

GENERAL NOTES

1. Utilities shown do not purport to constitute or represent all utilities located upon or adjacent to the surveyed premises. Existing utility locations are approximate only. The Contractor shall field verify all utility conflicts. All discrepancies shall be reported to the Engineer. The Contractor shall contact Dig Safe (888-344-7233) prior to any construction.
2. All existing utilities not incorporated into the final design shall be removed or abandoned as indicated on the plans or directed by the Engineer.
3. The Contractor shall maintain as-built plans (with ties) for all underground utilities. Those plans shall be submitted to the Owner at the completion of the project.
4. The Contractor shall repair/restore all disturbed areas (on or off the site) as a direct or indirect result of the construction.
5. All grassed areas shall be maintained until full vegetation is established.
6. Maintain all trees outside of construction limits.
7. The Contractor shall be responsible for all work necessary for complete and operable facilities and utilities.
8. The Contractor shall submit shop drawings for all items and materials incorporated into the site work. Work shall not begin on any item until shop drawing approval is granted.
9. In addition to the requirements set in these plans and specifications, the Contractor shall complete the work in accordance with all permit conditions and any local Public Works Standards.
10. The Contractor shall coordinate all work within Town Road R.O.W. with Town authorities.
11. The Contractor shall install the electrical, cable and telephone services in accordance with the utility companies requirements.
12. If there are any conflicts or inconsistencies with the plans or specifications, the Contractor shall contact the Engineer for verification before work continues on the item in question.
13. Property line information is approximate and based on existing tax map information. This plan is not a boundary survey and is not intended to be used as one.

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC.
 10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403
 802-864-2323 FAX: 802-864-2271 web: www.ccae-vt.com

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DRAWN MJW	
CHECKED SAV	
APPROVED SAV	

OWNER:

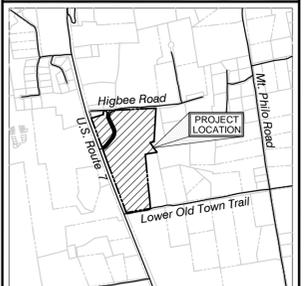
UNITY FARM, LLC

807 QUAKER SMITH POINT
SHELBURNE
VERMONT

PROJECT:

**PROPOSED
WASTEWATER
SYSTEM**

200 HIGBEE RD
CHARLOTTE
VERMONT

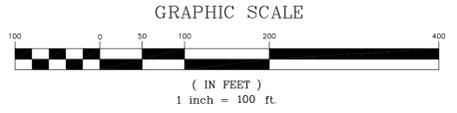


LOCATION MAP
1" = 2000'

DATE	CHECKED	REVISION

**OVERALL
PROPERTY
PLAN**

DATE OCT. 10, 2012	DRAWING NUMBER C1
SCALE 1" = 100'	
PROJ. NO. 12213	



LEGEND

- 336 --- EXISTING CONTOUR
- 336 --- PROPOSED CONTOUR
- --- APPROXIMATE PROPERTY LINE
- --- APPROXIMATE SETBACK LINE
- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- SS --- GRAVITY SEWER LINE
- FM --- FORCE MAIN
- W --- WATER LINE
- OE --- OVERHEAD ELECTRIC
- UE --- UNDERGROUND ELECTRIC
- T --- TELEPHONE LINE
- ⊗ SHUT-OFF
- ⊕ POWER POLE
- GUY WIRE
- ⊕ DECIDUOUS TREE
- ⊕ CONIFEROUS TREE
- EDGE OF BRUSH/WOODS
- FENCE
- DRAINAGE SWALE
- ⊕ TEST PIT
- ⊕ PERCOLATION TEST
- ⊕ WELL
- ⊕ PROJECT BENCHMARK

Test Pit Data
August 6, 2012

Stephen Vock
Spencer Harris
Brad (Birdseye)

TP #1
0-10" Dark loamy topsoil
10-17" Light brown fine sand
17-29" Silty sand-mottled/firm
29-50" Silty loam-dark brown

TP #2
0-8" Dark loamy topsoil
8-21" Light brown sand
21-33" Light brown loam-mottled
33-56" Clay loam-mottled/firm

TP #3
0-8" Dark loamy topsoil
8-20" Light brown fine sand-mottled @15"
20-50" Clay loam-mottled/firm

TP #4
0-9" Dark loamy topsoil
9-17" Light brown fine sandy loam, mottled @12"
17-34" Clay loam
34-45" Clay

TP #5
0-8" Dark loamy topsoil
8-13" Light brown sandy loam/firm
13-20" Clay

TP #6
0-8" Silty loam topsoil
8-50" Clay/clay loam-firm

TP #13
0-8" Dark loamy topsoil
8-18" Light brown medium sand
18-34" Silty loam-mottled
34-54" Clay loam

TP #14
0-7" Dark loamy topsoil
7-18" Light brown sandy loam
18-30" Silty loam-mottled
30-50" Clay

TP #15
0-8" Dark loamy topsoil
8-18" Light brown fine sand
18-23" Silty loam-mottled
23-48" Clay

Perc Tests
Perc Test #1 5 min/inch
Perc Test #2 20 min/inch

MINIMUM ISOLATION DISTANCES

(Contact Engineer for any Clarifications or Conflicts)

	Horizontal Distance (Feet)		
	Leachfield	Septic Tank	Sewer
Drilled Well Serving 1 Home - Up Slope of Disposal Field	100 (Min.) ¹	50	50
Drilled Well Serving 1 Home - Down Slope of Disposal Field	200 (Min.) ¹	50	50
Shallow Well or Spring, Up Slope of Disposal Field	150 (Min.) ¹	75	75
Shallow Well or Spring, Down Slope of Disposal Field	500 (Min.) ¹	75	75
Lakes, Ponds and Impoundment	50	25	25
Rivers, Streams	50	25	10
Drainage Swales, Roadway Ditches	25	50	10
Municipal Water Main	50	50	10
Service Water Lines	25	25	10
Roadways, Driveways, Buildings	10	5	5 ⁴
Top of embankment or slope > 30%	25	10	-
Property Line	10 (25 Downslope) ²	10	10
Trees	10	10	10
Replacement Area	10	-	-
Foundation, Footing Drains	35 (75 Downslope) ³	10	-

- Isolation distances to well locations may vary due to site conditions - contact Engineer for verification with the Vermont Water Supply Rule Regulations.
- For mound disposal systems, the limit of mound fill must be 25 feet from any downhill property line and 10 feet from side or uphill property lines.
- If a curtain or foundation drain is downslope of the leachfield, the leachfield cannot be closer than 75 feet to the drain. If the drain is upslope of the leachfield, it shall be 35' if possible and 20' minimum.
- Sewers under roads, driveways or parking lots may require protective conduits or sleeves.

Pump Requirements

1. Main Pump Station
Use two 35' Laterals
8 Orifices/lateral= 16 orifices
Use 1/4 holes @ 5' o/c
16 orifices @ 1.33gpm/orifices=22
Use 22 gpm

2. Secondary Pump Station
Use 15 gpm

TDH= Elevation=11'
Friction = 10'
TDH= 21'

Elevation=8'
Residual= 3'
Friction = 9'

*Field verify pump station locations and TDH

Design Data

- Future accessory Unit = 150 gpd
- 10 Employees @ 15gpd = 150gpd
- Total design flow= 300 gpd

Septic Tank

Desing flow = 300 gpd X 1.5 Design Flow = 450 gallons
Use 1000 gallon tank

Loading Rate

1.0 gal/SF for mound systems

System Design

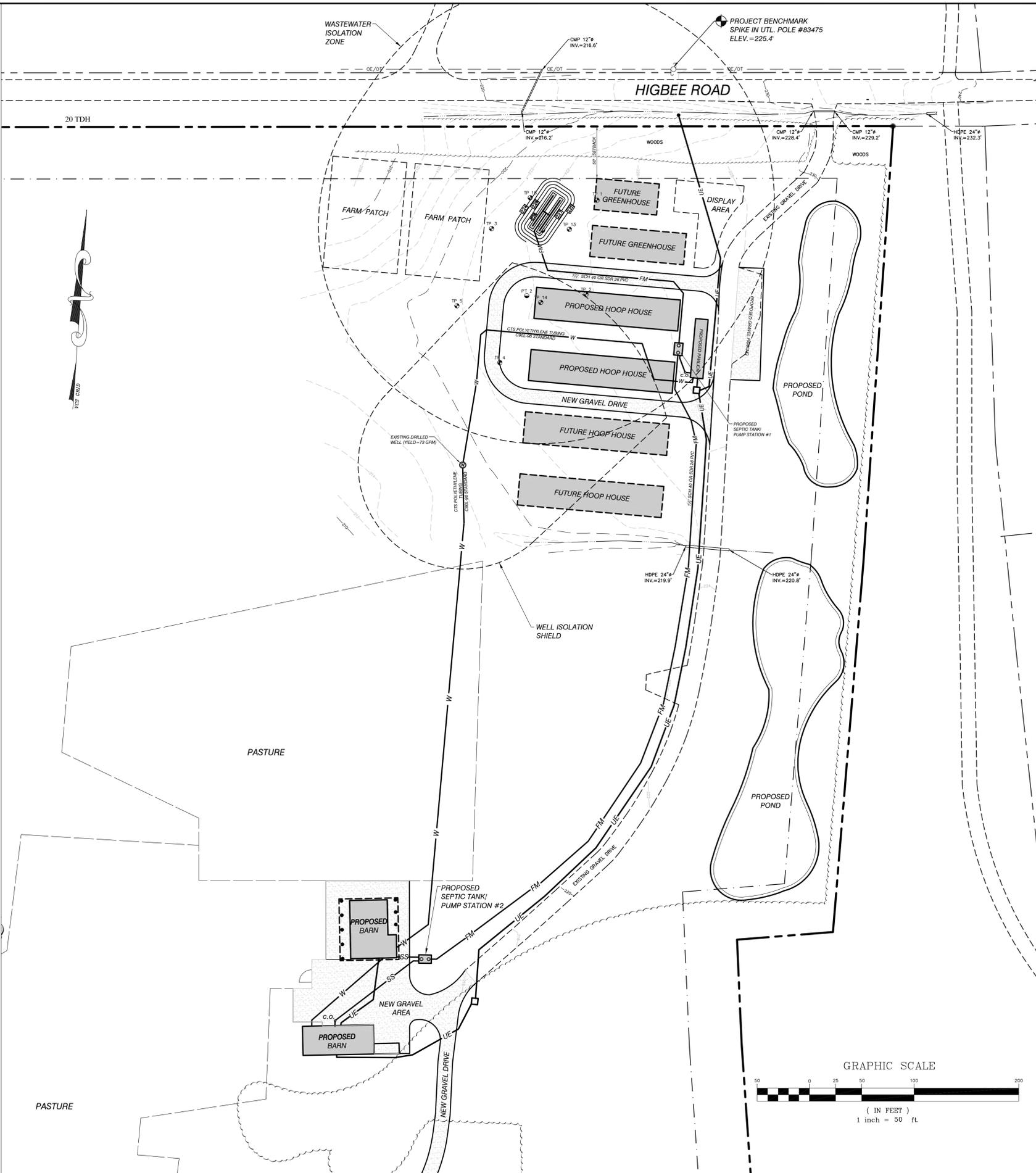
300gpd @ 1 gal/sf = 300 sf required
Trench Area 300'2 x 4' Trench = 37.5 - Use Trench Length of 40'

Desktop Analysis:

- Material = Fine Sand
- Slope = b/w 6.1% - 8%
- f = 26.2
- h = 17" - 6" = 11" = 0.92'
- LLR = 0.92 x 26.2 = 24 gal/lf
- Min Length Req. = 300/24 = 12.5 lf
- Length Provided = 40 > 12.5

Use 2.5 feet of sand beneath disposal area

**Mound Loading Rate to Govern - Use Trench Length of 40'



SITE ENGINEER:

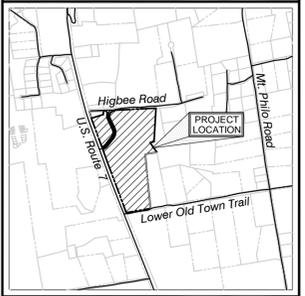
CIVIL ENGINEERING ASSOCIATES, INC.
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DRAWN: MJW
CHECKED: SAV
APPROVED: SAV

OWNER:
UNITY FARM, LLC
807 QUAKER SMITH POINT
SHELburnE
VERMONT

PROJECT:
PROPOSED WASTEWATER SYSTEM
200 HIGBEE RD
CHARLOTTE
VERMONT



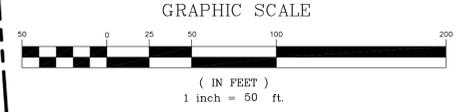
LOCATION MAP
1" = 2000'

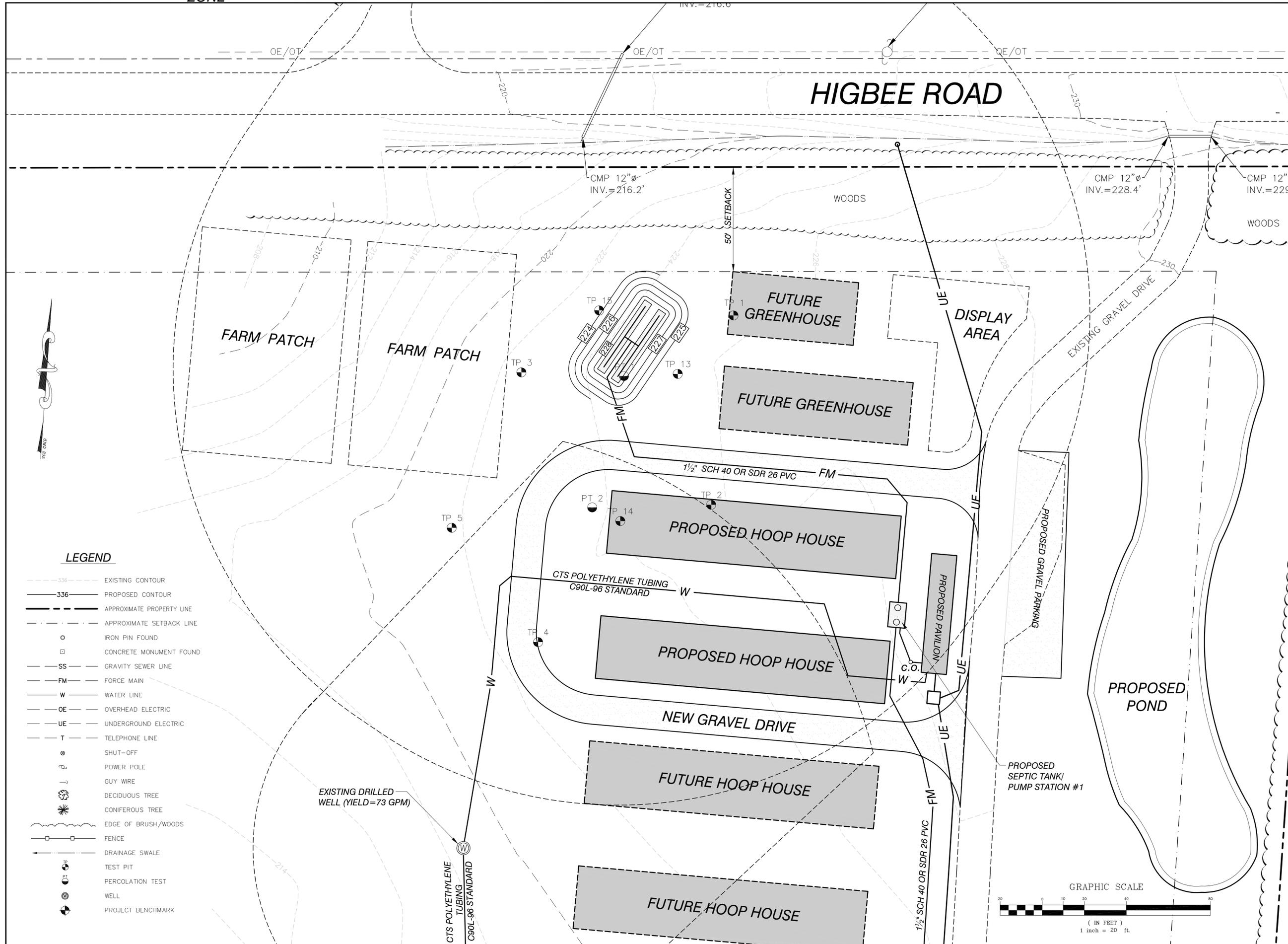
DATE	CHECKED	REVISION

OVERALL WASTEWATER PLAN

DATE: OCT. 10, 2012
SCALE: 1" = 50'
PROJ. No. 12213

DRAWING NUMBER: **C2**





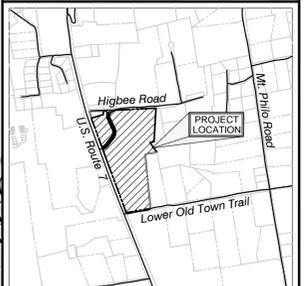
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DRAWN: MJW
 CHECKED: SAV
 APPROVED: SAV

OWNER:
UNITY FARM, LLC
 807 QUAKER SMITH POINT
 SHELBURNE
 VERMONT

PROJECT:
PROPOSED WASTEWATER SYSTEM
 200 HIGBEE RD
 CHARLOTTE
 VERMONT


 LOCATION MAP
 1" = 2000'

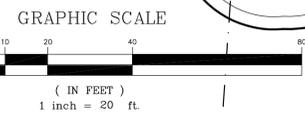
DATE	CHECKED	REVISION

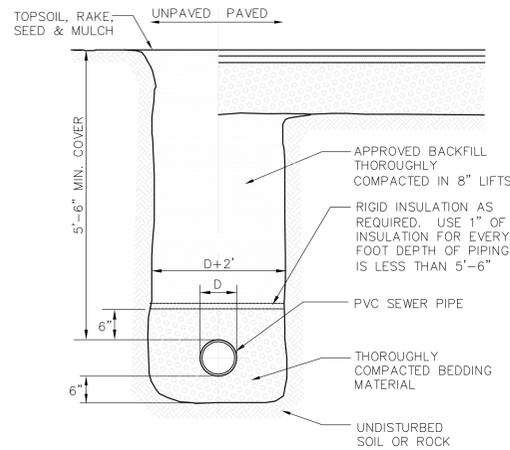
WASTEWATER SYSTEM PLAN

DATE OCT. 10, 2012	DRAWING NUMBER C3
SCALE 1" = 20'	
PROJ. NO. 12213	

LEGEND

- 336 --- EXISTING CONTOUR
- 336 --- PROPOSED CONTOUR
- - - - - APPROXIMATE PROPERTY LINE
- - - - - APPROXIMATE SETBACK LINE
- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
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- FM --- FORCE MAIN
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- ⌋ GUY WIRE
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- ⊕ CONIFEROUS TREE
- ⌋ EDGE OF BRUSH/WOODS
- FENCE --- FENCE
- DRAINAGE SWALE --- DRAINAGE SWALE
- TEST PIT
- PERCOLATION TEST
- WELL
- PROJECT BENCHMARK

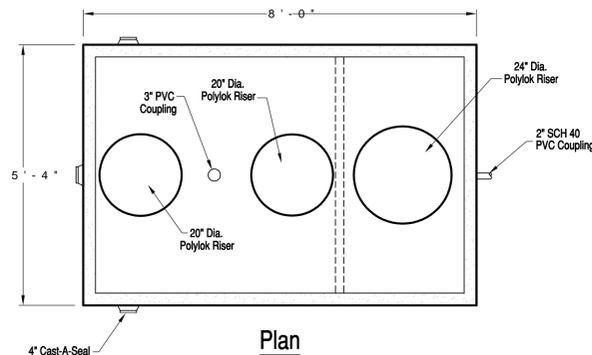




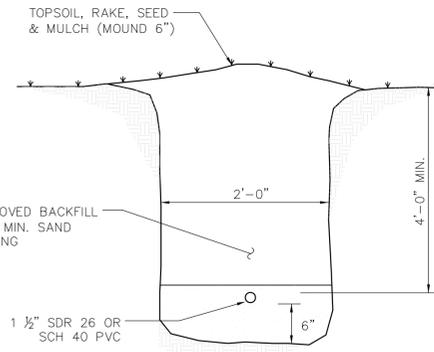
TYPICAL SEWER TRENCH DETAIL
N.T.S.

NOTES:

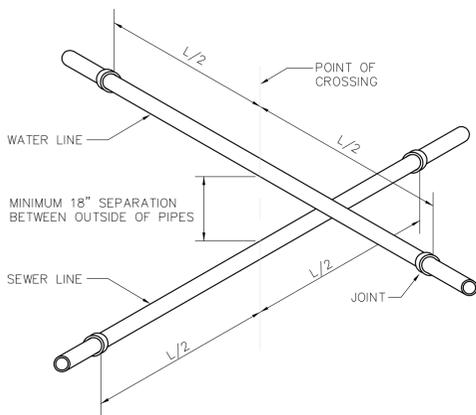
1. Compaction of backfill and bedding shall be a minimum of 90% (95% under roadway surfaces) of maximum dry density determined in the standard proctor test (ASTM D698).
2. Bedding material shall not be placed on frozen subgrade.
3. Approved backfill shall not contain any stones more than 12" in largest dimension (6" in roadways, 2" maximum diameter within 2' of the outside of the pipe), or contain any frozen, wet, or organic material.
4. Trenches shall be completely dewatered prior to placing of pipe bedding material and kept dewatered during installation of pipe and backfill.
5. In trenches with unstable materials, trench bottom shall first be stabilized by placement of filter fabric then crushed stone (3/4" maximum).
6. The sides of trenches 4' or more in depth entered by personnel shall be sheeted or sloped to the angle of repose as defined by O.S.H.A. standards.
7. Bedding material shall consist of crushed stone, gravel or sand with a maximum size of 3/4". Submit a sample to the Engineer for approval.



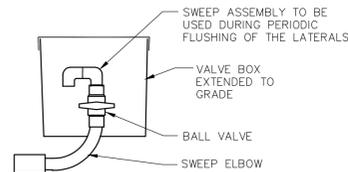
Plan



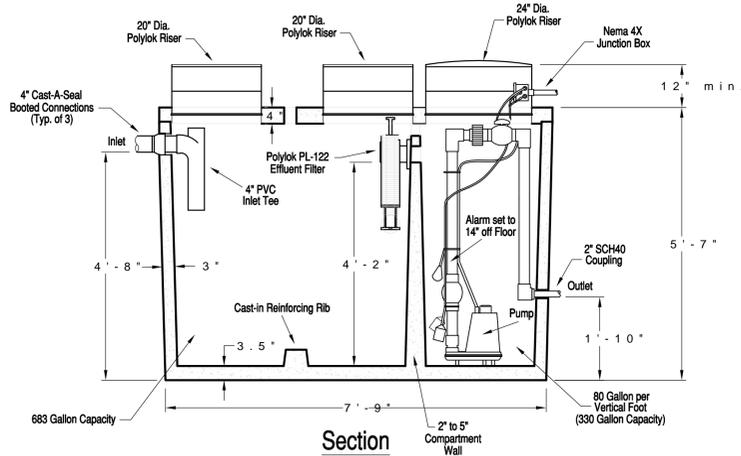
FM TRENCH SECTION
N.T.S.



WATER/SEWER CROSSING DETAIL
N.T.S.

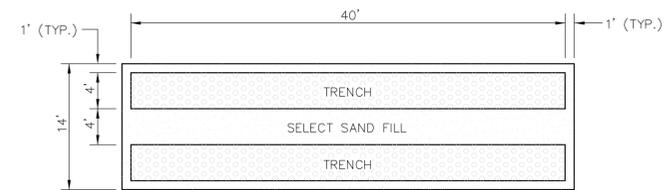


FLUSHING VALVE DETAIL
N.T.S.

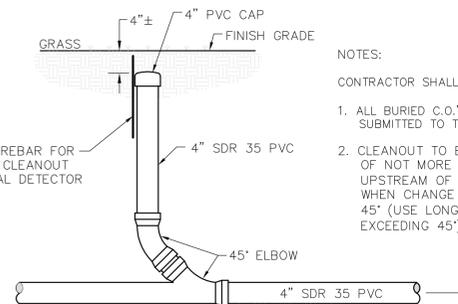


Section

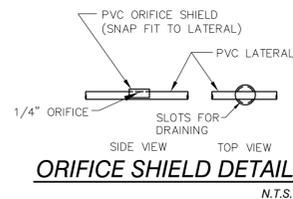
1000 GALLON COMBINED SEPTIC TANK/PUMP STATION
N.T.S.



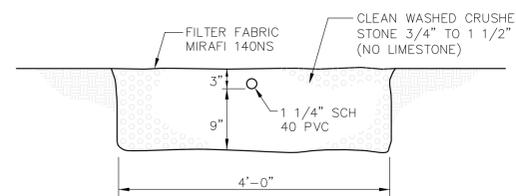
TYPICAL TRENCH PLAN
N.T.S.



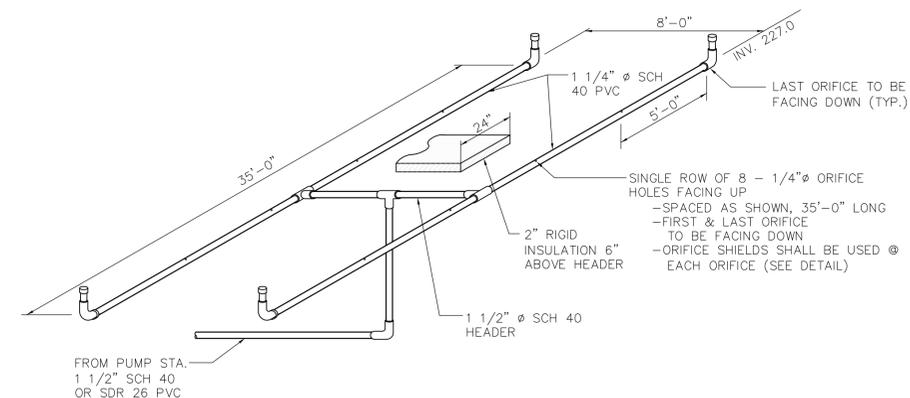
TYPICAL CLEANOUT DETAIL
N.T.S.



ORIFICE SHIELD DETAIL
N.T.S.



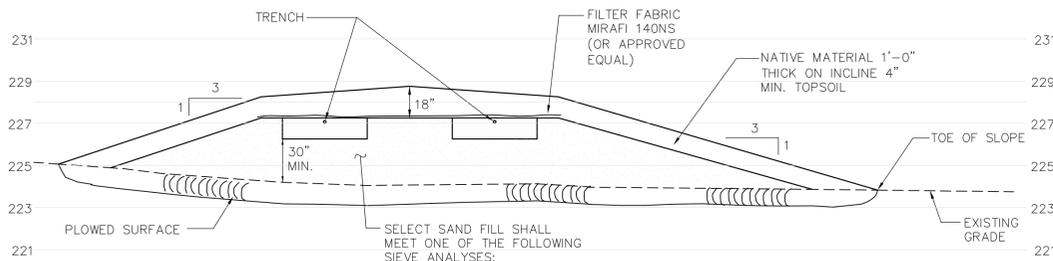
TYPICAL TRENCH SECTION
N.T.S.



MOUND PIPING DETAIL
N.T.S.

NOTES:

1. PROVIDE A MINIMUM 18" VERTICAL SEPARATION BETWEEN THE WATER LINE AND THE SEWER LINE. IF THIS SEPARATION CANNOT BE MAINTAINED, CONTACT THE DESIGN ENGINEER FOR DESIGN REVISIONS. ALL REVISIONS MUST BE APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (WATER SUPPLY DIVISION).
2. MAINTAIN 10' MINIMUM SEPARATION (HORIZONTAL) BETWEEN THE SEWER LINE AND WATER LINE.
3. PROVIDE ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER/WATER LINE AT ALL CROSSINGS TO PREVENT SETTLEMENT OR ANY DAMAGE.



SECTION A-A
1/4" = 1'-0"

SIEVE #	% PASSING	SIEVE #	% PASSING	SIEVE #	% PASSING
3/8	85-100	4	95-100	3/8	85-100
40	25-75	8	80-100	40	30-50
60	0-30	16	50-85	200	0-10
100	0-10	30	25-60		
200	0-5	50	10-30		
		100	2-10		

SITE ENGINEER:



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**PROPOSED
WASTEWATER
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**WASTEWATER
SYSTEM
DETAILS**

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12213

DRAWING NUMBER
C4

