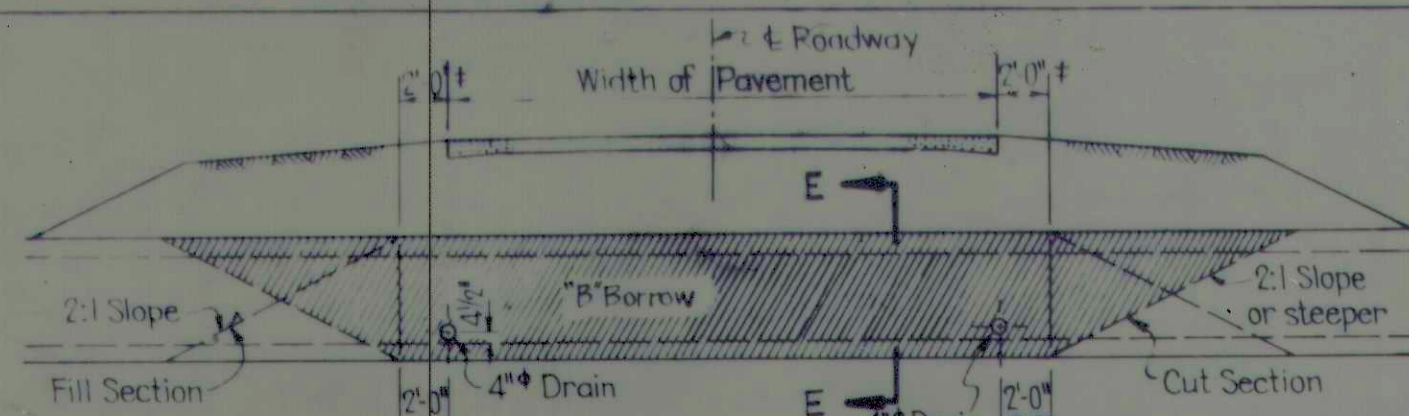
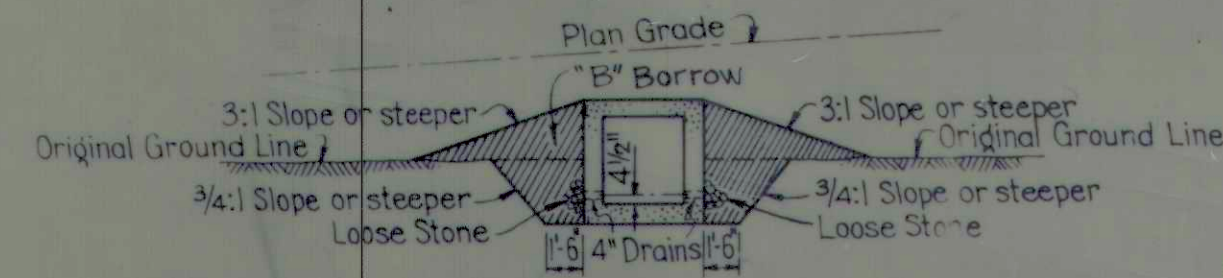




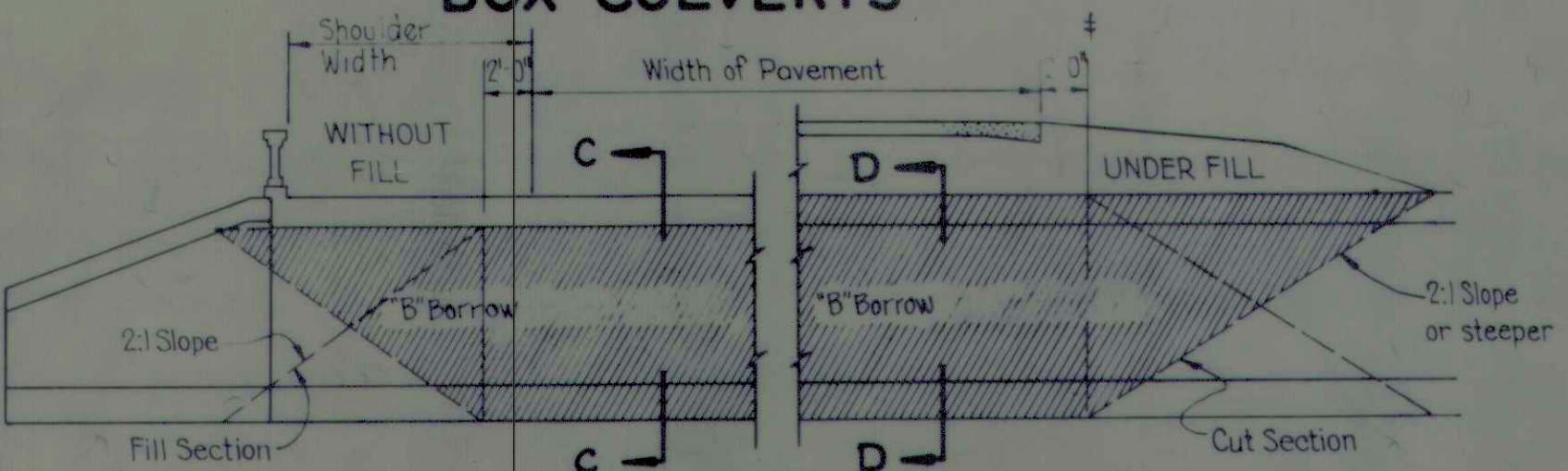
NOTE: Cost of drains to be included in unit price of Class "A" Concrete.

ELEVATION



SECTION E-E BOX CULVERTS

Where Improved Shoulders Are Used This Distance Shall be the width of the Improved Shoulder Plus 2'-0"



ELEVATION

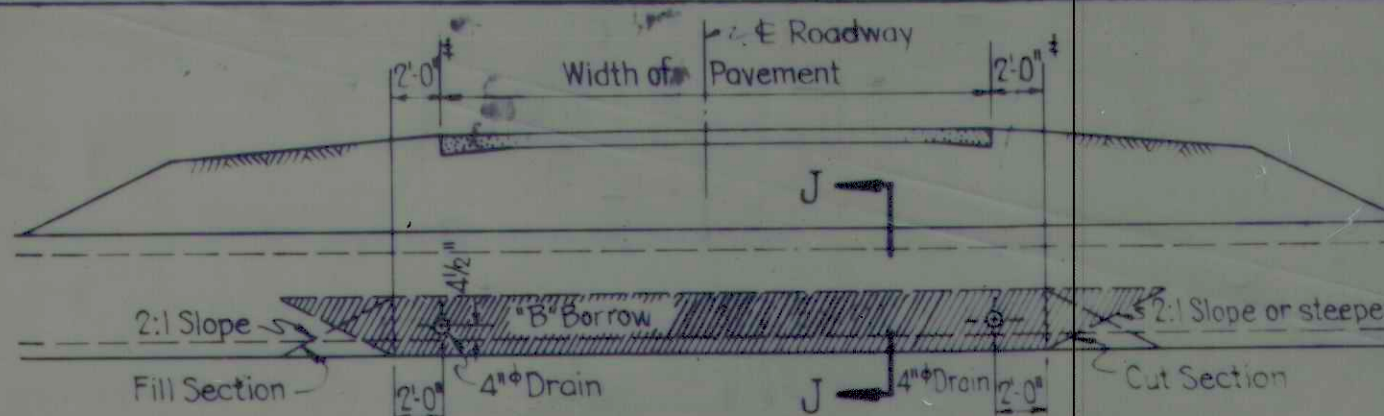


SECTION C-C

SLAB TOP CULVERTS

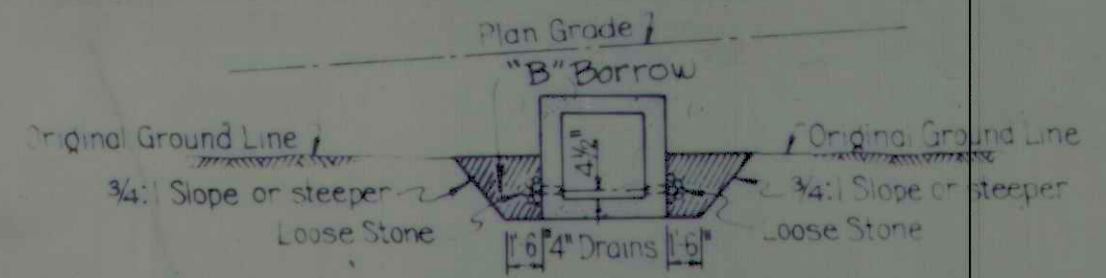
SECTION D-D

UNDER FILL

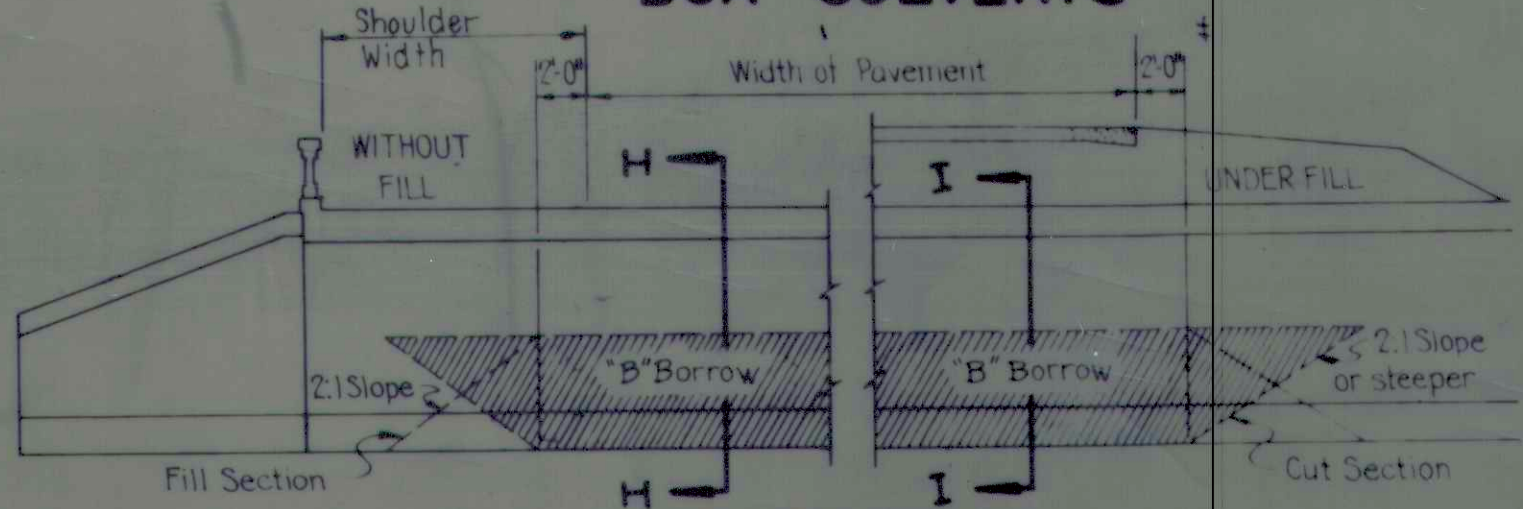


NOTE: Cost of drains to be included in unit price of Class "A" Concrete.

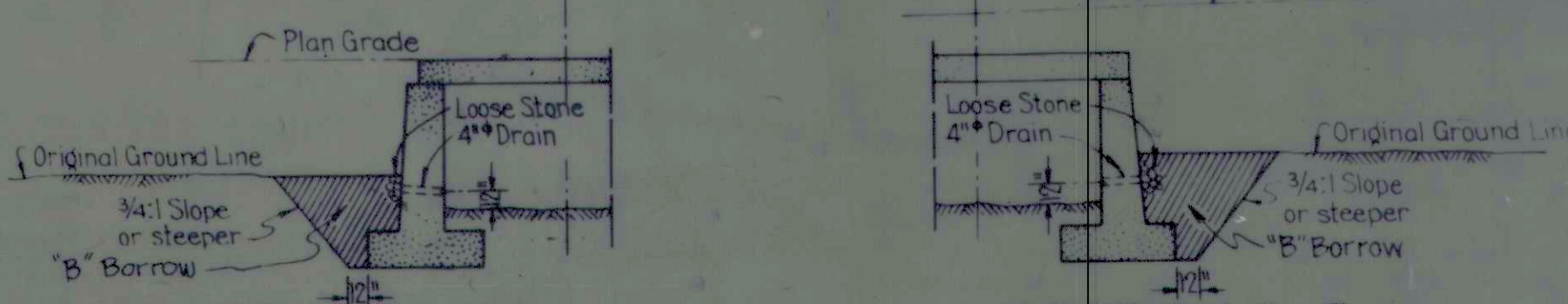
ELEVATION



SECTION J-J BOX CULVERTS



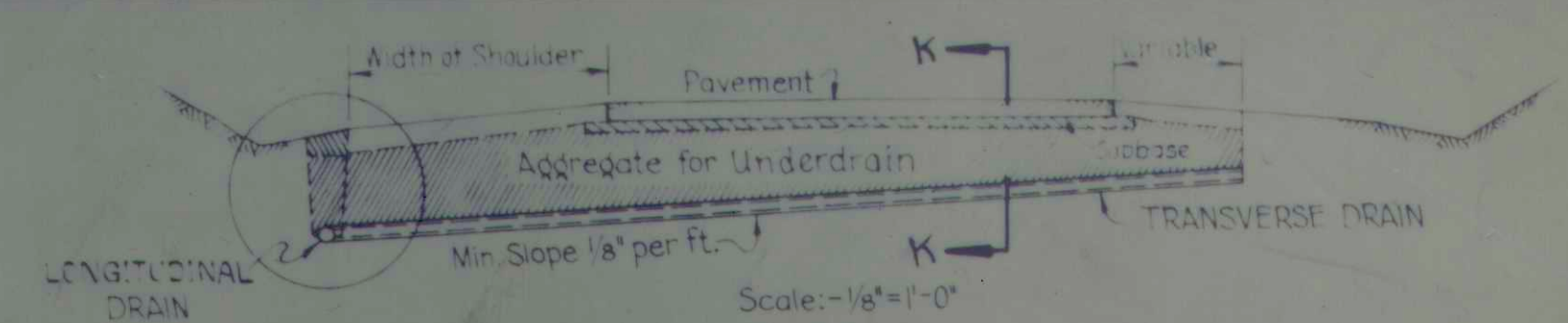
ELEVATION



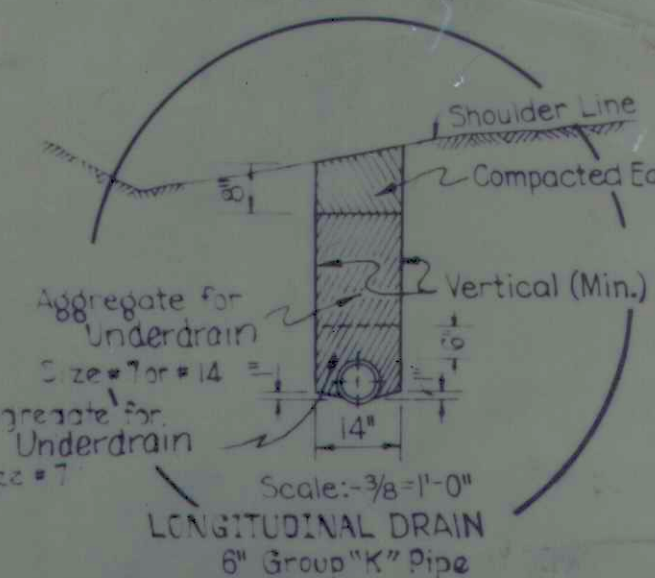
SECTION H-H

SECTION I-I

SLAB TOP CULVERTS



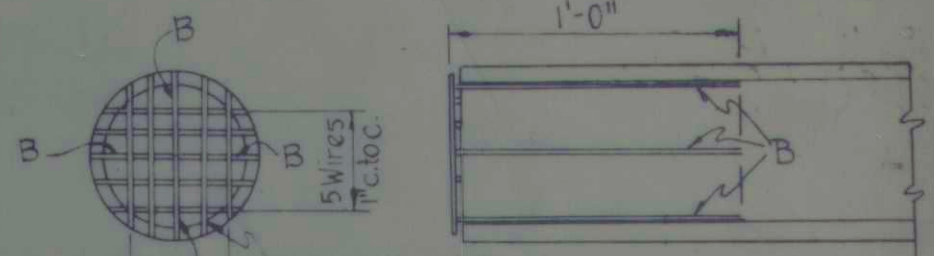
NOTE: Where perforated corrugated metal pipe with bottom perforations is used aggregate shall be placed 2\"/>



SECTION K-K

TRANSVERSE DRAIN

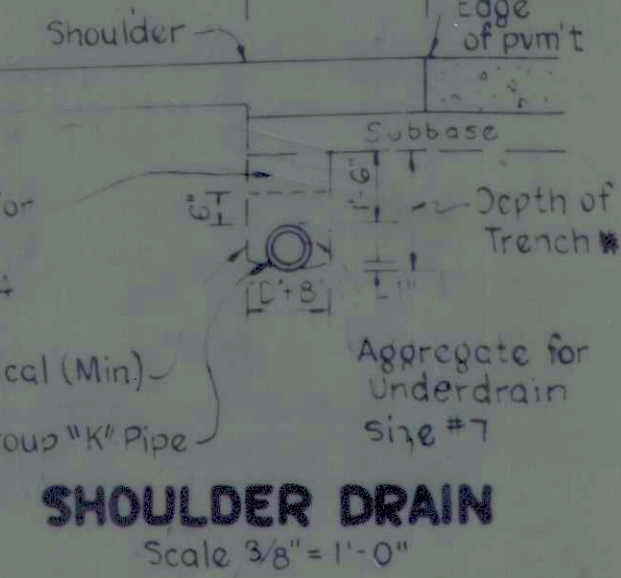
Wires marked 'B' shall be bent as shown and shall extend approx. 1'-0\"/>



DETAIL OF PIPE SCREEN

Note: This type of screen or one approved by the Engineer to be used on the outlet end of Underdrains

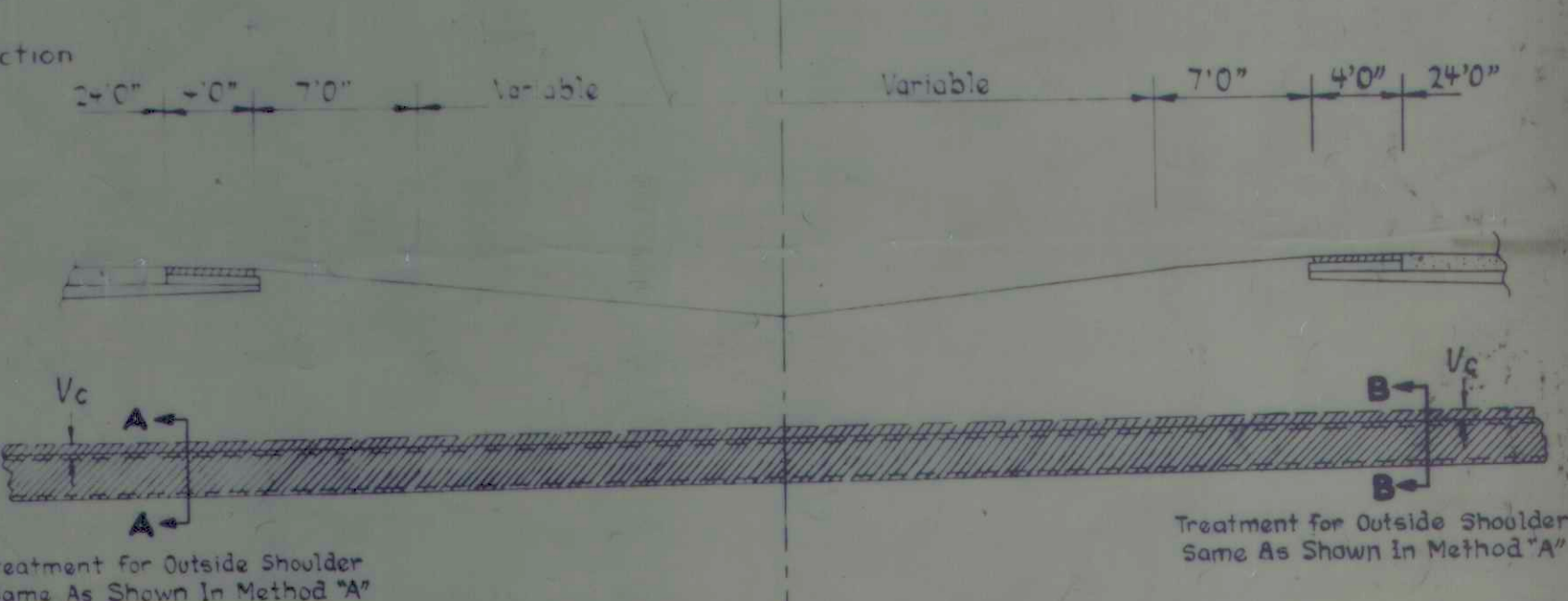
Note: Delineator Posts to be set at the Outlet of Underdrains at the exact location as directed by the Engineer, in order to preserve the location of the Underdrains



SHOULDER DRAIN

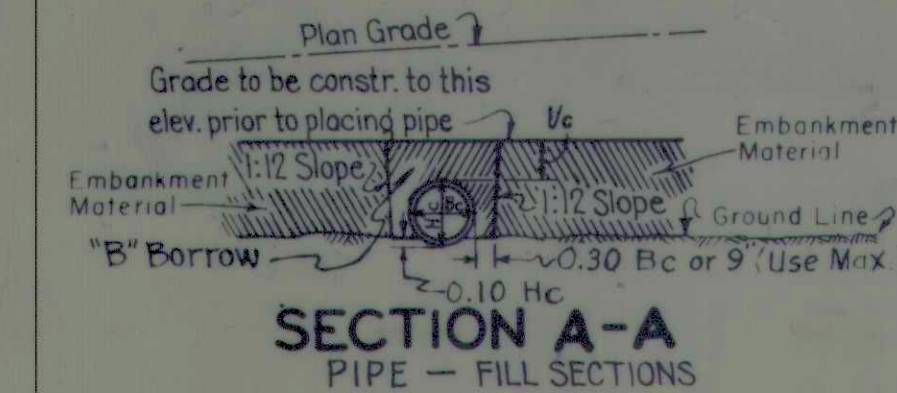
Scale 3/8\"/>

UNDERDRAINS



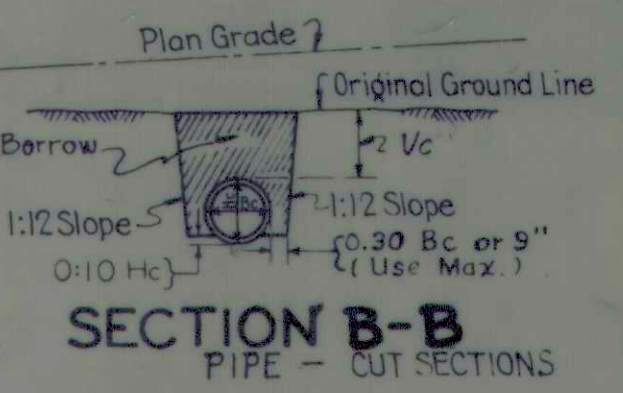
ELEVATION THRU MEDIAN STRIP USING METHOD "A"

Scale 1/8\"/>



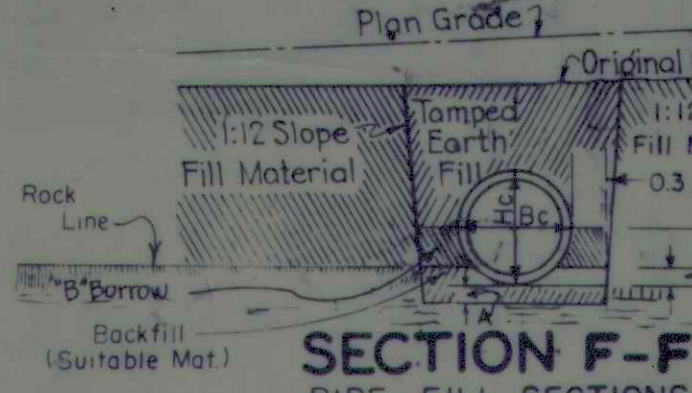
SECTION A-A

PIPE - FILL SECTIONS



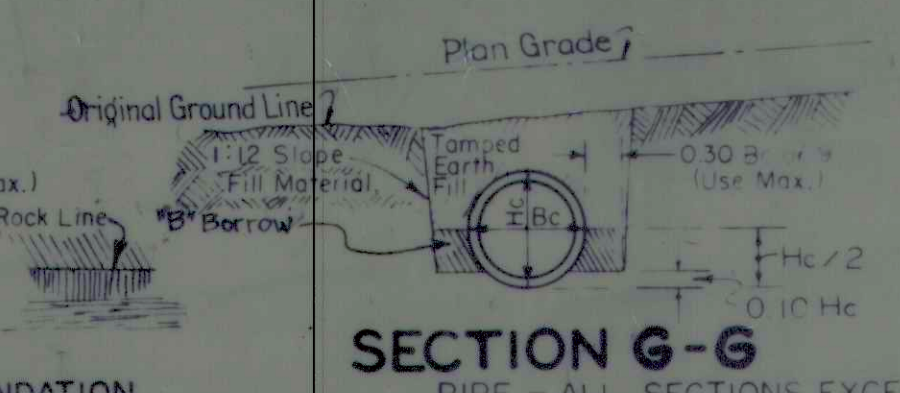
SECTION B-B

PIPE - CUT SECTIONS



SECTION F-F

PIPE - FILL SECTIONS, ROCK FOUNDATION



SECTION G-G

PIPE - ALL SECTIONS EXCEPT ROCK FOUNDATIONS

PIPE CULVERTS METHOD "B"

(C Bedding)

Where all or a part of the trench for a storm sewer is required to be backfilled with "B" Borrow the maximum pay limits for "B" Borrow shall, unless otherwise directed by the Engineer, conform to the trench limits as set out on this sheet for pipe culverts.

STORM SEWERS

PIPE CULVERTS METHOD "A"

(C Bedding)

GENERAL NOTES

Where heavy construction equipment will pass over pipe structures the contractor will be required to maintain protective cover as follows:
Up to and including 18" dia. or equivalent 1'-6"
21" dia. or equivalent to including 54" dia. or equivalent 3'-0"
Over 54" dia. or equivalent 4'-0"

NOTES:-
(A) 8" Min. for Fill Height up to 16'
12" Min. for Fill Height 16' or more.

GENERAL NOTES

Method "A" used for Structures under High Type Pavement.
Method "B" used for Structures under Low & Intermediate Type Pavement.
Method "B" used for Structures under Public Road, Commercial Drive and Private Drive Approaches.
Earth Backfill used for Structures under Field Entrances.
When Box Culvert and Slob Top Culverts are constructed on flat terrain or where more economical, the contractor may be ordered by the Engineer to make the additional excavation, parallel to the Structure, necessary to permit the construction of the backfill embankment in accordance with General Specifications instead of using "B" Borrow in which case the additional excavation ordered by the Engineer will be paid for at the contract price for the class of excavation involved.

BACKFILL FOR STRUCTURES

Scale: 1/8" = 1'-0"

REVISIONS	
7-1-66	Subsurf. Dm. Note
5-17-67	Shoulder Subsurf. Drain
1-5-67	General Note
8-25-67	SHOULDER SUBSURF. DRAIN
6-17-68	2ND DRAINAGE POSTS
7-26-68	HEADWALLS
4-1-69	1969 Spec.
4-1-70	"B" BORROW

MISCELLANEOUS STANDARDS

STATE OF INDIANA

FEB. 1949

RECOMMENDED FOR APPROVAL *W.H. Behrens*
ENGINEER OF ROAD DESIGN
APPROVED *J.T. Haller*
ENGINEER OF ROADS
APPROVED *Raymond Bowen*
CHIEF ENGINEER

REVISIONS	
2-11-57	Subsurface Drains
1-23-58	Aggregate for Subsurface Drains
10-14-60	Method "A" & "B"
4-11-61	Method "A" & "B"
12-1-64	Method "A" & "B"
11-23-65	Subsurface Drain
1-24-66	Protective Cover