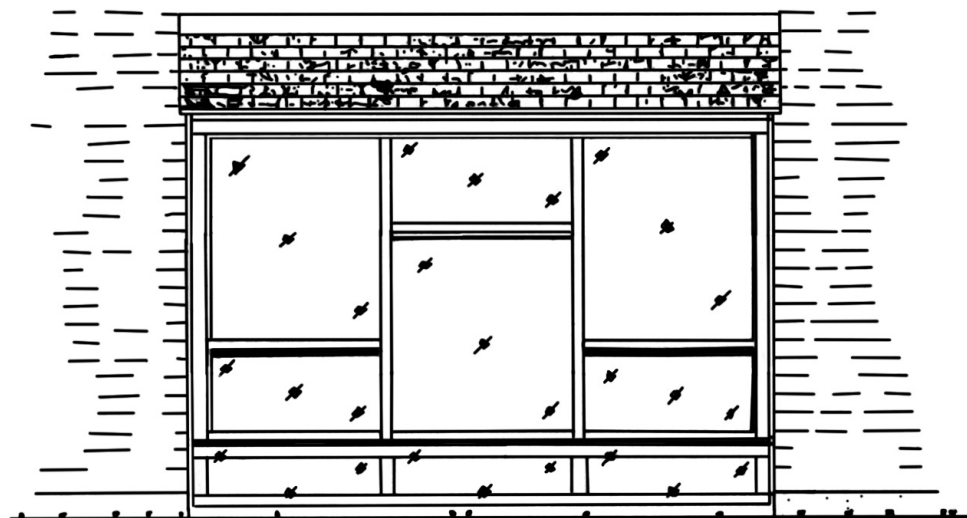
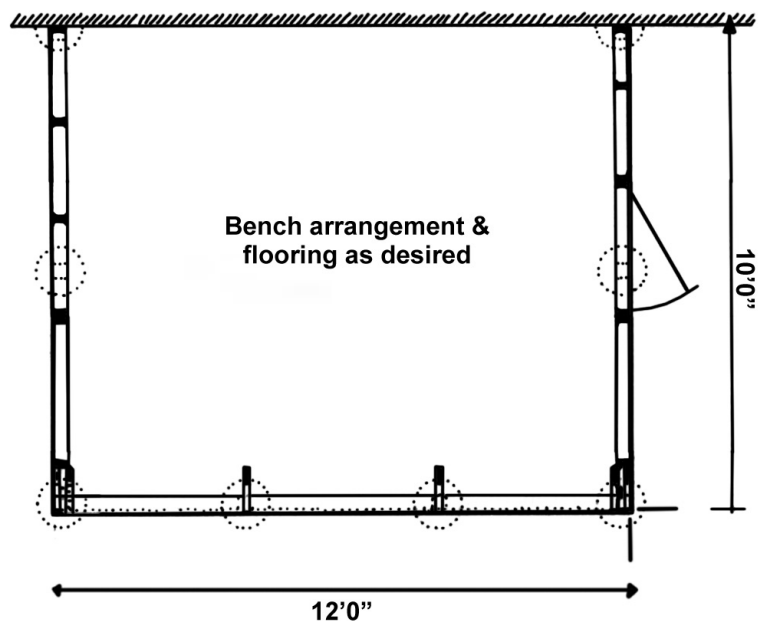


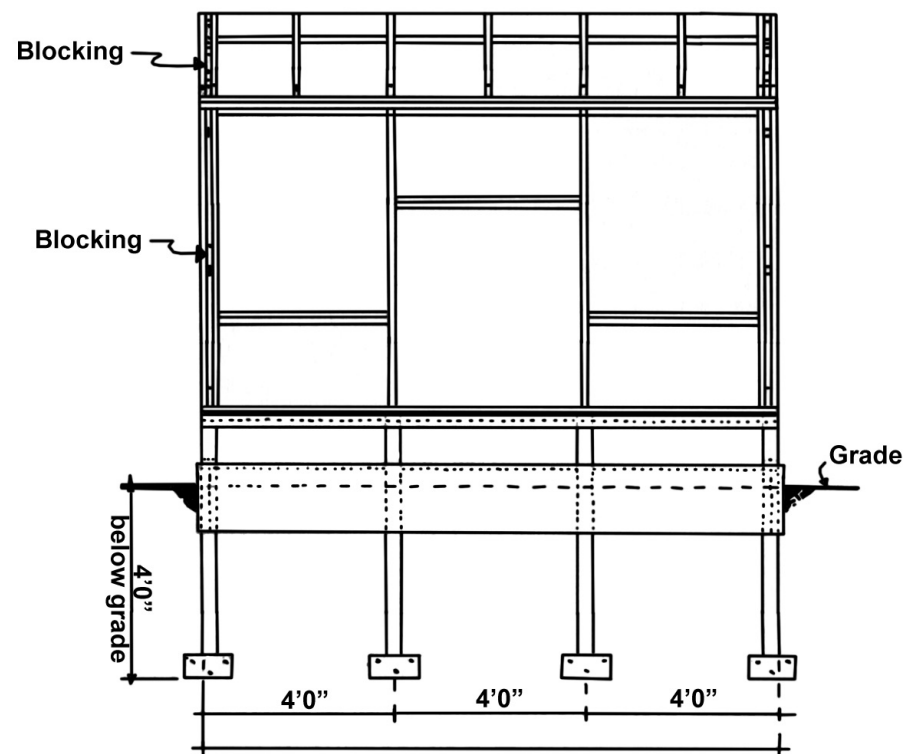


SOUTH ELEVATION



BASIC FLOOR PLAN

length may be expanded
in 4' increments



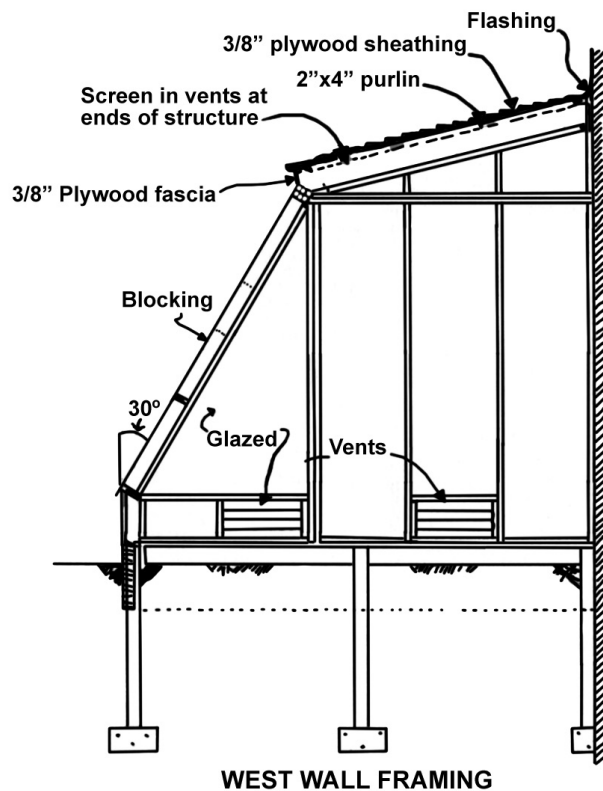
SOUTH WALL FRAMING

CONSTRUCTION NOTES:

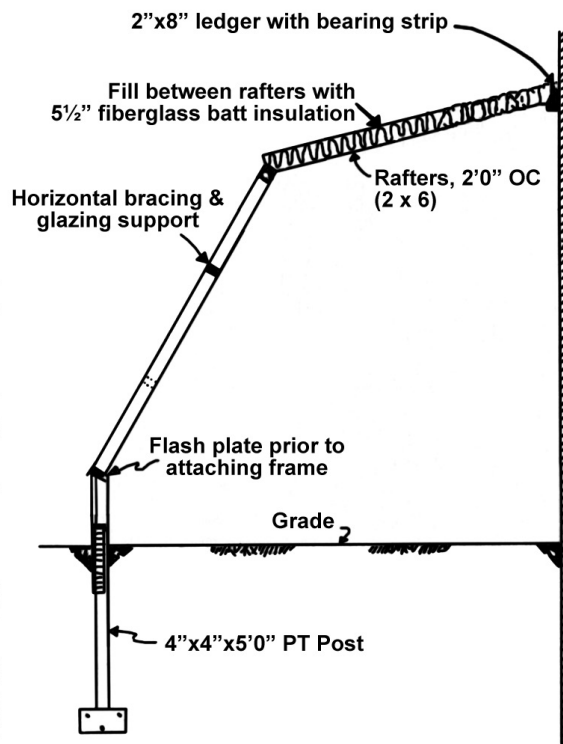
1. Basic framing is 2x4 construction unless otherwise noted. Use only construction grade lumber.
2. Any lumber in contact with soil should be pressure treated. Creosote or pentachlorophenol should NOT be used.
3. Unglazed interior walls and ceiling to be insulated and covered.
4. All exposed lumber should be protected with a coat of primer and/or an oil-base paint. The final coat of paint should be white.
5. If treated lumber is cut, make sure cut surfaces are protected or not inserted into the ground.
6. Compacted crushed gravel or concrete footings may be recommended.
7. Use flashing and/or caulking to protect all joints.
8. Sidewall framing may be adjusted to suit doors, vents, fans, etc.

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Food Engineering Department University of Massachusetts and the		
United States Department of Agriculture		
10'x12' ATTACHED SOLAR GREENHOUSE		
Scale: as shown	MC 2802	Sheet 1 of 3
Drw by RFR	Ck by RJG	RFR

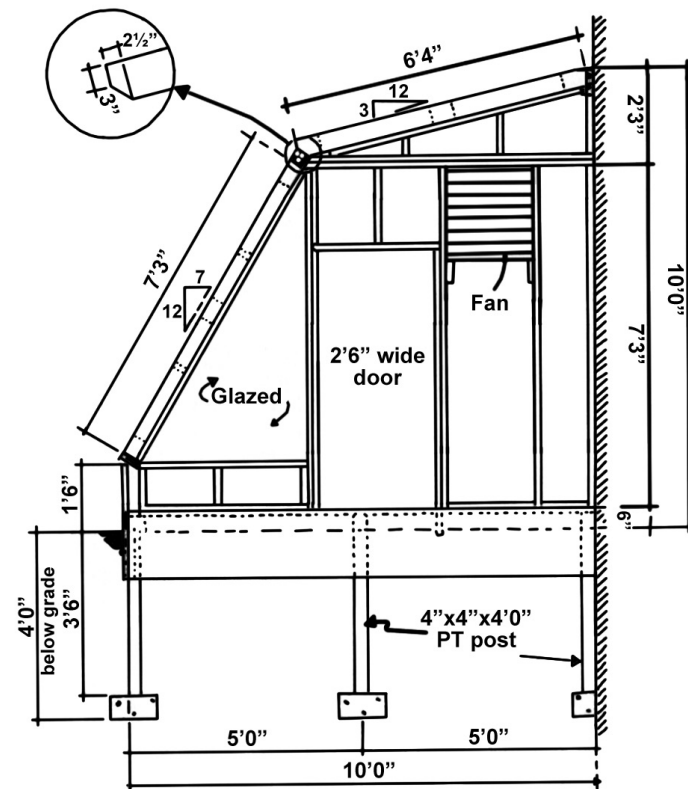
Check with your building
inspector before construction.



WEST WALL FRAMING



CROSS-SECTION

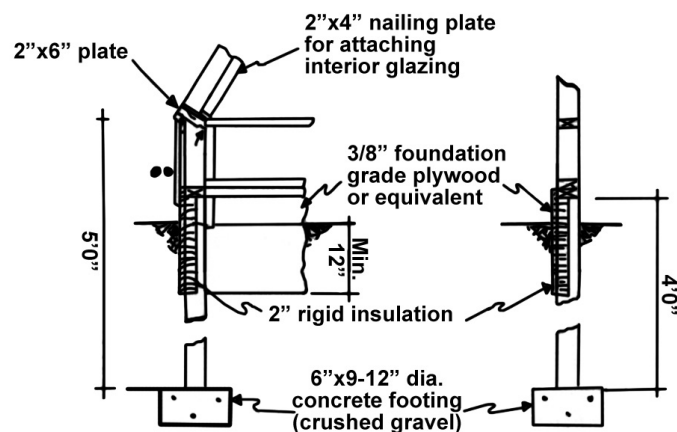


EAST WALL FRAMING

IMPORTANT NOTE:

Exterior/interior finish materials, plumbing, wiring, etc., are owner/builder's responsibilities. Take into account the unique characteristics of the greenhouse environment when making these decisions

- Cut top of kneewall posts at a 30° angle as shown.
- Kneewall can be glazed as shown or covered with foundation grade plywood and insulated as shown with dotted lines.

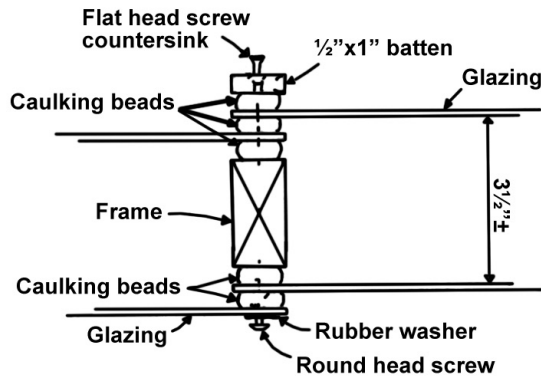


KNEEWALL and FOUNDATION DETAILS

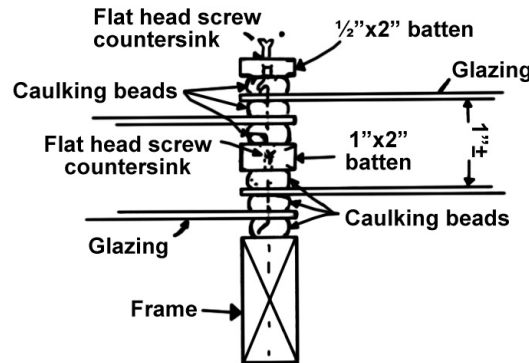
A supplemental narrative is available in conjunction with this plan.

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Scale: As shown	MC 2802	Sheet 2 of 3
Drw by RFR	Ck by HJG	RJR

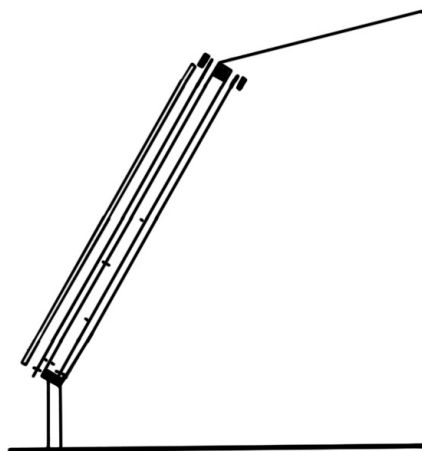
- Space screws alternately with screws in middle batten



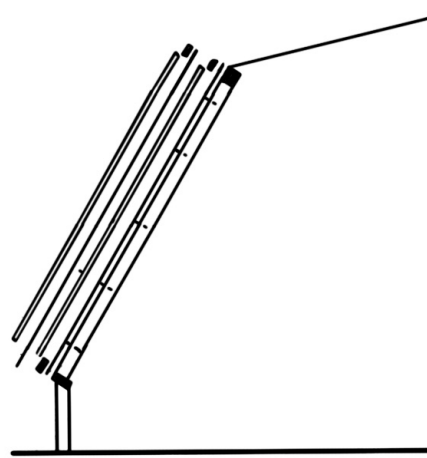
METHOD A



METHOD B



RECOMMENDED



OPTIONAL

EXPLODED VIEWS OF GLAZING DETAILS

No Scale

GLAZING NOTES

1. Recommend 2 layers of greenhouse (solar) grade fiberglass, preferably flat.
2. Caulk all joints to discourage air and moisture leaks.
3. Allow the outer layer of glazing on south wall to overhang kneewall for runoff of precipitation.
4. Aluminum battens may be used in place of wood battens.
5. Double walled panels may be substituted for fiberglass. However, frame spacing must be altered to accommodate thermal expansion of panels.

INSULATION NOTES

1. 3 1/2" fiberglass batt insulation is recommended in opaque walls and 5 1/2" in ceiling.
2. Use foil-backed insulation or seal with 4-mil polyethylene vapor barrier.
3. Moveable insulation such as insulated shutters or thermal blankets are recommended for glazed areas.
4. Recommend 2" extruded polystyrene (styrofoam) along foundation curtain wall. Bury 12"-16" below grade.

VENTILATION NOTES

1. Use forced ventilation (fan) for summer cooling. Provide 10-12 CFM per sq. ft. of floor area. Choose a fan rated at 0125" static pressure.
2. Winter ventilation can be provided by exchanging air with main structure through a door, window or small fan (approx. 100 CFM).
3. Inlet vents may be hinged or louvered. Provide approximately 13 sq. ft. of opening per 1000 CFM of fan capacity.
4. Automatic controls such as thermostats are highly recommended for fans, vents and auxiliary heat.
5. Greenhouse door can be used during mild weather in conjunction with vents for adequate ventilation without operating fan. DO NOT HAVE DOOR OPEN WHEN FAN IS OPERATING.
6. Purlins on rafters provide for venting space above ceiling insulation. Screen in, DO NOT COVER, openings at ends with hardware cloth.
7. Summer shading may be necessary to reduce over-heating of structure.

FURTHER CONSTRUCTION NOTES

1. Exterior wall and roof sheathing should be at least 3/8" exterior grade plywood or equivalent.
2. Fasteners should be made of aluminum, brass or galvanized steel.
3. Joist hangers & framing anchors may be used to simplify construction.
4. If more insulation is desired, 2"x6" ± may be substituted for 2"x4" ± used in side wall framing.

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10'X12' ATTACHED SOLAR GREENHOUSE		
Scale: As shown	MC 2802	Page 3 of 3
Drw by RFR	Ck by HJG	RJR