

# Seasonal High Tunnel System for Crops

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



Photo Source: [www.hightunnels.org](http://www.hightunnels.org)

### Definition

A seasonal high tunnel is a polyethylene covered structure with no electrical, 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 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 4 year manufacturer's warranty, size(s) \_\_\_\_\_

Polyethylene cover, minimum 6-mil greenhouse grade, UV resistant

#### **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)

Sediment Basin (construction plan attached)

Other \_\_\_\_\_

### High Tunnel System Construction

- Obtain all necessary permits prior to construction.
- Contact the Nebraska OneCall System at 1-800-833-7352 at least 2 working days in advance of construction, for location of underground utilities.
- 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.

### 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.
- These are intended to be seasonal structures and may not be designed to sustain a heavy snow load. Follow manufacturers' recommendations regarding care and maintenance of the polyethylene cover. If necessary, remove and store the cover at the end of each growing season and replace it prior to use in the spring.

**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

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

Supporting Practices Installed	
Manufactured Gutter System Critical Area Planting Infiltration Trench along each side Underground Outlets Diversion 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: _____

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Producer \_\_\_\_\_ Location \_\_\_\_\_  
 Field Office \_\_\_\_\_ Conservation Contract \_\_\_\_\_  
 Report Date \_\_\_\_\_

**Report Due On or Before December 15, \_\_\_\_\_**

Actual cost of Seasonal High Tunnel System \$ \_\_\_\_\_ *(attach copies of bills)*

First year maintenance requirements : *(add more sheets if necessary)*

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

Two years of cropping history before installation of Seasonal High Tunnel:  
*(add more sheets if necessary)*

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

First year's crop in Seasonal High Tunnel:

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

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:

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**Seasonal High Tunnel System – Second Year Annual Report**

Producer \_\_\_\_\_ Location \_\_\_\_\_  
 Field Office \_\_\_\_\_ Conservation Contract \_\_\_\_\_  
 Report Date \_\_\_\_\_

**Report Due On or Before December 15, \_\_\_\_\_**

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 December 15, \_\_\_\_\_**

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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