***
7	***Orange***			***9.1***	***90.9***	***185***	***185***
					Total	715	*715*

	System	Repair
	Lines 6-7	Lines 1-5
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.24	0.26
Total Line Length	370'	345'
Square Footage	1110	1035
Proposed Trench Bottom	18"	18"
Distribution Method	Pump to D-Box	Pressure Manifold

Notes:

TBM

Bingham Ridge Subdivision
Lot 2
4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		6.4		100.0			
INST. 1			106.4				
1	***Pink***			***2.3***	***104.1***	***98***	***95***
2	***Blue***			***3.4***	***103***	***115***	***115***
3	***Yellow***			***4.6***	***101.8***	***100***	***100***
4	***Orange***			***5.5***	***100.9***	***101***	***100***
5	Pink			6.4	100	100	100
6	Red			8.0	98.4	103	100
7	Orange			8.5	97.9	101	100
8	Pink			9.3	97.1	100	100
9	Yellow			10.5	95.9	80	80
					Total	898	*890*

	System Lines 1-4	Repair Lines 5-9
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.29	0.25
Total Line Length	410'	480'
Square Footage	1230	1440
Proposed Trench Bottom	14"	14"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: 6" of fill material required over drain field
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 1
3-Bedroom Home (360 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	***PInk***			***3.5***	***96.5***	***80***	***80***
2	***Blue***			***4.2***	***95.8***	***56***	***55***
3	***Orange***			***4.8***	***95.2***	***56***	***55***
4	***Red***			***5.3***	***94.7***	***53***	***50***
5	***Yellow***			***6.4***	***93.6***	***50***	***50***
6	***Orange***			***7.0***	***93***	***50***	***50***
7	***Blue***			***7.7***	***92.3***	***53***	***50***
8	Yellow			9.0	91	70	70
9	Orange			10.3	89.7	72	70
10	Red			11.0	89	80	80
11	Pink			11.9	88.1	70	70
12	Blue			13.0	87	67	65
13	Yellow			14.1	85.9	45	0
					Total	802	*745*

	System	Repair
System Type	Lines 1-7 Innovative EZ-FLOW	Lines 2-3 Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.27	0.27
System Installation LTAR	0.24	0.25
Total Line Length	380'	355'
Square Footage	1140	1065
Proposed Trench Bottom	14"	14"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes: 6" of fill material required over drain field
TBM top of cut in marked tree

Bingham Ridge Subdivision
Lot 24

4-Bedroom Home (480 gal./day)

LINE #	COLOR	BS	HI	FS	ELEVATION	LINE LENGTH in field	Design Length installation
TBM		0.0		100.0			
INST. 1			100.0				
1	***Red***			***4.6***	***95.4***	***100***	***100***
2	***Blue***			***4.8***	***95.2***	***88***	***85***
3	***Orange***			***5.0***	***95***	***77***	***75***
4	***Yellow***			***5.3***	***94.7***	***77***	***75***
5	***Red***			***5.4***	***94.6***	***75***	***75***
6	***Pink***			***5.7***	***94.3***	***71***	***70***
7	***Orange***			***6.1***	***93.9***	***66***	***65***
8	Yellow			6.5	93.5	60	60
9	Red			6.8	93.2	60	60
10	Pink			7.2	92.8	56	55
11	Orange			7.7	92.3	56	55
12	not shown					40	40
					Total	826	*815*

	System	Repair
	Lines 1-7	Lines 8-12
System Type	Innovative EZ-FLOW	Innovative EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.3
System Installation LTAR	0.29	0.29
Total Line Length	410'	405'
Square Footage	1230	1215
Proposed Trench Bottom	24"	24"
Distribution Method	Pressure Manifold	Pressure Manifold

Notes:
TBM top of cut in marked tree