

United States Department of Agriculture
 NRCS Natural Resources Conservation Service

Seasonal High Tunnel System for Crops

INTERIM
 Alabama NRCS Job Sheet AL798



Definition

A seasonal polyethylene covered structure that is used to cover crops to extend the growing season in an environmentally safe manner.

Purpose

The purpose of the seasonal high tunnel is to improve plant quality, improve soil quality, reduced nutrient and pesticide transport, improve air quality through reduced transportation inputs, and reduce energy use through local consumption.

Where used

A seasonal high tunnel may be used where existing specialty commodity crops are grown in open field conditions, and extension of the growing season is needed due to climate conditions.

Commercially available high tunnel structures are made in numerous widths and lengths. The high tunnels are constructed of metal or plastic bow frames that are covered with a single layer of

polyethylene. Ventilation can be achieved by means of a combination of roll-up side vents, end vents, and occasionally, roof vents. Generally, the end walls are framed-in to create door and ventilation areas. The high tunnel structure covers several crop rows, is wide enough to allow crop growth to full maturity under the tunnel, and is tall enough to allow spraying, cultivation and harvest to occur with the tunnel intact.

Conservation management system

Water runoff from the high tunnels or from other nearby sources can cause erosion and ponding issues that may require the application of other practices such as infiltration trenches, diversions, underground outlets and critical area plantings. These additional practices must be planned and installed as a condition for the installation of a high tunnel. Additional practices should be considered as a part of a conservation plan, such as nutrient and pest management and crop rotation.

Seasonal High Tunnel System – Job Sheet

Producer _____ Location _____

Field Office _____ Conservation Contract _____

Materials List

- High Tunnel Structure with 6-mil (or thicker) greenhouse grade, UV resistant polyethylene cover; and a frame at least 6-feet high inside the tunnel.
- High Tunnel Structure with manufacturer's warranty, size(s) _____

Supporting Practices Required:

- Manufactured Gutter System
- Critical Area Planting (job sheet attached)
- Infiltration Trench along each side (construction plan attached)
- Underground Outlet (construction plan attached)
- Diversion (construction plan attached)
- Other _____

High Tunnel System Construction

- Locate your high tunnel structure on existing cultivated cropland that provides best available growing conditions for your desired crops.
- Select a high tunnel site after consideration of your land's slope, sun exposure, soil quality, soil fertility, water drainage, air drainage, risk of herbicide carry-over, and risk of soil pests.
 - The site must be relatively level and well drained, so the tunnel can be installed without grading or water ponding between the rows
 - Orient your tunnel according to manufacturer's instructions in a direction that provides acceptable sunlight exposure for the crops to be grown; and good ventilation by the prevailing wind.
 - The site location must have access to enough clean irrigation water to meet your crop needs and allow you to carry out normal farming operations without damaging the structure.
- Assemble high tunnel structure and prepare site according to manufacturer's instructions.
- At least 2 working days before you start building, request marking of underground utilities in the construction area by telephoning the Alabama One-Call System (dial 811). This is a free service.
- Lay out building location according to site plan.
- Install supporting practices as required, according to construction plans provided.

Operation and Maintenance

- Grow crops under the high tunnel in the natural soil profile- not on benches, tables, or in pots.
- Operate the high tunnel to manage temperature and moisture according to the tolerances of crops grown.
- Do not use the high tunnel for storage of material or equipment during the extended growing season.
- Periodically inspect structure and cover for damage. Reinstall or repair promptly.
- Follow manufacturer's instructions for operation and maintenance of the high tunnel structure.
- Avoid damage to structure from equipment operated in and around the seasonal high tunnel.
- Inspect runoff control measures after every significant rainfall event. Repair promptly.
- Remove the high tunnel's cover to protect it from damaging snow loads, tropical storms, hurricanes, or other inclement weather conditions accordance with manufacturer's recommendation.

Design Certification

This Seasonal High Tunnel System plan meets the requirements of NRCS Conservation Practice Standard 798.

Signature

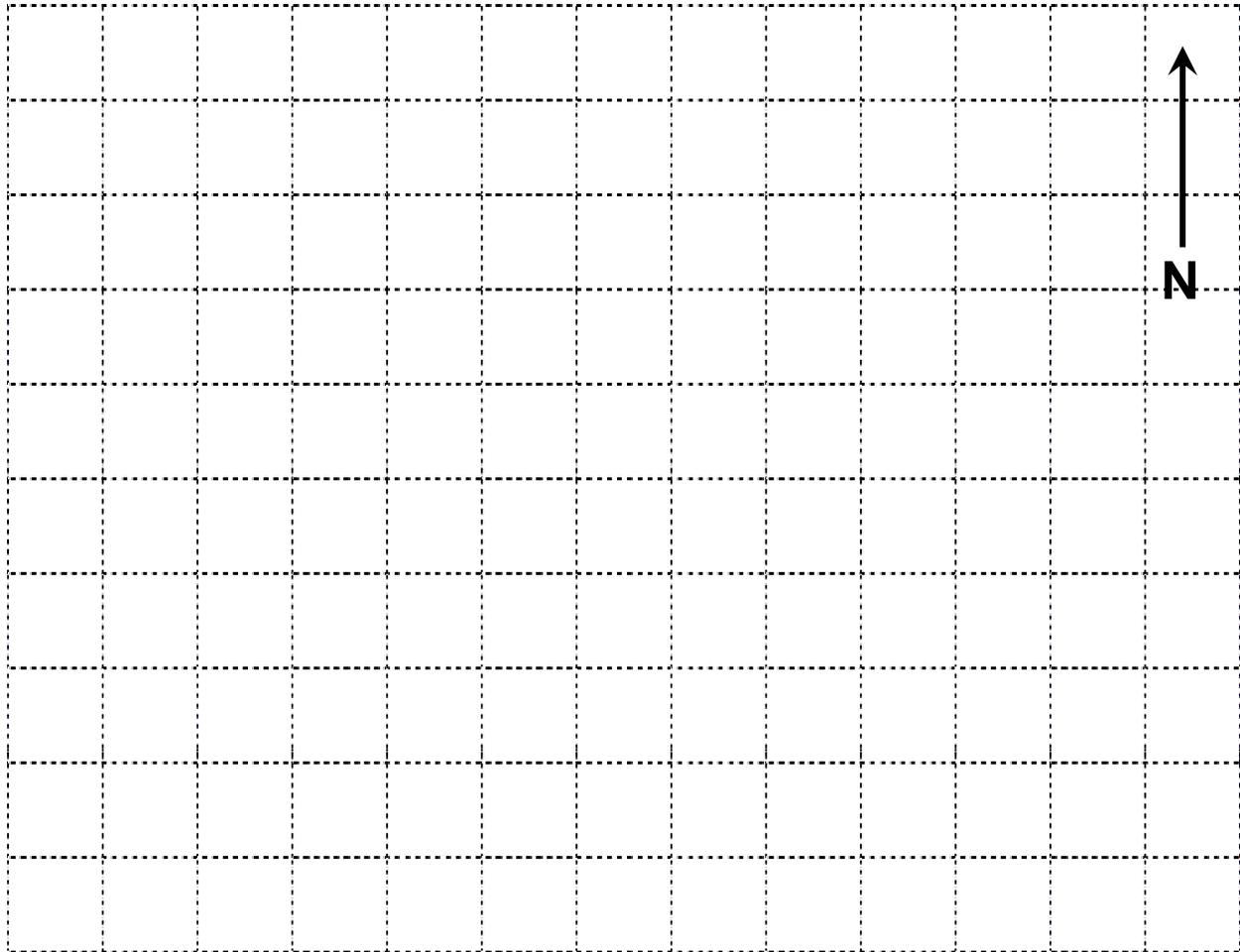
Title

Date

Seasonal High Tunnel System – Layout and Location

Plan view of seasonal high tunnel system site shown below.

Scale 1"=_____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes:

Seasonal High Tunnel System – Construction Checkout

Seasonal High Tunnel Structure – as-built measurements	
Length (ft)	Height in Center (ft)
Width (ft)	Structure Manufacturer

Supporting Practices Installed	
<input type="checkbox"/> Manufactured Gutter System <input type="checkbox"/> Critical Area Planting <input type="checkbox"/> Infiltration Trench along each side <input type="checkbox"/> Underground Outlets <input type="checkbox"/> Diversion <input type="checkbox"/> Other _____	Quantities and detailed checkout information for supporting practices shall be documented separately.

CHECK OUT:	
Amount Completed: _____ square feet.	Mark As-Built location on plan map.
Remarks _____	
This practice meets NRCS standards and specifications	<input type="checkbox"/> Yes <input type="checkbox"/> No
Check out by: _____	Date: _____

Seasonal High Tunnel System – First Year Annual Report **page 2 of 2**

Growing season (2 past years, plus the first year in the Seasonal High Tunnel):

Crop (type)	Crop Year	Season Dates	Length of Growing Season (Days)

Benefits for plant quality: _____

Benefits for soil quality: _____

Benefits for water quality: _____

Producer’s recommendations and observations:

Seasonal High Tunnel System – Second Year Annual Report

Producer _____ Location _____
 Field Office _____ Conservation Contract _____
 Report Date _____

Report Due On Or Before March 1, _____

- This year's maintenance requirements : *(add more sheets if necessary)*

Activity or Item <i>(list)</i>	Cost
	\$

- This year's crop in Seasonal High Tunnel:

Crop (type)	Crop Year	Yield	Nutrients (Fertilizer)			Pesticide(s)		
			Type	Rate	Timing	Type	Rate	Timing

- This year's growing season:

Crop (type)	Crop Year	Season Dates	Length of Growing Season (Days)

- Benefits for plant quality: _____
- Benefits for soil quality: _____
- Benefits for water quality: _____
- Producer's recommendations and observations:

Seasonal High Tunnel System – Third Year Annual Report

Producer _____ Location _____
 Field Office _____ Conservation Contract _____
 Report Date _____

Report Due On Or Before March 1, _____

- This year's maintenance requirements : *(add more sheets if necessary)*

Activity or Item <i>(list)</i>	Cost
	\$

- This year's crop in Seasonal High Tunnel:

Crop (type)	Crop Year	Yield	Nutrients (Fertilizer)			Pesticide(s)		
			Type	Rate	Timing	Type	Rate	Timing

- This year's growing season:

Crop (type)	Crop Year	Season Dates	Length of Growing Season (Days)

- Benefits for plant quality: _____
- Benefits for soil quality: _____
- Benefits for water quality: _____
- Producer's recommendations and observations: _____

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2/2011