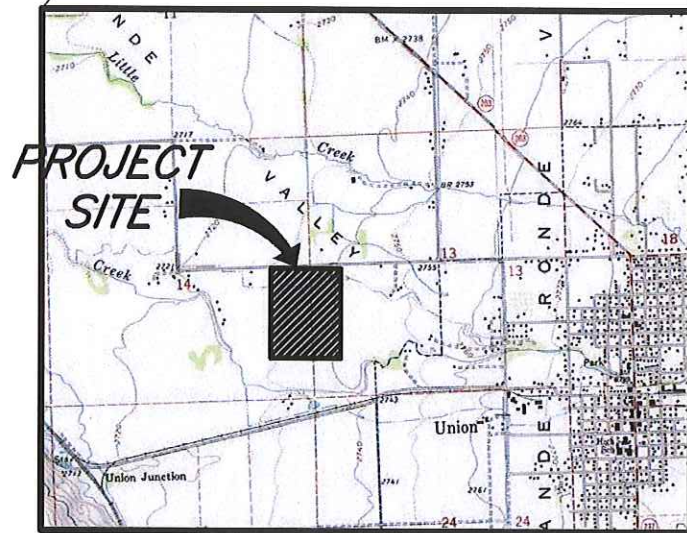
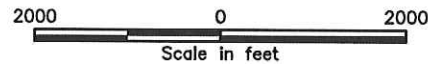


OREGON



### LOCATION MAP

T4S, R39E, SEC 13,14  
Union COUNTY, OREGON



UNION COUNTY  
PROJECT SITE

# HEFNER IRRIGATION SYSTEM

UNION COUNTY, OREGON

PREPARED BY:

UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL  
RESOURCES CONSERVATION SERVICE

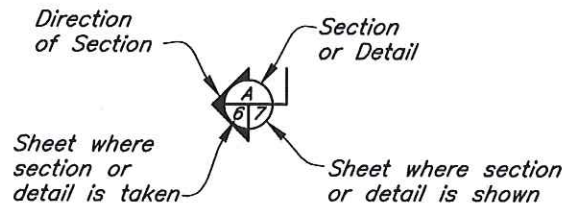
## INDEX OF DRAWINGS

SHEET NO.	TITLE
1.	Cover Sheet
2.	Plan View
3.	PUMP Details
4.	TRENCH Details
5.	DIVERSION/WHEELLINE Details

## ESTIMATED QUANTITIES

Excavation	30 CY
4" 125PSI PVC	350 FT
6" 125PSI PVC	1920 FT
WHEELLINE	2640 FT
HANDLINE	300 FT
DIVERSION	1 EA

Quantities are estimates only, based on topographic survey data and design drawings. The Contractor shall check quantities before entering into a contract with the landowner or NRCS.



## CROSS-SECTION SHEET REFERENCE



## GENERAL NOTES

1. Contour interval on all drawings is 1 foot.
2. Elevations and coordinate locations are based on State Plane OR North, NAD83.
3. All stationing refers to centerline of construction and is the measured horizontal distance.
4. Slopes designated as 2:1, 1.5:1, et cetera, are the ratios of horizontal distance to vertical distance.
5. All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the Project Engineer.
6. Dimensions are given in feet and tenths of a foot.
7. Topography and cross section ground lines are based on survey work performed in 10/2016.
8. Existing private improvements, which lie within the construction limits, unless otherwise noted will be removed by the owner prior to construction, or abandoned in place.
9. Protect all trees and land areas not located within the project construction or earthwork limit. Exercise care in areas not so marked to avoid unnecessary damage to natural vegetation.
10. Construction shall meet the requirements of OSHA. Actual slopes shall not exceed the slopes as indicated on drawings.
11. NRCS makes no representations as to the existence or non-existence of utilities. It is the responsibility of land owners or operators to comply with the provisions of ORS 757.541 to 757.571. Land owners or operators and contractors will be liable for any damage resulting from disruption of service caused by construction activities.
12. Contractor is required to attend a pre-construction meeting with NRCS and the landowner.

I UNDERSTAND THAT THIS IS MY PROJECT. I HAVE RECEIVED A COPY OF ALL DRAWINGS AND SPECIFICATIONS TO BE USED ON THIS PROJECT. I AGREE TO IMPLEMENT THE PROJECT IN ACCORDANCE WITH THE DRAWING SET AND SPECIFICATIONS PROVIDED. ANY ALTERATIONS TO THE DESIGN WILL BE APPROVED BY NRCS PRIOR TO INSTALLATION.

LANDOWNER SIGNATURE/DATE

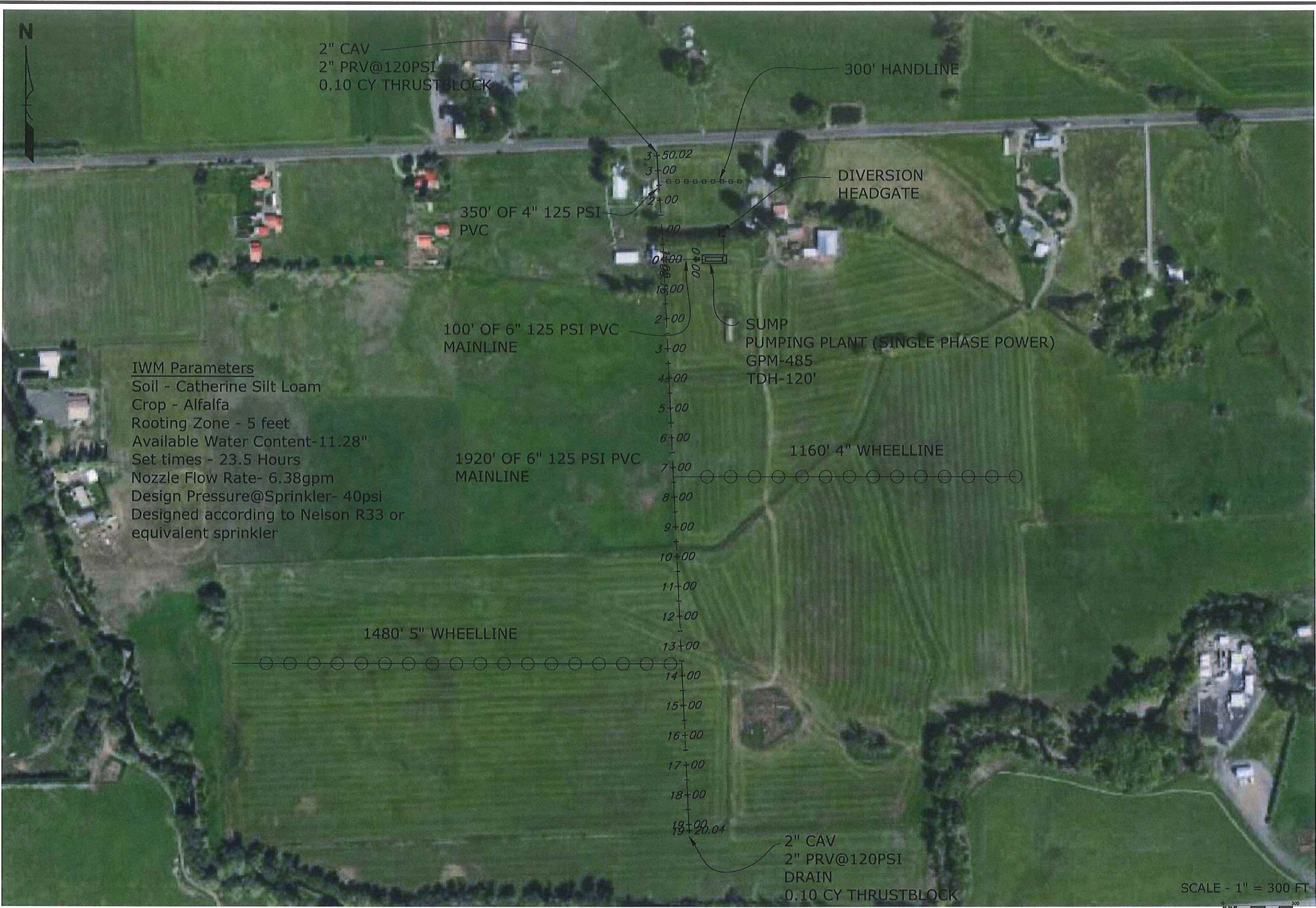
ATTENTION: Construction must be in conformance with these NRCS-approved drawings and specifications. No changes or modifications shall be made to these designs without full prior approval of the designer. Any material deviation from these drawings and specifications may constitute a breach of contract resulting in a discharge of NRCS from its obligation to provide cost-share under terms of the NRCS contract.

Date 10/17  
 Designed KLS  
 Drawn KLS  
 Checked  
 Approved  
 Title

HEFNER IRRIGATION SYSTEM  
 HEFNER  
 UNION, OR

United States  
 Department of  
 Agriculture  
 Natural Resources  
 Conservation Service

File Name hefprp1.rvtg  
 Drawing No.  
 11/1/2017 9:59 AM  
 Sheet 1 of 5



IWM Parameters  
 Soil - Catherine Silt Loam  
 Crop - Alfalfa  
 Rooting Zone - 5 feet  
 Available Water Content-11.28"  
 Set times - 23.5 Hours  
 Nozzle Flow Rate- 6.38gpm  
 Design Pressure@Sprinkler- 40psi  
 Designed according to Nelson R33 or  
 equivalent sprinkler

Date	_____
Designed	_____
Drawn	_____
Checked	_____
Approved	_____
Title	_____

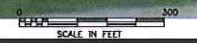
**PLAN VIEW**  
**HEFNER**  
 UNION, OREGON

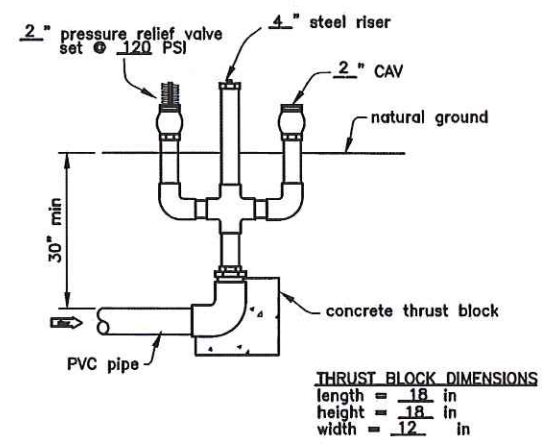
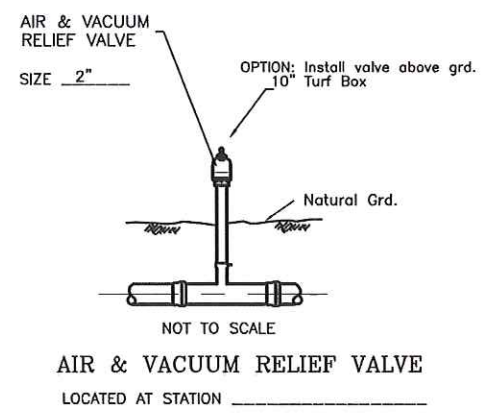
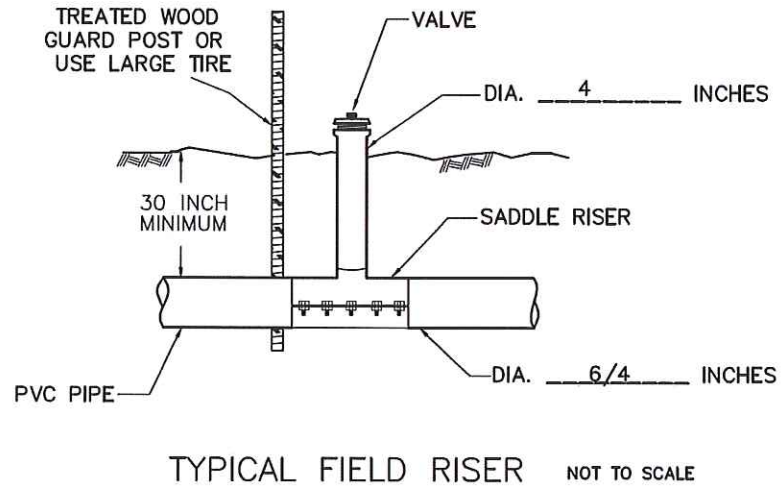
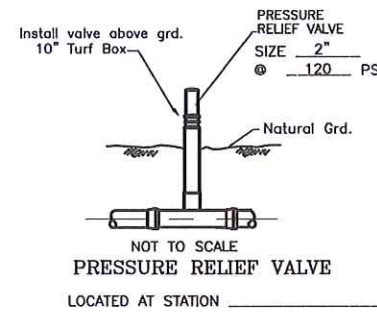
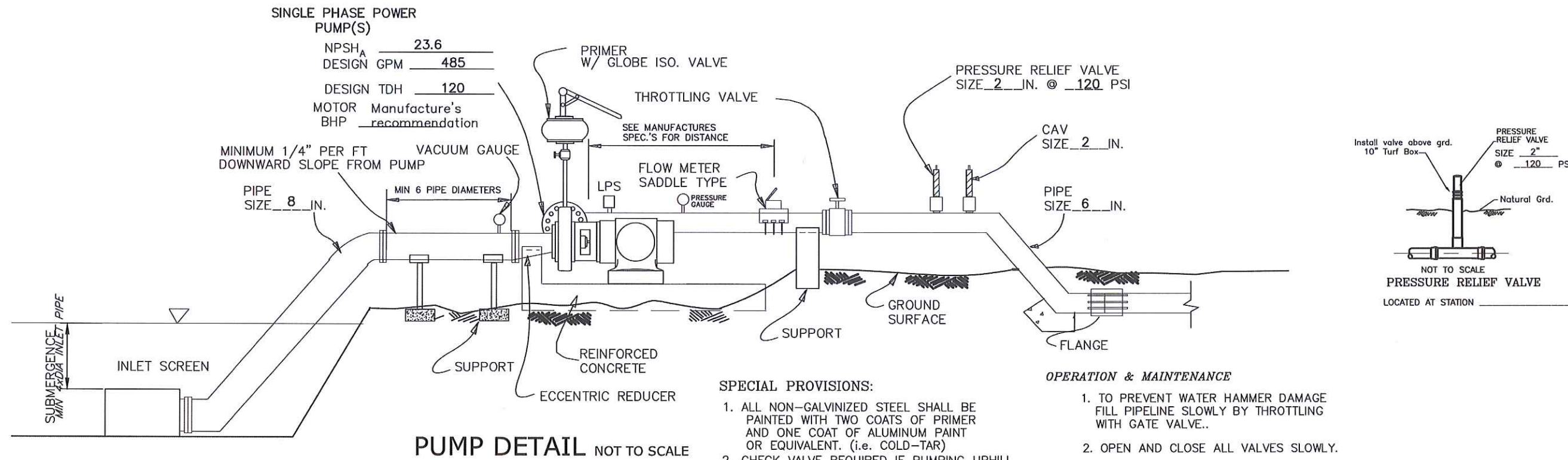


United States  
 Department of  
 Agriculture  
 Natural Resources  
 Conservation Service

File Name	HEFN
Drawing No.	_____

SCALE - 1" = 300 FT





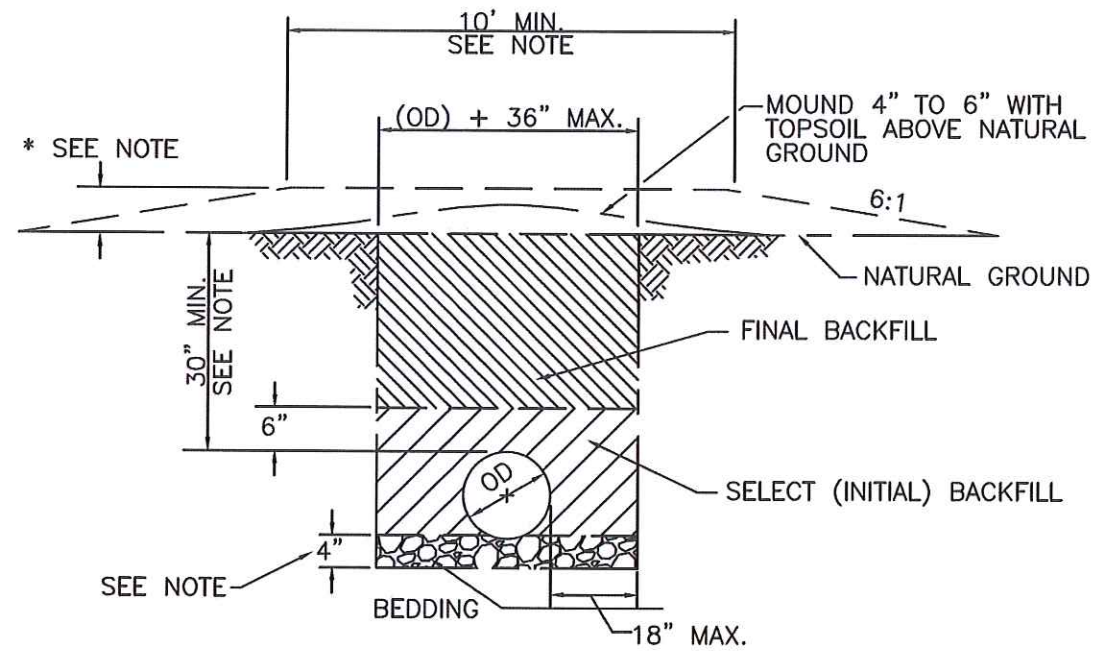
**END DETAIL**  
NOT TO SCALE

Date	
Designed	
Drawn	
Checked	
Approved	
Title	

**PUMPING PLANT DETAILS**  
 HEFNER  
 UNION, OREGON

United States Department of Agriculture  
 Natural Resources Conservation Service

File Name	HEFN
Drawing No.	
Sheet	3 of 5



DETAIL TD - TYPICAL MAINLINE & TRENCH CROSS SECTION

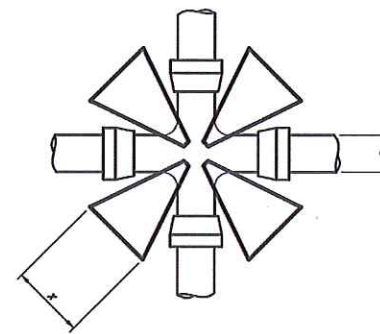
DESIGN Q = 380 (GPM)  
 MAX PRESSURE = 50 (PSI)  
 VELOCITY = 4.2 (FPS)  
 D = 6/4 (INCHES)

**CONSTRUCTION NOTES:**

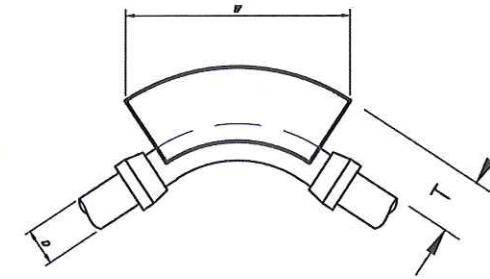
- \* PLACE FILL OVER PIPE AS SHOWN TO PROVIDE MINIMUM COVER IN PLACES WHERE NATURAL GROUND IS LOW. FILL MATERIAL MUST BE PLACED AND COMPACTED BEFORE TRENCH IS EXCAVATED. TOP WIDTH OF FILL SHALL BE NO LESS THAN 10 FEET AND SIDE SLOPES NO STEEPER THAN 6 HORIZONTAL AND 1 VERTICAL.
- FINAL BACKFILL SHALL BE FREE FROM MATERIAL LARGER THAN 3 INCHES IN DIAMETER. (SEE 430 PRACTICE SPECIFICATIONS)
- SELECT (INITIAL) BACKFILL SHALL CONSIST OF NATIVE SOIL, SAND OR GRAVEL THAT IS FREE FROM ROCKS OR STONES LARGER THAN 1 INCH IN DIAMETER, CONTAINING A MAXIMUM OF 12 PERCENT NON-COHESIVE FINES. SANDS SHALL HAVE A MAXIMUM OF 45 PERCENT PASSING THE #40 SIEVE. (SEE 430 PRACTICE SPECIFICATIONS)
- BEDDING SHALL BE USED ON FOUNDATIONS CONTAINING MATERIAL LARGER THAN 1/2 INCH. BEDDING MAY BE EITHER GRANULAR MATERIAL CONFORMING TO ASTM C-33 GRADATION 7 OR 8, OR SELECT BACKFILL MATERIAL.
- MINIMUM DEPTH OF COVER SHALL BE 30 INCHES.
- IF THERE ARE ROCKS, BOULDERS, OR ANY OTHER MATERIAL THAT MIGHT DAMAGE THE PIPE, THE TRENCH BOTTOM SHALL BE UNDERCUT A MINIMUM OF 4 INCHES BELOW FINAL GRADE AND FILLED WITH BEDDING MATERIAL CONSISTING OF SAND OR COMPACTED FINE GRAINED SOILS.
- WHERE TRENCH DEPTH EXCEEDS 4 FT, LOCAL, STATE AND FEDERAL SAFETY REQUIREMENTS FOR TRENCH EXCAVATION SHALL BE STRICTLY FOLLOWED.

DESIGN Q = 1200 (GPM)

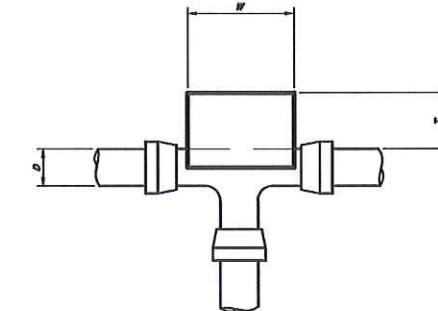
DETAIL TBD - THRUST BLOCK DETAIL



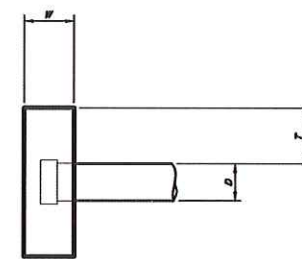
TYPE D  
(SEE SECTION A)



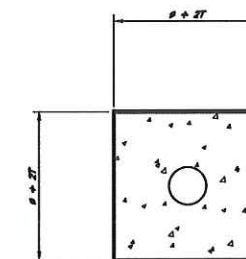
TYPE A  
(SEE SECTION A)



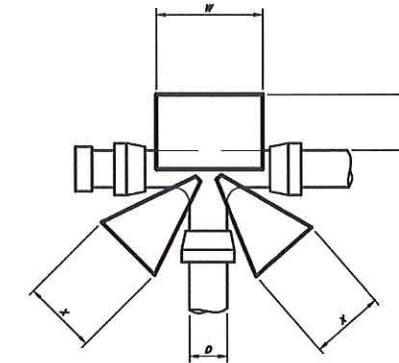
TYPE E  
(SEE SECTION A)



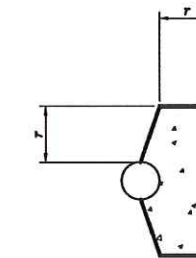
TYPE H  
(SEE SECTION B)



SECTION B



TYPE F  
(SEE SECTION A)



SECTION A

**DIMENSIONS**

TYPE A-45  
 D = 6 (in)  
 L & W = 1.5 (ft)

T = 12 (in)  
 V = 0.1 (yd<sup>3</sup>)

**DIMENSIONS**

TYPE H  
 D = 6 (in)  
 L & W = 1.5 (ft)

T = 12 (in)  
 V = 0.07 (yd<sup>3</sup>)

**DIMENSIONS**

TYPE H  
 D = 4 (in)  
 L & W = 1.5 (ft)

T = 12 (in)  
 V = 0.07 (yd<sup>3</sup>)

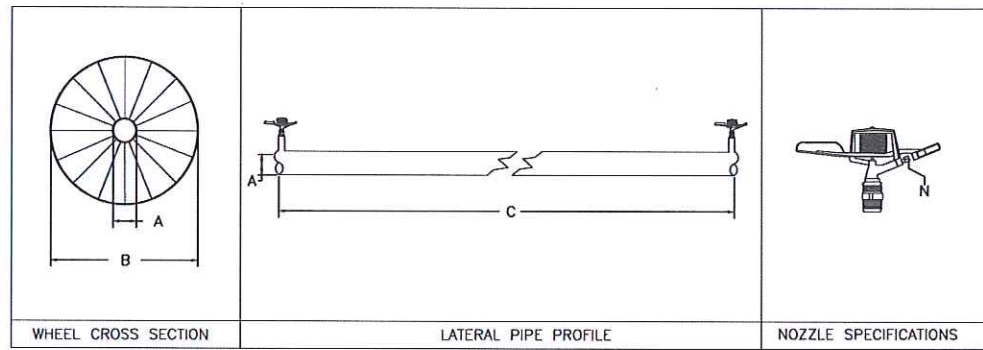
Date	
Designed	
Drawn	
Checked	
Approved	
Title	

TRENCH DETAILS  
 HEFNER  
 UNION, OREGON

United States  
 Department of  
 Agriculture  
 Natural Resources  
 Conservation Service

File Name  
 HEFN

Drawing No.

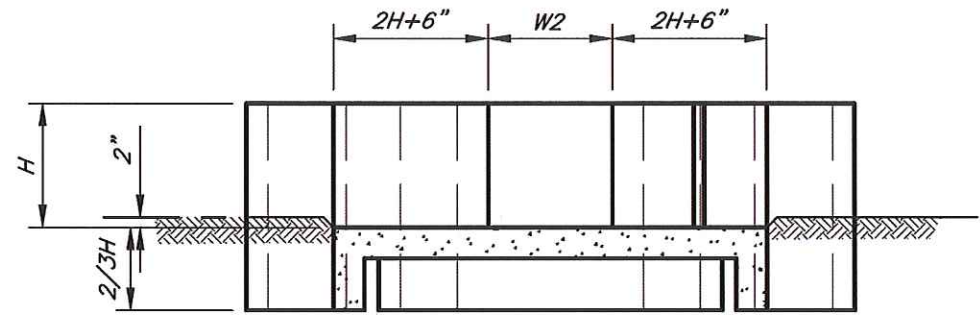
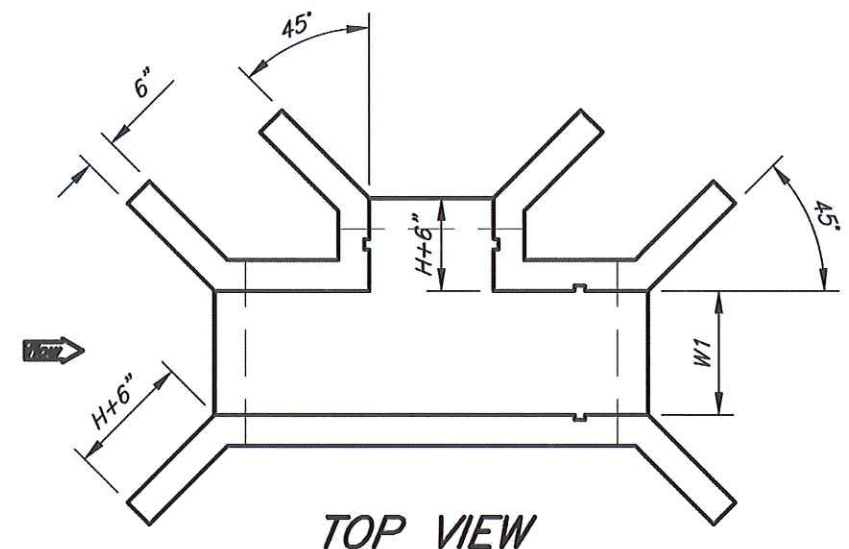


A = 4"/5" IN  
 B = 76 IN  
 C = 40 FT

N = GREEN IN  
 - THE NOZZLE SELECTED IN THIS DESIGN IS AN NELSON R33  
 (THIS IS NOT A REQUIRED SPRINKLER NOZZLE FOR THIS DESIGN.)  
 - THE FOLLOWING ITEMS ARE DESIGN SPECIFICATIONS FOR ANY NOZZLE THAT MAY BE USED:  
 DESIGN PRESSURE = 45 PSI  
 FLOW = 6.38 GPM/NOZZLE  
 RADIUS = 50 FT  
 WETTED DIA. = 100 FT

**CONSTRUCTION NOTES:**  
 - IF NOT INDICATED, THE WHEEL DIAMETER (B) MAY BE DETERMINED BY THE LANDOWNER.  
 - IF CHECKED FLOW CONTROL NOZZLES ARE REQUIRED

**WHEEL LINE DETAIL**  
 NOT TO SCALE



**TOP VIEW**

**SECTION**

**DIMENSIONS**  
 Capacity 500 gpm  
 Soil Classification SILT LOAM  
 W1 = (24" max) 2 ft  
 W2 = (24" max) 2 ft  
 H = (18" max) 1.5 ft  
 REBAR #4  
 SPACING 12 c.c. in

All walls and slabs shall have a minimum thickness of 6 inches.  
 This drawing requires supporting technical documentation prior to use and must be adapted to the specific site.

Drawing not to scale.

Date	
Designed	
Drawn	
Checked	
Approved	
Title	

**DIVERSION/WHEELLINE DETAILS**

HEFNER

UNION, OREGON

United States Department of Agriculture  
 Natural Resources Conservation Service

File Name	HEFN
Drawing No.	
Sheet	5 of 5