Housing Farm Laborers

By

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The migratory habits of the labor classes, including farm laborers, have made these people more and more conscious of higher living standards enjoyed by workers in more favored areas. This definitely applies to housing facilities and accommodations. Employers of labor in industry are rapidly learning that comfort adds to the contentment and efficiency of workers, and definite steps have been taken to provide better living conditions for workers in industrial areas. Farmers, too, are finding that better living conditions attract a better class of farm laborers and contribute to the solution of farm labor problems.

The rapid displacement of the early tourist camp by the modern auto court and motel illustrates the competitive advantages of comfortable living conditions. The rough shell of a cabin that barely provided shelter from wind and rain is no longer considered adequate even for the traveler who plans to stay only one day. The proprietor who offers such accommodations soon goes out of business, while the one who provides more comfortable conditions prospers.

During the present emergency, building is necessarily very limited, but improvement in housing is important to the farm labor problem, so this bulletin is written to offer suggestions and plans for standards of housing and sanitation for farm laborers. Plans for family homes for year around workers and for tenants are not included since war time building restrictions will not permit building on as large a scale as that. Only two plans are given: (1) a bunk house and (2) a bath house. These are both of simple construction and of low cost. The separate bath house is suggested because it will be cheaper and easier to build one bath house large enough to provide bathing and laundry facilities for the whole crew rather than to put a bath in each cabin or bunk house.
Bunk House

Figures 1 and 2 show the plan and construction details of a small bunk house large enough to accommodate four workers. In an emergency, an additional double bunk can be added. It is a small one-room frame building, built of rustic or of 8-inch drop siding, with the inside finished with ¼-inch celotex utility board. The bill of materials is given below. The prices were quoted by a local lumber dealer.

Figure 1

Figure 2
HOUSING FARM LABORERS

Bill of Materials for Bunk House

<table>
<thead>
<tr>
<th>Material</th>
<th>Amount</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation</td>
<td>Approximately 70 ft³ of concrete</td>
<td>$17.60</td>
</tr>
<tr>
<td>Cement</td>
<td>16 sacks</td>
<td>$8.00</td>
</tr>
<tr>
<td>Gravel</td>
<td>4 cubic yards</td>
<td></td>
</tr>
<tr>
<td>Lumber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sills</td>
<td>4 pcs. 2 in. x 6 in. - 16 ft.</td>
<td>64 bd. ft.</td>
</tr>
<tr>
<td>Headers</td>
<td>2 pcs. 2 in. x 6 in. - 14 ft.</td>
<td>28 bd. ft.</td>
</tr>
<tr>
<td>Joists—floor</td>
<td>11 pcs. 2 in. x 16 in. - 14 ft.</td>
<td>154 bd. ft.</td>
</tr>
<tr>
<td>Studding</td>
<td>24 pcs. 2 in. x 4 in. - 14 ft.</td>
<td>223 bd. ft.</td>
</tr>
<tr>
<td>Rafters</td>
<td>6 pcs. 2 in. x 4 in. - 16 ft.</td>
<td>64 bd. ft.</td>
</tr>
<tr>
<td>Collar beams</td>
<td>20 pcs. 2 in. x 6 in. - 10 ft.</td>
<td>200 bd. ft.</td>
</tr>
<tr>
<td>Sheathing walls</td>
<td>(Ship lap)</td>
<td>400 bd. ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>320 bd. ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>190 bd. ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>910 bd. ft @ $50 per M</td>
</tr>
<tr>
<td>Trim</td>
<td>1 in. x 4 in.</td>
<td>180 lin. ft.</td>
</tr>
<tr>
<td>Siding</td>
<td>8 in. drop siding or rustic, 450 bd. ft @ $50 per M</td>
<td>22.50</td>
</tr>
<tr>
<td>(instead of 12 in. beveled siding as shown)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flooring</td>
<td>1 in. x 4 in. vert. grain fir, 250 bd. ft. @ $50 per M</td>
<td>12.50</td>
</tr>
<tr>
<td>Wall board</td>
<td>¾ in. celotex utility, 600 sq. ft. @ $40 per M</td>
<td>24.00</td>
</tr>
<tr>
<td>Roofing</td>
<td>3 rolls, 320 sq. ft. @ $3.65</td>
<td>11.70</td>
</tr>
<tr>
<td>Building paper</td>
<td>2 rolls tar paper, @ $3.40</td>
<td>6.80</td>
</tr>
<tr>
<td>Door</td>
<td>1 2'-8&quot; x 6'-8&quot; x 1½ in.</td>
<td>4.70</td>
</tr>
<tr>
<td>Windows</td>
<td>2 26 in. x 30 in. (2 light) @ $4.35</td>
<td>8.70</td>
</tr>
<tr>
<td>Nails</td>
<td>50 lbs. @ $0.07</td>
<td>3.50</td>
</tr>
<tr>
<td>Paint</td>
<td>1½ gallons @ $3.25</td>
<td>4.90</td>
</tr>
<tr>
<td>Hardware</td>
<td>Lock and hinges ($1.45) and miscellaneous</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$217.30</td>
</tr>
</tbody>
</table>

Since the construction is simple, it can be built by the farmer or by a local carpenter. It should be located a reasonable distance from the farm house on a well-drained site and protected from the sun and storms by trees and shrubbery. This also adds to the attractiveness of it. Blueprints of this bunk house can be obtained from the Montana State College Agricultural Extension Service at Bozeman for 20 cents per set.

Bath House

Figures 3, 4, and 5 show plans and construction details for a bath house adapted to the needs of a crew of laborers. Bathing and laundry facilities are a definite necessity for farm workers. One of the principal difficulties is to provide hot water for both bathing and laundry. Many farms do not have a pressure water...
system, therefore, to provide hot and cold running water is a problem. Two alternate plans of providing hot water are suggested in figures 3 and 4. In the summer time warm water for bathing may be had by using sun as a source of heat. This is shown in figure 3. A 55-gallon barrel is set on a platform on the roof of
the building and supplies a shower head directly underneath. The barrel can be filled with a force pump or with buckets. Where a windmill is used to pump water, the barrel may be connected directly to the pump.

An optional plan for use during the cooler months is shown in figure 4. This shows a storage tank placed in the attic and connected to the water jacket of a small laundry stove and to a hot water storage tank. The necessary piping is shown. To provide bathing facilities for larger crews of 12 to 15 men, the plan shown in figure 5 is suggested. With this plan, a larger heating stove and hot water storage tank are needed. It is recommended that a shower be allowed for each three men with a minimum of 1 for 5 men. A bill of materials for the plan shown in figure 3 is given below. The estimated cost of materials is $174.05.
Minimum Standards for Farm Housing and Sanitation

Bill of Materials for Bath House

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation</td>
<td>Shower floor</td>
<td>78 cubic feet</td>
<td>$18.70</td>
</tr>
<tr>
<td>Cement</td>
<td>17 sacks @ $1.10</td>
<td></td>
<td>$18.70</td>
</tr>
<tr>
<td>Gravel</td>
<td>4 cubic yards @ 2.00</td>
<td></td>
<td>8.00</td>
</tr>
<tr>
<td>Lumber</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sills</td>
<td>2 pcs. 2 in. x 6 in.</td>
<td>12 ft.</td>
<td>24 bd. ft.</td>
</tr>
<tr>
<td>Joists—floor</td>
<td>2 pcs. 2 in. x 6 in.</td>
<td>10 ft.</td>
<td>20 bd. ft.</td>
</tr>
<tr>
<td>Joists—ceiling</td>
<td>7 pcs. 2 in. x 8 in.</td>
<td>10 ft.</td>
<td>92 bd. ft.</td>
</tr>
<tr>
<td>Studding</td>
<td>10 pcs. 2 in. x 4 in.</td>
<td>14 ft.</td>
<td>93 bd. ft.</td>
</tr>
<tr>
<td>Rafters</td>
<td>10 pcs. 2 in. x 4 in.</td>
<td>16 ft.</td>
<td>106 bd. ft.</td>
</tr>
</tbody>
</table>

**All Western**

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sill</td>
<td>2 pcs. 2 in. x 6 in.</td>
<td>10 ft.</td>
<td>32 bd. ft.</td>
</tr>
<tr>
<td>Joist</td>
<td>7 pcs. 2 in. x 6 in.</td>
<td>10 ft.</td>
<td>70 bd. ft.</td>
</tr>
<tr>
<td>Joist</td>
<td>7 pcs. 2 in. x 8 in.</td>
<td>10 ft.</td>
<td>92 bd. ft.</td>
</tr>
<tr>
<td>Studding</td>
<td>10 pcs. 2 in. x 6 in.</td>
<td>16 ft.</td>
<td>106 bd. ft.</td>
</tr>
<tr>
<td>Rafters</td>
<td>10 pcs. 2 in. x 6 in.</td>
<td>16 ft.</td>
<td>106 bd. ft.</td>
</tr>
</tbody>
</table>

Total 543 bd. ft. @ $50 per M 27.15

Sheathing and sub-floor .................................................. 650 bd. ft. @ $50 per M 35.00
8-in. drop siding ................................................................ 300 bd. ft. @ $50 per M 15.00

Wall board 500 sq. ft. ¾ celotex utility, @ $40 per M 20.00
Roofing 2 rolls, @ $3.65 7.30
Tar paper 2 rolls, @ $3.40 6.80
Door 1 2'-8" x 6'-8", @ $4.70 4.70
Windows 2 26 in. x 30 in., @ $4.35 8.70
Nails 40 lbs., @ $0.07 2.80
Paint 1½ gallon, @ $3.25 4.90
Hardware and miscellaneous ............................................... 5.00

Showed head, pipe, floor drain, etc. .................................... 10.00

174.05

Blueprints for either of the bath house plans may be obtained from the Montana State College Extension Service at Bozeman for 10 cents per sheet.
HOUSING FARM LABORERS

*RECOMMENDED MINIMUM REQUIREMENTS FOR A FARM HOUSE*

The United States Department of Agriculture, in recommending minimum requirements for a farm house, feels that the essentials for good social and healthful living have been included.

With the constantly improving building practices and the development of new materials, resulting in reduced costs, it is hoped that this house will finally be within the reach of all rural families, and it is recommended that, at the present time, every effort possible to be made to meet these minimum requirements in farm house construction.

**Site Selection**

The site should be well drained. Where the site is part of the farm to be operated by the occupant of the house, it should be so selected that the house is suitably located in relation to farm buildings. **Where the housing is provided for families of farm laborers with year-round tenure, sufficient land should be available to grow enough food to live on.** The site should permit the safe disposal of sewage and other household wastes. The space required will vary with the region and soil conditions.

A supply of good water must be available, preferably from wells or springs providing water at all times. Wells, springs, or cisterns should be covered and so located as to preclude any possibility of pollution. For privacy and to avoid dust and noise, the house should not be closer than 50 feet to the road, and where roads are not surfaced, the house should be located beyond the dust line (usually 100 to 150 feet). Shade trees, where possible, should be taken advantage of.

**Construction Features Contributing to Comfort and Livability**

In general, the house should be substantial enough to be usable for 30 years or more without excessive maintenance. For livability and ease of care, the following details of construction should be specified:

- Floors should be tight and so finished as to permit easy cleaning.
- Walls should be tight and constructed for comfortable temperature, winter and summer. **The required construction will vary with the climate.** The inner wall surface should be durable and easily cleaned or renewed. Inner walls and ceiling should be of colors that will reflect a reasonably high percentage of light.

*Courtesy of Farm Security Administration.*
The ceiling should be insulated with a minimum of 1/2-inch insulation board or the equivalent. In warm climates there should be adequate provision for ventilation of any air space between ceiling and roof. Ceiling height should be not less than approximately 7 feet 4 inches. This is based on the use of 7-foot studding.

Except in the mildest climate a continuous foundation or curtain walls between piers should be provided where the first floor is raised above the ground. There should be screened openings which may be closed in winter in such foundation or walls, so located as to permit cross draft for summer ventilation.

The roof should be tight to water at all seasons. Windows should be glassed and all openings to the exterior, except to screened porches, should be screened.

**Space Requirements**

Space requirements depend upon the family. Minimum requirements cannot and need not be stated for all variations in family size. The following seem to be the minimum requirements for families with both boys and girls. However, the provision for a family with children of both sexes should be generally adhered to in farm housing, because the make-up of the farm family changes frequently, particularly with the coming of new tenants or farm laborers.

The arrangement for living, dining and kitchen space usually should accord with the custom of the region. All may be provided in one room under circumstances where economy is of the utmost importance, although the provision of a separate living room and kitchen with dining space provided in one or the other is much more desirable. A separate dining room is not recommended for the minimum house because of the additional cost involved.

Where dining space is provided in the living room, the total space in this room should be not less than 144 square feet. Where the kitchen is not used for dining, its size may be reduced to not less than 84 square feet. The kitchen work space should be rectangular and approximately 9 feet in width. Equipment opposite a coal or wood-burning range should not be closer than 4 feet.

Where living, dining, and kitchen space are all provided in one room, the space should be not less than 300 square feet. Where the dining space is a part of either the living room or the kitchen, the usefulness of the dining space will be increased if there is a wide opening between the two rooms.

There should be three bedrooms. Two should accommodate two double beds each, if necessary. This means a minimum of 125 square feet and proper proportion and placement of openings. One
bedroom may be smaller but should be large enough to accommodate a double bed. A bathroom or at least space for a future bathroom should be provided.

A work porch or workroom, according to the climate, should be provided with a minimum area of 48 square feet. In warm climates there should be a living porch of not less than 80 square feet area, either separate or combined with the work porch. Where a living porch is provided, the living room can be used as a sleeping room.

Storage Space

Clothes closets—every bedroom should have a minimum closet area of 3 feet by 22 inches.

One closet, at least 3 feet by 24 inches, should be near the most-used entrance for outside wraps and general storage.

A linen and bedding closet—should be at least 2 feet by 22 inches.

A cleaning closet 18 inches by 3 feet should be provided in the workroom or work porch for cleaning equipment and supplies, and some provision should be made for the storage of laundry equipment.

Kitchen Storage

There should be provided in each kitchen an enameled iron sink 16 inches by 30 inches with drain built into a cabinet with work surface to the right of this sink at least 2 feet by 3 feet and to the left at least 2 feet by 30 inches.

Below each work surface there should be a six-inch drawer and a shelf dividing the remainder of the space, this shelf being 12 inches deep. Doors should be provided to this space below, and toe space is desirable. To provide the minimum storage space for utensils and supplies, three shelves should be built above the two work surfaces and sink except as these interfere with windows. The bottom shelf should be at least 10 inches above the work surface. For reachability the third shelf should not be more than 70 inches above the floor. These shelves should be 12 inches deep except the lowest shelf above the sink, which should be only four inches deep.

Food Storage

Not less than 24 square feet of food storage floor space should be provided in or near the house. This space should be ventilated and protected from freezing or excessive heat. The floor should be braced sufficiently to support load, and the ventilator screened. The size required will vary with the food storage requirements of the area and the availability of satisfactory storage space in the outbuilding. When fruit and root vegetables must be stored in this
space a minimum of 35 square feet of floor area is desirable. The storage area should have shelves spaced to meet the need of the usual containers for the material to be stored.

Arrangement for Privacy and Convenience

There should be doors to all bedrooms, bath, or toilet rooms. Doors to closets are desirable. Sole access to any room or bath should not be through a bedroom.

Outside doors and porches should give convenient entrances from the farm driveway and the path to the barn, and wherever possible should be on the sheltered side of the house. There should be a shelter over the most-used door.

The only way from the back door to the main part of the house preferably should not lead through the kitchen work area. If the kitchen must be used as a passageway, the doors should be so arranged that the traffic crosses the work area as little as possible.

Light and Ventilation

The glazed window area of each room should be not less than 10 percent of the floor area. Window area that can be opened must be a minimum of 5 percent of the floor space. More openings are desirable in warm climates. Full length openings and additional screened openings below the windows are useful in some climates. Living room, kitchen, and bedrooms should have cross ventilation either through outside windows or doors or through another room. Cross ventilation of a bedroom should not be through another bedroom.

Electric Wiring

Where electric service is available or will probably be extended within a reasonable time, houses should be wired when built. The following outlets and switches are specified as the minimum desirable:

- Ceiling lights in kitchen, work porch, and over dining area and in living room if separate, with wall switches at front and rear doors to control the nearest ceiling light.
- Two double convenience outlets in living room and double convenience outlet in the kitchen and on the work porch.
- A bracket light in the bathroom and a bracket light with a convenience outlet in each of the bedrooms.

Heating

In addition to the kitchen stove, provision should be made for a heater of adequate size to maintain a minimum temperature of 65° at a level 3 feet 6 inches above the floor of the living room (and bathroom, if any) when the outside temperature is 10° above the minimum for the preceding 10-year period. The heater should
be so situated as to provide overflow heat to bedrooms and dressing areas. No range, ordinary stove, or furnace should be permitted within 3 feet of unprotected woodwork, or wood lath and plaster partitions. If such woodwork or partitions are covered with a sheet of metal or other fireproof material, a distance of not less than 18 inches is sufficient. Metal shields should be so attached as to preserve an air space behind them.

Chimney flue areas should be not less than that of a standard $8\frac{1}{2} \times 8\frac{1}{2}$ flue lining for flues serving a wood or coal range or a single heater. If range and heater are both to be connected to the same flue, the minimum area should be not less than that of a standard $8\frac{1}{2} \times 13$ inch flue lining. Fireplace flue area should be not less than that of a standard $8\frac{1}{2} \times 13$ inch flue lining.

**Fuel Storage**

Space should be provided convenient to the house for storing not less than 1 month's supply of fuel.

**Water Supply and Sanitation**

A potable water supply should be either piped to a kitchen sink or available from a pump adjacent to the work porch. A bathroom equipped with an indoor flush toilet, wash basin, and shower or tub should be provided if at all possible, or, at least, space should be provided for a future installation (except in areas where an inadequate supply of water makes such facilities impractical). When the bathroom is equipped, a septic tank for sanitary waste disposal is necessary. When only a kitchen sink is provided, the drain should be connected with a dry well or with underground tile for disposal. A sanitary outdoor toilet should always meet the specifications set up by the Public Health Service and State or local health authorities.

**Health and Safety**

Wells, plumbing, septic tanks, outdoor toilets, electric wiring and fixtures, chimneys, heating installations, and construction in general should comply with recognized standards of health and safety. Plans for installation should be checked against State and local regulations if any are in effect for the area. Information obtained from the Rural Electrification Administration may be helpful in connection with electrical installations.

**STANDARDS FOR FARM SANITATION**

Environmental sanitation is based upon three items:

1. Proper means of excreta disposal.
2. Protection of the domestic water supply against contamination and pollution.
3. Screening or mosquito-proofing of dwellings.
Certain diseases prevalent in rural areas can be prevented largely by adoption of these three fundamentals. These diseases are typhoid fever, dysentery, diarrhea, malaria, hookworm disease, and several other forms of intestinal parasites. Since public water supplies and sewerage systems are generally not available in rural areas, the standards proposed herein are based upon the assumption that the farm home is an isolated dwelling, requiring its own individual services of water supply and waste disposal.

1. Excreta Disposal: There are generally two systems of excreta disposal for farms: (1) the septic tank with sub-surface disposal field; (2) the sanitary pit privy. The septic tank usually is found only on farms of average income or better, since it depends upon having running water in the home for the operation of a flush toilet.

Methods of waste disposal are controlled in the majority of states by regulations of the State Health Departments. Many of the states have adopted standard designs for septic tanks and sanitary privies. Therefore, in planning any program involving waste disposal, it is essential that the requirements of the respective State Health Departments be followed.

(a) Septic Tank Specifications: There are at present no uniform specifications relating to the design of septic tanks, sub-surface disposal fields, or cess pools, so that it is necessary when planning construction within a state to be informed as to the actual requirements of the State Health Department. A concrete tank twice as long as it is wide is most common. This tank needs to have a capacity of at least the average volume of sewage flowing into it within a 24-hour period, but in no case less than 500 gallons. The minimum water depth should be at least four feet, and the minimum depth from the water line to the top of the tank should be one foot, making a total minimum depth of five feet. Scum boards or baffles are generally provided at each end of the tank. The inlet to the tank is above water level to permit ventilation of the tank through the soil stack on the house. The outlet from the tank ordinarily is submerged below the water line.

(b) Sub-Surface Disposal: The sub-surface disposal system consists simply of a tile drainage field so designed that the outflow from the septic tank may be discharged over a wide expanse underneath the surface of the earth. The sub-surface tile system should be located at least 50 feet from any well, spring or source of drinking water. While the length and depth of the trenches in which the tile is laid depends upon climatic conditions and the type of soil, generally trenches are made from 12 to 24 inches wide and 18 to 24 inches deep with a grade of from 2 to 4 inches per 100 feet of length. Tile lines are usually four inch un glazed tile with plain
ends and are laid on a course of gravel or crushed stone. Lines of tile shall not exceed 100 feet in length and the distance between lateral lines shall not be less than four feet. The amount of tile required will vary particularly with the type of soil, but in general from 100 to 400 feet of tile is required for the average installation. Syphons and syphon tanks for distributing sewage into sub-surface drainage fields are not required.

(c) Sanitary Pit Privy: In 41 states there are recommended designs of sanitary pit privies which meet the requirements of the State Health Departments. With only minor differences, these designs follows that known as Type IV recommended by the U. S. Public Health Service. This type of privy has been constructed during the past 6 years by the Works Project Administration through the Community Sanitation Program. Essentially the sanitary pit privy consists of a pit in the earth having a capacity of not less than 50 cubic feet, which is curbed to prevent the earth walls from caving. Around the top of the curb, a concrete foundation is placed to support the pit cover and building. The pit cover is of concrete and supports the stool or riser and the seat and cover. A wooden building is placed around and on top of the concrete pit cover for privacy and shelter. Some system of ventilation is ordinarily provided for the pit to permit gases and odors to escape and to prevent condensation of moisture on the seats.

Concrete Vault Privies: Certain State Health Departments may occasionally demand that a vault type privy be used rather than a pit privy, in order to protect underground water supplies, especially in areas where the rock formation is close to the surface and composed of cavernous limestone. In such cases the same type of building, floor, seat and riser is used as in the case of the sanitary pit privy. A concrete vault, however, is used to replace the pit. This vault must have a capacity of at least 30 cubic feet and the vault itself shall be water tight and provided with an extension to facilitate cleaning of the vault.

2. Domestic Water Supply: The majority of State Health Departments exercise some form of control over domestic water supply. Few states have explicit regulations, but the recommendations of the State Health Departments are in accordance with good sanitary practices and should be followed in any program involving construction or repair of water supplies within the state. There are no uniform standards, since the types of water supplies vary materially. In general, the recommended practices provide for enclosure of the water supply with a water-tight building material, to exclude contamination or pollution such as might be caused by surface water, insects, animals, and man himself. Means for withdrawing water without permitting contamination must be provided.
3. Screening or Mosquito-proofing of the Farm Home: Homes should have doors and windows covered with screen wire. Substantial frames should be provided for the wire screen at all doors, and should be self-closing by means of a strong coil spring or similar device. Window openings should be covered by screen wire, but the use of frames is optional. When frames are not provided, the screen wire should be securely tacked to the window frame and edges of the screen should be battened with strips of molding or lath. Each window opening must be fully covered by screen wire, not just the movable portion of the sash.

All screen wire should be at least 16 meshes to the inch and galvanized. Exceptions may be made where conditions require the substitution of 18 mesh bronze or copper wire screen.

Other openings into the home, such as cracks in floors and walls, knot holes, and spaces beneath eaves, should be fully closed by suitable material.

In malarious areas, chimney vents or flues should be covered with 16 mesh screen wire during summer months.

These standards are sufficiently flexible to be adapted to most farm conditions and should serve as a guide to better housing on farms for the farm family and for the farm worker.