
Maura J. Rossman, M.D., Health Officer

MEMORANDUM

TO: Watervale Heating & A.C.

FROM: Sarah Collins, L.E.H.S. **SEC**
Howard County Health Department
Well and Septic Program

DATE: March 19, 2019

RE: Mechanical permit for a horizontal geothermal well
#M19000150

The Health Department recently received a mechanical permit for the installation of a horizontal geothermal well at 1386 Driver Road. The site plan shows that the location of the horizontal loop does not meet setbacks to the well and septic system on the property.

The Health Department setbacks to a horizontal geothermal well include:

- 30' to a potable well
- 10' to a property line
- 15' to a road or right-of-way
- 25' to a sewage disposal area and septic tank
- 20' to a building foundation

The well box represents approved locations for drilling a replacement well. The horizontal loop must meet a 30' setback from the well box.

Please revise the location of the horizontal well and submit a new site plan that meets the Health Department setbacks.

Feel free to contact me at 410-313-6287 or SCollins@howardcountymd.gov with any questions.

Cc: Collin & Kim Ferguson (731 S. Curley Street, Baltimore, MD 21224)
File

DEPARTMENT OF INSPECTIONS,
 LICENSES & PERMITS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043
 PERMITS (410) 313-2455
 INSPECTIONS (410) 313-1850

**HOWARD COUNTY
 RESIDENTIAL
 HEATING-VENTILATION-AIR
 CONDITIONING AND
 REFRIGERATION PERMIT
 APPLICATION**

HVACR PERMIT # **MI9000150**
 BUILDING PERMIT #
B18003791

BUILDING ADDRESS: **1386 Driven Rd** SUITE/APT:
marriottsville, md. 21104
 SUBDIVISION:
 CENSUS TRACT: SECTION: AREA:
 LOT: TAX MAP: PARCEL:
 BLOCK: ZONE:
 PROPERTY ID: MAP COORDINATES:
 TYPE OF IMPROVEMENTS: USE:

OWNERS NAME: **collin & kim Ferguson**
 ADDRESS: **731 S. curley ST.**
 CITY: **BPTV.**
 STATE: **md.** ZIP CODE: **21224**
 HOME PHONE: **443-742-1392** WORK PHONE:

	<u>CHECK ONE</u>	<u>HOW MANY</u>
SINGLE FAMILY DWELLING	<input checked="" type="checkbox"/>	<u>2</u> ZONES
SINGLE FAMILY TOWNHOUSE	<input type="checkbox"/>	___ ZONES
MULTI-FAMILY / HOTEL/MOTEL	<input type="checkbox"/>	___ ROOMS
ASSISTED LIVING HOMES (16 OR FEWER RESIDENTS)	<input type="checkbox"/>	___ ROOMS

COMPANY NAME: **watervale Heating & A.C.**
 LICENSEE NAME: **Joseph F. O'Dyke**
 ADDRESS: **2116 watervale Rd.**
 CITY: **Fallsbn**
 STATE: **md.** ZIP CODE: **21047**
 PHONE: **410-819-0292** HVACR LICENSE NO: **7629**

- New**
- Heating and Air Conditioning
 - Geo Thermal System
 - Heating System Only
 - Ductless Mini Splits
 - Other Work (Describe):
 - Thru The Wall Systems
- Replacement**
- Heating
 - Air Conditioning
 - Heating and Air Conditioning
- Additions and Alterations**
- Heating
 - Air Conditioning
 - Heating and Air Conditioning

****Replacement Geo Thermal Systems are not required; However, if a tax credit is being sought a permit is required****

Zones

Permit Fee = # of Zones x \$40 = 80
 Technology Fee (10% of Permit Fee) = 8
 Plus Application Fee \$50.00
 Total Fees Due = 138.00

Rooms

Permit Fee = # of Rooms x \$80 = _____
 Technology Fee (10% of Permit Fee) = _____
 Plus Application Fee \$50 \$50.00
 Total Fees Due = _____

I HAVE CAREFULLY EXAMINED AND READ THIS APPLICATION AND KNOW IT IS TRUE AND CORRECT. THE WORK DESCRIBED HEREIN WILL BE PERFORMED BY A STATE HVACR LICENSED PERSON(S), AND ALL WORK WILL BE PERFORMED IN COMPLIANCE WITH APPLICABLE CODES AND STANDARDS OF HOWARD COUNTY THE STATE OF MARYLAND.

SIGNATURE OF LICENSEE: Joseph F. O'Dyke DATE: 3-4-19
 PRINT NAME OF LICENSEE: Joseph F. O'Dyke
 Email Address: watervalegeo@gmail.com

Validation

Check Number: 25471
 Cash: _____
 Receipt Number: 566685

RECEIVED

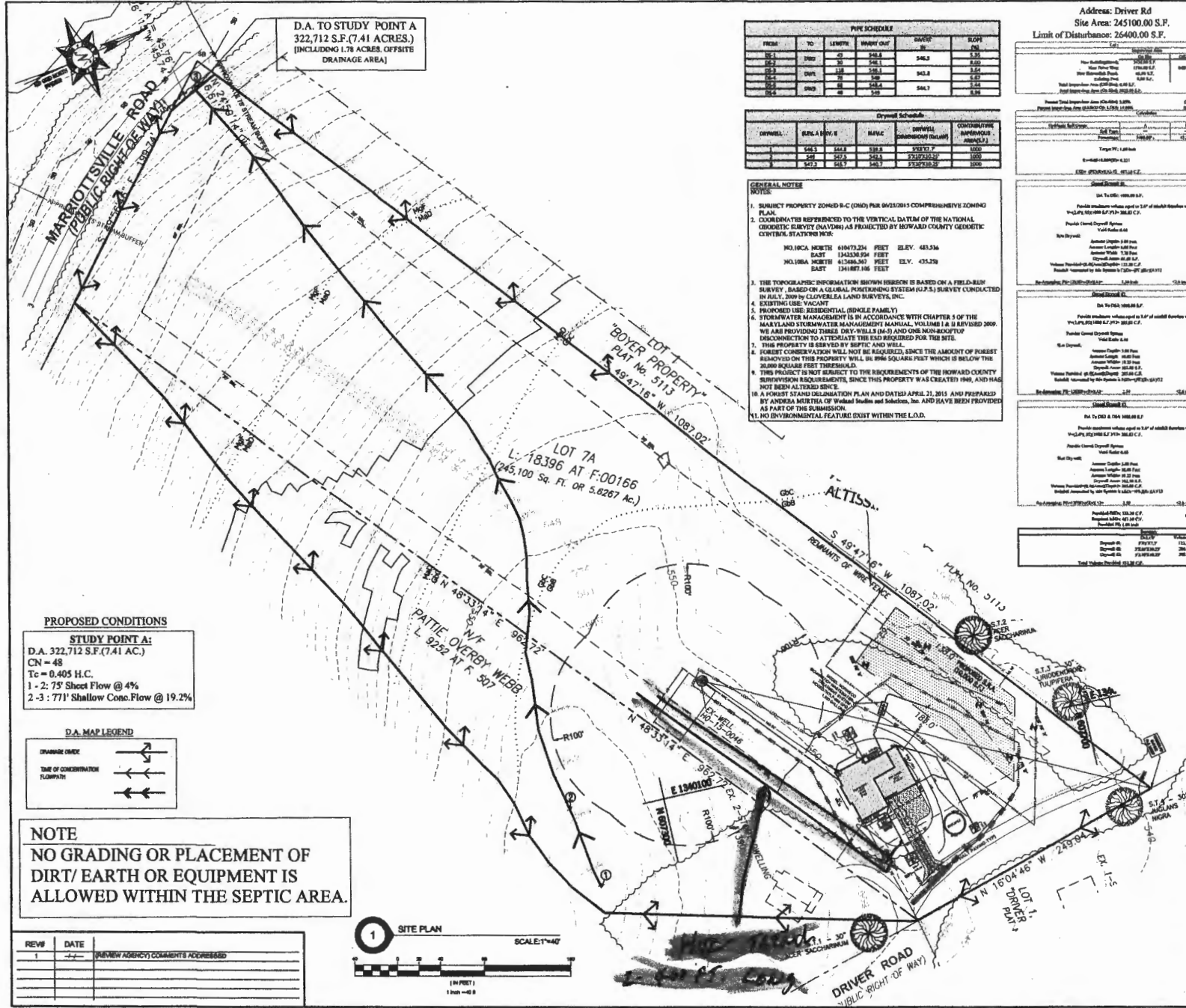
Approved Septic System **ABND 4 2019**
 Howard County Health Department

Make check payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

Signature _____ Date _____

LICENSES & PERMITS
 DIVISION

M19000150



D.A. TO STUDY POINT A
322,712 S.F. (7.41 ACRES.)
(INCLUDING 1.78 ACRES. OFFSITE
DRAINAGE AREA)

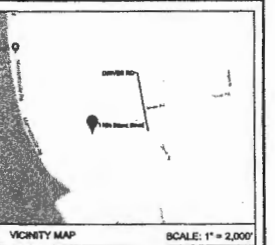
FROM	TO	LENGTH	INVERT	OUTLET	SLOP
101-1	100-2	42	546.8	546.3	1.2%
101-2	100-1	26	546.1	543.8	8.5%
101-3	100-1	139	545.1	543.8	1.2%
101-4	100-2	26	545.1	543.8	8.5%
101-5	100-2	48	545	544.7	0.7%

DRYWELL	AREA SERVED	RAVIC	DRYWELL CAPACITY (GALLONS PER HOUR)	CUMULATIVE CAPACITY (GALLONS PER HOUR)
101-1	545.1	545.1	1000	1000
101-2	545.1	545.1	1000	2000
101-3	545.1	545.1	1000	3000

- GENERAL NOTE:
- SUBJECT PROPERTY ZONED R-C (RD) PER 04/15/2015 COMPREHENSIVE ZONING PLAN.
 - COORDINATES REFERENCED TO THE VERTICAL DATUM OF THE NATIONAL GEODETIC SURVEY (NAD83) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS PER:
- NO. 10CA NORTH 416473.254 FEET ELEV. 433.34
EAST 134325.924 FEET
NO. 10BA NORTH 415486.361 FEET ELEV. 435.29
EAST 134187.166 FEET
- THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON A FIELD-BY SURVEY, BASED ON A GENERAL PLUMBING SYSTEM (G.P.S.) SURVEY CONDUCTED IN JULY, 2009 BY CLYVERLEA LAND SURVEYS, INC.
 - EXISTING USE: VACANT
 - PROPOSED USE: RESIDENTIAL (SINGLE FAMILY)
 - STORMWATER MANAGEMENT IS IN ACCORDANCE WITH CHAPTER 5 OF THE HANLY AND STORMWATER MANAGEMENT MANUAL, VOLUME 1 & 2 REVISED 2009. WE ARE PROVIDING THREE DRY-WELLS (N-5) AND ONE NON-RECEPTOR DISCONNECT TO ATTENUATE THE EXCESSIVE RUN-OFF FROM THIS SITE.
 - THIS PROPERTY IS SERVED BY SEPTIC AND WELLS.
 - FOREST CONSERVATION WILL NOT BE REQUIRED SINCE THE AMOUNT OF FOREST REMOVED ON THIS PROPERTY WILL BE 896 SQUARE FEET WHICH IS BELOW THE 1000 SQUARE FEET THRESHOLD.
 - THIS PROJECT IS NOT SUBJECT TO THE REQUIREMENTS OF THE HOWARD COUNTY SUPERVISION REQUIREMENTS, SINCE THIS PROPERTY WAS CREATED IN 1985, AND HAS NOT BEEN ALTERED SINCE.
 - A FOREST STAND DELINEATION PLAN AND DATED APRIL 21, 2015 AND PREPARED BY ANDREA HEDRICK OF Wetland Studies and Solutions, Inc. AND HAVE BEEN PROVIDED AS PART OF THE SUBMISSION.
 - NO ENVIRONMENTAL FEATURE EXIST WITHIN THE L.O.D.

Address: Driver Rd
Site Area: 245100.00 S.F.
Limit of Disturbance: 26400.00 S.F.

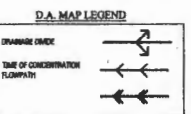
Scale: 1" = 2000'



20' fdn
15' low
25' SDA
30' well box

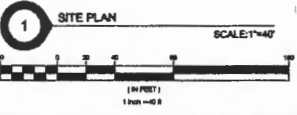
PROPOSED CONDITIONS

STUDY POINT A:
D.A. 322,712 S.F. (7.41 AC.)
CN = 48
Tc = 0.405 H.C.
1 - 2: 75' Sheet Flow @ 4%
2 - 3: 771' Shallow Conc. Flow @ 19.2%



NOTE
NO GRADING OR PLACEMENT OF
DIRT/ EARTH OR EQUIPMENT IS
ALLOWED WITHIN THE SEPTIC AREA.

REV#	DATE	(BY REVIEW AGENCY) COMMENTS ADDRESSED
1		



PROPOSED FEATURE SYMBOL

LIMIT OF DISTURBANCE	LOB
PROPOSED BUILDING	
PROPOSED PARKING	
PROPOSED CURB/LINE	100
PROPOSED SPOT ELEVATION	880
PROPOSED MANHOLE DRYWELL	
PROPOSED SEWER/PIPE LOCATION	880
PROPOSED P PVC PIPE	P PVC
PROPOSED P PERFORATED PIPE	P PVE
PROPOSED AS T FENCE	10
PVC WATER HOUR CONNECTION	WAC
STABILIZED CONSTRUCTION ENTRANCE	

SITE PLAN LEGEND

EXISTING FEATURE	SYMBOL
SUBJECT SITE BOUNDARY	
ADJACENT PROPERTY BOUNDARY	
BUILDING FOOTPRINT LINE	780
EXISTING CONTOUR (BARS)	100
EXISTING CONTOUR (SOLID)	100
EXISTING FENCE	
EXISTING TREE LINE	
EXISTING WATER WELL	
EXISTING TREE TO BE REMOVED	

SITE GRADING PLAN

1386 DRIVER RD MARRIOTTVILLE LOT 7A

SITUATED AT:
1386 DRIVER ROAD,
HOWARD CO., MD

OWNER/APPLICANT INFO:
FOOTPRINTS:
INSTRUMENT NUMBER:
75 & COMPLETE BY:
MARRIOTTVILLE 1386
ORD 10 PARCEL 128
L: 12898 F:00188
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

RAZTEC ASSOCIATES, INC.
civil engineers & planners
241 West Park Dr.
Preston, Maryland 21151
tel: (301) 775-4204
email: raztecinc@gmail.com

PROFESSIONAL'S CERTIFICATE STATEMENT:
I CERTIFY THAT THESE CALCULATIONS WERE PREPARED OR APPROVED BY ME,
AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF
THE STATE OF MARYLAND LICENSE NUMBER: 22143. EXPIRES: JUNE 16, 2020

SEAL OF STATE OF MARYLAND

DRAWN BY: RB
CHECKED BY: MR

DATE: 1/8/2019

SCALE: 1" = 40'

SHEET NUMBER: 1 of 1

M19000150

*Wood Brothers
HVAC Load Calculations*

for

1386 Driver, Rd.
Marriottsville, Md.

Elite Software

**RHVAC RESIDENTIAL
HVAC LOADS**

Prepared By:

Monday, March 04, 2019

Project Report

General Project Information

Project Title: Wood Brothers
 Project Date: Tuesday, October 02, 2018
 Client Address: 1386 Driver, Rd.
 Client City: Marriottsville, Md.

Design Data

Reference City: Baltimore, Maryland
 Daily Temperature Range: Medium
 Latitude: 39 Degrees
 Elevation: 148 ft.
 Altitude Factor: 0.995
 Elevation Sensible Adj. Factor: 1.000
 Elevation Total Adj. Factor: 1.000
 Elevation Heating Adj. Factor: 1.000
 Elevation Heating Adj. Factor: 1.000

	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	5	0	30	72	29
Summer:	95	75	50	75	34

Check Figures

Total Building Supply CFM:	2,102	CFM Per Square ft.:	0.404
Square ft. of Room Area:	5,200	Square ft. Per Ton:	1,017
Volume (ft³) of Cond. Space:	43,450	Air Turnover Rate (per hour):	2.9

Building Loads

Total Heating Required With Outside Air:	50,537 Btuh	50.537 MBH
Total Sensible Gain:	46,007 Btuh	96 %
Total Latent Gain:	2,103 Btuh	4 %
Total Cooling Required With Outside Air:	48,111 Btuh	4.01 Tons (Based On Sensible + Latent)
		5.11 Tons (Based On 75% Sensible Capacity)

Notes

Calculations are based on 8th edition of ACCA Manual J.
 All computed results are estimates as building use and weather may vary.
 Be sure to select a unit that meets both sensible and latent loads.

Load Preview Report

Scope	Has AED	Net Ton	Rec Ton	ft. ² /Ton	Area	Sens Gain	Lat Gain	Net Gain	Sens Loss	Sys Htg CFM	Sys Clg CFM	Sys Act CFM	Duct Size
Building		4.01	5.11	1,017	5,200	46,007	2,103	48,111	50,537	660	2,102	2,102	
System 1	Yes	2.27	2.89	1,282	3,700	25,965	1,250	27,215	27,915	364	1,187	1,187	12x17
Zone 1					1,850	0	0	0	5,970	78	0	0	
1-Basement					1,850	0	0	0	5,970	78	0	0	0-0
Zone 2					1,850	27,972	1,250	29,222	21,945	287	1,278	1,278	12x18
2-First Floor					1,850	27,972	1,250	29,222	21,945	287	1,278	1,278	12-6
System 2	Yes	1.74	2.23	674	1,500	20,042	853	20,896	22,622	295	916	916	10x17
Duct Latent							482	482					
Zone 1					1,500	20,042	371	20,413	22,622	295	916	916	10x17
3-Second Floor					1,500	20,042	371	20,413	22,622	295	916	916	8-6
Sum of room airflows may be greater than system airflow because system has multiple zones.													

Detailed Room Loads - Room 1 - Basement (Peak Fenestration Gain Procedure)

General

Room is in zone 1, which peaks at 7 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	50.0 ft.	System Number:	1
Room Width:	37.0 ft.	Zone Number:	1
Area:	1,850.0 sq.ft.	Supply Air:	0 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	0.0 AC/hr
Volume:	14,800.0 cu.ft.	Required Vent.:	0 CFM
Number of Registers:	0	Actual Winter Vent.:	0 CFM
Runout Air:	0 CFM	Percent of Supply.:	0 %
Runout Duct Size:	0 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	0 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	0 ft./min.	Actual Winter Infil.:	0 CFM
Actual Loss:	0.000 in.wg./100 ft.	Actual Summer Infil.:	0 CFM

Item Description	Area Quantity	-U Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
E -Wall-15A19-0fcw-8 50 X 8	400	0.037	2.5	992	0.0	0	0
N -Wall-15A21-0ocw-8 37 X 8	296	0.039	2.6	773	0.0	0	0
W -Wall-15A19-0fcw-8 50 X 8	400	0.037	2.5	992	0.0	0	0
S -Wall-15A19-0fcw-8 37 X 8	296	0.037	2.5	734	0.0	0	0
Floor-21A-32 37 X 50	1850	0.020	1.3	2,479	0.0	0	0
Subtotals for Structure:				5,970		0	0
Infil.: Win.: 0.0, Sum.: 0.0	0		0	0	0	0	0
Room Totals:				5,970		0	0

Detailed Room Loads - Room 2 - First Floor (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	50.0 ft.	System Number:	1
Room Width:	37.0 ft.	Zone Number:	2
Area:	1,850.0 sq.ft.	Supply Air:	1,278 CFM
Ceiling Height:	9.0 ft.	Supply Air Changes:	4.6 AC/hr
Volume:	16,650.0 cu.ft.	Required Vent.:	0 CFM
Number of Registers:	12	Actual Winter Vent.:	0 CFM
Runout Air:	0 CFM	Percent of Supply:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	543 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	543 ft./min.	Actual Winter Infil.:	39 CFM
Actual Loss:	0.187 in.wg./100 ft.	Actual Summer Infil.:	19 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
E -Wall-12F-0sw 50 X 9	304	0.065	4.4	1,324	1.3	0	401
N -Wall-12F-0sw 37 X 9	312	0.065	4.4	1,359	1.3	0	412
W -Wall-12F-0sw 50 X 9	304	0.065	4.4	1,324	1.3	0	401
S -Wall-12F-0sw 37 X 9	291	0.065	4.4	1,267	1.3	0	384
S -Door-11J 6 X 7	42	0.600	40.2	1,688	18.6	0	781
N -Door-11J 3 X 7	21	0.600	40.2	844	18.6	0	391
E -Gls-2A-w-o shgc-0.61 0%S	146	0.550	36.9	5,380	43.7	0	6,377
W -Gls-2A-w-o shgc-0.61 0%S	146	0.550	36.9	5,380	107.4	0	15,686
UP-Ceil-16A-44 20 X 18	360	0.022	1.5	531	1.7	0	594
Subtotals for Structure:				19,097		0	25,427
Infil.: Win.: 38.9, Sum.: 19.4	1,566		1.819	2,848	0.271	450	425
People: 200 lat/per, 230 sen/per:	4					800	920
Equipment:						0	1,200
Room Totals:				21,945		1,250	27,972

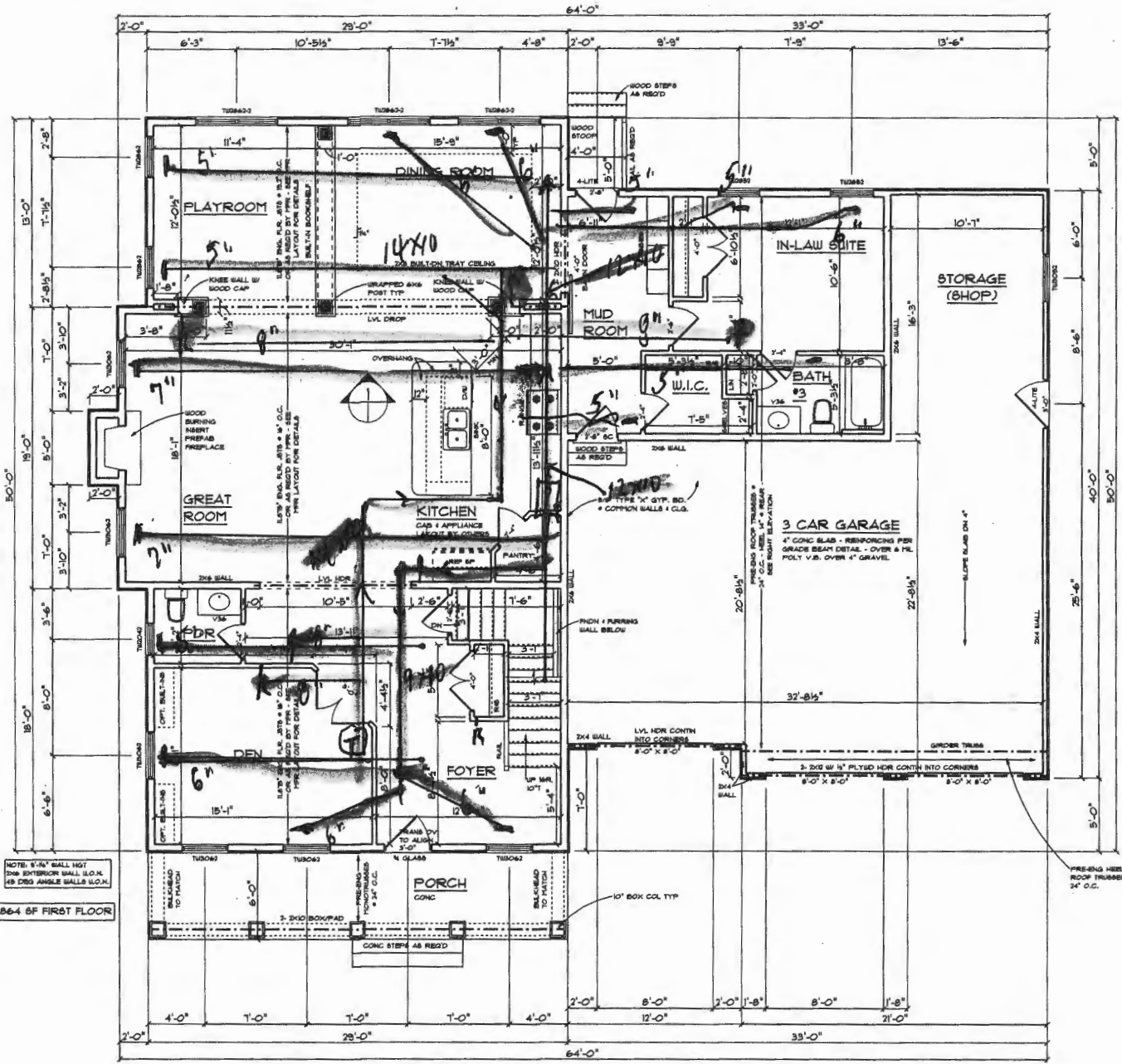
Detailed Room Loads - Room 3 - Second Floor (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	50.0 ft.	System Number:	2
Room Width:	30.0 ft.	Zone Number:	1
Area:	1,500.0 sq.ft.	Supply Air:	916 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	4.6 AC/hr
Volume:	12,000.0 cu.ft.	Required Vent.:	0 CFM
Number of Registers:	8	Actual Winter Vent.:	0 CFM
Runout Air:	0 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	583 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	583 ft./min.	Actual Winter Infil.:	32 CFM
Actual Loss:	0.216 in.wg./100 ft.	Actual Summer Infil.:	16 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
E -Wall-12F-0sw 50 X 8	322	0.065	4.4	1,402	1.3	0	425
N -Wall-12F-0sw 30 X 8	240	0.065	4.4	1,045	1.3	0	317
W -Wall-12F-0sw 50 X 8	321	0.065	4.4	1,398	1.3	0	424
S -Wall-12F-0sw 30 X 8	240	0.065	4.4	1,045	1.3	0	317
E -Gls-2A-w-o shgc-0.61 0%S	78	0.550	36.9	2,874	68.7	0	5,357
W -Gls-2A-w-o shgc-0.61 0%S	79	0.550	36.9	2,911	68.7	0	5,426
UP-Ceil-16A-44 50 X 30	1500	0.022	1.5	2,211	1.7	0	2,475
Subtotals for Structure:				12,886		0	14,741
Infil.: Win.: 32.0, Sum.: 16.0	1,280		1.833	2,346	0.273	371	350
Ductwork:				7,390			4,951
Room Totals:				22,622		371	20,042

MP9000150



Watervale Heating & A.C.
 Joseph Opatyke #7629
 Joseph Opatyke
 1386 Driver Rd.
 Marriottsville, Md. 21104

3-TON
 WATER FURNACE
 ND2038

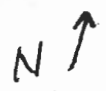
APPROX. 1864 SF FIRST FLOOR

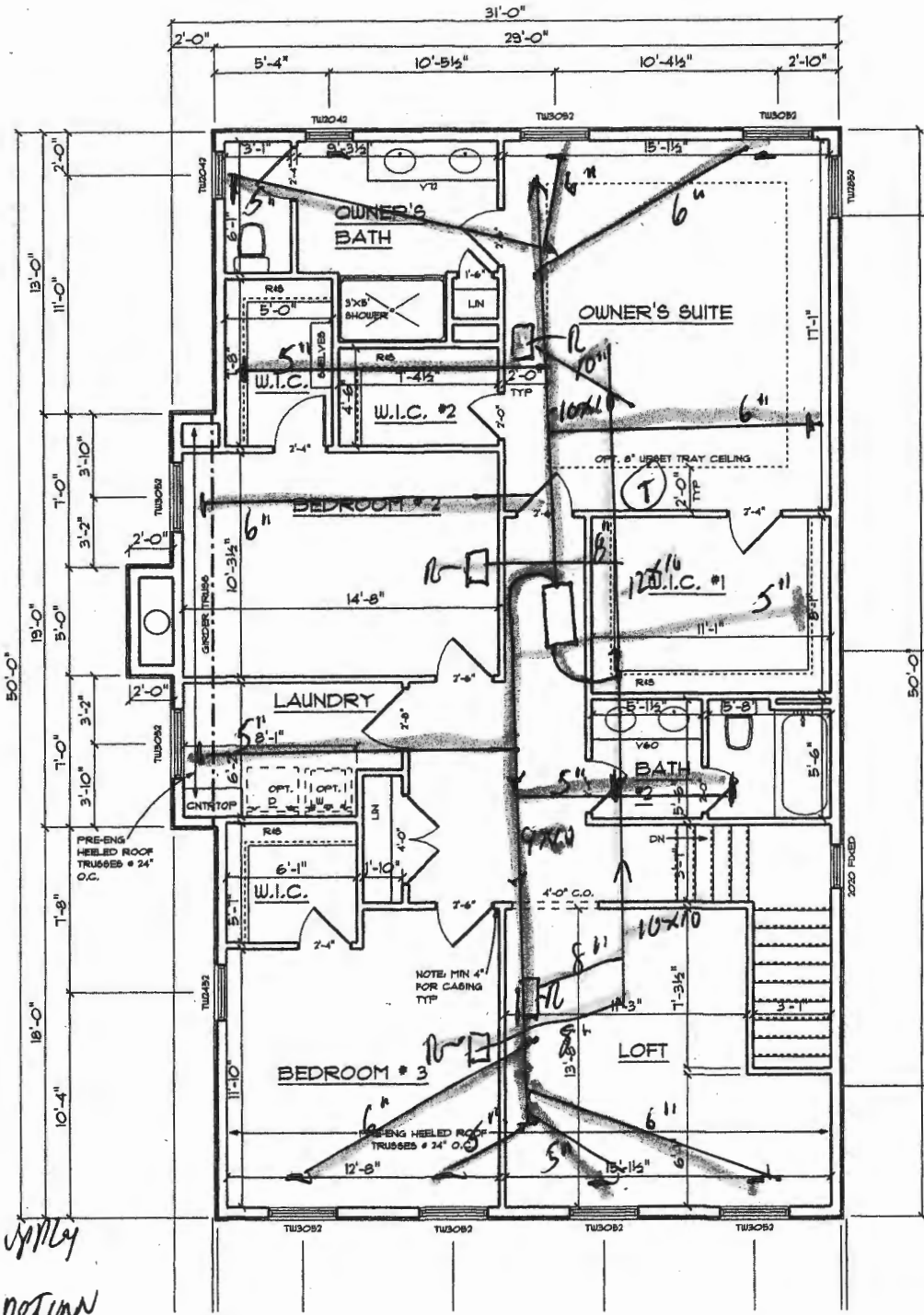
First Floor Plan

SCALE: 1/8" = 1'-0"

Ferguson Residence

SUPPLY
 RETURN





Prots insulated
to min R-8

2-TFM
water finish
ND2026

Supply
Return

NOTE: 6'-6" WALL HGT
2x6 EXTERIOR WALL U.O.N.
45 DEG ANGLE WALLS U.O.N.

APPROX. 1486 SF BECON