

# Seasonal High Tunnel System for Crops

## *Interim Conservation Practice Job Sheet* **798**



Photo Source: [www.Harnois.com](http://www.Harnois.com)

### **Definition**

A seasonal high tunnel is a polyethylene covered structure with no electrical, mechanical ventilation or heating system, at least 6 feet in height, which modifies the climate to create more favorable growing conditions for vegetable and other specialty crops grown in the natural soil within the covered space.

### **Purpose**

The purpose of the seasonal high tunnel is to extend the crop growing season, improve plant quality, improve soil quality, and improve water quality from reduced nutrient and pesticide transport.

### **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 is 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 adoption of runoff control practices and critical area plantings. These additional practices must be planned and installed as a condition for the installation of a high tunnel. Plan the following practices as a part of a conservation plan: nutrient, pest, and irrigation water management.

For all vegetable and ornamental crops the Crop Rotations 328 and Cover Crops 340 conservation practices must be adopted. The 6-mil polyethylene cover must be removed every two years and a cover crop planted to reduce potential nutrient and pests problems.

High Tunnel Structures can extend the growing season 30 to 45 days allowing a producer to plant and harvest a crop earlier and/or later in the growing season. The management of High Tunnel House temperature is critical to the survival and growth of the crop(s)

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**Seasonal High Tunnel System – Job Sheet**

Producer \_\_\_\_\_ Location \_\_\_\_\_

Field Office \_\_\_\_\_ Conservation Contract \_\_\_\_\_

**Materials List**

High Tunnel Structure on MS NRCS approved list, size(s) \_\_\_\_\_

Polyethylene cover, 6 mil greenhouse grade or better, UV resistant

**Supporting Practices Required:**

Additional High Tunnel Structure Component (not included with high tunnel kit)

Critical Area Planting (job sheet attached)

Nutrient Management (job sheet attached)

Pest Management (job sheet attached)

Irrigation Water Management (job sheet attached)

Crop Rotations and Cover Crops for vegetables and ornamentals (job sheet attached)

Other \_\_\_\_\_

**High Tunnel System Construction**

- Contact the Mississippi OneCall System at 1-800-227-6477 at least 2 working days in advance of construction, for location of underground utilities.
- Obtain any required permits.
- Prepare site according to manufacturer's instructions.
- Lay out building location according to site plan.
- Assemble high tunnel structure according to manufacturer's instructions.
- Install supporting practices as required, according to construction plans provided.
- Locate your high tunnel structure on existing cultivatable 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 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.
- Contact NRCS when your work is completed, or before you make changes to you planned installation.

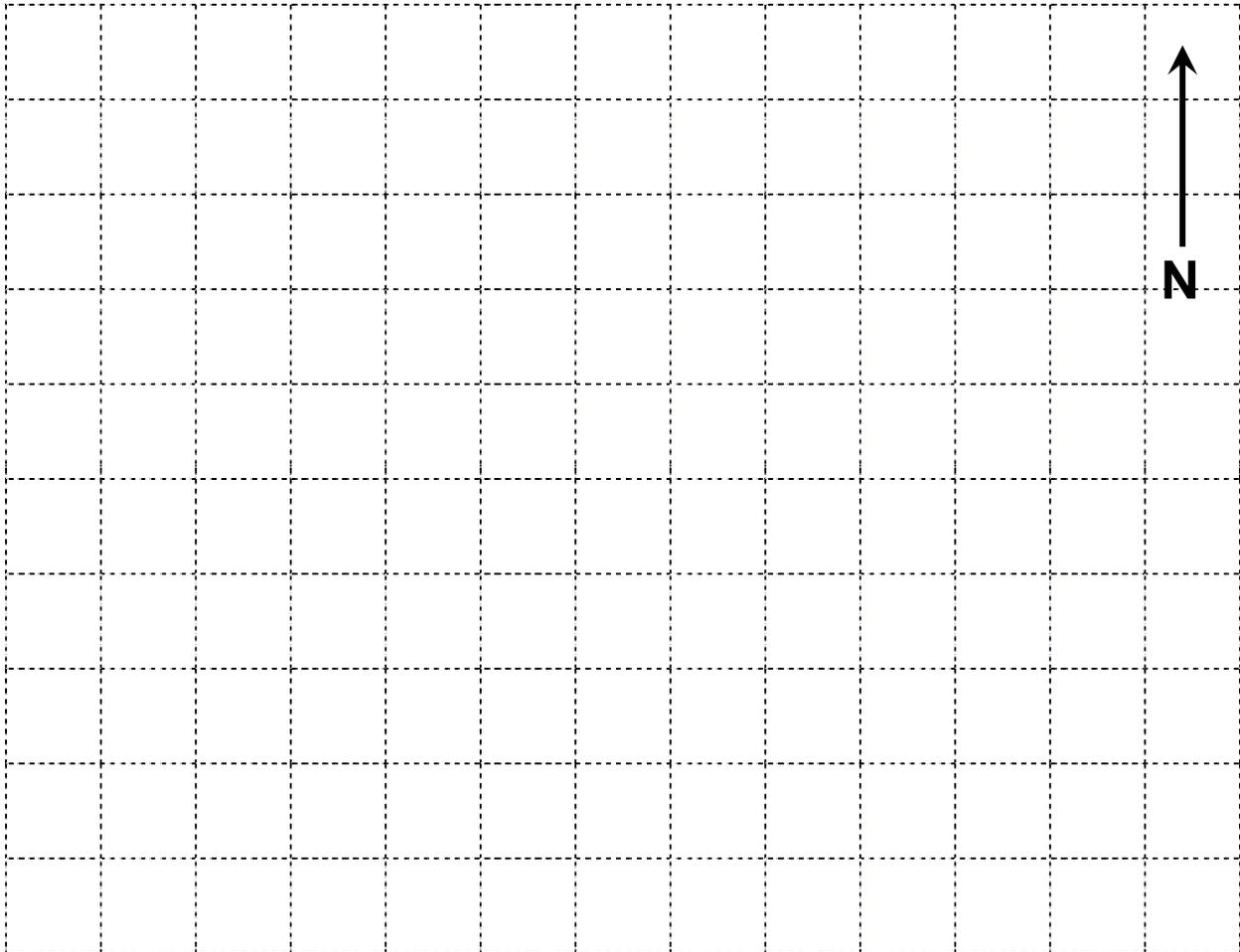
**Operation and Maintenance**

- 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 and store high tunnel cover at the end of each growing season if required by the manufacturer's warranty. Replace cover prior to use in the spring.
  - Remove and store polyethylene cover during hurricane events to reduce structural damage.
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**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")



<b>Additional Specifications and Notes:</b>		
<b>Design Certification</b>		
This Seasonal High Tunnel System plan meets the requirements of NRCS Conservation Practice Standard 798.		
_____	_____	_____
Signature	Title	Date

**Seasonal High Tunnel System – Construction Checkout**

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

<b>Supporting Practices Installed</b>	
<input type="checkbox"/> Runoff Control Practices <input type="checkbox"/> Critical Area Planting <input type="checkbox"/> Nutrient Management <input type="checkbox"/> Pest Management <input type="checkbox"/> Irrigation Water Management <input type="checkbox"/> Crop Rotation (vegetable and ornamental crops only) <input type="checkbox"/> Cover Crops (vegetable and ornamental crops only) <input type="checkbox"/> Other _____	Quantities and detailed checkout information for supporting practices shall be documented separately.

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