Design Assumptions for
Nebraska Base Drawing NE300-10-001
Drain Detail, General Layout

Revised: 10-04 Replaces: 5003-12

Drain Detail, General Layout

This sheet is intended to be used by filling in the blanks as appropriate for the site.

Reference is made to “Policy for Foundation Drains In Nebraska” date 2/1/89, File code 210-13-19, Section 19, NEH, Area Engineer’s Office.

Maximum height of structure is 35.0 ft.

Foundation drains, generally, will be located approximately 0.6 of the distance between the downstream edge of the top and the downstream toe of the embankment.

Transverse drain top elevation must be placed at least 1.0 ft. below original ground line across flood plain.

Special gradation and design of drains shall be made for non-plastic soils and dams with pervious foundations, in accordance with Soil Mechanics Note No. 1.

The use of a pipe in the drain system is an option to the designer for additional drainage capacity.

The outlet section of the drain may be widened or deepened to allow the pipe support to be placed in the drain material. The outlet section need not coincide with the centerline of the principal spillway.

Non-plastic soils are considered soils with more than 15 percent sand size particles, i.e., do not pass a No. 200 sieve.

Gradation shown is considered acceptable for plastic soils, i.e., more than 85 percent passes a No. 200 sieve (CL or ML soils). For non-plastic soils or sites with pervious foundations, design should be in accordance with Soil Mechanics Note 1.

Instructions for
Nebraska Base Drawing(s) NE300-10-001(a,b,or d)
Drain Detail, General Layout

You have a choice of three different drawings for drain outlet direction.

Page 3 is drawing with straight outlet (90°).
Page 4 is drawing with outlet skewed left.
Page 5 is drawing with outlet skewed right.

Fill in the blue data fields on this page to automatically fill in the titleblock areas on the drawings.

Title block

Title line(s)

Subtitle line

County, State

Sheet number of

Who / When

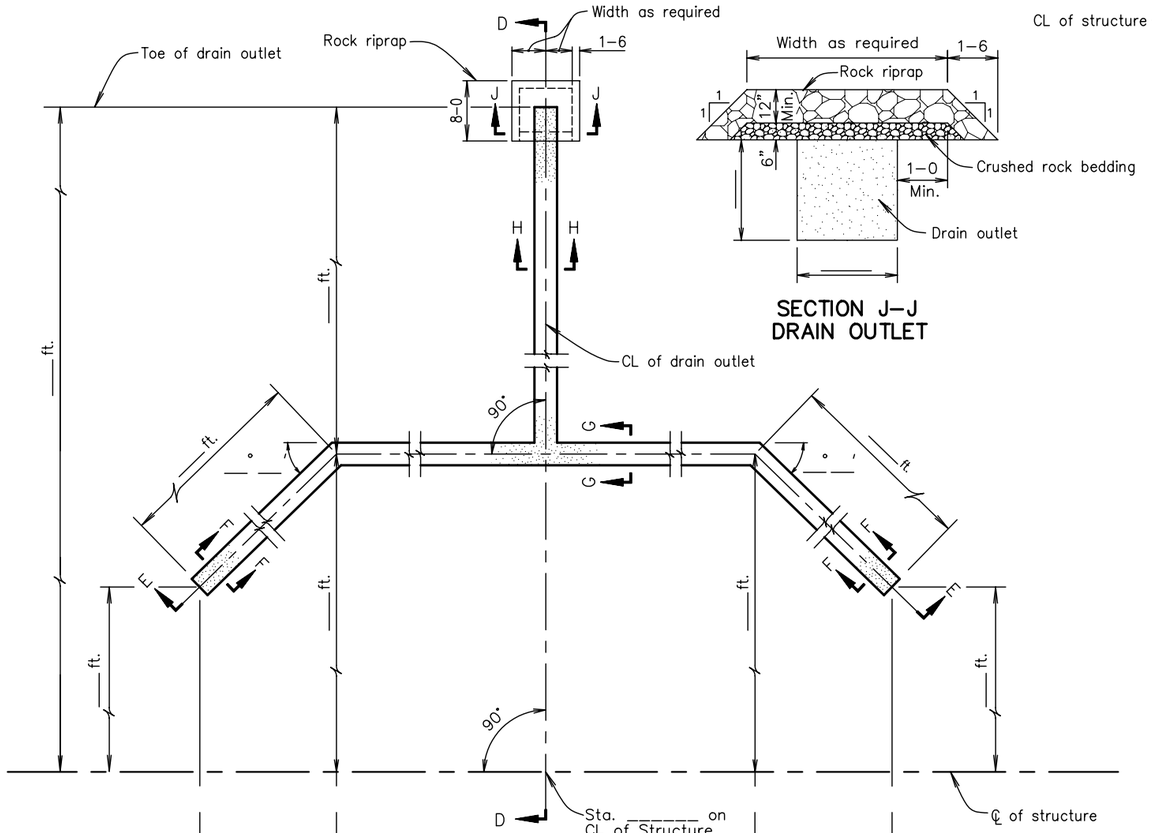
	Who (initials)	When (MM/DD/YY)
Designed		
Drawn		
Checked		

Clear Form

Click to clear all form fields

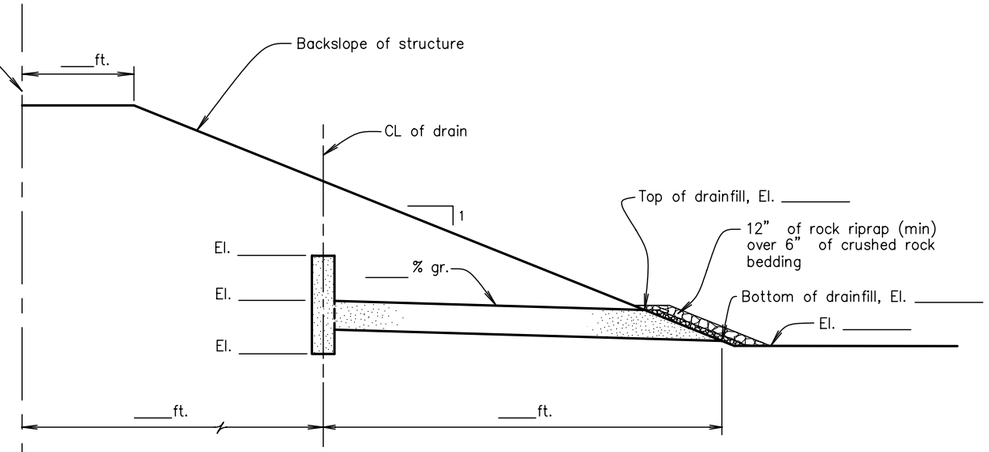
Print Drawing

Note: Select pages 3 of 3 for drawing only.

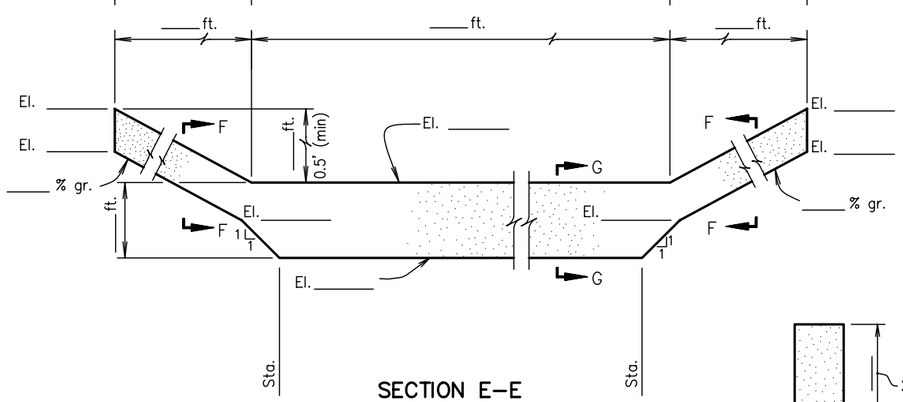


PLAN VIEW
NOT TO SCALE

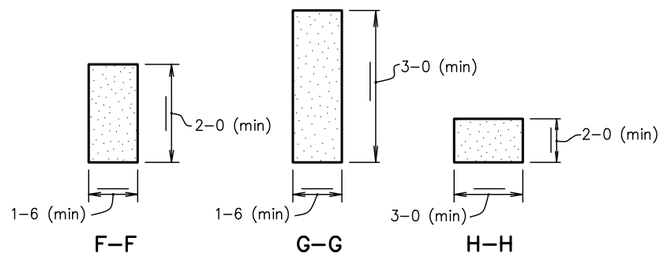
SECTION J–J
DRAIN OUTLET



SECTION D–D
PROFILE ALONG CL OF DRAIN OUTLET
NOT TO SCALE



SECTION E–E
PROFILE ALONG CL OF DRAIN
NOT TO SCALE



DRAIN SECTIONS

GRADATION FOR CRUSHED ROCK BEDDING IN DRAIN OUTLET

CRUSHED ROCK TO BE REASONABLY WELL–GRADED, TOUGH, HARD DURABLE MATERIAL MEETING THE FOLLOWING GRADATION:	
MAXIMUM SIZE 3"	NOT MORE THAN 10% PASSING NO. 4 SIEVE

ROCK RIPRAP GRADATION IN DRAIN OUTLET

ROCK FRAGMENTS SHALL BE ANGULAR AND REASONABLY WELL–GRADED AND IN ACCORDANCE WITH THE FOLLOWING GRADATION:
MAXIMUM WEIGHT 155 LB. 50% – 77 LB. OR LARGER. SPALLS AND SMALLER SIZE ROCK REQUIRED TO FILL VOIDS. SAND AND ROCK DUST LESS THAN 5%.

TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY
DRAINFILL	CU.YD.	
ROCK RIPRAP INCLUDING _____ CU.YD. OF CRUSHED ROCK BEDDING	CU.YD.	

RIPRAP WEIGHT CONVERSION 1 CU.YD.= 1.35 TONS

DRAINFILL GRADATION

SIEVE NO.	PERCENT PASSING
3/8	95–100
4	75–95
10	45–65
20	20–40
30	15–30
50	5–15
100	0–5

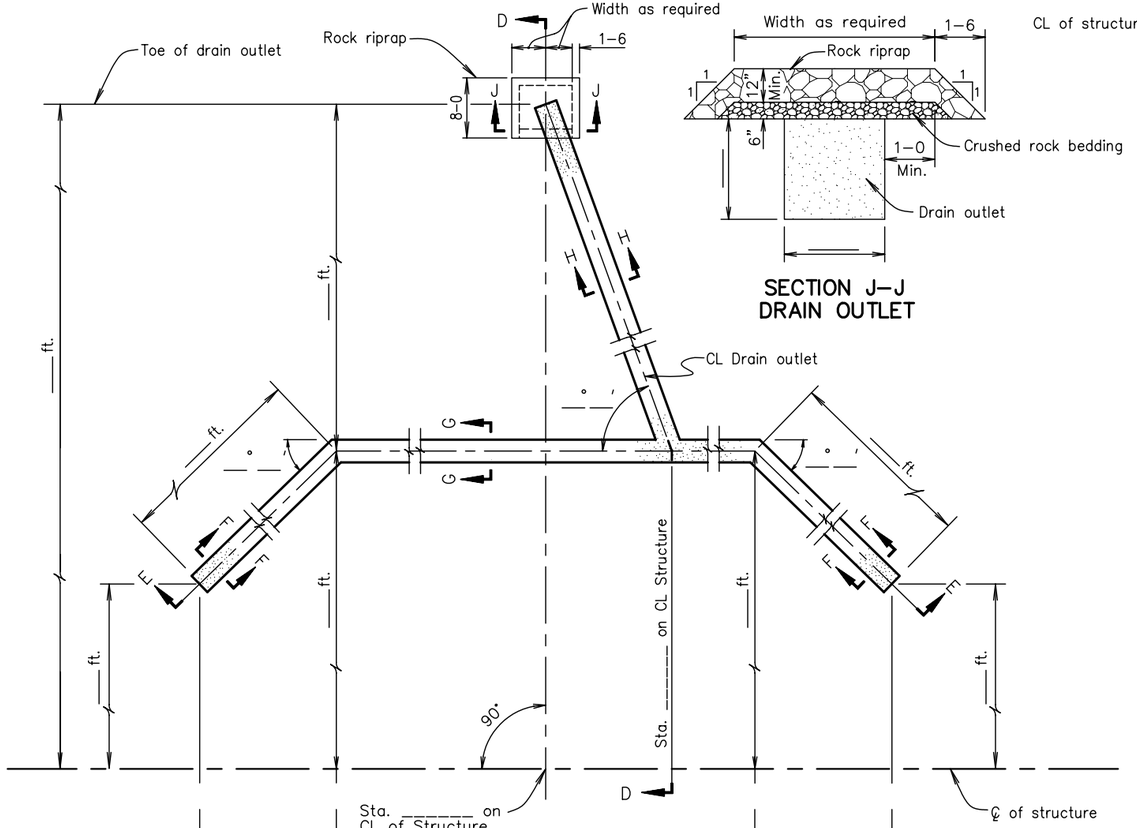
Date
Designed
Drawn
Checked
Approved

NRCS
Natural Resources Conservation Service

CAD file: NE300–10–001a.dwg
Drawing No.
Sheet of

DRAIN DETAIL, GENERAL LAYOUT (STRAIGHT OUTLET)

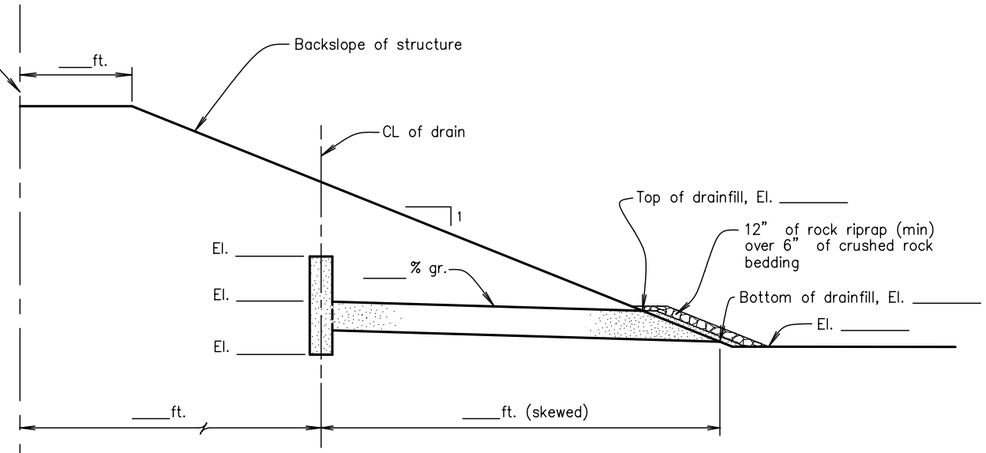
Nebraska Standard Drawing
NE300–10–001a Revised 10/04 Replaces 5003–12



PLAN VIEW

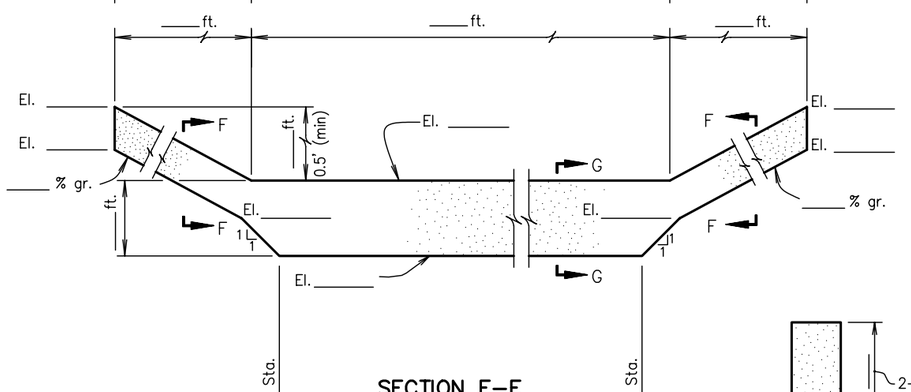
NOT TO SCALE

SECTION J–J
DRAIN OUTLET



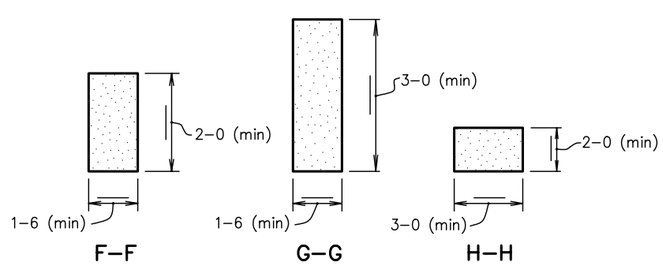
SECTION D–D
PROFILE ALONG CL OF DRAIN OUTLET

NOT TO SCALE



SECTION E–E
PROFILE ALONG CL OF DRAIN

NOT TO SCALE



DRAIN SECTIONS

GRADATION FOR CRUSHED ROCK BEDDING IN DRAIN OUTLET

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Nebraska Standard Drawing
NE300–10–001b Revised 10/04 Replaces 5003–12

Date
Designed
Drawn
Checked
Approved

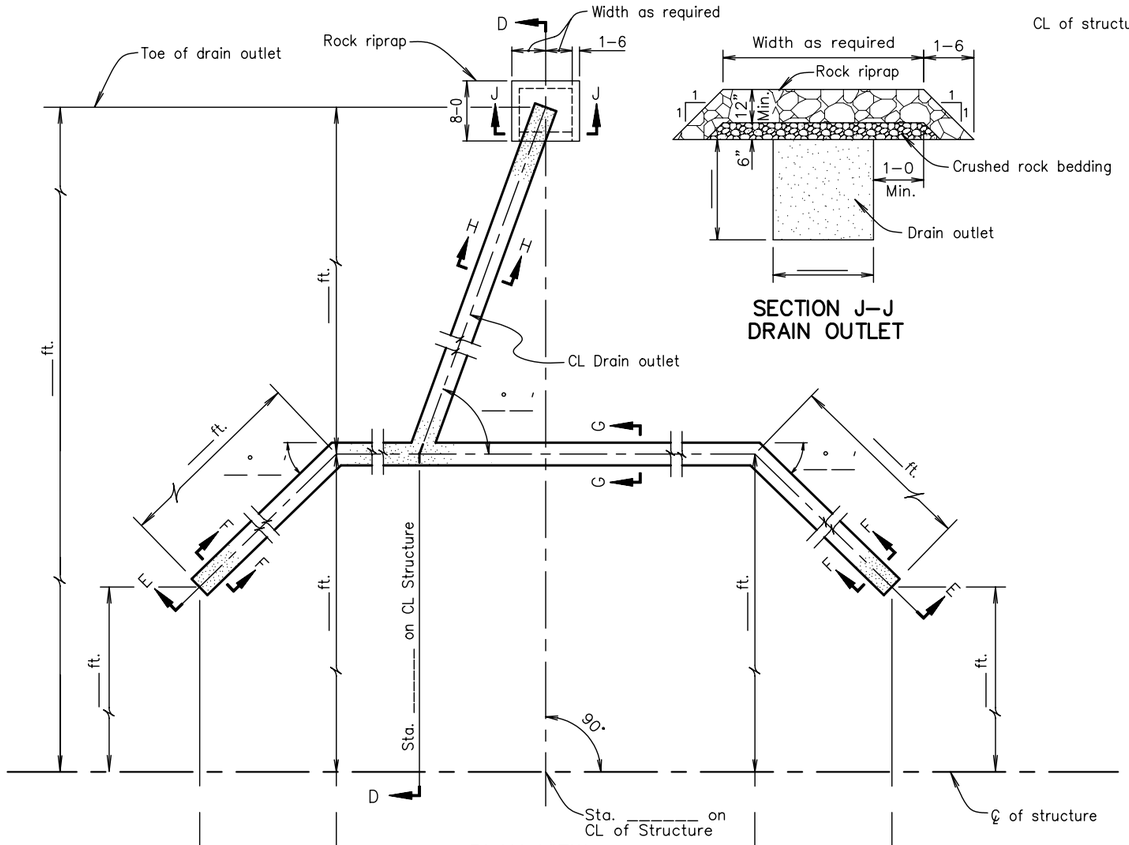
NRCS Natural Resources Conservation Service

CAD file: NE300–10–001b.dwg

Drawing No.

Sheet of

DRAIN DETAIL, GENERAL LAYOUT (OUTLET SKEWED LEFT)



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NOT TO SCALE

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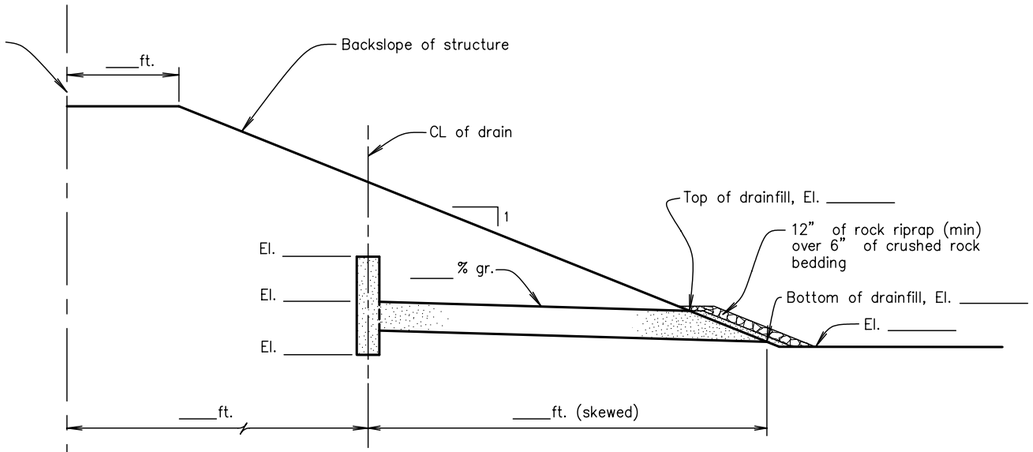
DRAIN OUTLET



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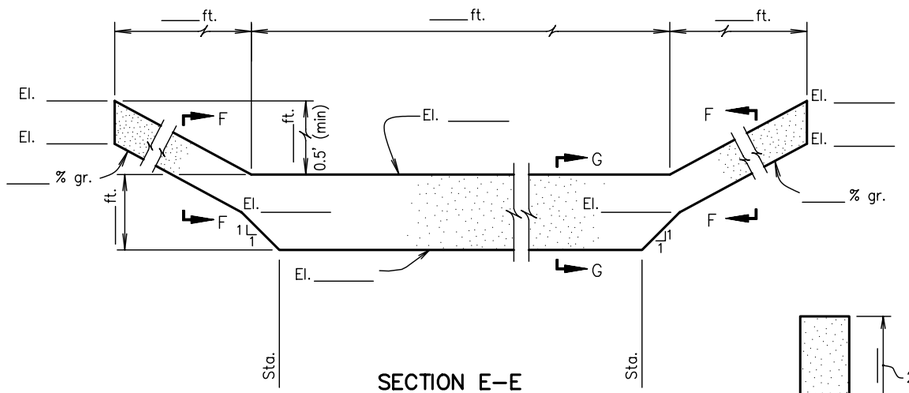

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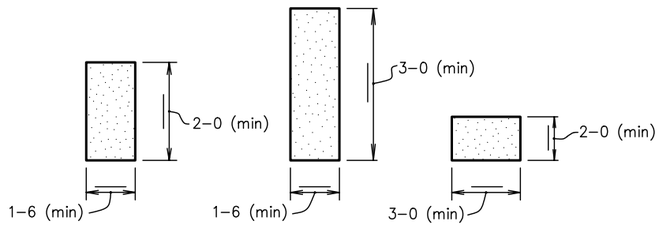

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