

CONSULTANTS:
CONSTRUCTION MANAGER:
BRUSS CONSTRUCTION INC.
MICHAEL BRUSS
PO BOX 456
BRADFORD, NH 03221
T: 603 938 2069 F: 603 9

TIMBERFRAME DESIGN:
PARADIGM BUILDERS
ED LEVIN
5 CROWLEY TERRACE
HANOVER, NH 03755
T: 603 643 2002

PORTSMOUTH ST NCORD, NH 03301 603 224 9945 F: 603

ONMENTAL/LEED: LEVEILLE

938 2621

ELECTRICAL:

DUFRESNE—HENRY ENGINEERING CORP.

54 ROUTE 106 PO BOX 157

NO. SPRINGFIELD, VT 05150

T: 802 886 2261 F: 802 886 2260

MECHANICAL:
PETERSEN ENGINEERING
JAMES PETERSEN
ANDY ARSENAULT
BEN GOSS
PO BOX 4774
PORTSMOUTH, NH 03802
T: 603 436 4233 F: 603 436 4294

THE CARRIAGE HOUSE
6 SOUTH PARK STREET
LEBANON, NH 03766
T: 603 448 3778
F: 603 443 5555

HITEC

9. REFERENCE STANDARDS AND INDUSTRY SPECIFICATIONS
ANY MATERIAL OR OPERATION SPECIFIED BY REFERENCE TO PUBLISHED SPECIFICATIONS OF A MANUFACTURER, SOCIETY, ASSOCIATION, CODE OR OTHER PUBLISHED STANDARD, SHALL COMPLY WITH REQUIREMENTS OF THE LISTED DOCUMENT. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF STATE, LOCAL AND OTHER CODES WHICH APPLY TO THIS PROJECT OR HAVE JURISDICTION.
2000 INTERNATIONAL PLUMBING CODE (IPC).
2000 INTERNATIONAL PLUMBING CODE (IPC).
2002 NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS.
4 MAERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
4 MAERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
5 MATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
5 MAERICAN SOCIETY OF TESTING MATERIALS (ASTM).
5 MAERICAN SOCIETY OF TESTING MATERIALS (ASTM).
5 MAERICAN SOCIETY OF TESTING MATERIALS (ASTO).
5 MAERICAN SOCIETY OF TESTING MATERIALS (ASTO).
5 MAERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE).
5 MAERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE). THE DRAWINGS SHOW APPROXIMATE LOCATION OF EQUIPMENT, DUCTS AND PIPES. THE EXACT LOCATION SHALL BE DETERMINED BASED ON FIELD CONDITIONS.

EQUIPMENT, DUCT WORK AND PIPING SHALL FIT INTO THE SPACES SHOWN ON THE DRAWINGS ALLOWING FOR ACCEPTABLE CLEARANCES FOR INSTALLATION, REPLACEMENT MAINTENANCE. IT IS NOT INTENDED THAT THE DRAWINGS SHOW IN DETAIL EVERY FITTING, DEVICE, ETC. ALL MATERIAL NECESSARY TO SATISFY REGULATIONS, THE BEST PRACTICES OF THE TRADE AND TO THE COMPLETE SATISFACTION OF THE ENGINEER SHALL BE FURNISHED WITHOUT ADDITIONAL RECOMPENSE.

AUTOCAD RECORD DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AT THE COMPLETION OF THE PROJECT SHOWING THE AS—BUILT ARRANGEMENT OF THE SYSTEMS. THE ENGINEER'S AUTOCAD FILES WILL BE PROVIDED AT NO COST TO THE CONTRACTOR. 10. WORKMANSHIP ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER, BY EXPERIENCED MECHANICS OF THE TRADE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND THE MOST MODERN TRADE PRACTICE AND SHALL PRESENT A NEAT APPEARANCE. 8. GUARANTEE
THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE (1) YEAR AFTER SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL REPAIR OR CORRECT
WORK WITHIN TEN (10) DAYS OF WRITTEN NOTIFICATION. IF THE CONTRACTOR DOES NOT COMPLY, THE OWNER MAY HAVE THE WORK CORRECTED AND CHARGE ALL SUCH
THE CONTRACTOR. STORAGE OF MATERIALS
THE CONTRACTOR SHALL COORDINATE STORAGE OF HIS MATERIALS AND EQUIPMENT WITH THE GENERAL CONTRACTOR AND SHALL BE RESPONSIBLE FOR ALL LOSS AND COMPONENTS CAN ELECTRICAL SUPP (BY OTHERS) GFX S4-60 DRAIN HEAT RECOVERY (DHR) UNITS SYMMONS 5-120 THERMIXER VALVE 为" WILKINS 875A DCW 2 OW SCHEMATIC WATER STORAGE TANK DHW-I DOMESTIC HOT WATER TANK Z, **(b)** <del>-</del>Q-1¼" HWS-BOILER-TO BURNBACK SAFETY SYSTEM <u>–</u>

\*

15' MIN.

T

Petersen Engineering, Inc.

×%,

T&P VALVE

FLOOR DRAIN

ξ

PLAN

5. OPERATION AND MAINTENANCE MANUALS AND INSTRUCTIONS
PRIOR TO SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL PROVIDE THREE (3) BOUND COPIES OF PRINTED OPERATIONS INSTRUCTIONS
NFORMATION FOR EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS CONTRACT, INCLUDING PREVENTATIVE MAINTENANCE PROCEDURES.

CONTROL SEQUENCES:

16. INSULATION
OUTSIDE AIR PLENUMS & DUCTS FROM THE PLENUM TO ERV-1 AND EXHAUST AIR PLENUMS & DUCTS FROM THE PLENUM TO 2 FEET BEFORE THE CONTROL DAMPERS SHALL BE INSULATED WITH 1-1/2" FIBERGLASS BLANKET OR BOARD WITH FSK JACKET. HEATING HOT WATER PIPING SHALL BE INSULATED WITH 1-1/2" TYPE I, PREFORMED FIBERGLASS INSULATION WITH ALL SERVICE JACKET. PEX TUBING DOES NOT REQUIRE INSULATION. INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS AS TESTED IN ACCORDANCE WITH ASTM E 84.

17. CONTROLS

THE BUILDING CONTROLS SHALL BE DIRECT DIGITAL CONTROLS (DDC) WITH GRAPHIC FLOOR PLANS. LOAD SOFTWARE ONTO THE OWNER'S COMPUTER. THE CONTROL SYSTEM MUST BE FULLY ACCESSIBLE THROUGH THE INTERNET (PASSWORD PROTECTED) AND ALARMS MUST BE SENT TO A LIST OF EMAIL ADDRESSES SINCE THE BUILDING WILL BE UNOCCUPIED FOR EXTENDED PERIODS.

REFER TO THE SEQUENCES OF OPERATION FOR ADDITIONAL INFORMATION.

19. EQUIPMENT SCHEDULED EQUIPMENT IS BASIS OF DESIGN. ALTERNATE MANUFACTURERS WILL BE CONSIDERED, BUT MUST BE EQUAL

18. BALANCING
BALANCE AIR AND WATER SYSTEMS TO QUANTITIES SHOWN ON THE DRAWINGS.

PROVIDE SIX (6) BALANCE REPORTS ON CONTRACTOR'S STANDARD FORMS

(AS DETERMINED BY PETERSEN ENGINEERING)

15. HVAC

DUCTWORK SHALL BE G-90 GALVINIZED SHEETMETAL INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. DUCT CONSTRUCTION SHALL BE 2" PRESSURE CLASS WITH CLASS C SEALING (TRANSVERSE JOINTS). FLEXIBLE DUCT (INSULATED FOR SUPPLY DUCTS) SHALL BE LIMITED TO THREE (3) FEET MAXIMUM, INSTALLED STRAIGHT. ALL CHANGES IN DIRECTION SHALL BE MADE WITH LONG RADIUS SHEETMETAL ELBOWS.

HEATING HOT WATER PIPING SHALL BE ASTM B 88, TYPE L, DRAWN TEMPER COPPER WITH ASTM B 32 LEAD-FREE-ALLOY SOLDER JOINTS OR PEX TUBING, ASTM F 876 AND F 877.

11. SITE INSPECTION
BEFORE BEGINNING WORK, THE CONTRACTOR SHALL INSPECT THE SITE AND SURVEY THE CONDITIONS TO BE ENCOUNTERED IN THE PERFORMANCE OF FAILURE TO FAMILIARIZE HIMSELF WITH THE CONDITIONS SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR FULL COMPLETION OF THE WORK IN THESE DOCUMENTS.

12. COORDINATION
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THEIR WORK WITH ALL OTHER TRADES SUCH THAT ALL BUILDING SYSTEMS AND ASSEMBLED WITHOUT CONFLICT AND IN CONFORMANCE WITH ALL CONSTRUCTION DOCUMENTATION, INCLUDING THOSE OF OTHER TRADES.

13. DISCREPANCIES AND CLARIFICATIONS
IN THE EVENT OF A DISCOVERED DISCREPANCY OR AMBIGUITY, IT SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IN CONTRACTOR SHALL NOT PROCEED WITH RELATED WORK WITHOUT A WRITTEN RESOLUTION CLARIFICATION FROM THE ARCHITECT.

WRITING AND

IN A TIMELY

14. ON-SITE SUPERVISION THE CONTRACTOR SHALL MAINTAIN ON-SITE SUPERVISION OF HIS OWN WORK FORCE AND HIS SUB-SUBCONTRACTORS.

A THE TEMPERATURE OF THE DOMESTIC WATER HEATING SHALL BE PROVIDED BY RENEWABLE ENERGY SOURCES TO THE GREATEST EXTENT POSSIBLE.

A THE TEMPERATURE OF THE DOMESTIC HOT WATER TANK (DHW-1) SHALL BE MANITANED BETWEEN A MINIMUM TEMPERATURE OF 120°F AND A MAXIMUM TEMPERATURE OF 200°F.

B. THE TEMPERATURE OF THE MATER STORAGE TANK (WST-1) SHALL BE MANITANED BETWEEN A MINIMUM TEMPERATURE OF 110°F AND A MAXIMUM TEMPERATURE OF 200°F.

C. DOMESTIC HOT WATER HEATING STORAGE TANK (WST-1) SHALL BE MANITANED BETWEEN A MINIMUM TEMPERATURE OF 110°F AND A MAXIMUM TEMPERATURE OF 200°F.

I. IF THERE IS EXCESS RENEWABLE ELECTRICAL ENERGY MANIJABLE AND ETHER DWH-1 OR WST-1 ARE BELOW THEIR MAXIMUM TEMPERATURE, PROVIDE POWER TO THE TANK NEEDING HEAT.

II. IF THERE IS EXCESS RENEWABLE ELECTRICAL ENERGY MANIJABLE AND ETHER DWH-1 OR WST-1 ARE BELOW THEIR MAXIMUM TEMPERATURE, PROVIDE POWER TO THE TANK NEEDING HEAT.

II. IF THERE IS EXCESS RENEWABLE ELECTRICAL ENERGY MANIJABLE AND ETHER DWH-1 OR WST-1 ARE BELOW THEIR MAXIMUM TEMPERATURE, PROVIDE POWER TO THE TANK NEEDING HEAT.

II. IF THERE IS EXCESS RENEWABLE ELECTRICAL ENERGY MANIJABLE AND ETHER DWH-1 OR WST-1 ARE BELOW THEIR MAXIMUM TEMPERATURE, PROVIDE POWER TO THE TANK NEEDING HEAT.

II. IF THERE IS EXCESS RENEWABLE ELECTRICAL ENERGY MANIJABLE AND ETHER DWH-1 OR WST-1 ARE BELOW THEIR MAXIMUM TEMPERATURE, PROVIDE POWER TO THE TANK NEEDING HEAT.

II. IF THERE IS EXCESS RENEWABLE ENERGY SHALL BE DIED TO SHALL BE DIED TO SHALL BE DIED TO WST-1 ARE BELOW THEIR MAXIMUM TEMPERATURE, ENERGZE THE HEAT TO THE TANK NEEDING HEAT TO THE TANK NEEDING HEAT.

II. IF THERE IS EXCESS RENEWABLE ENERGY SHALL BE DIED TO SH

RECOVERY VENTILATOR (ERV-1) SHALL BE OPERATED BY A MANUAL WALL SWITCH AND SHALL RUN WHEN THE HOUSE IS OCCUPIED. IS OPERATING, DAMPERS D-3 & D-4 SHALL BE CLOSED

CONSTRUCTION DOCUMENTS

GREEN WOODLANDS HOUSE/BARN PROJECT

MECHANICAL FLOW SCHEMATIC SPECIFICATIONS, CONTROL SEQUENCES, & LEGEND

570 DATE: