POLICY FOR EXPERIMENTAL PERMITS
July 13, 1993

The following policy, adopted this day by the Board of Taos County Commission, will be the **MINIMUM REQUIREMENTS** for permitting and issuance of the Certificate of Occupancy by Taos County Planning Department for an experimental single-family residential (R-3) permit.

Applicants for experimental building permits under Section 105 of the New Mexico Building Code must meet all other code, regulatory, and inspection requirements but for the specific element being allowed as an alternate method or material. Applicants recognize no exception based on life safety, fire safety or unsafe conditions is authorized or granted by the Department's issuance of a permit for, or inspection of, an alternate method or material. Likewise, issuance of a permit and inspection by the Taos County Planning Department **DOES NOT IMPLY** that and alternate method's or material's strength, suitability, effectiveness or durability is recognized by the Division.

MINIMUM REQUIREMENTS:

1. Permit applications and plans must clearly be labeled "**EXPERIMENTAL**".

2. All sheets of all drawings must be stamped by a licensed New Mexico Structural Engineer and / or Architect.

3. Prior to the issuance of a Certificate of Occupancy by the Taos County Planning Department, an inspection report must be provides by the Structural Engineer or Architect attesting to the building's structural integrity and that construction conforms with the permitted drawings.

4. When requesting an experimental permit, applicants must provide a written statement bearing the stamp of the County Clerk and showing the book and page number of filing with the County Clerk of the county in which the property is located reflecting that non-code-approved alternate methods or materials will be used, stating the specific type.

5. The Planning Department **MAY REQUIRE ADDITIONAL TESTS OR SUBSTANTIATION** as it does necessary in accordance with Section 107 of the New Mexico Building Code.

PERMIT APPLICANT:_____DATE:_____

_____
Date

Taos County Planning Department
105 Albright Street
Suite C.
Taos, NM 87571

Attn: Building Permit Section

To whom it may concern:

I/We recognize that the structure that I and/we are building/buying that has been designed by a licensed architect or engineer does not comply with the New Mexico Building Code and that, as a condition of owning and/or living in such structure, I/We waive and all claims against Taos County or any of its agencies, entitles or employees, for any reason arising out of any incident, injury or loss to myself/ourselves or anyone else arising out of my/our ownership and/or occupancy of such structure.

I/We further agree that should I/We sell, rent or permit anyone to visit, live in or occupy this structure, that I/We will advise such person (s) of the se conditions of waiver of liability to build/own/lease this structure.

Owner's Signature _____

State of New Mexico
County of _____
Sworn to before me this _____day of
_____, 19_____.
By_____

_____
Notary Public
My commission expires_____

GUIDELINES
FOR RESIDENTIAL
NON-LOAD-BEARING STRAW BALE CONSTRUCTION

SECTION 1. GENERAL

A. Straw bales shall not be used to support the weight of the building, beyond the weight of the bales themselves. The bales will be acting as wall in-fill between the structural members.

B. The structural support of the building shall be designed according to the provisions of the Uniform Building Code (UBC). All loadings shall be as required by Chapter 23 of the UBC for vertical and lateral loads.

C. For the purposes of placement of perimeter foundation insulation, straw bales shall not overhand the bearing surface by mote than a total of four inches (4"). Straw bale walls shall have an exterior and interior finish that will protect the in-fill bales from wind, moisture and pests.

D. The maximum height of a straw bale in-fill wall shall be twelve feet (12') and the maximum length of an unbuttressed in-fill wall panel shall be twenty feet (20').

E. The following codes, copies of which are on file at the Taos County Planning Department, are the minimum requirements.

a. Uniform Building Code (UBC)
b. Uniform Mechanical Code (ICBO)
c. Uniform Plumbing Code (IAPMO)
d. National Electric Code (NFPA)
e. State of New Mexico Electric Code
f. LP Gas Code
g. ANSI
h. Current Energy Conservation Code
i. New Mexico Building Code and any additional codes and standards as may be adopted by the Taos County Planning Department.

NOTE: The current edition of the above codes adopted in New Mexico with applicable New Mexico changes shall apply.

SECTION 2. STRAW BALE CONSTRUCTION STANDARDS.

A. DEFINITIONS

1. **IN-FILL**: Straw bales shall be places within the structural members so as not to carry any weight other than the weight of the bales themselves.

2. **LAID FLAT**: Refers to the stacking of the bales such that the longest edge of the bale is parallel to the wall plane and so the greatest cross sectional area of the bale is horizontal. The resulting wall shall be at least 18" thick.

3. **STRAW**: The stalk or stem of grain from wheat, rye, oats, rice or barley left after threshing or when the seed head has been removed.

4. **STRAW BALE**: A rectangular compressed block of straw bound with polypropylene twine or bailing wire in a minimum of two places with the twine running parallel to the longest side.

5. **UBUTTRESED**: A section of in-fill wall without a perpendicular wall, column or other lateral support.

B. STRAW BALE SPECIFICATIONS

Bales shall be composed of straw, mechanically baled within baling wire or polypropylene twine. Bales must be sufficiently dry with a maximum moisture content of twenty percent (20%) at the time of installation. Bales shall have a minimum of two strings running parallel to the longest edge and shall be dense enough to be handled without coming apart and to resist settling. If a partial bale is required, it should be split from a full bale and retied to maintain the original compression of the bale.

All bales shall be field tested for compression before placement in walls when lifted into position. Bales shall be of sufficient compression to remain intact when lifted by one bailing wire ore polypropylene twine.

C. WALL CONSTRUCTION

Straw bales shall not be used below grade. The foundation shall be constructed so that the bottom of the lowest course of straw bales is at least six inches (6") above final exterior grade. Straw bales use for in-fill walls should be laid flat with the vertical joints staggered at each course with a minimum overlap of twelve inches (12"). Vertical joints shall be field tested during placement of bales in the wall. Joints shall be sufficiently tight to prevent the end of a nominally dimensioned one by four inch (1"x 4") board two feet long with being pushed more than six inches (6") into the joint.

D. VAPOR BARRIERS

A moisture barrier shall be placed between the foundation and the first course of straw bale. The barrier shall run vertically between the perimeter insulation and the foundation wall and shall run horizontally under the straw bale and then double back to the outside edge of the foundation.

A vapor barrier shall be placed over the top course of bales to prevent moisture entering the top of the wall of bales.

E. REINFORCING

The bottom course of straw bales shall be pinned to the foundation with #4 rebar with a minimum of two pins per bale. These pins should be embedded into the foundation to a depth of not less than seven inches (7") and should continue vertically halfway into the second course of bales.

Each subsequent course of bales shall have two rebar pins per bale: continuous from second course to one course below bond beam. Where rebar cannot be continuous, it should overlap other rebar by one course.

All rebar should be approximately nine inches (9") from the bale ends and centered on the width of the bale.

A continuous horizontal ladder reinforcing shall be placed horizontally between courses at mid-wall height and shall be fastened twice per bale to the twine or wire.

F. ANCHORS

The straw bale in-fill walls shall be securely anchored to all adjacent structural members to sufficiently resist horizontal displacement of the wall.

Anchors shall be placed at every horizontal joint or one per bale along vertical structure and a maximum of twenty four inches (24") on center along horizontal structures at the top of straw bale walls beginning not more than twelve inches (12") from each end of the wall.

Anchors shall be metal strips or dowels. Metal strips shall be 6" wide expanded metal lath or FHA perforated metal strips which shall be securely fastened to the vertical structural members and shall extend at least 12" onto the adjacent bale and shall be pinned into the bale. Dowels shall be _" minimum diameter wood or steel and shall extend into the bale at least 6".

G. OPENINGS

Rough bucks and/or door and window frames shall be stabilized with _" diameter x 12" wood dowels extended into every adjacent bale or by means of a continuous metal lath, prior to the application of plaster or stucco.

H. STUCCO/PLASTER

Straw bales shall be stuccoed or plastered. Building paper shall not be used a moisture barrier on vertical surfaces of straw bales in order to allow natural transpiration of moisture from the bales. Where stucco netting is not used, the first coat of plaster or stucco shall be thoroughly worked into the straw.

At all points where the straw bales are butted against a different material (wood, concrete, steel, etc.) metal lath shall be used to cover the junction. Expanded metal lath shall extend a minimum of six inches (6") over the edge of the straw bale and shall be securely fastened to the bale.

Metal lath (wire mesh) shall be used pursuant to Chapter 47 of the Uniform Building Code and wire mesh shall be a minimum of 17 gauge by one and one-half inch (1 _") opening and shall be securely attached to the exterior wall surface. Mesh fasteners shall have a maximum spacing of sixteen inches (16") from each other. Alternative plastering systems shall be submitted for approval by the building official.

I. PARAPETS

Straw bales may be used for parapets with a maximum height of (2) courses. These bales shall be pinned together vertically with rebar and have a continuous wrap with stucco netting; up front, over the top and down the backside. A continuous seal shall be maintained from the roof surface to the top of the parapet and down the other side a minimum of to inches (2") and a maximum of six inches (6").

J. ELECTRICAL

All wiring within bales shall be Type UF and shall meet all provisions of the National Electrical Code 1993.

All wiring within bales may be pressed between vertical and horizontal joints of the bales, or bales may be channeled, maintaining a minimum depth of 1 _" from the surface of the interior wall finish.

All junction boxes shall be fastened securely. All other aspects of electrical wiring, methods and materials shall conform to existing national and state codes.

K. PLUMBING

All plumbing shall meet all provisions of the Uniform Plumbing Code, 1991 Edition.