





# Whitefield Hop Yard

East Hardwick, Vermont



# -OVERVIEW-

- \*WHO ARE WE?
- \*WHY GROW HOPS?
- \*PREPARING THE YARD AND  
PLANTING
- \*BUILDING THE TRELLIS
- \*RHIZOMES & PLANTS
- \*THE SHED FOR HOP  
EQUIPMENT
- \*THE PELLITIZER
- \*IRRIGATION
- \*WHAT WE HAVE BEEN  
SEEING
- \*WHAT BREWERS ARE  
TELLING US







# Who We Are

- Karen, my wife and I own and operate the Whitefield Hop Yard and processing equipment with the help of our six grown kids - Vincent, Lydia, Kyle, Taylor, Lillian and Jeremy.
- Karen is a lab tech at Copley Hospital and I am a 6th grade teacher at Hardwick Elementary School.
- We have 6 kids and a dog



WHY START GROWING  
HOPS IN HARDWICK  
VERMONT?!?

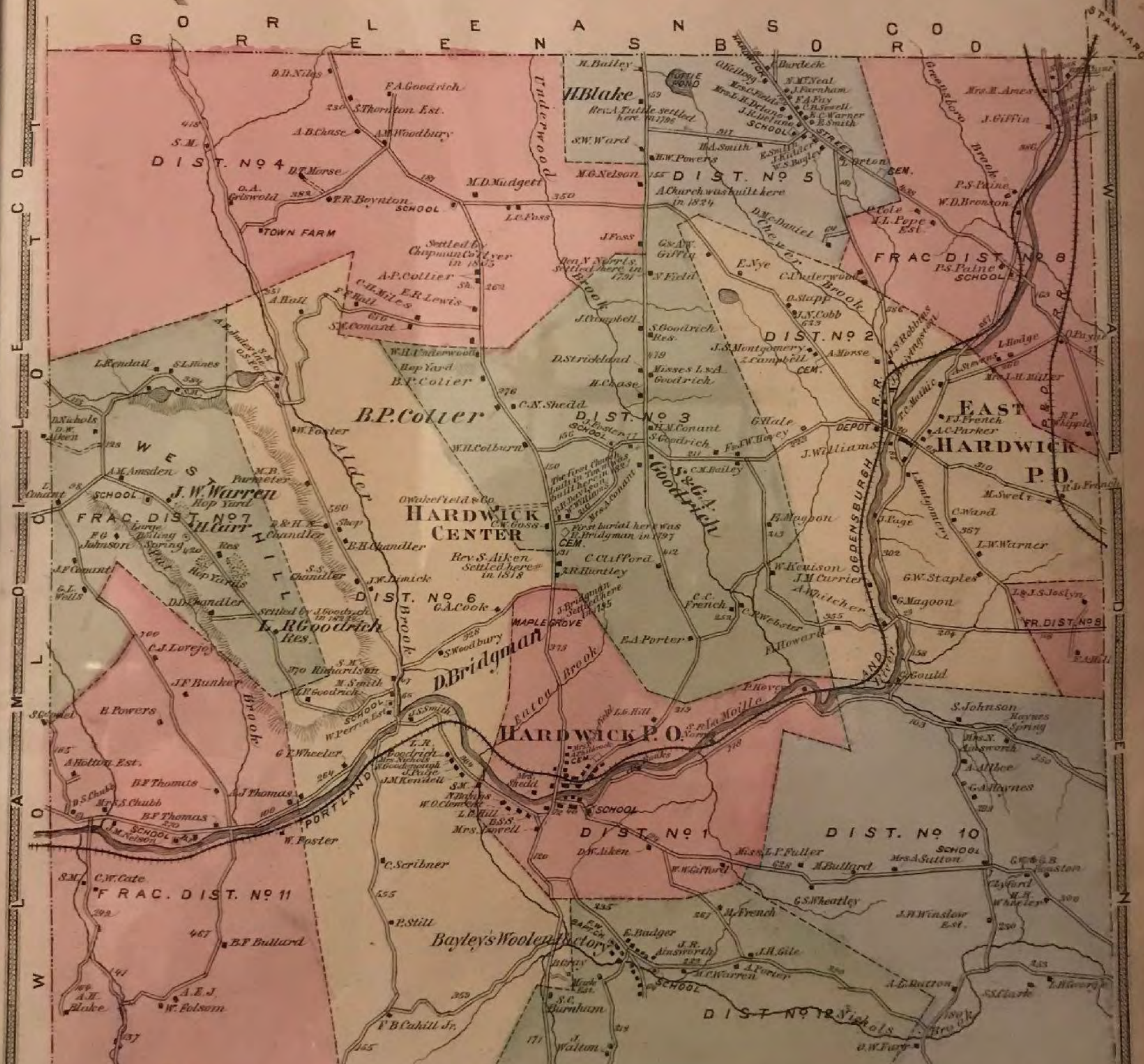






# HARDWICK

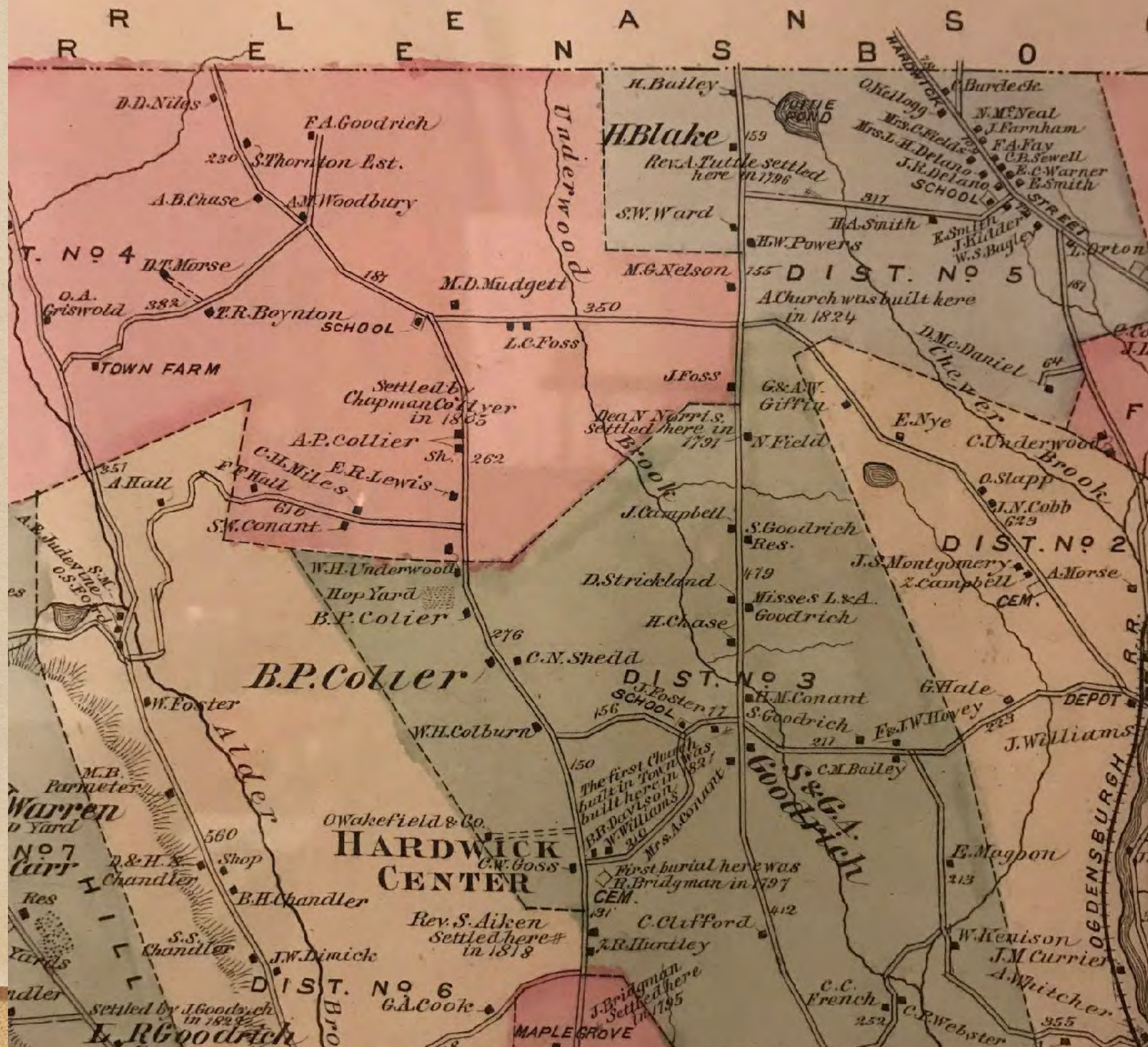
Scale 200 Rods to the inch.



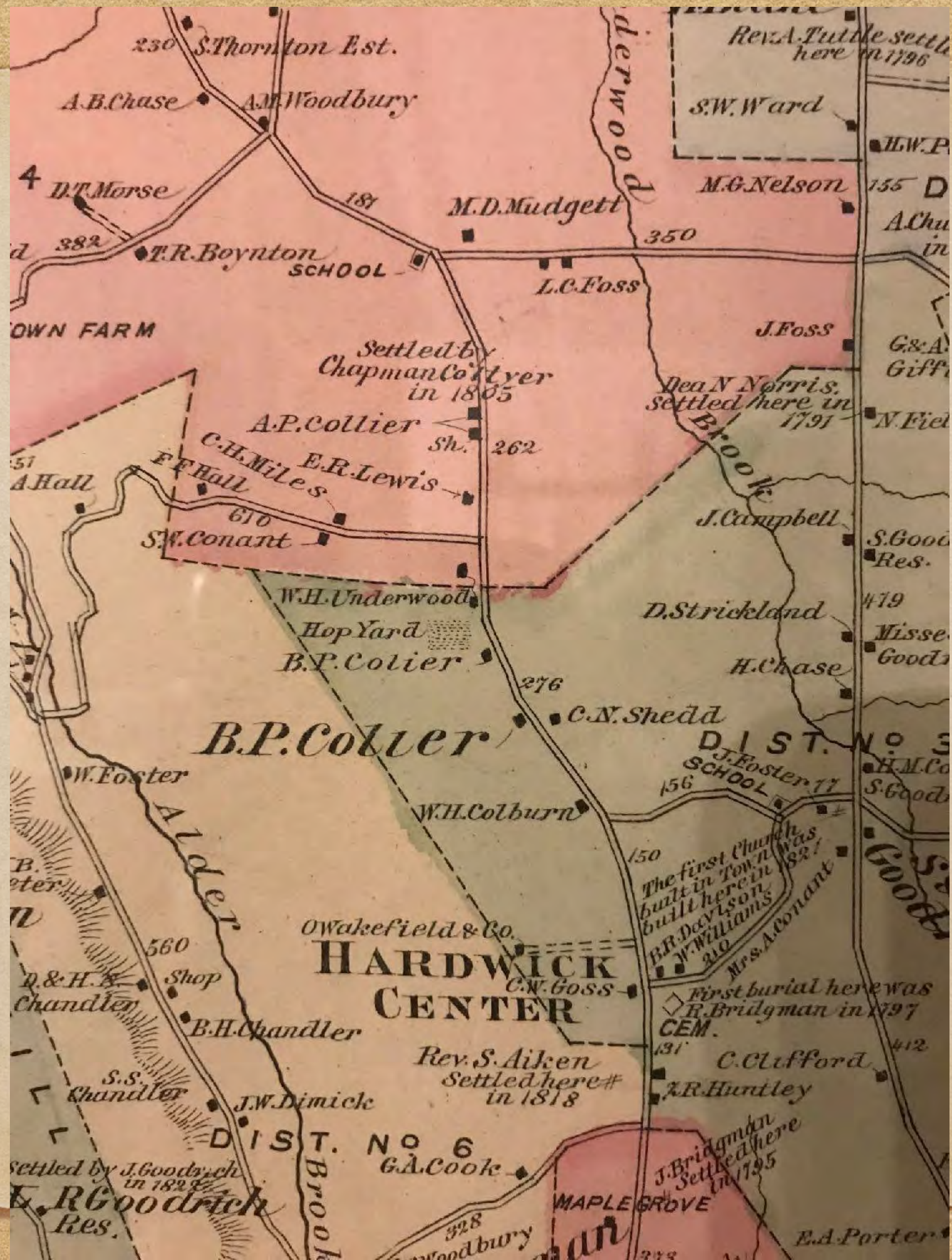


# HARDWICK

Scale 200 Rods to the inch.









Chapman Collyer  
in 1805

A.P. Collier

Sh. 262

C.H. Miles

E.R. Lewis

F.F. Hall

610

W. Conant

W.H. Underwood

Hop Yard

B.P. Collier

276

C.N.

B.P. Collier

W.H. Colburn

Wakefield & Co



Part  
J. W. Warren  
Hop Yard  
15 T. No 7  
H. Carr  
ing 420 Res  
Hop Yards  
D.D. Chandler





A HOP-FIELD IN WINTER. — SEE PAGE 153.











# Hops Farming Returns to Hardwick After 100-Year Hiatus

by Doug McClure

**EAST HARDWICK** — It is a crisp August morning, just a week before harvest begins. Kevin and Karen Broderick, the owners of Whitefield Hop Yard, are surveying the work that needs to be done in the interim. They are pleased with how the crop looks.

The field is unusual in appearance. It is just over an acre. A series of eighteen-foot tall poles stand in rows, with wire strung between each, like an enormous trellis. Ropes lead down from the wire and the hops vines rise from land-

scape-fabric-clad black mounds to coil around the ropes and spiral straight up. Karen notes that the plant's root system extends almost as deep as the plant is tall.

An interesting aside is the vines have to be trained to coil clockwise to ensure that they attach to the rope properly.

When fully mature, at three years of age, this plot will yield approximately 1,000 pounds of hops in three different varieties. To put that in context, it only takes a half-ounce to seven ounces of hops to make five gallons of any variety of India Pale Ale (IPA).

Whitefield Hop Yard is on the leading edge of a burgeoning trend in Vermont farms, but not a recent trend, he points out — it is a revival.

In the 1850s, Vermont was the second-largest producer of hops in the United States, with 288,023 pounds produced, according to Adam Krakowski's *A Bitter Past: Hop Farming in Nineteenth-Century Vermont*. Ten years later, that number had increased to 638,657 pounds, with the largest amount produced in Orleans County, according to the agricultural census of 1860.

Broderick points out a historical map showing the large number of hops farms in this area as evidence that the crop was popular.

"The Hardwick area was one of the largest producers in the 1820s," he says.

Hops were a profitable crop for farmers. But the climate proved challenging to the early agrarians, especially when competing against California. Krakowski states that New Hampshire's Daniel Flint brought most of the hops that started the West Coast farms from Vermont stock. With a more favorable climate, California had no trouble surpassing Vermont production.

A series of years plagued with poor weather and insect problems did not help, Krakowski says. He attributes the final nail in the coffin to Prohibition, as the main use for hops was producing alcoholic beverages.

In 1828, according to Vermont historical archives, the Vermont Temperance Society was founded. The 1830s saw a rise in petitions from towns to the legislature to ban liquor. In 1850, the legislature acted, first by permanently banning the licensing of alcoholic beverages with Act 30. Two years later, Act 24 banned production and Vermont went dry statewide for fifty years.

The end of the state ban did not end the local ones; according to the state records, fifteen Caledonia Residents — most women, all Italians, and most from Hardwick — received nine to twelve months' prison time and fines of \$400 for liquor violations in 1918. Adjusted for 2017 prices using the Consumer Price Index, the biggest fines were equivalent to \$8,325 today.

The 1852 ban hit at the peak of hops production in Vermont. By 1900, Vermont produced just 4,400 pounds of hops, most from Derby; by 1910, it was almost zero.

The great Vermont hops boom that began in the early 1840s ground to a halt.



**Ready for a Hopping Good Time**

*Kevin and Karen Broderick survey their hops field, just a week before harvest.*

*photo by Doug McClure*



*An informal scrimmage by 7th and 9th grade open house*

## "All Eyes at Hazen"

by Doug McClure

**HARDWICK** — Under shifting in and out of cloud temperature sliding into a crispness, Hazen Union High School held its open house for the 7th and 9th grades on Thursday, August 10.

This time, it isn't just the new faces that are new. Hazen hired Principal Jack McCarthy a month ago. McCarthy to greet the arriving students followed by Matt Renau, new guidance counselor for 8th, and 9th grades.

McCarthy lets the kids know he cares by standing at the door shaking every hand. So many seem surprised he is there to greet each student personally.

Students show up with mothers, fathers, brothers, and sisters. Some are ap-



















-You have to start  
somewhere-























































































Hop Shed

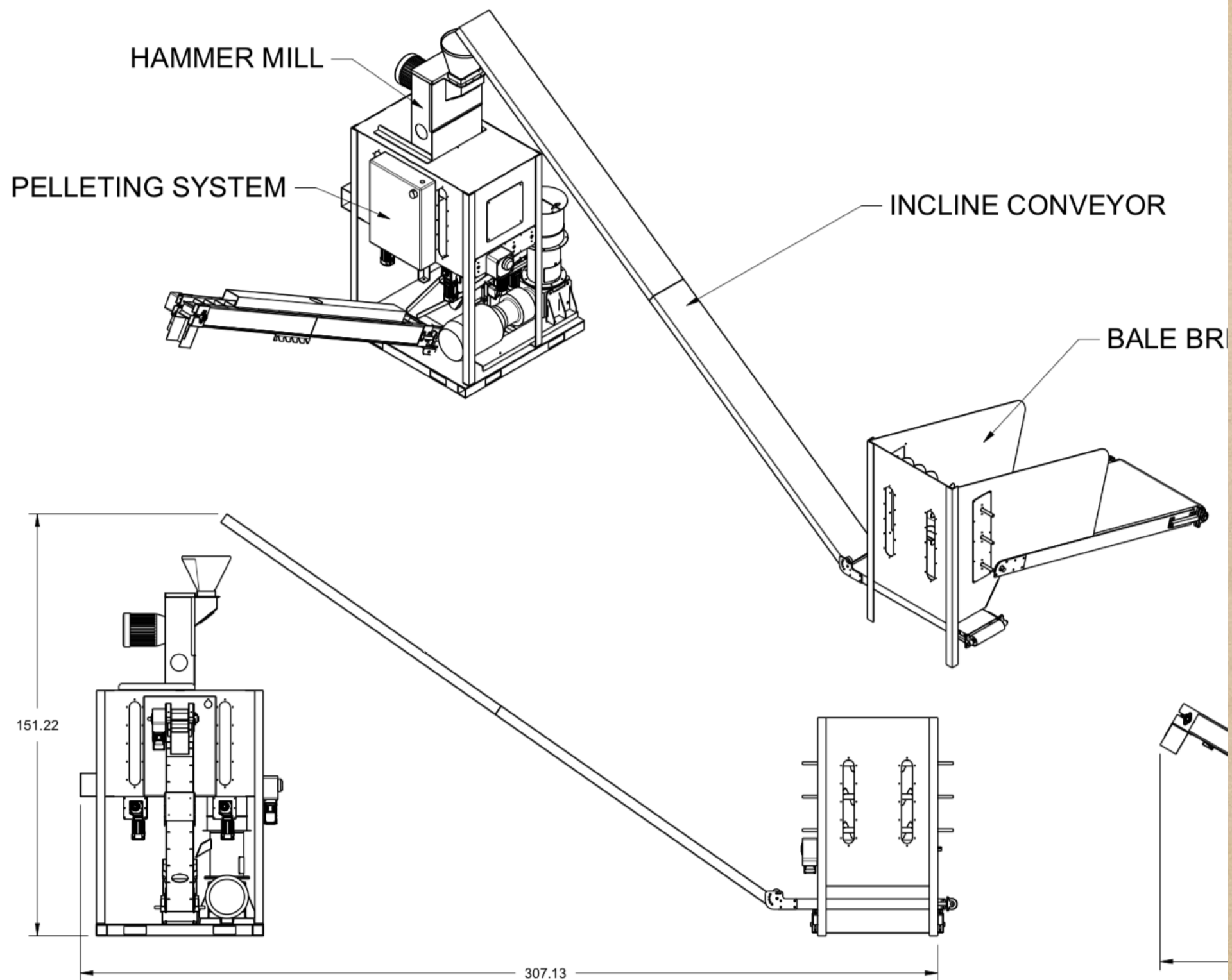
























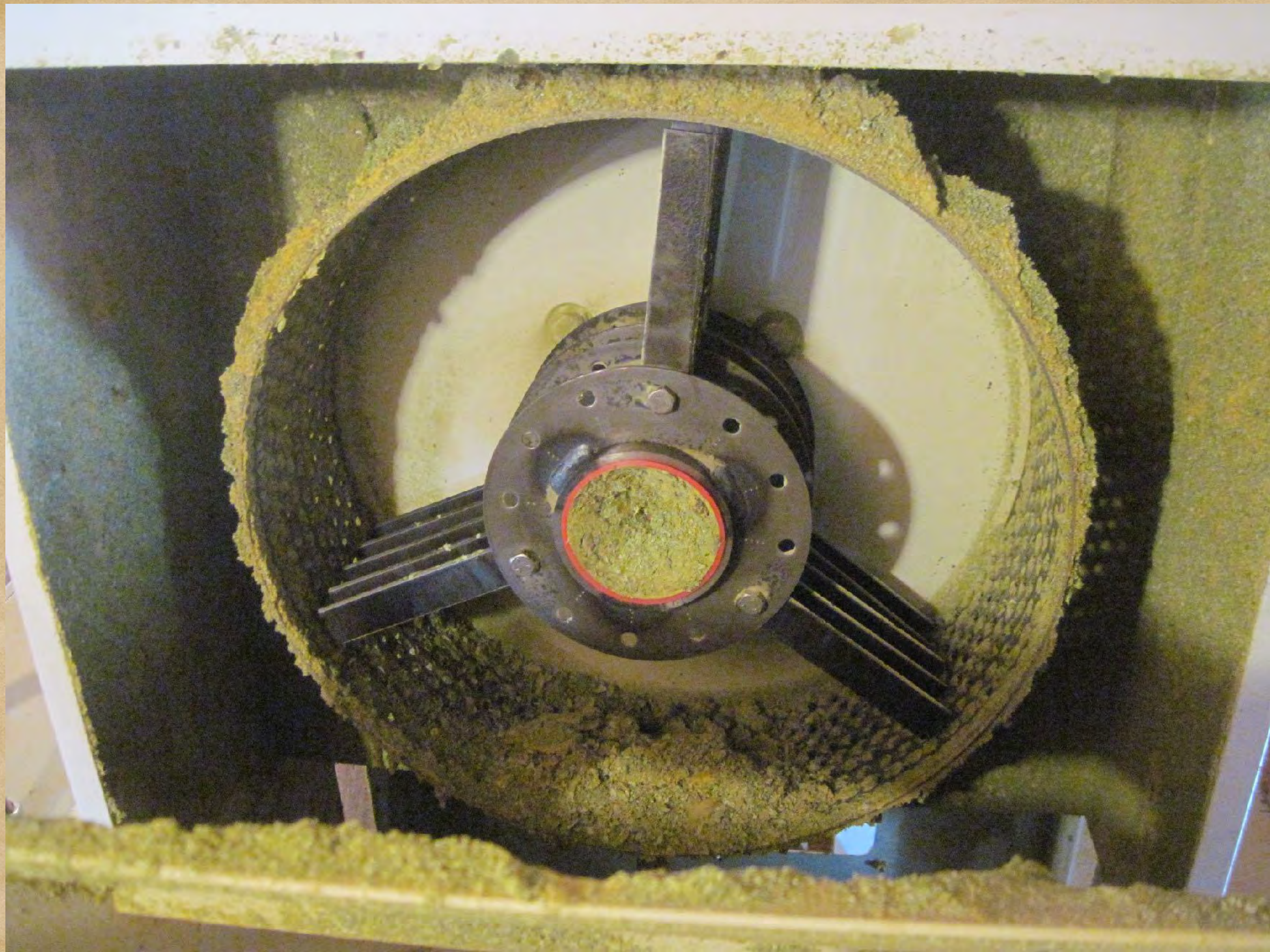






































# PRO FORMA INVOICE

DATE: April 5, 2016

Page 2 of 2

Description	Unit Price
20' Pellet Conveyor 1/4 HP Motor, Single Phase, 230VAC/175 gear motor and Variable Frequency Drive. Less air transition and air package 10" Wide Box Belting	(\$9,490.00)
Take Away Surge Tank In-Feed Conveyor Discharges into Hammer Mill mounted on top of Surge Tank. 1/2 HP Motor, Single Phase Input with variable frequency drive 7" wide Box Belting	(\$8,490.00)
System Control Panel & Wiring Components are pre-wired to the control panel, wiring to the control panel from the power source is required.	(\$10,390.00)
System Platform Automation System assembly is placed on (1) stands, 5' x 5', and shipped complete.	(\$2,990.00)

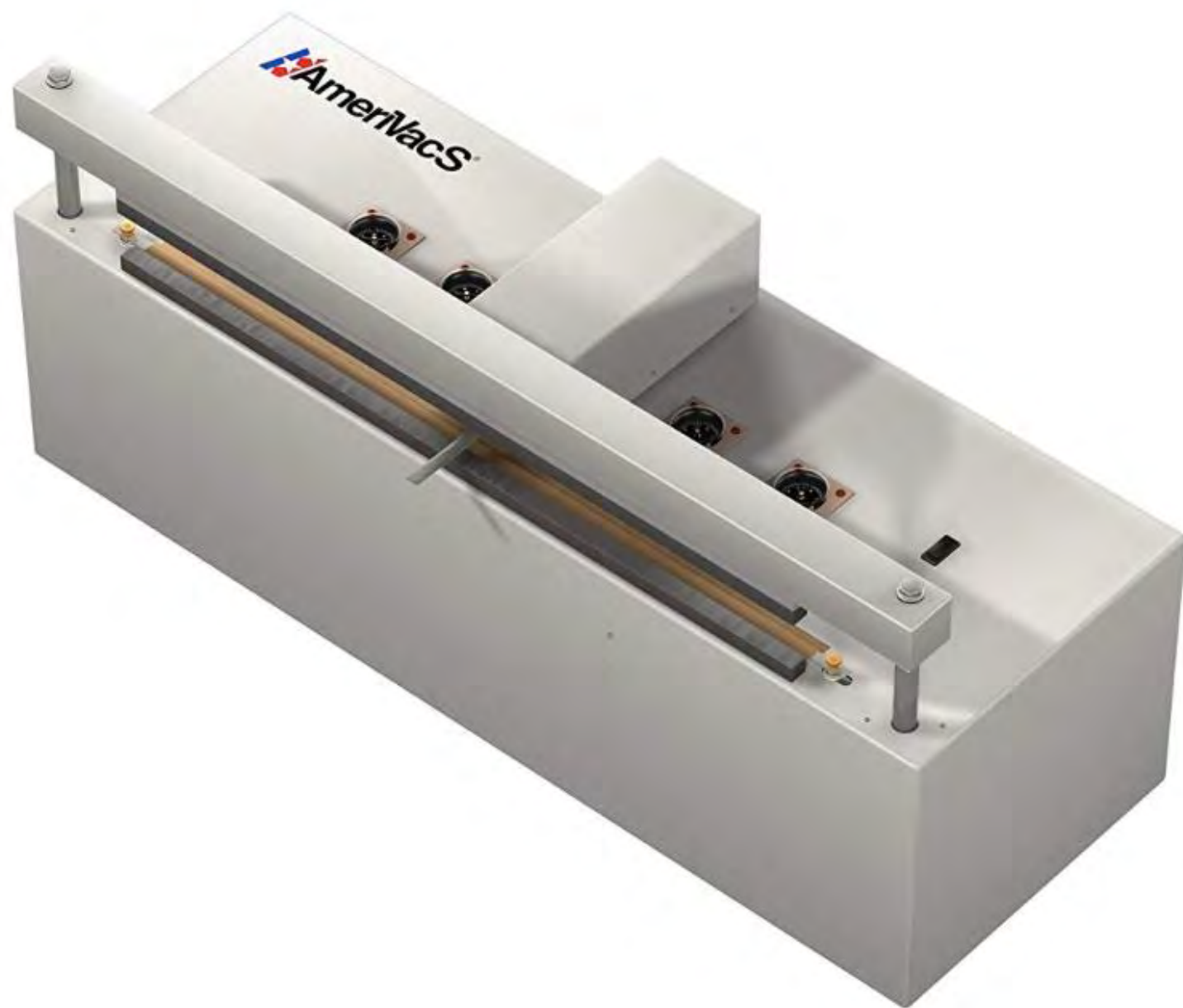
Sub Total	\$ 56,805.00
Crating/Loading Charge	\$ 500.00
Freight to East Harwick VT	\$ 1,897.00
Total Due	\$ 59,202.00
Total Due if Paid in Full	\$ 56,212.00
Paid in Full 4-05-2016	(\$ 56,212.00)
Balance Due	\$ 0.00

100 NORTH OSSIANDALE INDIANA 46777



# Vacuum Sealer and Packaging























Harvesting

















# WOLVERINE Hops Harvesters

## INVOICE

WHITEFIELD HOP YARD  
1349 CENTER RD.  
EAST HARDWICK, VT 05836

DATE: NOVEMBER 21, 2017  
ATTN: KEVIN BRODERICK

WOLVERINE AIR-1, COMPLETE WITH LATEST UPDATES

PRICE FOB OUR SHOP:	\$30,000
DEPOSIT DUE:	\$15,000
BALANCE DUE ON COMPLETION:	\$15,000

*pc Paid*  
*pc Paid*  
*14/18* *KCF*

MADE AT OUR SHOP IN USA. 2-YEAR WARRANTY ON PARTS AND WORKMANSHIP.  
REPLACEMENT PARTS WILL BE AVAILABLE FOR MAINTENANCE AND REPAIRS.  
ALL MATERIALS ARE NEW AND OF THE HIGHEST QUALITY.

BY

Patrick Comerford,  
Wolverine Hops Harvesters











# Irrigation

1. bucket and hose
2. pump and drip line (1740 gallons per hour/ 4 HOURS EACH WEEK)







**NORTH STAR**  
Proven Performance

**NORTH STAR**  
Proven Performance

SERIAL NUMBER: 106470  
16

**NORTH STAR**  
Proven Performance

POWERED by  
**HONDA**

## 2in. High- Pressure Water Pump

GPH  
**8,120**



- Designed to push water long distances or to great heights
- Ideal for sprinkler systems, remote area firefighting and washing down equipment
- Pumps 8,120 GPH
- Rugged, dependable 160cc Honda GX160 engine with .82-gallon steel fuel tank and Oil Alert®
- Strong 26-ft. max. suction lift; 214-ft. max. total head
- Engine has an adjustable throttle to control pressure
- Silicon carbide mechanical seal outperforms common aluminum oxide seals
- Fully welded 1 1/4in. steel roll cage with durable DuPont® Black Wrinkle TGIC polyester finish
- Check valve holds prime while pump is not running
- 3-year limited warranty on engine; 2-year limited warranty on pump
- Includes strainer
- Optional wheel kit (Item# 10666, sold separately)

Item#  
**106470**



Distributed by Northern Tool & Equipment Co., Inc.  
Burnsville, MN 55306 | [northern-tool.com](http://northern-tool.com)

**2-YEAR LIMITED WARRANTY**

**NORTH STAR**  
Proven Performance

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**NORTH**



















[illegible]



# SPRAYERS

- BACKPACK / 4 GALLONS
- OESCO-REARS / 100 GALLON

















## Work Order 80945

OESCO, Inc.  
PO Box 540 8 Ashfield Road  
Conway, MA 01341  
800-634-5557 413-369-4335 FAX 413-369-4431  
www.oescinc.com orders@oescinc.com

Bill To			Ship To		
Whitefield Hop Yard 4349 Center Road East Hardwick, VT 05836			Same as Billing address		
Contact	Customer Tax Number	Phone	Alt Phone	PO Number	Transaction
Kevin Broderick		(802) 472-6231	(0) -		Estimate
Counter Person	Sales Person	Estimate Date	Reference	Department	
44	15	04/11/17	80945	Sales Retail	

### Shipping Instructions:

TERMS: 10% DEPOSIT REQUIRED TO SCHEDULE ORDER. BALANCE DUE BY CHECK ON OR BEFORE DELIVERY.

Part Number	Line	Description	Ordered	B/O'd	Shipped	List	Net Each	Amount
MANUAL	NOLP	MANUAL	1		1	\$0.00	\$0.00	\$0.00
Model	Line	Description	Ordered	B/O'd	Shipped	List	Net	Amount
KB100C28-ELC	REAW	100 PakBlast Constoga Elec	1		1		\$9,842.00	\$10,242.00
SN M17-059								

### Wholegoods Notes

3 pt airblast sprayer w/SS tank & fan housing, mechanical agitation, AR813 diaphragm pump, pressure gauge, 28" variable pitch fan, 14 check rollover nozzles, ceramic tips, electric Braglia controls, PTO shaft, anti-sag chains, and deflectors

Description	Qty	Net Each	Amount
Factory Freight	1	\$400.00	\$400.00

Description	Line	Reference	Quantity	Net Each	Amount
OESCO DELIVERY-CHARGE		No Charge	1	\$0.00	\$0.00

### Note

Delivered price \$10,242.00.

Invoice Total \$10,242.00

Sales Tax \$0.00

Grand Total \$10,242.00

Payment Details	Memo	Clerk	Date Time	Amount
VISA		44	04/11 13:56	(\$1,025.00)
VISA XXXXXXXXXXXX0803				
02299C				

Payment Total (\$1,025.00)

Balance Due \$9,217.00



Oasts

1. UVM

2. Sea Container























# Invoice

1518 Lancaster Point Way  
San Diego, CA 92154  
619-498-8227 Sales@AmeriVacS.com

Date	Invoice #
8/3/2016	21863

**PAID**  
08/03/2016

Bill To	Ship To
WHITESEALED HOP YARD 4349 SENSOR ROAD EAST HARDWICK, VT 05836	WHITESEALED HOP YARD 4349 SENSOR ROAD EAST HARDWICK, VT 05836

P.O. No.	Terms	Ship To P.O. No.	Ship Date
	CREDIT CARD		8/4/2016

FOB	Ship Via
AMERIVACS	FED-EX

Item	Description	Qty	Unit Price	Extended
CAVN-20	AMERIVACS CAVN-20, 20" RETRACTABLE NOZZLE VACUUM SEALER WITH GAS PURGE AND BUILT IN AIR COMPRESSOR, 20" X 1/4" SEAL	1	3,495.00	3,495.00T
VF	VACUUM FILTER	1	100.00	100.00T
S&H	SHIPPING AND HANDLING FedEx Package 1 Tracking #: 783740389137		87.00	87.00

Subtotal	\$3,682.00
Sales Tax (0.0%)	\$0.00
<b>Total</b>	<b>\$3,682.00</b>
Payments/Credits	-\$3,682.00
<b>Balance Due</b>	<b>\$0.00</b>

NOTE: PAST DUE ACCOUNTS SUBJECT TO INTEREST CHARGE OF 1.5% PER MONTH COMMENCING ON INVOICE DATE.



# Problems and Plagues























# WHAT WE'VE BEEN SEEING AND HEARING FROM GROWERS AND BREWERS

- DRY AND NOT SO DRY HOPS
- NO LEAVES AND LEAVES
- VERMONT HOPS?
- LATE HARVEST/EARLY  
HARVEST
- TERROIR















# Beer

- We sold to 7 Vermont breweries
- Our hops were sold-out by January



















# -FUN FACTS-

- OUR FARM'S NAMESAKE MOVED HERE WITH HIS WIFE, SALLY IN 1797. WHITEFIELD LIVED ON THE FARM UNTIL HIS DEATH IN 1856. THEIR SON, HARVEY WAS BORN HERE IN 1823 AND CONTINUED WORKING THE HOUSE THE FARM UNTIL HIS DEATH IN 1898.
- 2013: STARTED GROWING HOPS IN OUR GARDEN
- IN 2015 WE STARTED BUILDING THE TRELLIS
- TRELLIS HAS 16 ROWS THAT ARE EACH 200' LONG.
- PLANTED RHIZOMES IN 2016
- EXPANDED THE YARD IN 2017 WITH PLANTED AND ROWS.
- IN 2015: STARTED BUILDING THE TRELLIS
- FINISHED NEW SECTION TRELLIS IN 2018



# What we would do differently-

- Have soil tested and condition it the year before planting.
- Purchased new refrigerator condenser etc. and put in a much larger unit.
- More coordination with local brewers the year before first harvest before



- 1,120 HILLS AND 2,240 BINES IN THE HOP YARD
- WE HARVESTED 400 POUNDS OF HOPS IN 2017 (PLH)
- IN 2018 WE HARVESTED 800 POUNDS AND SOLD OUT BY JANUARY.
- OUR HOPS WENT TO 7 DIFFERENT VERMONT BREWERIES.







