

Design Assumptions for Nebraska Base Drawing NE100-30-009 Slotted Flume for Principal Spillway

Revised: 5/6/09 Replaces:5004-1

Slotted Flume for Principal Spillway

This type of outlet can be used where the outlet channel may aggrade after the dam is installed or where water may be backed up from a lower dam on either a temporary or permanent basis.

When the hydraulics of the principal spillway are calculated, the top of the flume will be considered as the outlet of the pipe.

The flume will have the same type of coating and be the same gauge as the rest of the principal spillway.

It is very important that the soil slope away from the flume on a 10:1 slope to protect the conduit from erosion.

It is important that vegetation be established in the area surrounding the flume. Any delays that may occur may create the need to repair the area and reseed.

Instructions for
Nebraska Base Drawing NE100-30-009
Slotted Flume for Principal Spillway

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

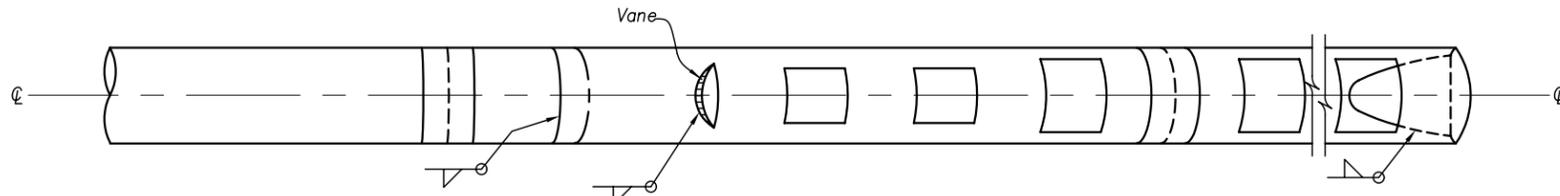
Designed

Drawn

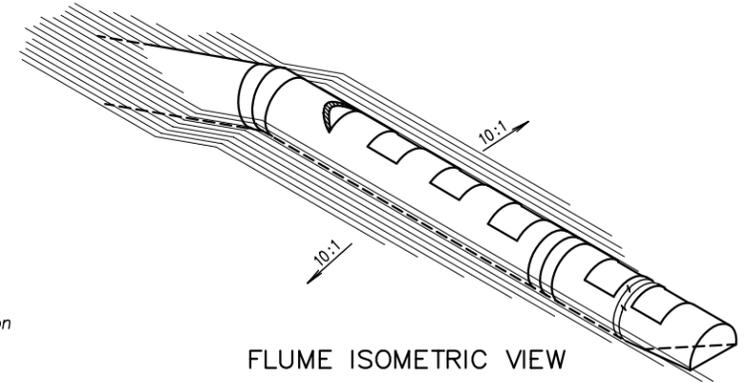
Checked

Enter directly on drawing

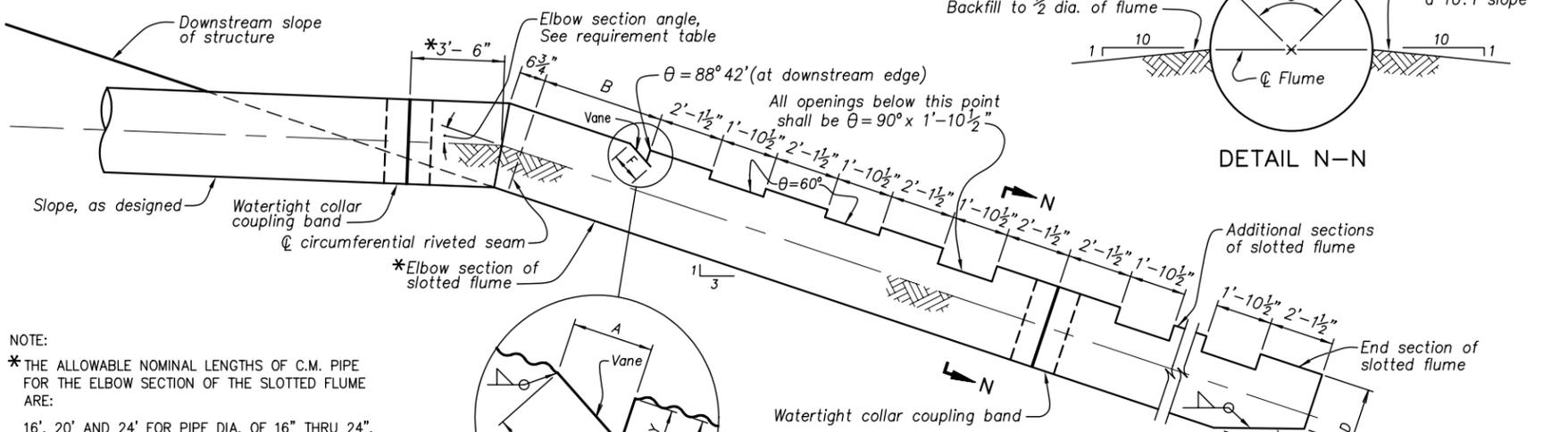
Left click on yellow boxes on drawing to mark with X as required.
Left click data blue data fields to enter required information.



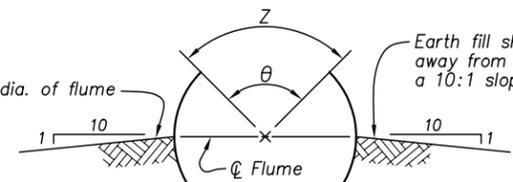
PLAN



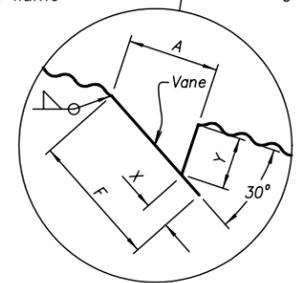
FLUME ISOMETRIC VIEW



SECTIONAL ELEVATION



DETAIL N-N



ENLARGED VIEW

NOTE:
 * THE ALLOWABLE NOMINAL LENGTHS OF C.M. PIPE FOR THE ELBOW SECTION OF THE SLOTTED FLUME ARE:
 16', 20' AND 24' FOR PIPE DIA. OF 16" THRU 24".
 18', 22' AND 26' FOR PIPE DIA. OF 30" THRU 48".
 ADDITIONAL SECTIONS OF SLOTTED FLUME PIPE WILL BE IN LENGTHS OF 6', 10', 14', 18', 22' AND 26'.
 ALL SEAMS CUT, DUE TO FABRICATING SLOTS IN HELICAL PIPE, SHALL BE WELDED FOR A LENGTH OF 1" FROM THE EDGE OF THE CUT AND TREATED ACCORDING TO SPECIFICATIONS.

SLOTTED FLUME REQUIREMENT TABLE

X IN BOX INDICATES THE REQUIREMENTS THAT APPLY TO STRUCTURE

SLOTTED FLUME:
 CORRUGATED METAL PIPE, ZINC COATED STEEL, _____" DIA., _____ GA., _____ FT. NOMINAL LENGTH WITH _____ ELBOW SECTION ANGLE, COUPLING BANDS, VANE, SLOTS AND DEFLECTOR PLATE

PIPE CLASSIFICATION

TYPE I FULL CIRCULAR CROSS-SECTION FABRICATED WITH:

ANNULAR CORRUGATIONS
 CLOSE RIVETED OR STANDARD RIVETED
 HELICAL CORRUGATIONS

CORRUGATION REQUIREMENTS

NOMINAL SIZE (INCH)

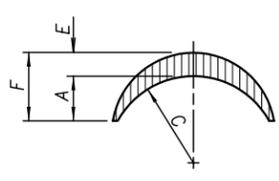
1 1/2 x 1/4 (AVAILABLE ONLY IN HELICALLY CORRUGATED PIPE)
 2 2/3 x 1/2
 3 x 1
 5 x 1

COATINGS AND FABRICATION

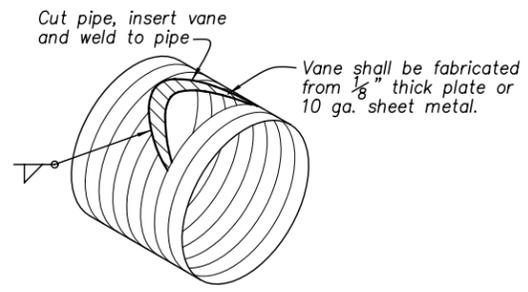
SEE METAL PIPE REQUIREMENTS AND COUPLING BAND SHEET

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

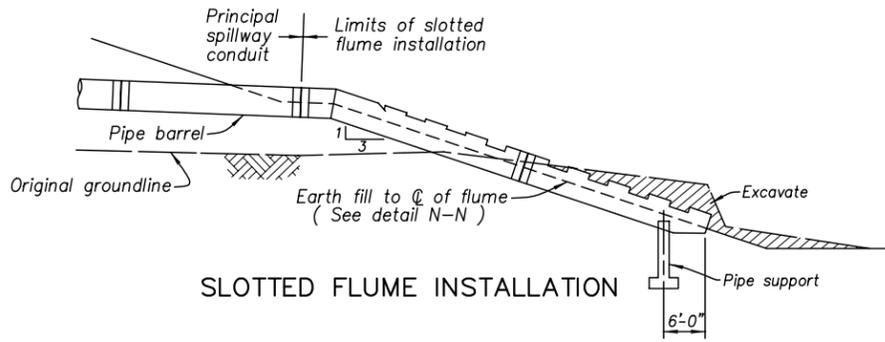
- A760 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, METALLIC-COATED FOR SEWERS AND DRAINS.
- A761 STANDARD SPECIFICATION FOR CORRUGATED STEEL STRUCTURAL PLATE, ZINC-COATED, FOR FIELD BOLTED PIPE, PIPE ARCHES, AND ARCHES.
- A762 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, POLYMER PRECOATED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



PLAN VIEW VANE

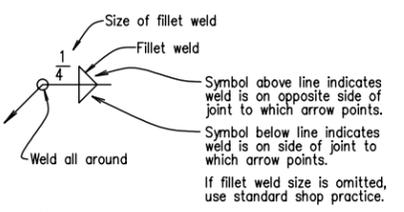


ISOMETRIC VANE



SLOTTED FLUME INSTALLATION

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.

FLUME DIMENSION TABLE

| D (PIPE DIA.) | 15 | 18 | 21 | 24 | 30 | 36 | 42 | 48 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| A | 0'- 3 3/4" | 0'- 4 1/2" | 0'- 5 1/4" | 0'- 6" | 0'- 7 1/2" | 0'- 9" | 0'- 10 1/2" | 1'- 0" |
| B | 1'-11 1/4" | 1'- 11 1/4" | 1'- 11 1/4" | 1'- 11 1/4" | 3'- 11 1/4" | 3'- 11 1/4" | 3'- 11 1/4" | 3'- 11 1/4" |
| C | 0'- 6" | 0'- 7 1/4" | 0'- 8 3/8" | 0'- 9 5/8" | 1'- 0" | 1'- 2 3/8" | 1'- 4 3/4" | 1'- 7 1/4" |
| E | 0'- 1 7/8" | 0'- 2 1/4" | 0'- 2 5/8" | 0'- 3" | 0'- 3 3/4" | 0'- 4 1/2" | 0'- 5 1/4" | 0'- 6" |
| F | 0'- 5 5/8" | 0'- 6 3/4" | 0'- 7 7/8" | 0'- 9" | 0'- 11 1/4" | 1'- 1 1/2" | 1'- 3 3/4" | 1'- 6" |
| G | 0'- 5" | 0'- 6" | 0'- 7" | 0'- 8" | 0'- 10" | 1'- 0" | 1'- 2" | 1'- 4" |
| X | 0'- 1 1/4" | 0'- 1 1/2" | 0'- 1 3/4" | 0'- 2 1/2" | 0'- 2 5/8" | 0'- 3 1/8" | 0'- 3 5/8" | 0'- 4 1/8" |
| Y | 0'- 2 1/8" | 0'- 2 5/8" | 0'- 3" | 0'- 3 1/2" | 0'- 4 3/8" | 0'- 5 1/4" | 0'- 6" | 0'- 6 7/8" |
| Z (θ = 88° 42') | 0'- 11 5/8" | 1'- 1 7/8" | 1'- 4 1/4" | 1'- 6 5/8" | 1'- 11 1/4" | 2'- 3 7/8" | 2'- 8 1/2" | 3'- 1 1/8" |
| Z (θ = 60°) | 0'- 7 7/8" | 0'- 9 3/8" | 0'- 11" | 1'- 0 5/8" | 1'- 3 3/4" | 1'- 6 7/8" | 1'- 10" | 2'- 1 1/8" |
| Z (θ = 90°) | 0'- 11 3/4" | 1'- 2 1/8" | 1'- 4 1/2" | 1'- 6 7/8" | 1'- 11 5/8" | 2'- 4 1/4" | 2'- 9" | 3'- 1 3/4" |

SLOTTED FLUME FOR PRINCIPAL SPILLWAY

Nebraska Standard Drawing NE100-30-009 Rev. 3/04 Replaces 5004-1

Date _____
 Designed _____
 Drawn _____
 Checked _____
 Approved _____



CAD file: NE100-30-009.dwg
 Drawing No. _____

Sheet _____ of _____