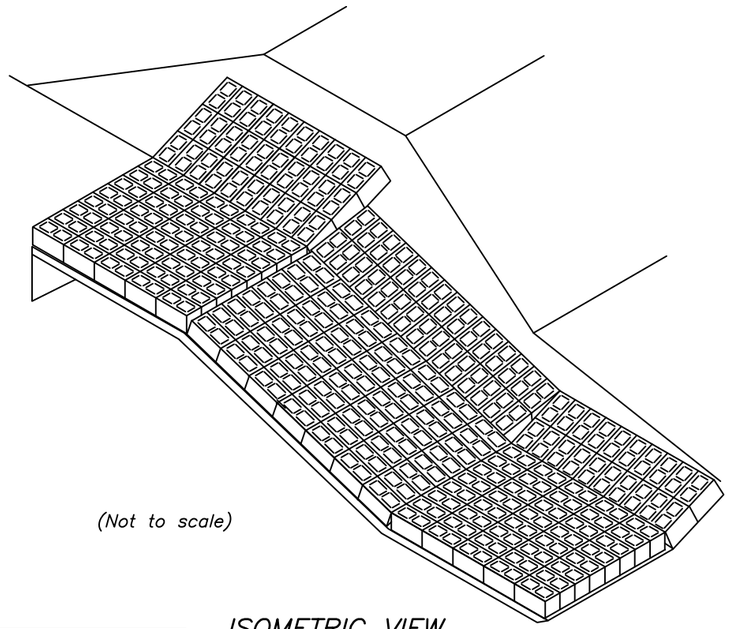
29N317

NOTES:

1. For further detail see Missouri Construction Specification 410–A, Grade Stabilization Structure.
2. Site Preparation:
   Excavate to chute slope and side slope subgrade (approx. 0.8 ft. below finished grade). Chute slope shall be located completely in cut (excavation of existing ground), except compacted fill is permissible if denser than the adjacent undisturbed soil material.
3. Cutoff Trench and Anchor Trench:
   A. Excavate the anchor trench on the downstream end of the outlet apron, and the cutoff trench on the upstream end of the inlet apron. Trench depth shall be 2 feet min. below the top of gravel bedding.
   B. Trenches shall extend the full width of block placement (2.3 feet min. beyond bottom width "w" on each side slope).
4. Bedding:
   Place a 2 inch thick layer of bedding to the required grade over the entire chute bottom and side slopes. Bedding shall conform to ASTM C33 size 57, 67 or 467. It is permissible to use gradation A, B or D as shown in section 1005, Aggregates for Concrete, Missouri Standard Specifications for Highway Construction.
5. Geotextile:
   A. Place geotextile over the gravel bedding subgrade and anchor with pins or staples in accordance with manufacturer's recommendations. If the geotextile is installed in more than one piece, use a minimum lap of 18 inches. Place the upstream lap over the downstream lap.
   B. Place geotextile in cutoff trench and anchor with earth.
   C. Do not place gravel or earth between geotextile and block.
   D. Place geotextile to the bottom of the anchor trench and backfill with compacted earthfill.
   E. Geotextile shall conform to Missouri Construction Specification 753, Geotextile.
6. Plastic Sheeting Cutoff:
   A. Plastic sheeting shall have a 10 mil minimum nominal thickness.
   B. Place plastic sheeting against upstream side of geotextile 2 feet down into the cutoff trench. It extends the full width of the inlet apron bottom and side slopes. Backfill with compacted earthfill.
   C. The plastic sheeting above the trench (12" min.) is folded over the geotextile on the inlet apron bottom and side slopes.
7. Concrete Blocks:
   A. Place concrete blocks (holes facing up) with length in direction of flow starting at the downstream end of the chute slope and proceed upstream and downstream.
   B. Concrete blocks shall be nominal 8"x 8"x 16", in good condition and free of excess mortar.
   C. Concrete blocks shall not be driven on by any machinery during or after placement.
8. Grout:
   A. Grout all triangular shaped voids between the concrete blocks of the chute slope and aprons, and the chute bottom and side slopes.
   B. Grout shall be 3 parts sand to 1 part cement and enough clean water to make a paste. Bagged mortar mix may also be used.
9. Finish Operations:
   A. Fill holes in concrete blocks with topsoil. Seed with the same mixture used on disturbed areas.
   B. Lime, fertilize, seed and mulch all disturbed areas.



(Not to scale)

ISOMETRIC VIEW
HALF PROFILE

ELEVATIONS (ft.)	Design
Top of fill	
Inlet apron	
Outlet apron	
Channel outlet	

STRUCTURAL INFORMATION

Design

w = _____ ft.
(4 ft. ≤ w ≤ 38 ft.)

x = _____ ft.

z = _____ ft.

F = _____ ft.
(max. = 10 ft.)

Design capacity, Q = _____ cfs
(max. = 200 cfs)

Design head, H = _____ ft.

Chute slope, s = _____:1
(s = 3 or s = 4)

TABLE OF ESTIMATED QUANTITIES

ITEM	UNIT	AMOUNT	AS BUILT
Concrete blocks	Each		
Bedding: (gravel) (sand)	Tons		
Plastic sheeting (3.0 ft. x _____ lin. ft.	Sq. yds.		
Non–woven geotextile	Sq. yds.		
Seeding area	Acres		

DRAFT

NOT FOR CONSTRUCTION

Date
Designed
Drawn
Checked
Approved

CONCRETE BLOCK CHUTE

United States Department of Agriculture
NRCS Natural Resources Conservation Service

File Name

Drawing Name
29–N–317

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Revised 4/01

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Adapted from Michigan
Standard Drawing SO–B–0790

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