

Design Assumptions for
Nebraska Base Drawing NE100-10-005
Concrete Base Metal Pipe Riser and Alfalfa Valve
Drawdown Facility

Revised: 5/6/09 Replaces: 5001-33

Concrete Base Metal Pipe Riser and Alfalfa Valve Drawdown Facility

The pipe gage is determined by criteria contained in Table 3, Standard 378.

The coating requirements are determined by criteria contained in E.F.H. NB6-34 for corrosion resistance. The need for watertight coupling band is outlined in Standard 378.

This installation is to be used where the riser is surrounded by embankment to protect it from ice action and buoyancy.

The alfalfa valve drawdown should be used where there is a need to open it only occasionally. The configuration of the valve and arch is such that it won't maintain a constant flow because of trash accumulation.

The inlet to the drawdown should be placed below an anticipated ice depth to protect it from ice action.

Corrugation size (3x1) and (5x1) are only available in 36" dia. pipe and larger.

Use a minimum 30" dia. pipe riser to facilitate installation and maintenance of the valve.

Riser base length and width are to be the same.

Instructions for
Nebraska Base Drawing NE100-10-005
Concrete Base Metal Pipe Riser and Alfalfa Valve
Drawdown Facility

Fill in the following data fields to automatically fill in the necessary data fields on the drawing.

Title block

Title line(s)

Subtitle line

County, State

Sheet number of

Who / When

Designed

Drawn

Checked

Enter directly on drawing

Left click on yellow boxes on drawing to mark with X as required.
Left click data blue data fields to enter required information.

Date _____
 Designed _____
 Drawn _____
 Checked _____
 Approved _____

**TABLE OF QUANTITIES
 FOR CONCRETE RISER BASE**

DIA. OF RISER IN INCHES	30	36	42	48	54	60	66	72
CONCRETE, CU.YDS.	0.75	0.93	1.12	1.33	1.56	1.81	2.08	2.37
NO. 4 REINFORCING BAR, LIN.FT.	40	45	60	66	84	91	112	120
LENGTH OF EACH BAR, FT.-IN.	4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6
TOTAL NUMBER OF BARS	10	10	12	12	14	14	16	16
TOTAL WEIGHT - NO. 4 BARS, LBS.	26.7	30.0	40.1	44.1	56.1	60.8	74.8	80.2

TABLE FOR DIMENSION C

DIA. OF RISER IN INCHES	30	36	42	48	54	60	66	72
C SPACING IN INCHES	3	6	3	6	3	6	3	6

NO. 4 REINFORCING BAR = 1/2 IN. DIA. = 0.668 LBS./LIN.FT.

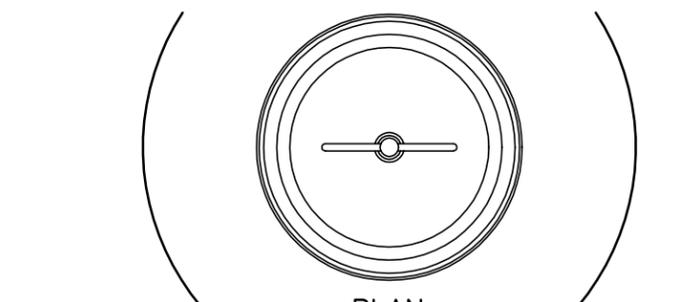
NOTE:

THE FOLLOWING DESIGNATIONS FOR PIPE CLASSIFICATIONS, CORRUGATIONS AND COATINGS WHEN REFERRED TO ON THE DRAWINGS ARE IN ACCORDANCE WITH CURRENT ASTM'S:

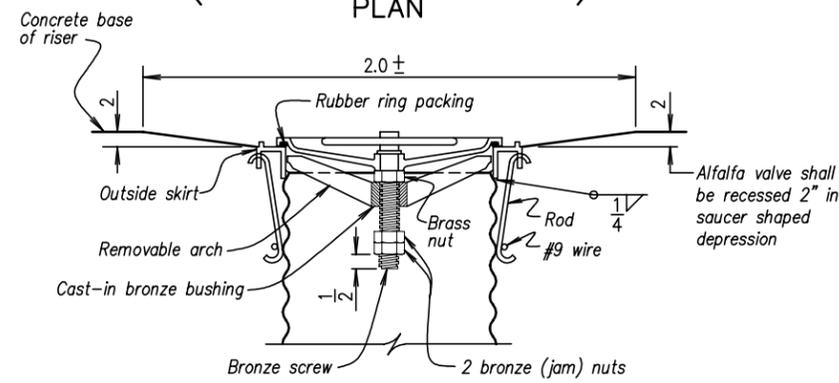
- A760 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, METALLIC-COATED FOR SEWERS AND DRAINS
- A761 STANDARD SPECIFICATION FOR CORRUGATED STEEL STRUCTURAL PLATE, ZINC-COATED, FOR FIELD-BATTED PIPE, PIPE-ARCHES AND ARCHES
- A762 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, POLYMER PRECOATED FOR SEWERS AND DRAINS.
- A849 STANDARD SPECIFICATION FOR POST-APPLIED COATINGS, PAVINGS AND LININGS FOR CORRUGATED STEEL SEWER AND DRAINAGE PIPE
- A885 STANDARD SPECIFICATION OF STEEL SHEET, ZINC AND ARAMID FIBER COMPOSITE-COATED FOR CORRUGATED STEEL SEWER, CULVERT AND UNDERDRAIN PIPE.

REQUIREMENT TABLE

X IN BOX INDICATES THE REQUIREMENTS THAT APPLY TO STRUCTURE <input type="checkbox"/> INDICATES - NOT APPLICABLE <input type="checkbox"/>			
CONCRETE:	CLASS	<input type="checkbox"/> 3000 <input type="checkbox"/> 3000M <input type="checkbox"/> 4000	CU.YD.
REINFORCING STEEL:			LB.
RISER:	CORRUGATED METAL PIPE, ZINC COATED STEEL, _____" DIA., _____ GA., _____ FT. NOMINAL LENGTH WITH A _____" DIA., _____ GA., PIPE TEE _____ FT. NOMINAL LENGTH WELDED TO IT 9" FROM THE LOWER END.		
DRAWDOWN:	CORRUGATED METAL PIPE, ZINC COATED STEEL, _____" DIA., WITH COUPLING(S), ELBOW(S) AND WITH _____" DIA. ALFALFA VALVE, AND TRASH RACK, PER DETAILS. TOTAL LIN.FT. = _____		
PIPE CLASSIFICATION	RISER	PIPE TEE	DRAWDOWN
TYPE I FULL CIRCULAR CROSS-SECTION FABRICATED WITH:			
<input type="checkbox"/> ANNULAR CORRUGATIONS, CLOSE RIVETED	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> HELICAL CORRUGATIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CORRUGATION REQUIREMENTS			
NOMINAL SIZE (INCH)			
<input type="checkbox"/> 1 1/2 x 1/4 (AVAILABLE ONLY IN HELICALLY CORRUGATED PIPE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 2 2/3 x 1/2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 3 x 1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 5 x 1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
COATINGS AND FABRICATION			
SEE COUPLING BAND AND METAL PIPE REQUIREMENTS SHEET			

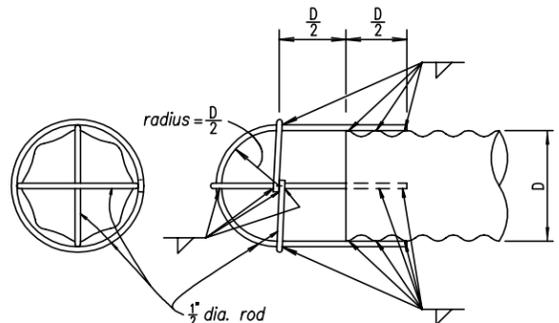


PLAN



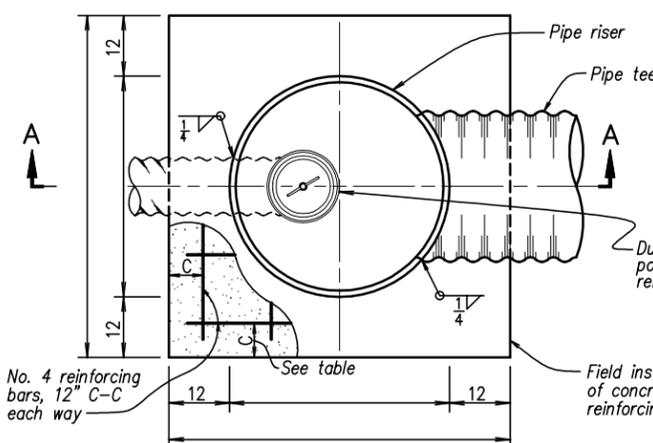
ALFALFA VALVE

DRAWDOWN PIPE TRASH RACK DETAIL

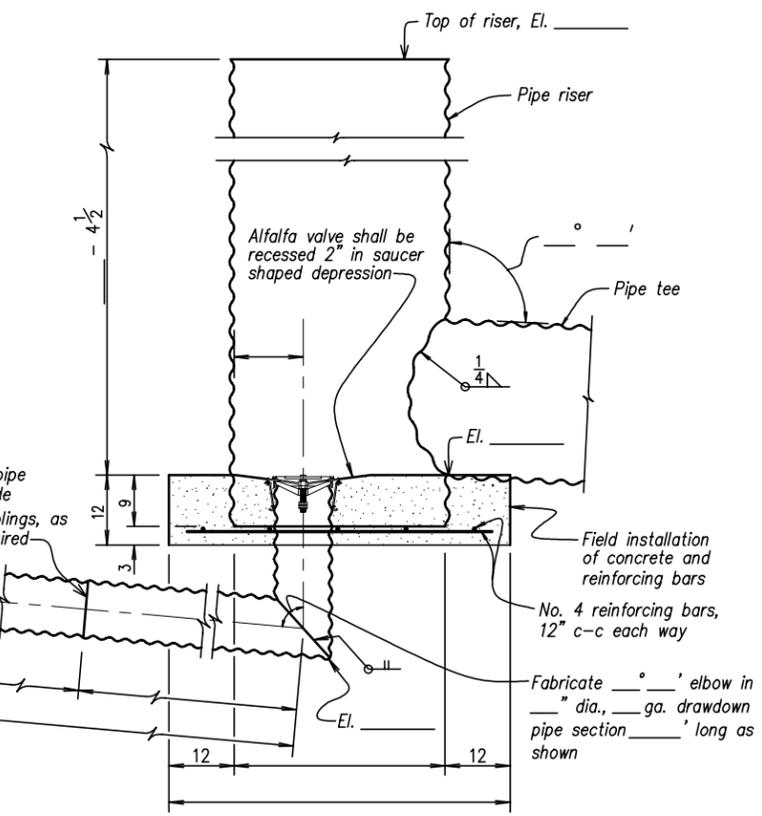


PIPE DIA. INCHES	* ROD LENGTH INCHES	** CIRCULAR ROD LENGTH-INCHES
8	30	35
10	37	41
12	44	47
15	54	57

* 2 RODS REQUIRED.
 ** APPROXIMATE 2" LAP.
 RODS TO BE ZINC COATED OR PAINTED ACCORDING TO PAINT SYSTEM C.
 1/2" DIA. ROD = 0.668 LB./FT.



PLAN

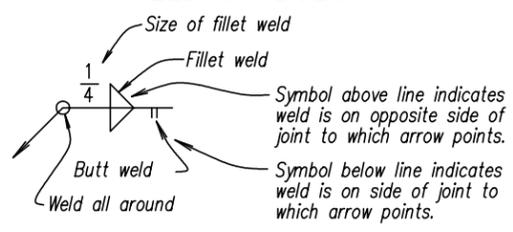


**SECTIONAL ELEVATION A-A
 RISER DETAIL**

FABRICATION AND INSTALLATION NOTES:

- THE ALFALFA VALVE SHALL HAVE A CONCAVE COVER, SOLID IRON FRAME SIMILAR TO WATERMAN'S TYPE 3 WITH A REMOVABLE THREE ARMED ARCH AND 2 BRONZE (JAM) NUTS TIGHTENED AGAINST EACH OTHER 1/2" FROM THE LOWER END OF THE BRASS SCREW.
- FOR 15" DIA. C.M. PIPE, USE 16" DIA. VALVE WITH A DOUBLE-RINGED IRON FRAME WITH RIBS SIMILAR TO WATERMAN'S TYPE 1.
- THE SOLID IRON FRAME SHALL BE WELDED TO THE PIPE AND HAVE HOLES DRILLED IN THE OUTSIDE SKIRT FOR PLACEMENT OF THE FOUR 3/8" DIA. GALV. RODS 8" LONG AND BENT AT BOTH ENDS AS SHOWN.
- RODS SHALL BE SECURED AGAINST PIPE WITH #9 WIRE TO INSURE THAT RODS STAY IN PLACE DURING PLACEMENT OF CONCRETE.
- ALL WELDS AND ALL HEAT AFFECTED AREAS ON ZINC-COATED METAL SHALL BE THOROUGHLY CLEANED AND TREATED IN ACCORDANCE WITH SPECIFICATIONS.
- FOR FABRICATION OF RISERS ON HELICAL PIPE A FILLER STRIP MAY BE USED TO INSURE A WATERTIGHT SEAL BETWEEN THE RISER AND TEE.
- WHEN MORE THAN ONE COATING IS CHECKED IN THE COLUMN BOXES EACH TYPE IS ACCEPTABLE BUT ONLY ONE TYPE OF COATING SHALL BE USED IN EACH INSTALLATION.
- BACKFILL, AROUND DRAWDOWN PIPE UNDER RISER, TO BE MECHANICALLY COMPACTED IN ACCORDANCE WITH SPECIFICATION. COMPLETE CONCRETE ENCASEMENT OF PIPE IN LIEU OF BACKFILL IS PERMITTED FOR DRAWDOWN PIPE UNDER RISER BASE.

WELD SYMBOLS



NOTE:
 ALL WELDS AND HEAT AFFECTED AREAS TO BE TREATED IN ACCORDANCE WITH SPECIFICATIONS.
 MATERIALS NOT COATED OR GALVANIZED SHALL BE PAINTED ACCORDING TO PAINT SYSTEM "C" OF PAINT SPECIFICATIONS.

