



Idea Plan

No. IP 790-33

Roadside Markets, Stands, and Equipment

This Idea Plan is intended to provide educational information and ideas concerning small roadside stands and markets. The following attached drawings are based on historical plans and may not meet design and construction standards for your area:

- Roadside Market 10' x 18' (PSU 303)
- Roadside Market 12' x 20' (PSU 304)
- Roadside Market 16' x 21' (PSU 305)
- Roadside Market—Refrigerated (PSU 306)
- Farm Market Walk-In Refrigerator (USDA 6380)

If you decide to build a facility similar to any of these plans, be sure to check building requirements for your area. Your local building inspector, engineer, building supplier, building contractor and highway department can help you determine what is a safe and legal facility for roadside marketing in your area. In addition to the rules and regulations covering design and construction of buildings, be sure to consider potential nuisance problems for neighbors, including flies, rodents, odor, traffic, and noise.

The Department of Agricultural and Biological Engineering at Penn State has a variety of educational material available related to agricultural and biological engineering. This material is intended to help Pennsylvania farmers and others develop buildings and facilities for modern, environmentally-compatible farm facilities. The material can be used in conjunction with county extension staff, builders, suppliers, consulting engineers, the Natural Resources Conservation Service, financial management advisors, farm lenders, veterinarians, and others to assemble a facilities plan suitable for local conditions.

Publications are available in the areas of agricultural safety and health, animal housing systems, building and farmstead planning, crops and greenhouses, machinery systems and tractors, residential housing, soil and water resources, and solid waste management. Contact your county Penn State Extension Office for more information on these subjects. You can also obtain an index of publications concerning the above areas by calling, writing, faxing or e-mailing:

Department of Agricultural and Biological Engineering
246 Agricultural Engineering Building
University Park, PA, 16802-1909
Telephone: 814-865-7685
Fax: 814-863-1031
E-mail: agbioeng@psupen.psu.edu.

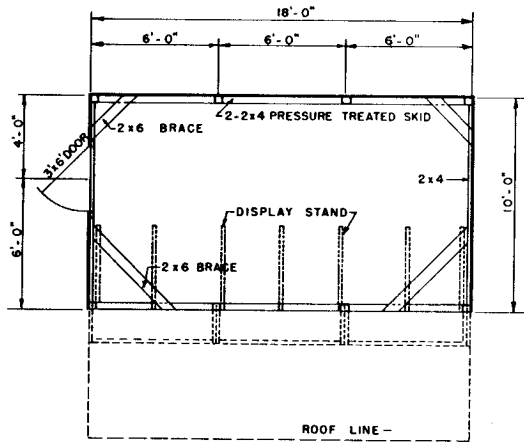
For more information, the following comprehensive handbook covering roadside marketing is available:

NRAES-52—Facilities for Roadside Markets (1992).
\$7.00 (Contact office below for current pricing).

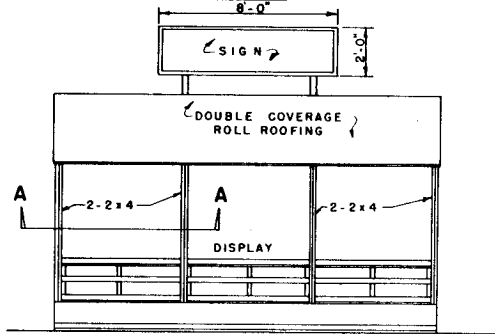
Order from NRAES, B-16 Morrison Hall, Ithaca, NY 14853. Phone:(607)255-7654
Fax: (607)254-8770 email: nraes@cornell.edu

This publication is available in alternative media on request.

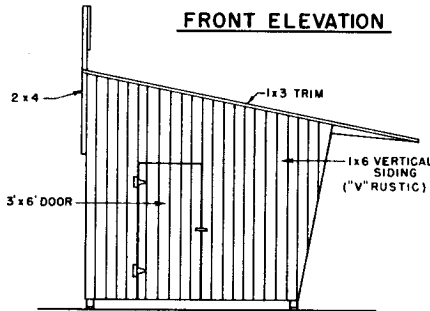
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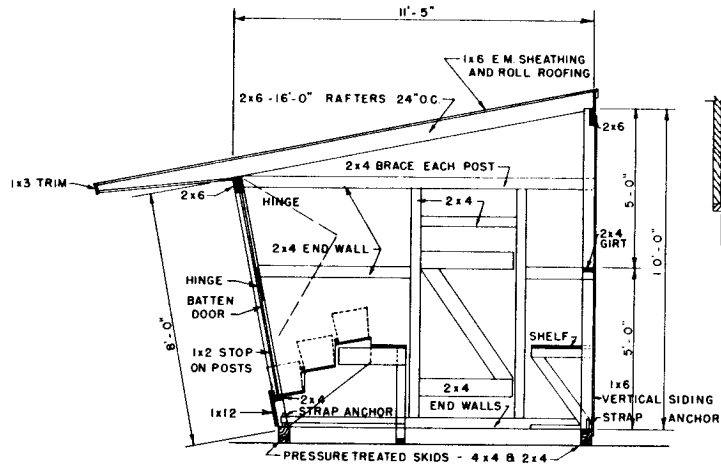
PLAN



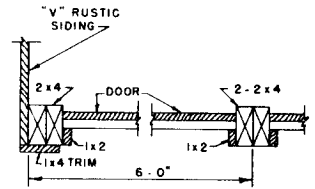
FRONT ELEVATION



SIDE ELEVATION

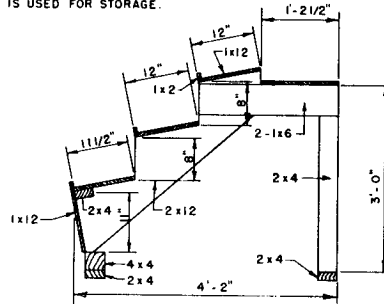


SECTION

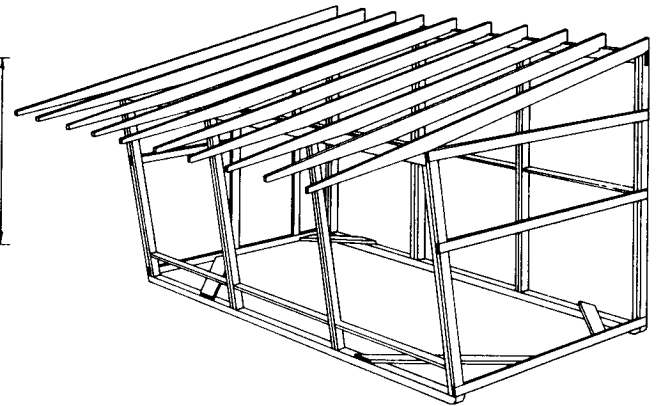


SECTION A-A

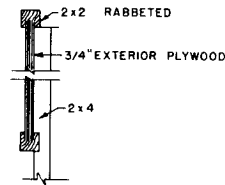
NOTE:
DISPLAY SHELVES TO BE
REMOVED WHEN SHELTER
IS USED FOR STORAGE.



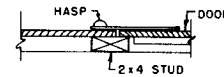
DETAIL OF DISPLAY



FRAMING PERSPECTIVE



SIGN DETAIL



DOOR JAMB DETAIL

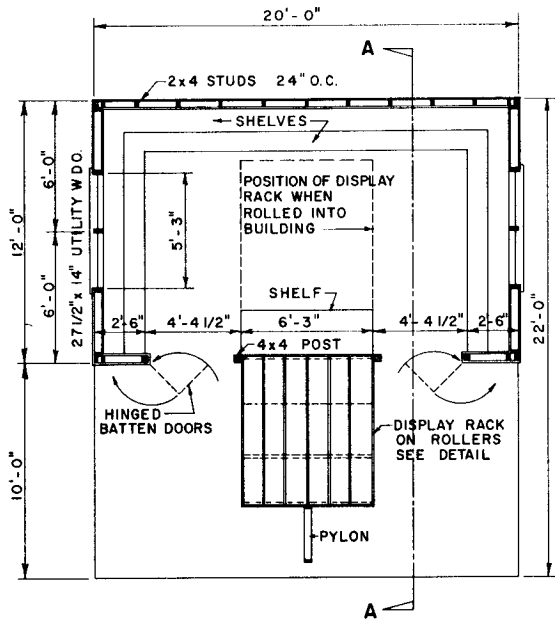
THE PENNSYLVANIA STATE UNIVERSITY
AGRICULTURAL EXTENSION SERVICE

ROADSIDE MARKET 10'x18'

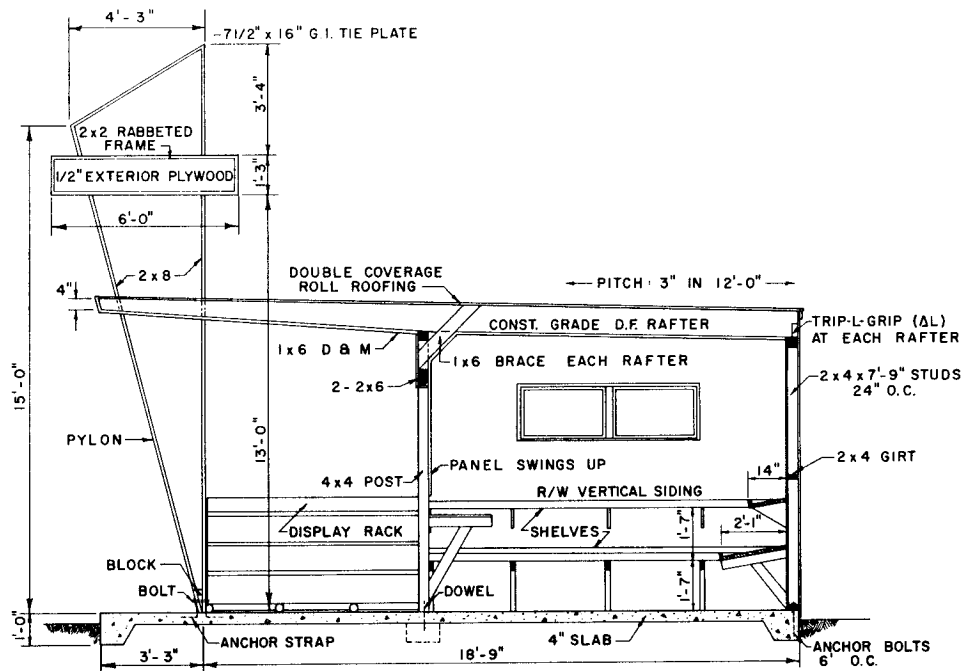
DRWN BY: M.J.T.
CHKD. BY: F.B.G.
DATE: DEC, 1965

ORDER NO.
790-303

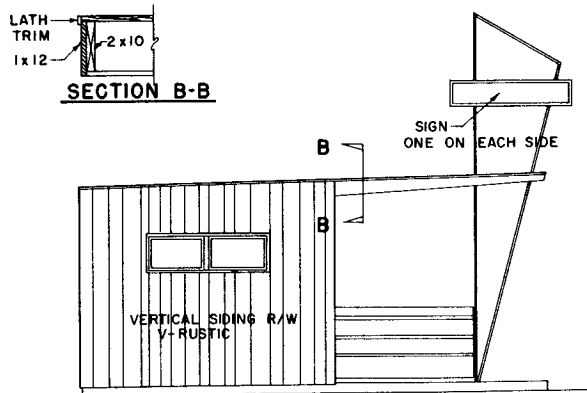
SHEET 1 OF 1



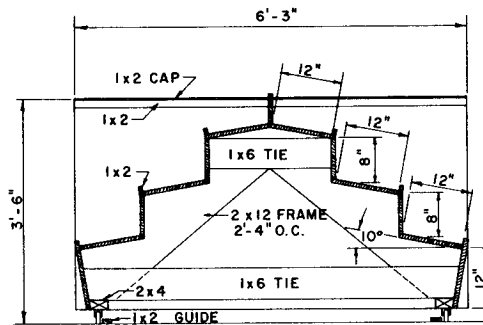
PLAN



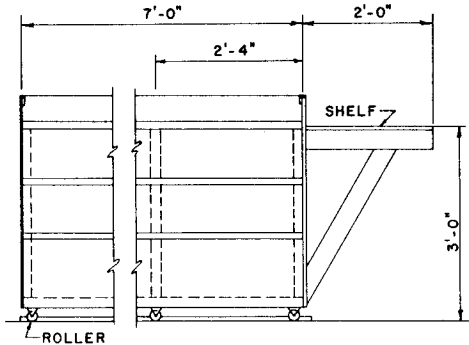
SECTION A-A



ELEVATION



SECTION



ELEVATION

DISPLAY RACK

THE PENNSYLVANIA STATE UNIVERSITY
AGRICULTURAL EXTENSION SERVICE

ROADSIDE MARKET 12'x20'

DRWN. BY: M.J.T.
CHKD. BY: F.B.G.
DATE: DEC., 1965

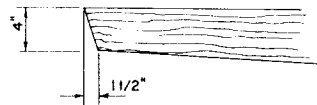
ORDER NO.
790-304

SHEET 1 OF 2

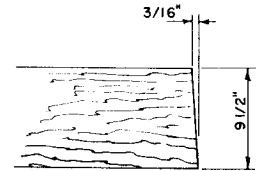
LIST FOR CUTTING FRAME

| | | | | |
|-------------------|----|------|--------|------------|
| REAR WALL PLATES | 2 | PCS. | 2 x 4 | 20'-0" |
| | 1 | " | " | 19'-4 3/4" |
| END WALL PLATES | 2 | " | " | 12'-0" |
| | 4 | " | " | 11'-4 3/4" |
| FRONT WALL PLATES | 1 | " | " | 20'-0" |
| | 2 | " | " | 19'-4 3/4" |
| | 2 | " | " | 2'-4 1/4" |
| REAR WALL STUDS | 15 | " | " | 7'-9" |
| FRONT WALL STUDS | 8 | " | " | 8'-0" |
| | 2 | " | " | 7'-0" |
| | 7 | " | " | 8 1/8" |
| END WALL STUDS | 2 | " | " | 7'-11 1/8" |
| | 2 | " | " | 7'-9 7/8" |
| FRONT WALL POSTS | 2 | " | 4 x 4 | 7'-0" |
| LINTEL | 2 | " | 2 x 6 | 15'-3 1/4" |
| FRONT WALL GIRTS | 2 | " | 2 x 4 | 1'-9 1/2" |
| REAR WALL GIRTS | 8 | " | " | 1'-10 3/8" |
| | 2 | " | " | 1'-6" |
| END WALL GIRTS | 6 | " | " | 5'-3" |
| | 4 | " | " | 2'-9 5/8" |
| RAFTERS | 11 | " | 2 x 10 | SEE DETAIL |

MATERIAL SHOWN IN ABOVE LIST IS FOR THE BUILDING FRAME ONLY.



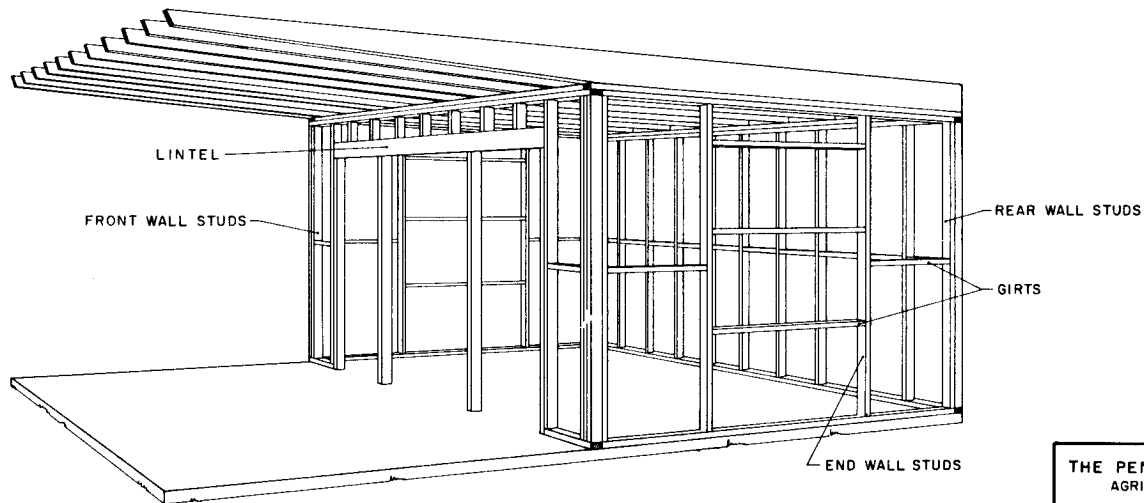
FRONT END CUT



REAR END CUT



RAFTER DETAIL



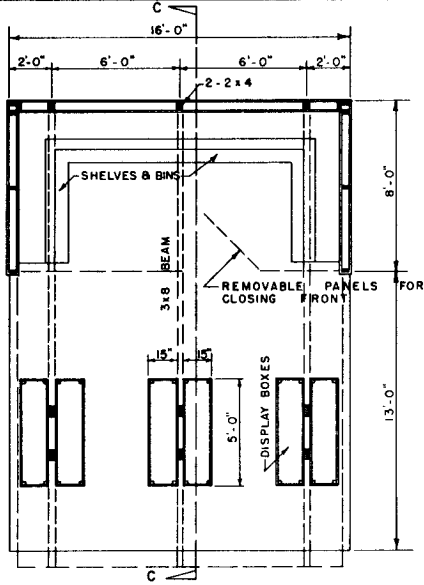
THE PENNSYLVANIA STATE UNIVERSITY
AGRICULTURAL EXTENSION SERVICE

ROADSIDE MARKET 12'x20'

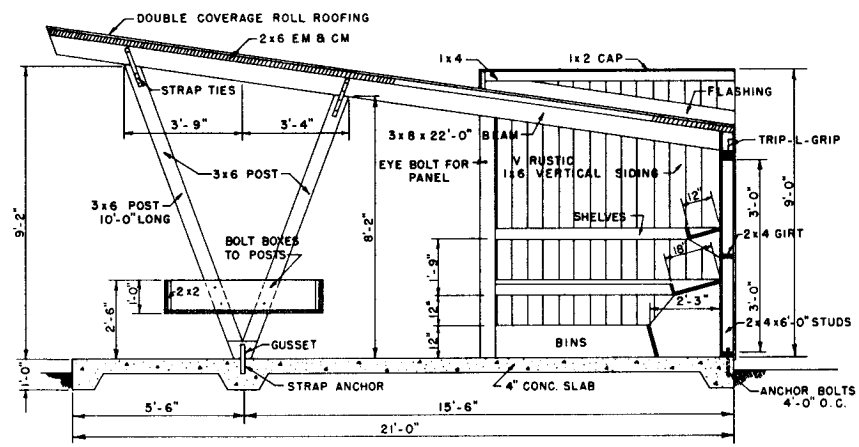
DRWN. BY: M.J.T.
CHKD. BY: F.B.G.
DATE: DEC., 1965

ORDER NO.
790-304

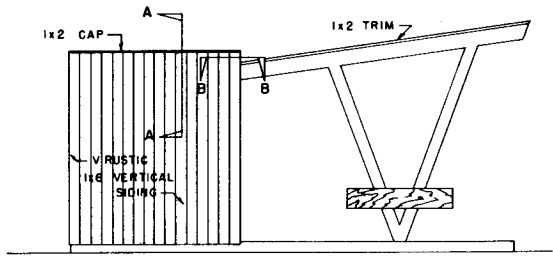
SHEET 2 OF 2



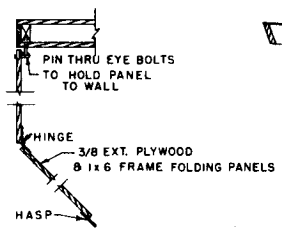
PLAN



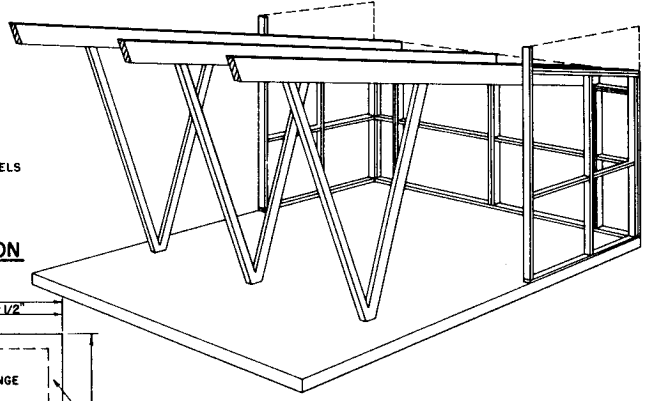
SECTION C-C



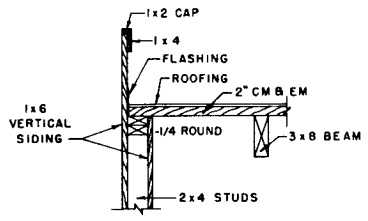
ELEVATION



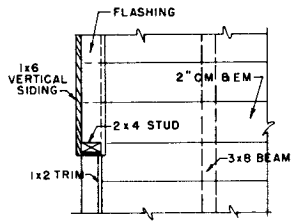
FOLDING PANEL SECTION



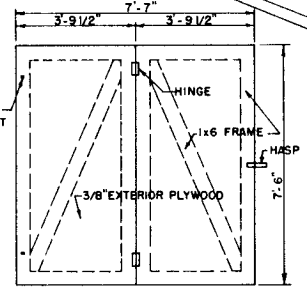
FRAMING PERSPECTIVE



SECTION A-A

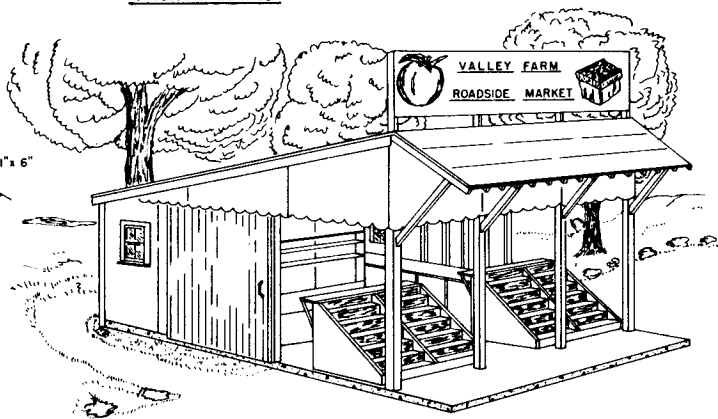
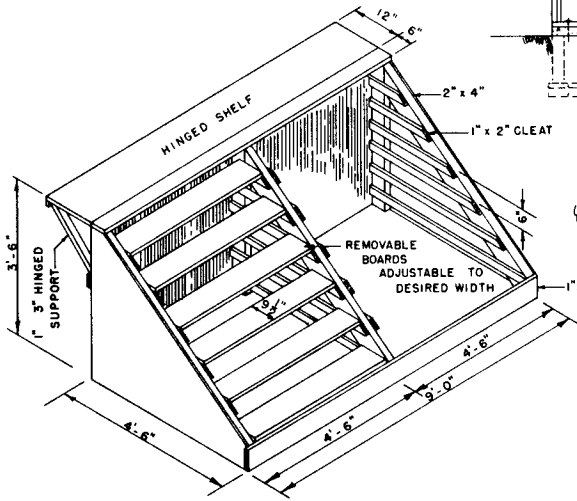
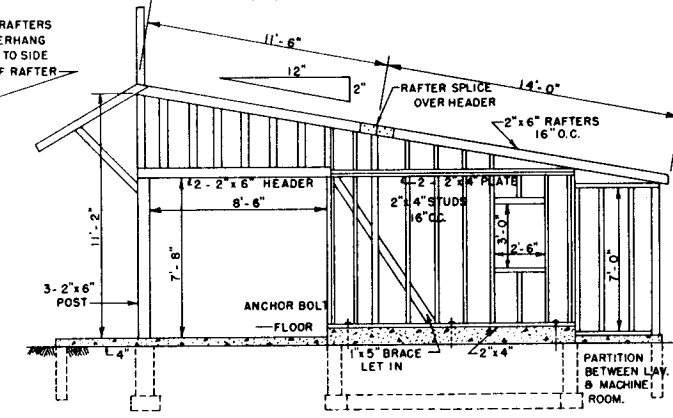
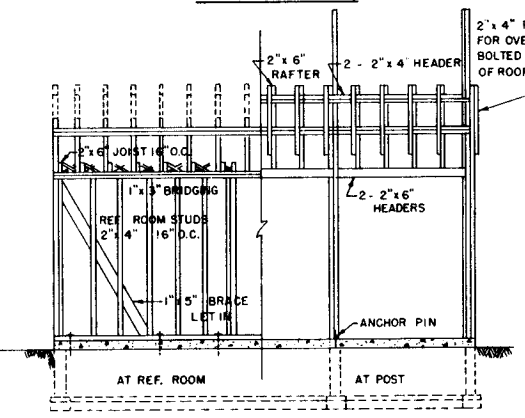
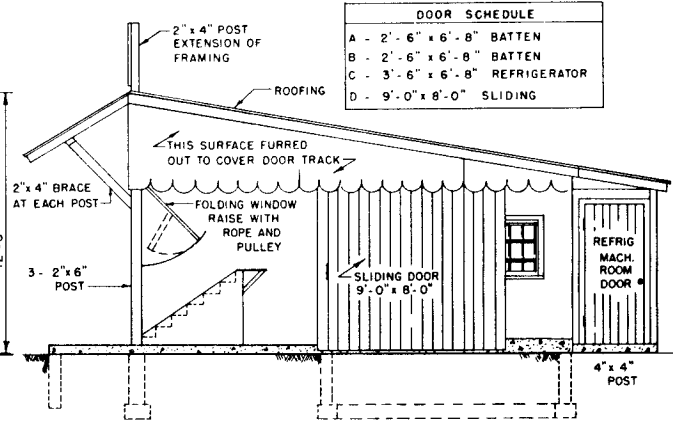
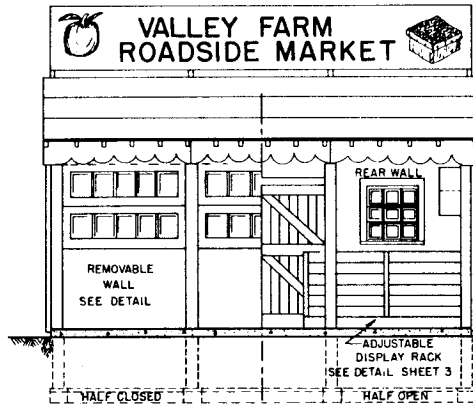
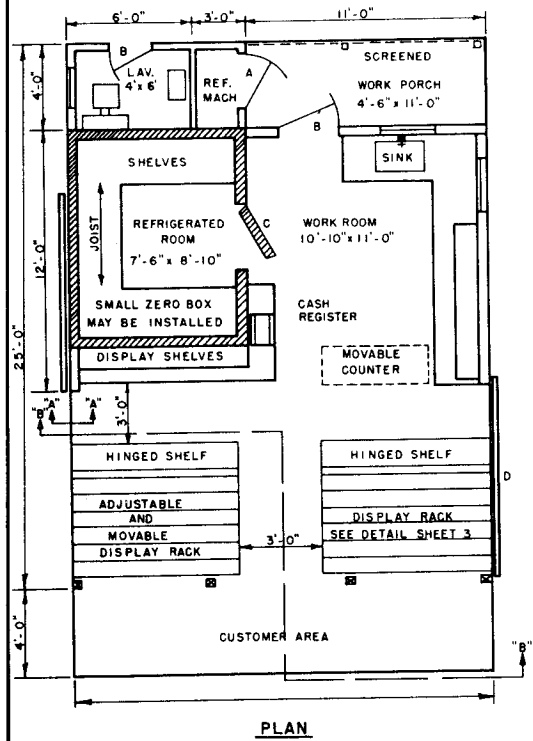


SECTION B-B



FOLDING PANEL ELEVATION

| | | |
|---|----------------------|--------------|
| THE PENNSYLVANIA STATE UNIVERSITY AGRICULTURAL EXTENSION SERVICE | | |
| ROADSIDE MARKET 16'x21' | | |
| DRWN. BY: M.J.T. CHKD. BY: F.B.G. DATE: JAN., 1966 | ORDER NO. 790-305 | SHEET 1 OF 1 |



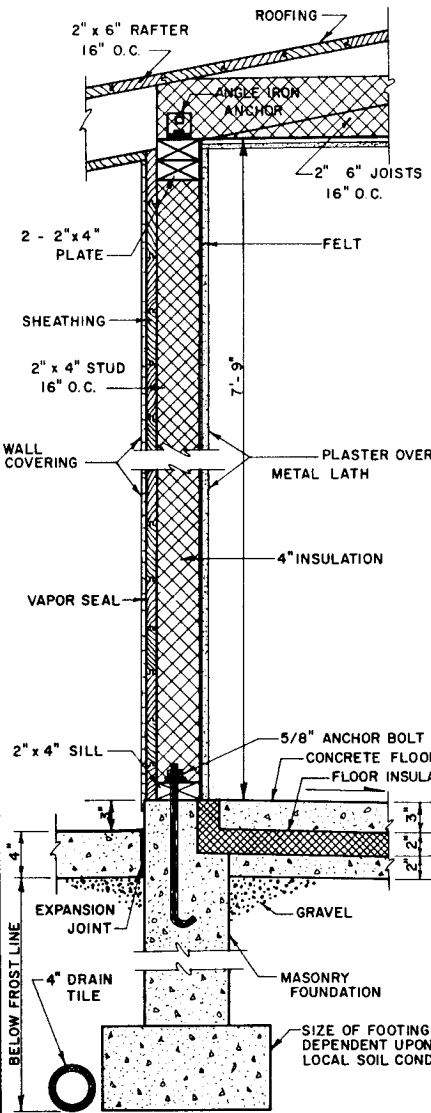
THE PENNSYLVANIA STATE UNIVERSITY
AGRICULTURAL EXTENSION SERVICE

ROADSIDE MARKET
(REFRIGERATED)

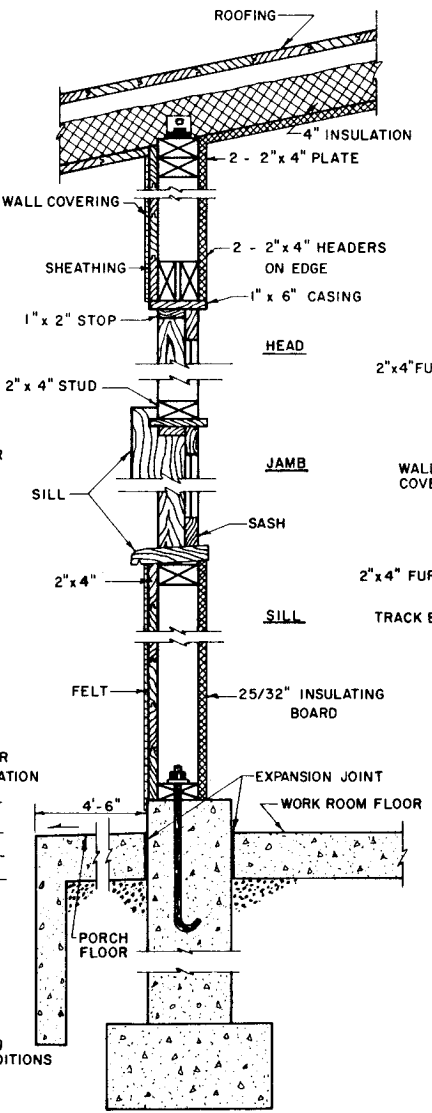
DRWN BY: M.J.T.
CHKD BY: F.B.G.
DATE: JAN., 1966

ORDER NO.
790-306

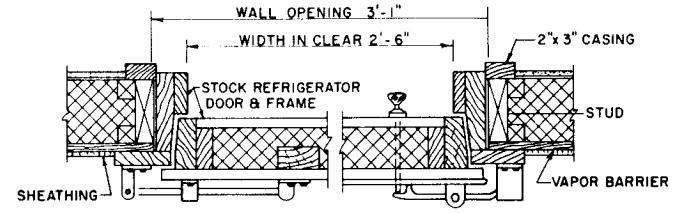
SHEET 1 OF 2



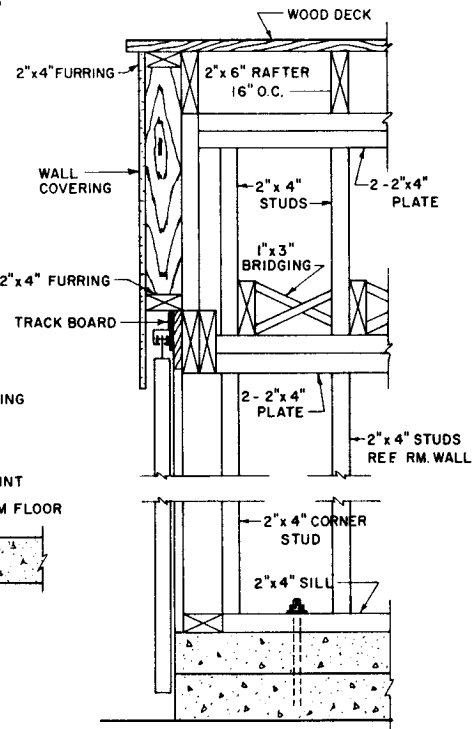
SECTION THRU REFRIGERATION WALL



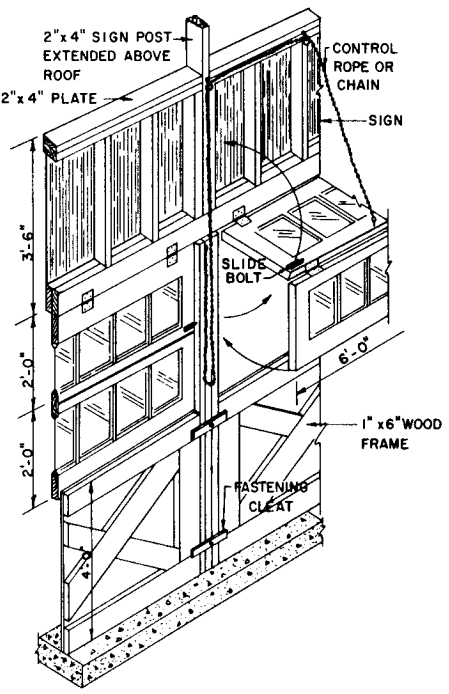
SECTION THRU WORK ROOM WALL



INSTALLATION OF STOCK REFRIGERATOR DOOR

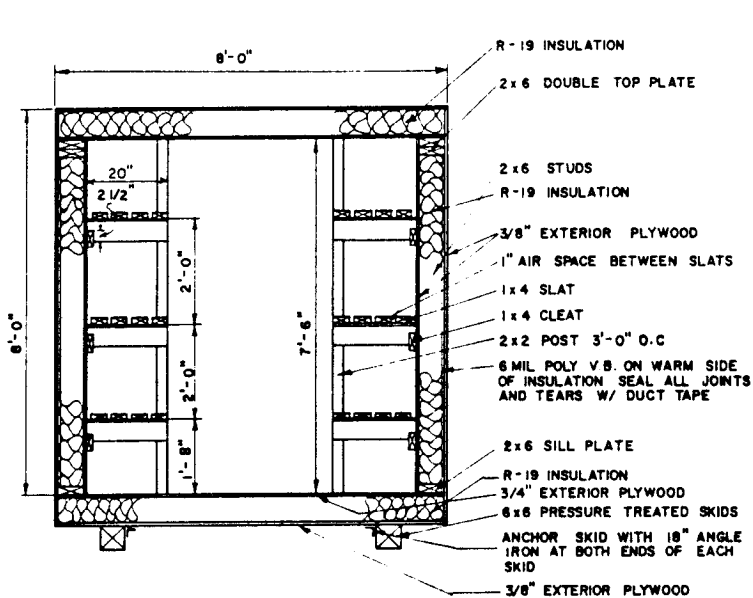


SECTION A-A

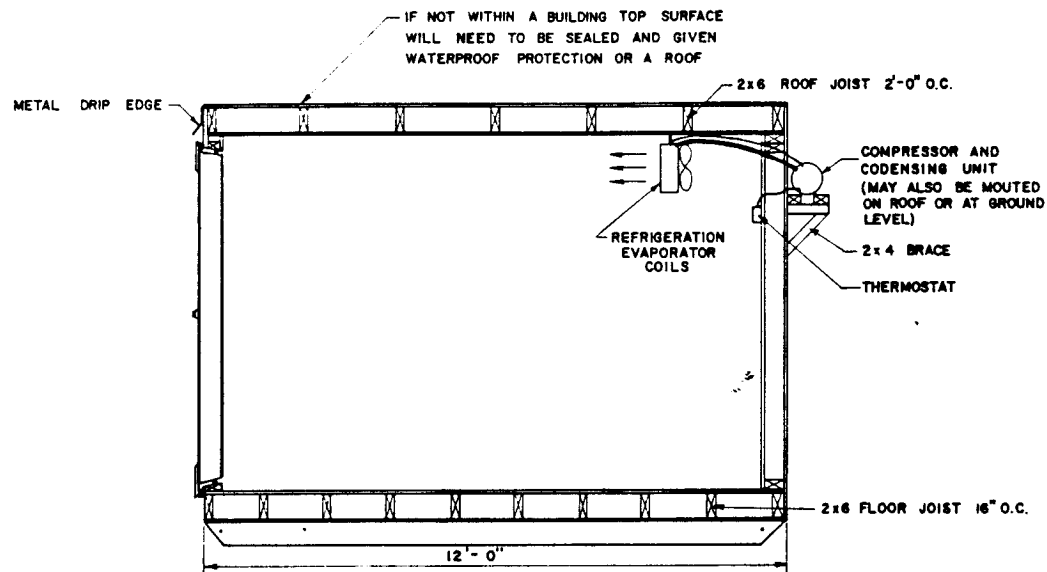
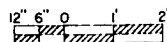


DETAIL OF REMOVABLE FRONT WALL

| | | |
|---|----------------------|--------------|
| THE PENNSYLVANIA STATE UNIVERSITY AGRICULTURAL EXTENSION SERVICE | | |
| ROADSIDE MARKET (REFRIGERATED) | | |
| DRWN BY: M.J.T. CHKD. BY: F.B.G. DATE: JAN., 1966 | ORDER NO. 790-306 | SHEET 2 OF 2 |



SECTION/SHELF DETAIL



SIDE VIEW

NOTES:

1. REFRIGERATION: MANY VEGETABLES ARE BEST STORED AT 30°F, SOME AT 45°F AND OTHERS, LIKE TOMATOES, CLOSER TO 55°F. USUALLY A COMPROMISE IS MADE - ACCEPTING SOMEWHAT SHORTER SHELF LIFE FOR A LESS COSTLY WARMER TEMPERATURE. WITH BOX TEMPERATURES BELOW 40° - 45°F (DEPENDING ON EQUIPMENT CHOICES), DEFROSTING IS NEEDED FOR COILS. TO AVOID FREEZING OF COILS, OPERATE ABOVE THIS RANGE. CONTINUOUS OPERATION OF THE COOLING COIL BLOWER WILL REDUCE THE CHANCES OF FROST BUILD-UP AND IMPROVE AIR CIRCULATION.

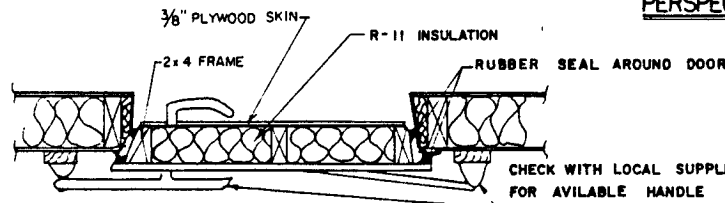
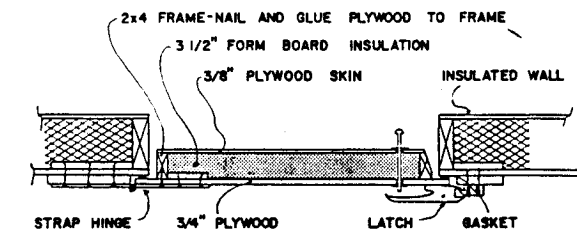
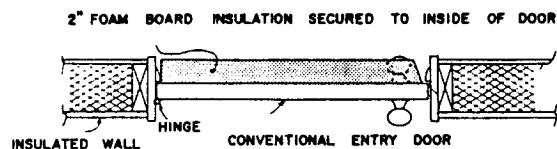
ASSUMING A TEMPERATURE DIFFERENCE OF 50°F BETWEEN INSIDE AND OUTSIDE AIR AND USING 4000 BTU/HR FOR THE HEAT LOAD DUE TO CONDUCTION THROUGH SURFACES AND AIR EXCHANGE, A 3/4 HP UNIT (ABOUT 9000 BTU/HR) SHOULD COOL 1/4 TON IN 5 HOURS. A 1 HP UNIT SHOULD COOL 1/2 TON IN 5 HOURS. MORE VEGETABLES COULD BE COOLED WITH LESS THAN A 50°F TEMPERATURE DIFFERENCE OR IF VEGETABLES WERE BROUGHT IN AT A TEMPERATURE LESS THAN THAT OF THE HOT PART OF THE DAY.

2. FRESH AIR: GOOD SANITATION AND MANAGEMENT REDUCES THE NEED FOR FRESH AIR. ORDINARILY THE DOOR WILL BE OPENED OFTEN ENOUGH TO SUPPLY FRESH AIR. IF NOT, A SMALL 60 CFM FAN COULD BE INSTALLED NEAR THE CEILING IN ONE END TO BLOW AIR INTO THE BOX, WITH ANOTHER SIMILARLY SIZED OPENING AT THE OTHER END TO RELEASE THE AIR. A FLAP SHOULD BE INSTALLED TO CLOSE BOTH OPENINGS WHEN THE FAN IS OFF. OPENINGS SHOULD BE COVERED WITH SCREEN. KNOWLEDGE OF PRODUCE NEEDS IS IMPORTANT, I.E. TOMATOES EMIT ETHYLENE TO WHICH SOME OTHER PRODUCTS ARE SENSITIVE. FRESH AIR DILUTES THE ETHYLENE.

3. SHELVING: PERFORATED OR EXPANDED METAL TREATED TO PREVENT RUST WOULD INSURE BETTER AIR CIRCULATION. METAL POST AND SHELF SUPPORTS WOULD BE A FURTHER IMPROVEMENT. NOTE 20" SHELF DEPTH MAY BE TOO NARROW FOR SOME OPERATORS. PRESERVATIVE TREATED SHELF SUPPORTS AND SHELVING WOULD LENGTHEN LIFE BUT BE SURE THAT THE PRESERVATIVE IS APPROVED FOR THIS USE.

4. INSULATION: TO MINIMIZE SURFACE HEAT EXCHANGE USE R 19 INSULATION WITH 2x6 STUDS, 24" O.C., BUT MANY OPERATORS PREFER THE EXTRA 4" OF INTERIOR WIDTH THAT 2x4 STUDS PROVIDE. NOTE: A PLASTIC STRIP CURTAIN INSIDE OF DOOR REDUCES HEAT GAIN WHEN OPENING DOOR.

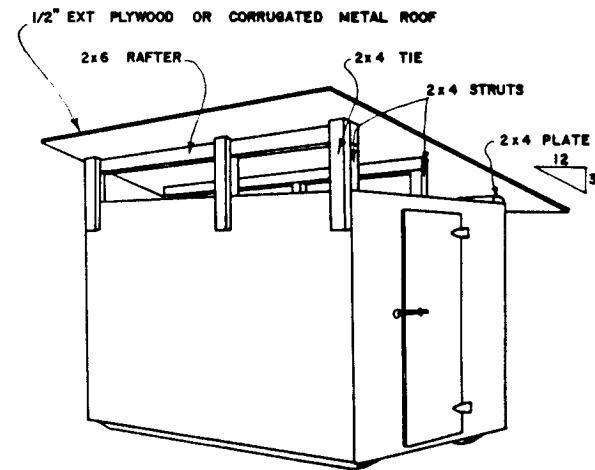
5. LAMPS SHOULD BE INSTALLED AS NEEDED BUT USED SPARINGLY TO REDUCE HEAT GAIN.



ALTERNATIVE DOOR DETAILS (NOT TO SCALE)

CHECK WITH LOCAL SUPPLIER FOR AVAILABLE HANDLE AND HINGE

PROVIDE INSIDE LATCH RELEASE TO ASSURE SAFE OPERATION



PERSPECTIVE WITH OPTIONAL SHED (NOT TO SCALE)

| | | |
|---|------|--------------|
| COOPERATIVE EXTENSION SERVICE AGRICULTURE AND HOME ECONOMICS | | |
| The Pa. State University | | |
| AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING | | |
| FARM MARKET WALK-IN REFRIGERATOR | | |
| USDA '86 | 6380 | SHEET 1 OF 1 |
| 734-6380 | | |