OK AS TO FORM
C.H 8-11-16

Jefferson County Board of Education

STATEMENT OF WORK
JEFFERSON COUNTY BOARD OF EDUCATION
AND
NATURAL RESOURCES CONSERVATION SERVICE

This agreement is entered into between Jefferson County Board of Education dba Jefferson County Public Schools (JCPS) and the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS).

I. AUTHORITY

7 U.S. C 2255A; The Soil Conservation and Domestic Allotment Act, (16 U.S.C. 590a-590f); Public Law 109-238 (S2590), Federal Funding Accountability and Transparency Act of 2006; Section 12381 of the Federal Agriculture Improvement and Reform Act of 1985, (16 U.S.C. 3838h et seq.), as amended; and implementing regulations set forth at (7 CFR Part 1491)

II. PURPOSE

The purpose of this agreement is to provide assistance and support to Moore Traditional High School's Environmental Agriculture Program by providing funds for the construction of a seasonal High Tunnel.

III. MUTUAL BENEFITS

The Moore Environmental Magnet reaches students in grades 6-12. In middle school, the Environmental Science Program is an Optional Program. In high school, the Environmental Program is a Magnet Program. The middle school program introduces 6th-8th grade students to a view of our place in space and the concept of Earth being a closed system, as well as, handling the paper recycling for the entire school running the process like an actual business. Curriculum then progresses through the high school Magnet Program where students are asked to critically analyze and solve current environmental issues. As each grade level progresses, students participate in an increasingly challenging variety of projects, experiments, and activities. The agriculture program at Moore Traditional High School interfaces with the Moore Environmental magnet through it's Urban Agriculture Program. It is mutual beneficial to both NRCS and Moore Traditional High School to establish a Seasonal High Tunnel of the School's campus to provide Urban Agriculture instruction.

IV. RESPONSIBILITIES AND DELIVERABLES

In accordance with this agreement, it is accepted by the parties that this agreement be executed by their duly authorized officers, on the day and year written below.

A. Moore Traditional High School will:

1. Manage all aspects of Seasonal High Tunnel purchase, construction (as described in the Conservation Standard, Job Sheet, and Cost List found in appendix A), and use in educational programs.

2. Designate a Contact as liaison to interface with NRCS for activities associated with this agreement.
3. Acknowledge NRCS support of the Kentucky Small Limited Resource Minority Farmers Conference.
4. Provide reports that may be mutually agreed upon including a final report detailing all work done and results accomplished within days after project/activities completion to NRCS Technical Liaison.

Reed Cripps
Kentucky NRCS State Office
771 Corporate Dr.
Suite 210
Lexington, KY 40503
Telephone: 859-224-7373
reed.cripps@ky.usda.gov

B. NRCS will:

1. Provide a liaison to interface between the Moore Traditional High School and NRCS to provide Technical Assistance and Support.
2. Provide financial support in the amount of $10,000 to assist with the cost of the Seasonal High Tunnel construction.

V. IT IS MUTUALLY AGREED

A. This agreement is effective from the date of last signature and will continue in full force and effect through September 30, 2017.

B. Employees of NRCS shall participate in efforts under this agreement solely as representatives of NRCS. To this end, they shall not serve or participate as directors, officers, or employees of the recipient, or otherwise serve or hold themselves out as representatives of the recipient. They also shall not assist the recipient with efforts to lobby congress, or to raise money through fund- raising efforts. NRCS employees must avoid any conflict of interest, or the appearance thereof, related to efforts under this agreement. Further, NRCS employees shall immediately report to their immediate supervisor and negotiations or discussions that they have with the recipient concerning future employment and upon engaging in such discussions or negotiations, shall refrain from participation in matters regarding the recipient until approved by the agency.

C. Employees of Moore Traditional High School shall remain its employees while carrying out their duties under this Agreement, and shall not be considered Federal employees or agents of the United States for any purpose under this agreement.

D. This agreement may be amended in writing by mutual consent of the parties to the agreement.

E. This agreement may be terminated by either party by written notice to the other party at least 30 days in advance of the effective date of the termination.

F. NRCS may terminate this agreement in whole or in part if NRCS determines that Moore Traditional High School has failed to comply with any of the conditions of this agreement. NRCS shall promptly notify Moore Traditional High School in writing of the determination and reasons for the termination, together with the effective date. Payments or recoveries made by NRCS under this termination shall be accordance with legal rights and liabilities of NRCS and Moore Traditional High School.

G. By signing this agreement, the recipient assures the Department of Agriculture that the program or activities provided for under this agreement will be conducted in compliance with all Federal civil rights laws, rules, regulations, and policies.

VI. FUNDING AND PAYMENT PROCEDURE

A. Funding shown on NRCS-ADS-093 is hereby applied under this agreement to cover anticipated costs to be reimbursed to the Moore Traditional High School for the work outlined herein. Reimbursement by NRCS shall not exceed the amounts indicated on NRCS-ADS-093 or in any amendments without the prior written consent of NRCS.

B. Requests for payment shall be submitted by the Moore Traditional High School on SF-270 Request for Advance or Reimbursement to NRCS. The SF-270 will cite the agreement number, fund citation, remittance address, and billing period. The SF-270 and itemized expense support documentation are to be submitted to the NRCS Program Manager stated on NRCS-ADS-093.

C. On an accrual quarterly basis, recipients must submit an interim Federal Financial Report (FFR), (SF-425 and 425A) no later than 30 days after each reporting period to:

Reed Cripps
Kentucky NRCS State Office
771 Corporate Drive
Suite 300
Lexington, KY 40503
Telephone: 859-224-7373
Reed.cripps@ky.usda.gov

D. A final report shall be submitted no later than 90 days at the completion of the award agreement. For final FFRs, reporting end date shall be the end date of the project or the agreement period. The report(s) should be submitted to the NRCS Technical Contact identified in NRCS-ADS-093. This report will be used to monitor Federal Cash

Transactions for each award. Recipients may download the applicable form at www.forms.gov.

Kentucky Natural Resources Conservation Service (NRCS:

_____ _____

Dr. Reed W. Cripps **Date**
Assistant State Conservationist

Jefferson County Public Schools:

_____ _____

Dr. Donna M. Hargens **Date**
Superintendent

Appendix A

United States Department of Agriculture

CODE 325-CPS-1

Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

HIGH TUNNEL SYSTEM

Code 325

(ft^2)

DEFINITION

An enclosed polyethylene, polycarbonate, plastic, or fabric covered structure that is used to cover and protect crops from wind, excessive rainfall, or cold, to extend the growing season in an environmentally safe manner.

PURPOSE

Improve plant health and vigor.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to land capable of producing crops. This practice applies where wind intensity may damage crops, or where an extension of the growing season is needed due to climatic conditions.

The practice does not apply to crops which are not grown in the natural soil profile (i.e. tables/benches, portable pots, hydroponically, etc.).

CRITERIA

Plan supportive conservation practices to address all environmental concerns associated with the installation and use of the high tunnel systems such as erosion, irrigation, and runoff.

Crops must be grown in the natural soil profile. Raised beds may be installed to improve soil condition, fertility, and access. Raised beds are a maximum of 12 inches in height.

The practice does not include greenhouses or low tunnel systems.

The practice cannot be used to provide shelter or housing for any livestock, or to store supplies or equipment.

Locate structures to avoid buried public utilities.

Locate the structure near a viable water source for irrigation.

Locate the structure outside of the 100 year floodplain.

Locate the high tunnel conveniently for ingress/egress of plant materials, equipment, and other operation and maintenance activities.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide.

NRCS, KENTUCKY
September 2015

Construct high tunnel structures on level grade or the naturally occurring slope if the slope does not exceed 5 percent.

The high tunnel structure must be planned, designed, and constructed from a manufactured kit in accordance with manufacturers' recommendations. The high tunnel frame must be constructed of metal, wood, or durable plastic; and be at least 6 feet in height at the peak of the structure. In Kentucky, end walls are required for the high tunnel system. Use structures with the entry/exit point sized to facilitate movement of equipment and supplies needed for the production of planned crops.

Select the high tunnel covering material of a significant thickness to withstand the temperature change for the period required and shall have a 4-year-minimum lifespan. At a minimum, use 1 layer of 6-mil greenhouse grade UV-resistant polyethylene cover. End walls will also be a minimum of 1 layer of 6mil greenhouse grade polyethylene. End wall covering may be greenhouse-grade plastic, polycarbonate, or other durable light transmitting covering provided that it meets minimum criteria noted above.

For organic producers, it will be the responsibility of the producer to make sure that all permissible activities, design, material used, material specifications are consistent with the USDA Agricultural Marketing Service National Organic Program, National Standards on Organic Agricultural Production and Handling.

Where snow loads may damage the structure, the tunnel cover shall be removed or rolled up at the end of the growing season unless the structure is designed by the manufacturer to withstand expected snow loads.

Where wind loads may damage the structure, select the tunnel cover and structure designed by the manufacturer to withstand expected wind loads or manage the tunnel system in a manner that limits wind damage.

High tunnels shed a large amount of water and can create drainage and ponding issues where none previously existed. Direct runoff away from the high tunnel structure to avoid ponding. Provide a detention basin, storage reservoir, or stable outlet when runoff from tunnel covers empties onto the ground surface with potential to cause erosion.

Outside the high tunnel structure, vegetate all exposed surfaces disturbed during construction in accordance with CPS Code 342, Critical Area Planting. If climatic conditions preclude the use of seed or sod, use CPS Code 484, Mulching.

Significant modifications to the high tunnel structure design must be verified and approved by the manufacturer prior to construction to ensure that any warranties remain in effect.

CONSIDERATIONS

Runoff may be captured and used for irrigation purposes though runoff should not be relied on as the only source of irrigation water. Use the criteria for CPS Code 558, Roof Runoff Structure, to design any structure needed to meet the runoff criteria above. Runoff may empty into surface or underground outlets, or onto the ground surface when properly protected. Size surface and underground outlets according to the criteria for CPS Code 620, Underground Outlet, to ensure adequate capacity. Provide for cleanout as appropriate. Surface or ground outlets such as rock pads, rock-filled trenches with subsurface drains, concrete and other erosion-resistant pads, or preformed channels may be used.

Consider managing the high tunnel system to maintain or improve soil health by following a soil management system that creates a favorable habitat for soil microbes by:

- minimizing soil disturbance, physical, chemical and biological
- using plant diversity in the rotation to increase diversity below ground

- keeping a living root growing year round as much as possible
- keeping the soil covered with residue and growing plants year round

Remove or manipulate side covers to control internal temperatures and humidity. Installation of vents, fans, or heaters should be considered and should be included in the manufacturer's design and recommendations. If providing protection from the sun extends the growing season, consider a high tunnel structure that includes shade cloth.

If available, consider installing a supplemental manufacturer's kit to provide additional structural support.

Consider setting end posts in concrete, the use of heavier 12 to14 gauge steel, and a double layer of plastic to increase integrity of the structure.

Consider a minimum clearance of 10 to 20 feet between side by side high tunnel installations for snow removal and cover installation.

Consider potential shading of high tunnel structures by other structures or trees and locate at a distance of two times the height of the tree or structure.

Control weeds with soil fabrics, covers, or mulches.

Where growing seasons are extended, consider utilizing cultural and management practices that enhance habitat for native pollinators that facilitate pollination for crops produced during that period. If available refer to the KY Pollinator Handbook for more information on habitat creation.

Consider additional conservation practices where appropriate to include:

- crop rotation
- irrigation water management
- nutrient management
- integrated pest management
- critical area planting
- mulching
- roof runoff structure
- diversion
- underground outlets
- heavy use protection
- cover crop

PLANS AND SPECIFICATIONS

Prepare plans and specifications in accordance with the criteria of this standard.

As a minimum, the plans and specifications include the following:

- Identify purpose.
- Document the planned growing season.
- Layout and location of the high tunnel.
- Site preparations and the required supporting practices for erosion control, runoff, and vegetative cover according to the requirements of the corresponding conservation practice standard.
- The planned width and length of the seasonal high tunnel. Statement that the seasonal high tunnel will be built per the manufacturer's directions.
- Procedure and timing to remove or roll up the high tunnel cover prior to inclement weather conditions.

Completion of Kentucky High Tunnel Jobsheet meets these requirements.

OPERATION AND MAINTENANCE

Managing a tunnel requires intensive and vigilant attention by the producer.

Provide specific instruction for proper operation and maintenance of each component of this practice and detail the level of repairs needed to maintain the effectiveness and useful life of the practice. Review with O & M instructions with the landowner and/or operator responsible for the practice.

Periodically inspect the high tunnel and repair, reinstall, or replace, as needed to accomplish the intended purpose.

Manage the structure in a manner that limits wind and/or snow damage. Close sides and ends before storm events. In areas that receive snow and ice, the structure should be closed or the cover should be completely removed prior to winter weather.

If the cover remains over winter, remove snow and ice from the structure and sides promptly to prevent structure failure.

When the structure is at serious risk of collapse due to weather conditions, consider slashing the plastic cover to relieve pressure and save the framework.

Perform soil tests regularly to monitor nutrients and to monitor salt build-up. The soils under the immobile high tunnels may require periodic "flushing" to remove salt build-up. This is accomplished by removing the cover for a season to allow natural precipitation to infiltrate, or by artificially flooding the ground under cover.

If needed, seed all disturbed earth surfaces outside of the high tunnel and maintain the vegetation throughout the structure's life.

Removal of cover materials shall be consistent with the intended purpose and site conditions.

Plan for proper disposal of the cover at the end of its useful life.

Operation of equipment near and on the site shall not compromise the intended purpose of the high tunnel structure or its cover.

REFERENCES

Community Garden Guide Season Extension - High Tunnel, NRCS. Rose Lake Plant Materials Center, East Lansing, Michigan.

"High Tunnel Production Manual". Penn State University College of Agriculture, Department of Horticulture. White, L. and Orzolek, M. 2003

"High Tunnels: Using Low-Cost Technology to Increase Yields, Improve Quality and Extend the Season". Ted Blomgren, Cornell Cooperative Extension, and Tracy Frisch, Regional Farm and Food Project. Published by the University of Vermont Center for Sustainable Agriculture. 2007.

"Minnesota high tunnel production manual for commercial growers". Edited by: Terrance T. Nennich, Sr., University of Minnesota Extension and Suzanne Wold-Burkness, University of Minnesota. 2013.

"Growing Under Cover: A Guide to Polytunnel Options for Kansas Growers"; Kansas Rural Center; Kim Scherman, 2014.

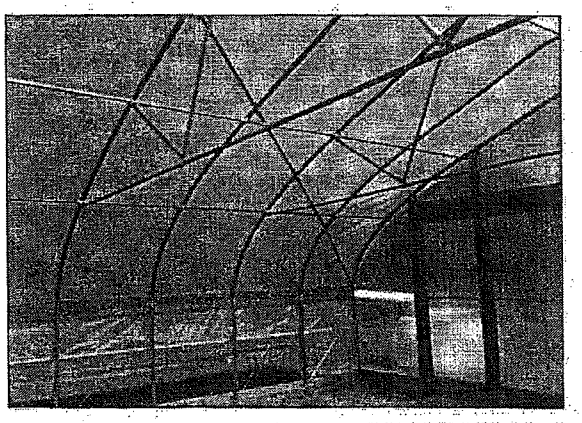
NRCS Natural Resources Conservation Service

High Tunnel System

Conservation Practice Job Sheet — Code 325

DEFINITION

An enclosed polyethylene, polycarbonate, or plastic covered structure that is used to cover and protect crops to extend the growing season in an environmentally safe manner.



PURPOSE

To improve plant health and vigor

WHERE PRACTICE APPLIES

This practice applies to land capable of producing crops. This practice applies where an extension of the growing season is needed due to climatic conditions. The practice does not apply to crops not grown in the natural soil profile. Raised beds are limited to 12 inches in depth.

- Practice cannot be utilized to provide shelter or housing for any livestock.
- Practice cannot be utilized to store equipment or supplies.
- Practice does not include greenhouses or low tunnel systems.

Minimum Height: 6' clearance in the center of the structure

Cover Material: Minimum of one layer 6 mil Greenhouse grade UV stabilized plastic rated for a 4 year lifespan.

LAYOUT AND LOCATION

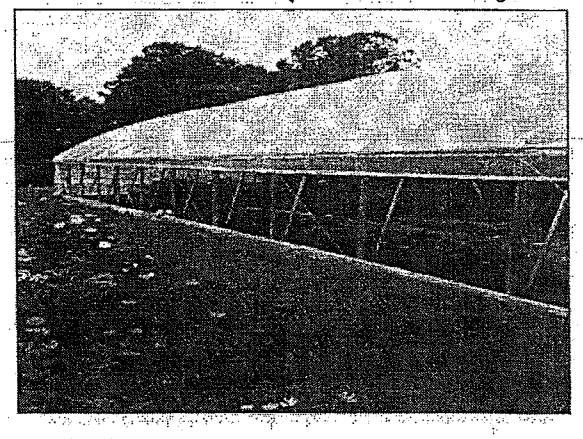
- Choose a location with a moderately well-drained or well-drained soil.
- Locate the near a viable water source for irrigation.
- Locate the practice to avoid public utilities.
- Place outside of the 100 year floodplain.
- Plan the high tunnel for convenient ingress/egress of plant materials, equipment, and other operation and maintenance activities.

SITE PREPARATION AND REQUIRED SUPPORTING PRACTICES

- Remove existing vegetation with herbicide, tillage, or a combination of both.
- Plan adequate drainage away from the structure to prevent erosion and ponding in and around the crop area.
- Level area with minimum soil disturbance.
- Check slope. High tunnel should not be installed on slopes greater than 5%.
- Plan supportive conservation practices to address all environmental concerns associated with the installation and use of the high tunnel systems such as erosion, irrigation, and runoff.
- Treat disturbed areas with Critical Area Planting (342) and Mulching (484) practices.

CONSIDERATIONS

- Consider structures with 4 foot spacing of bows because narrow spacing offers better stability than wider spaced bows.
- Set end posts in concrete, use of heavier 12 to14 gauge steel, and install a double layer of 6 mil plastic to increase integrity of the structure.
- Use concrete ground anchors to increase stability of permanent structures.
- Installation of bracing kits (when available) is highly recommended. Lateral and horizontal bracing can increase structural strength for snow and wind load.
- Install rollup sides for temperature regulation.
- For heat retention and increased strength, install a cover using two layers of 6 - mil, greenhouse-grade, UV resistant polyethylene. Use inflation fans to produce insulated air space. This system increases heat retention in the high tunnel and helps protect the cover from wind damage.
- Plan and install waterline for irrigation. Call 811 to determine and avoid buried utilities.
- Create a minimum clearance of 10 to 20 feet between side by side high tunnel installations for snow removal and cover installation.
- Prevent potential shading of high tunnel structures by other structures or trees and locate at a distance of two times the height of the tree or structure.
- Gothic style (peaked roof) high tunnels shed snow and ice more readily that rounded roof high tunnels.
- Capture and use roof runoff for irrigation purposes though runoff should not be relied on as the only source of irrigation water.
- Rotate the location of the tunnel or remove cover in winter to allow rain, wind, sun, and cold to cleanse soil from possible salt and disease buildup.



OPERATION AND MAINTENANCE

- Operation of equipment near or in the structure shall not compromise its intended purpose.
- To protect high tunnel framework from snow, ice, or wind damage, remove cover when not in use.
- To protect structure in high wind events, secure doors and all ventilation openings prior to inclement weather.
- Control weeds with soil fabrics, covers, or mulches.
- Maintenance and repair of the high tunnel structure is the sole responsibility of the individual. The covered area will be periodically be inspected and shall be replaced or repaired as needed to accomplish the intended purpose.
- If cost shared, the contract participant is expected to bear the costs of all repairs for the 4 year lifespan of this practice.

NRCS Natural Resources Conservation Service

KY Conservation Practice Job Sheet — Code 325

SPECIFICATIONS

Site-specific requirements and additional provisions are listed on the following pages. Specifications are prepared in accordance with the High Tunnel System (325) practice standard in the NRCS Field Office Technical Guide. This information is considered to be part of the contract and/or conservation plan.

Client:	**Farm #:**
Field(s):	**Tract #:**
Assisted By:	**Date:**
Contract #: (If applicable)	**Planned Growing Season:** _____ (month) **through** _____ (month)

STRUCTURE INFORMATION	
MANUFACTURER	**STRUCTURE SIZE**
Company:	**Width:**
Model:	**Length:**
Type:	**Total square foot** (L x W)
Add. Spec: (optional)	**Height:** (min 6' required)
If planting is required due to construction disturbance (complete as necessary)	
Seeding dates: _____	**Lime:** _____ (lbs./ac)
Fertilizer : _____ (lbs./ac) or (lbs./sq. ft.)	**Mulch :** _____ (lbs./ac) or (lbs./sq. ft.)

COMPONENT OR FACILITATING FOTG PRACTICES (Check all that apply. Refer to the individual specifications as applicable)	
☐ Diversion (362)	☐ Roof Runoff Structure (558)
☐ Irrigation System, Microirrigation (441)	☐ Critical Area Planting (342)
Other Conservation Practice:	
Species Planted:	Seeding Rate:

PRODUCER CERTIFICATION

This structure was constructed and installed using a manufactured kit. All manufacturers' recommendations were followed. I have read and understand the operation and maintenance requirements associated with this practice. I understand that electrical, heating and mechanical ventilation equipment are not eligible for cost-share as part of this practice.

_____ _____

Participant/Producer Date

NRCS Natural Resources Conservation Service

NRCS CERTIFICATION

Certifications			
Job Sheet	Prepared by:	Title:	Date:
	Approved by:	Title:	Date:
Installation	Meets NRCS Standards and Specifications		
	Certification by:	Title:	Date:

Note: The High Tunnel System will be constructed according to manufacturer's directions. End walls, doors, appropriate cover must be installed prior to certification by NRCS.

Practice: 798 - Seasonal High Tunnel for Crops

Scenario: #1 - Quonset-style (arched roof)

Scenario Description:

A quonset-style (arched roof) manufactured frame of tubular steel (30 x 72 ft.) covered with 4-year 6mil plastic. Costs are based on purchase of manufactured kit and landowner installing the structure. Structure must be installed to manufacturer's specifications.

Before Situation:

Cropland where extension of the growing season is needed. Additional resource concerns that may need to be addressed include; soil erosion, soil condition, water quality, water quantity, plant condition.

After Situation:

A seasonal high tunnel has been installed and the growing season has been extended for 1-4 months on average. Plant health and vigor is improved.

Scenario Feature Measure: Area of Tunnel Installed

Scenario Unit: Square Foot

Scenario Typical Size: 2,160

Scenario Cost: $8,138.80 **Scenario Cost/Unit:** $3.77

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$18.80	71	$1,334.80
Materials						
Hoop House, quonset style, base package	1277	Includes the framework complete with all predrilled steel, hardware and instructions. Includes 6 mil 4-year polyethylene film to cover tunnel, and polylock for sides and ends for a quonset style (round top) hoop house. Materials and shipping only, does not include labor.	Square Foot	$3.15	2160	$6,804.00

Practice: 798 - Seasonal High Tunnel for Crops

Scenario: #2 - Gothic-style (peaked roof)

Scenario Description:

A gothic-style (peaked roof) manufactured frame of tubular steel (30 x 72 ft.) covered with 4-year 6mil plastic. Costs are based on purchase of manufactured kit and landowner installing the structure. Structure must be installed to manufacturer's specifications.

Before Situation:

Cropland where extension of the growing season is needed. Additional resource concerns that may need to be addressed include; soil erosion, soil condition, water quality, water quantity, plant condition.

After Situation:

A seasonal high tunnel has been installed and the growing season has been extended for 1-4 months on average. Plant health and vigor is improved.

Scenario Feature Measure: Area of Tunnel Installed

Scenario Unit: Square Foot

Scenario Typical Size: 2,160

Scenario Cost: $10,579.60 **Scenario Cost/Unit:** $4.90

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$18.80	71	$1,334.80
Materials						
Hoop House, gothic style, base package	1278	Includes heavy-duty, gothic framework complete with all predrilled steel, hardware and instructions. Includes 6 mil 4-year polyethylene film to cover tunnel, roll-up sides, lumber, and polylock for sides and ends for a gothic style (peaked top) hoop house. Materials only, does not include labor.	Square Foot	$4.28	2160	$9,244.80