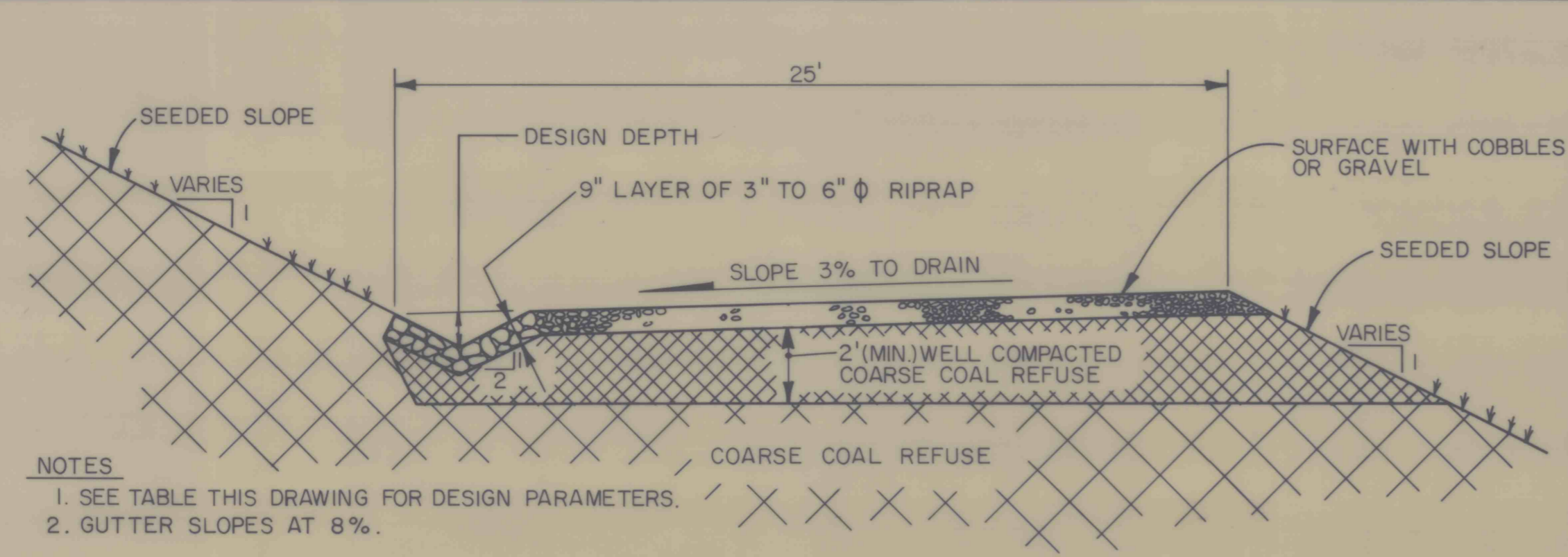


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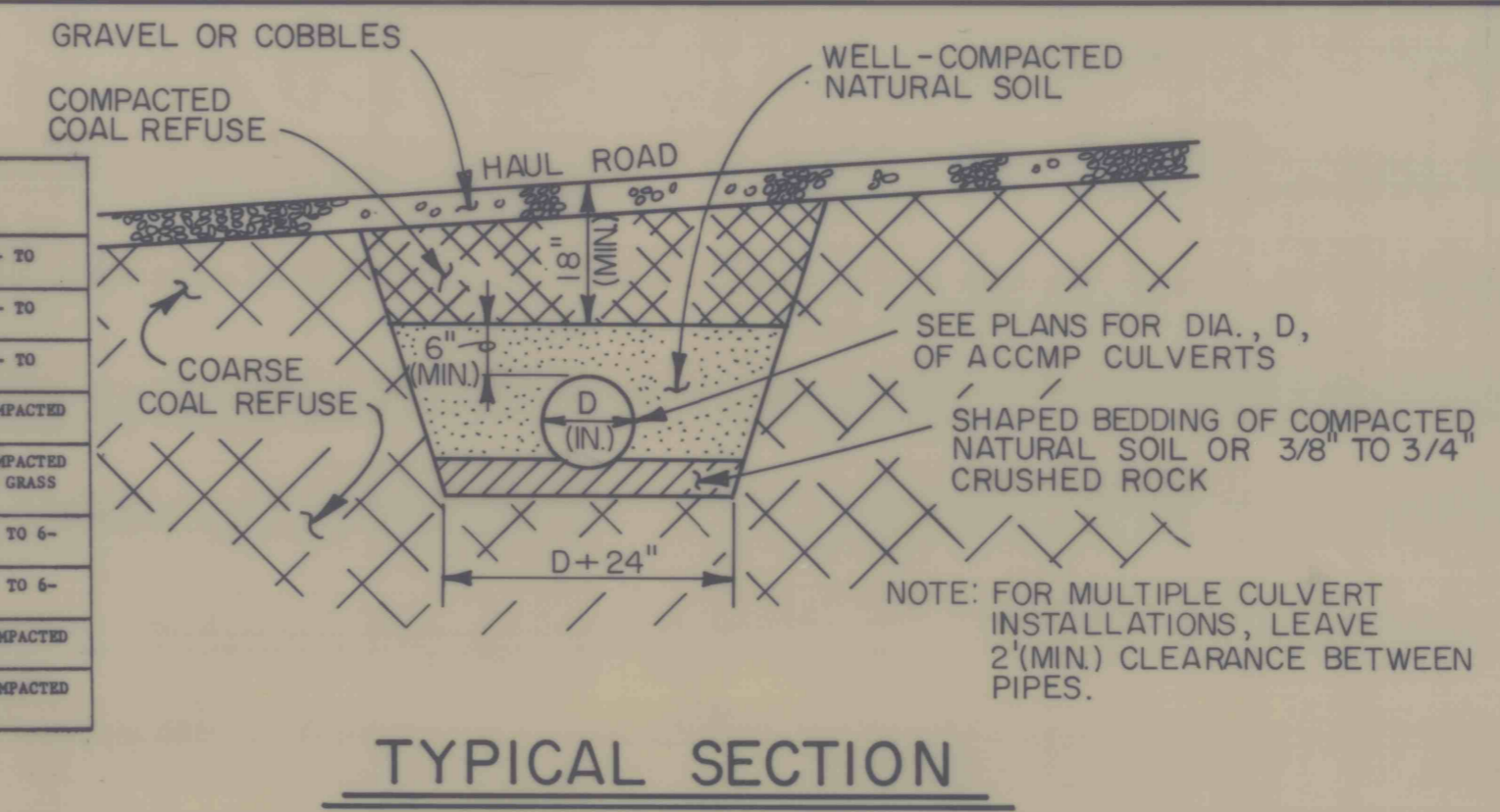


NOTES
 1. SEE TABLE THIS DRAWING FOR DESIGN PARAMETERS.
 2. GUTTER SLOPES AT 8%.

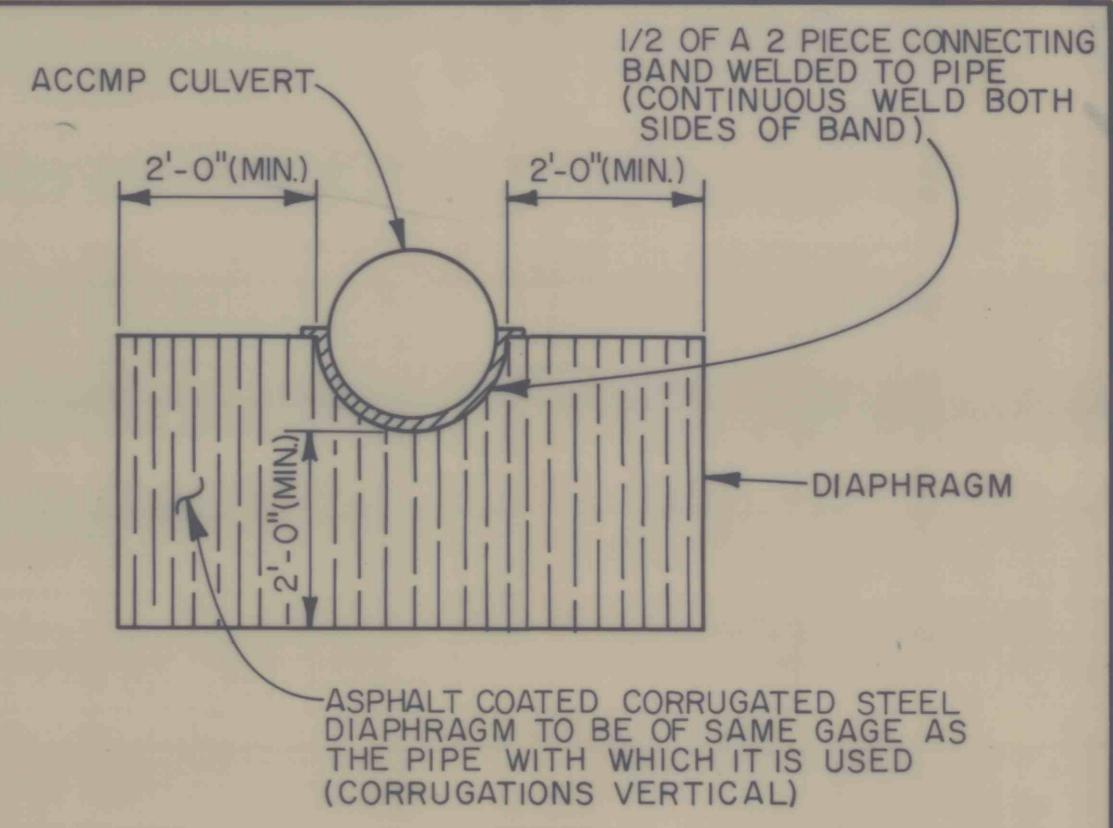
DITCH DESIGN PARAMETERS

CHANNEL TYPE	CHANNEL DESIGNATION	CHANNEL NUMBER	PEAK DISCHARGE (cfs)	MAXIMUM FLOW DEPTH (FEET)	MAXIMUM FLOW VELOCITY (FPS)	DESIGN DEPTH (FEET)	EROSION PROTECTION
PERIMETER DITCH	A	0.025	22	50	0.9	2.0	15-INCH-THICK LAYER OF 6- TO 9-INCH GROTTED RIPRAP.
PERIMETER DITCH	B	0.025	92	29	1.5	2.6	15-INCH-THICK LAYER OF 6- TO 9-INCH GROTTED RIPRAP.
PERIMETER DITCH	C	0.025	174	50	1.9	3.4	15-INCH-THICK LAYER OF 6- TO 9-INCH GROTTED RIPRAP.
PERIMETER DITCH	D	0.033	92	1	1.2	3	6-INCH-THICK LAYER OF COMPACTED SOIL AND GRASS LINING.
DIVERSION DITCH	E	0.033	54	1	1.6	4	6-INCH-THICK LAYER OF COMPACTED SOIL. FINAL DITCH TO BE GRASS LINED.
HAUL ROAD CUTTER	F	0.035	6	8	0.7	6	9-INCH-THICK LAYER OF 3- TO 6-INCH RIPRAP.
HAUL ROAD CUTTER	G	0.035	20	8	1.1	8	9-INCH-THICK LAYER OF 3- TO 6-INCH RIPRAP.
BENCH CUTTER	H	0.033	8	1	1.2	3	6-INCH-THICK LAYER OF COMPACTED SOIL AND GRASS LINING.
BENCH CUTTER	I	0.033	12	1	1.4	3	6-INCH-THICK LAYER OF COMPACTED SOIL AND GRASS LINING.

NOTE
 ALL DITCHES ARE DESIGNED FOR 100-YEAR RECURRENT INTERVAL STORM.

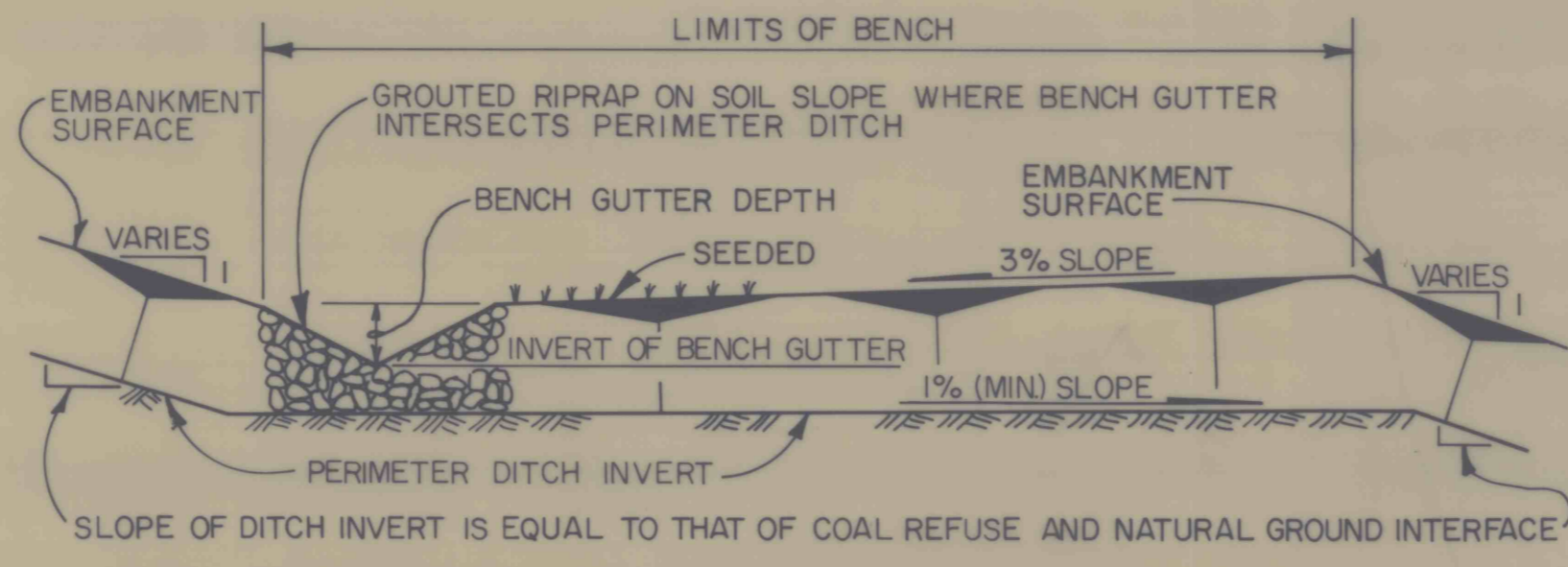


TYPICAL SECTION
 N.T.S.

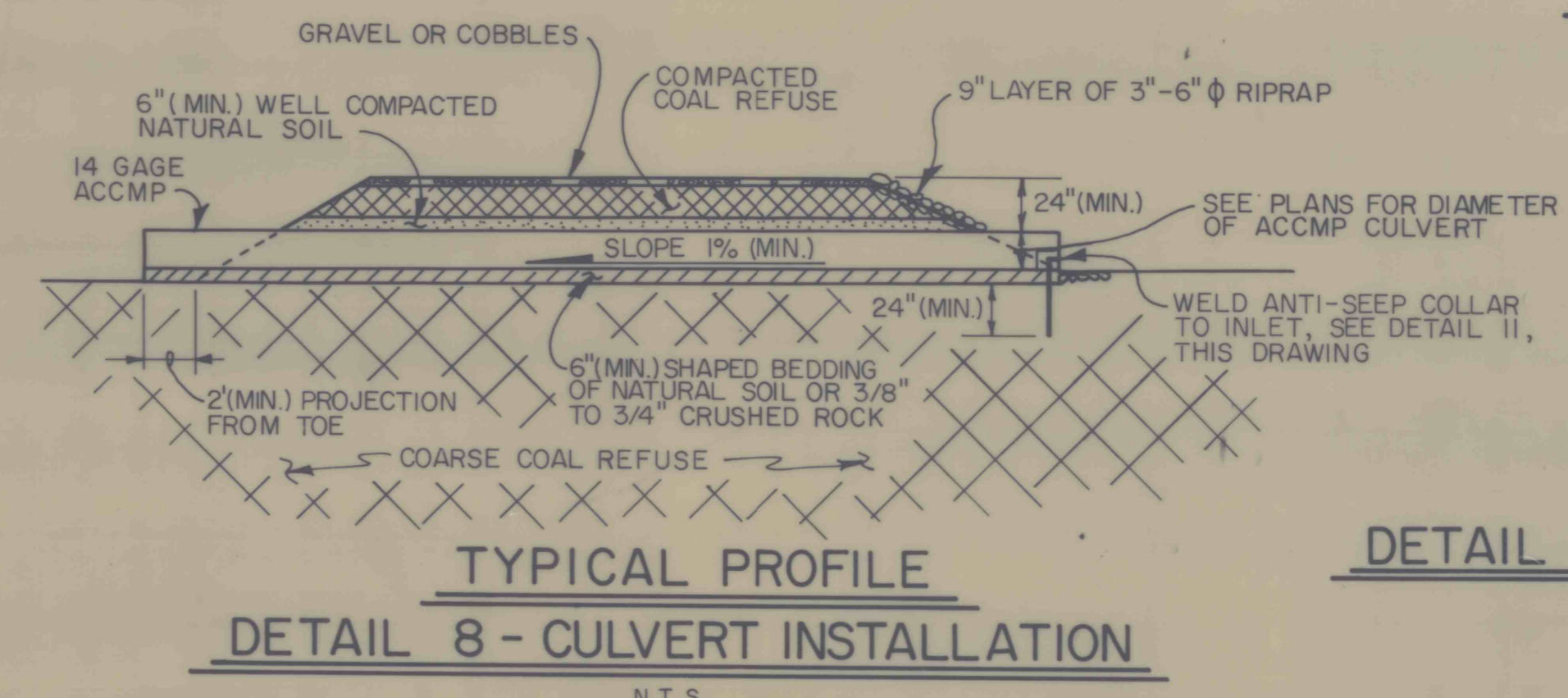


ELEVATION
 N.T.S.

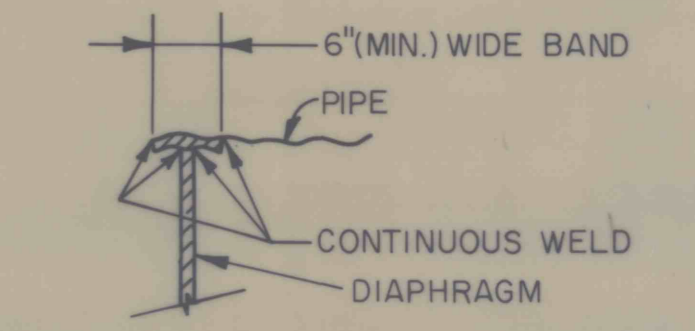
DETAIL 1
 HAUL ROAD AND GUTTER
 N.T.S.



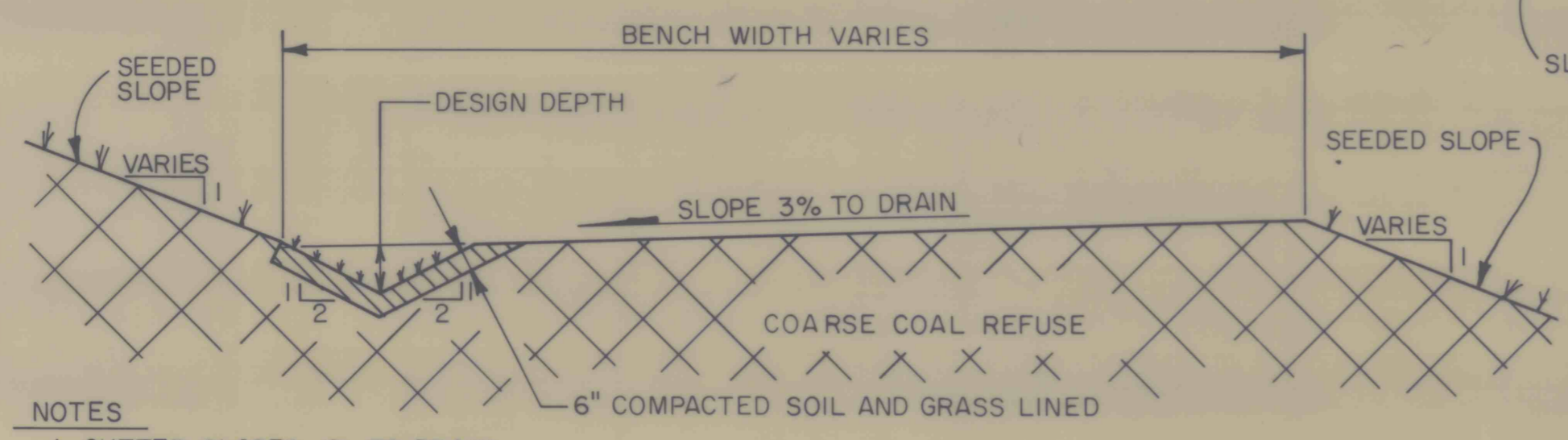
DETAIL 5
 TYPICAL PROFILE OF PERIMETER DITCH AND BENCH GUTTER INTERSECTION
 N.T.S.



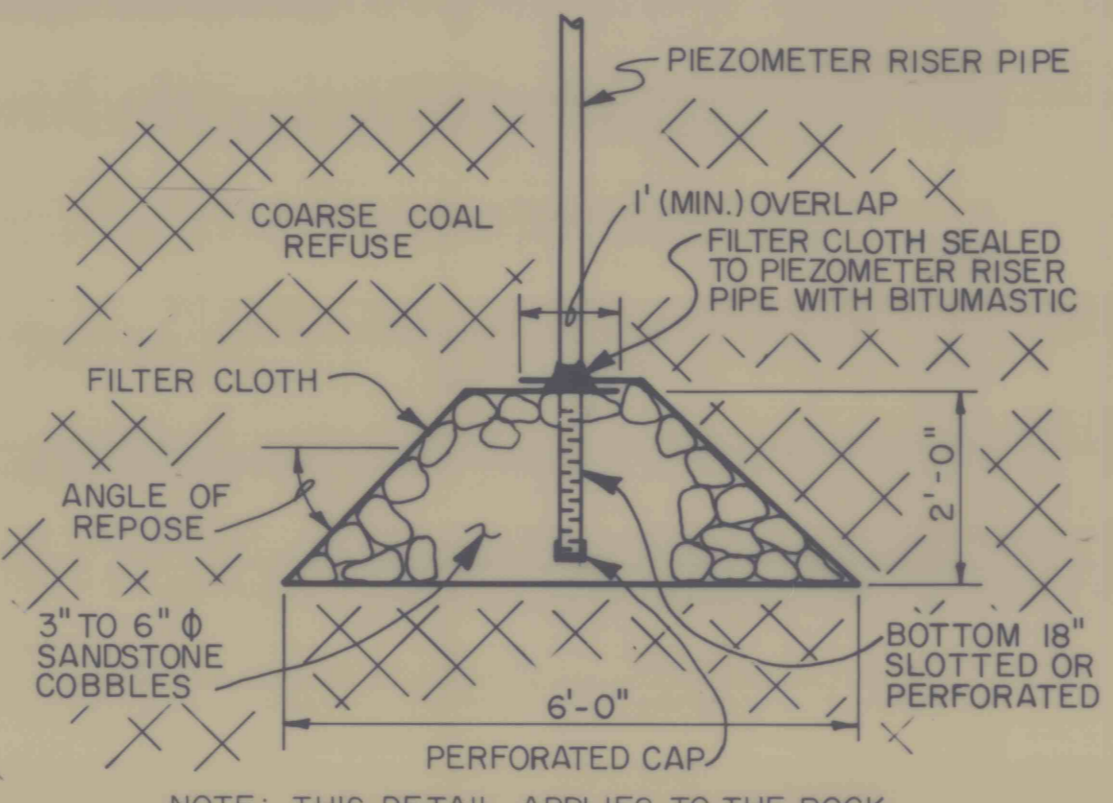
TYPICAL PROFILE
 DETAIL 8 - CULVERT INSTALLATION
 N.T.S.



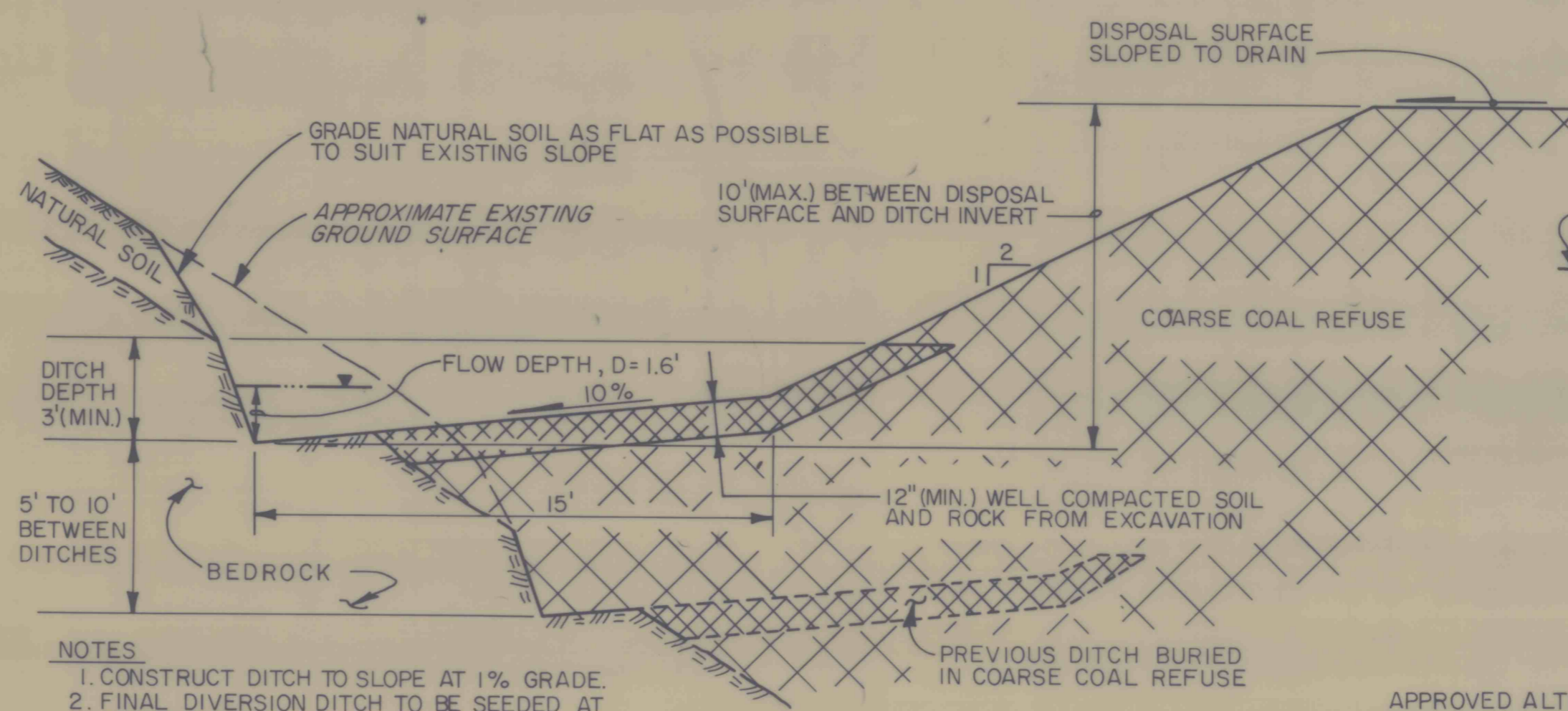
SECTION
 DETAIL II ANTI-SEEP COLLAR
 N.T.S.



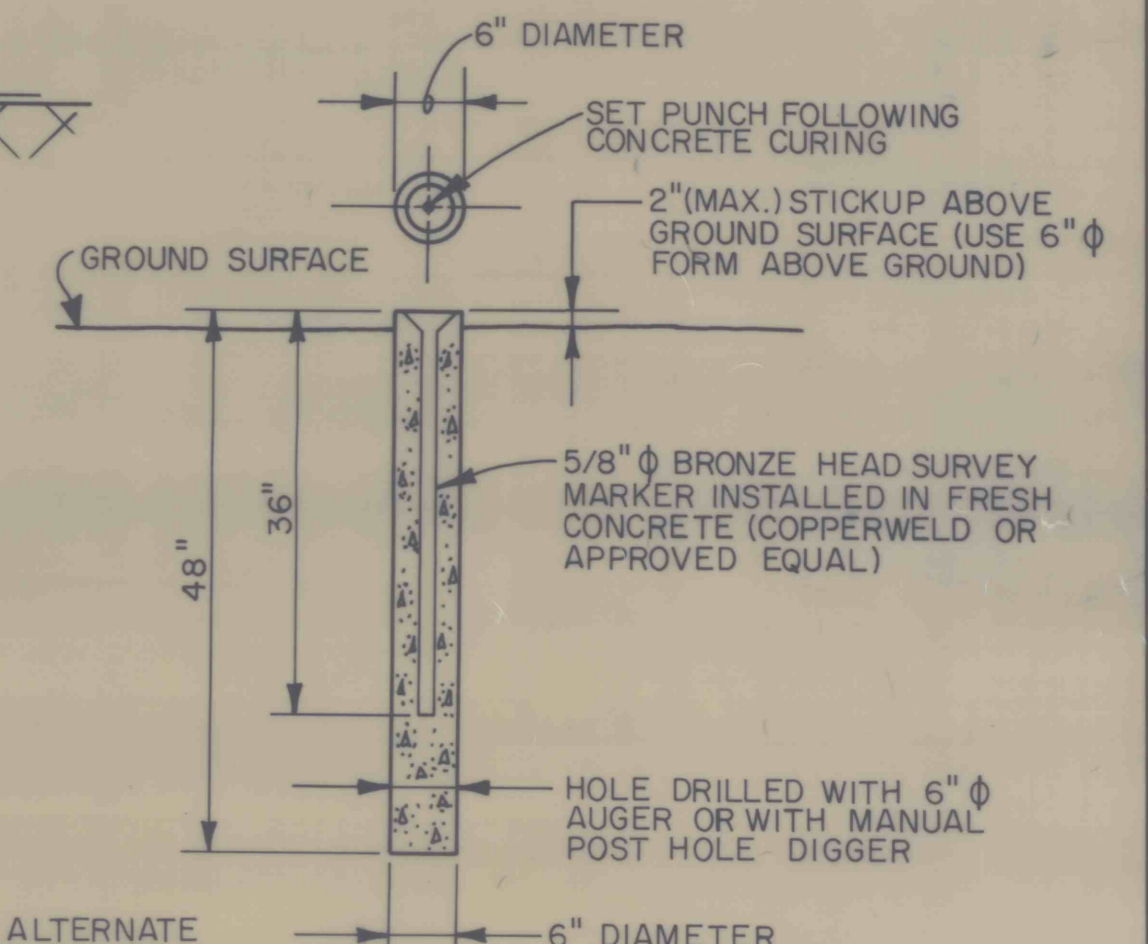
DETAIL 2
 BENCH AND BENCH GUTTER
 N.T.S.



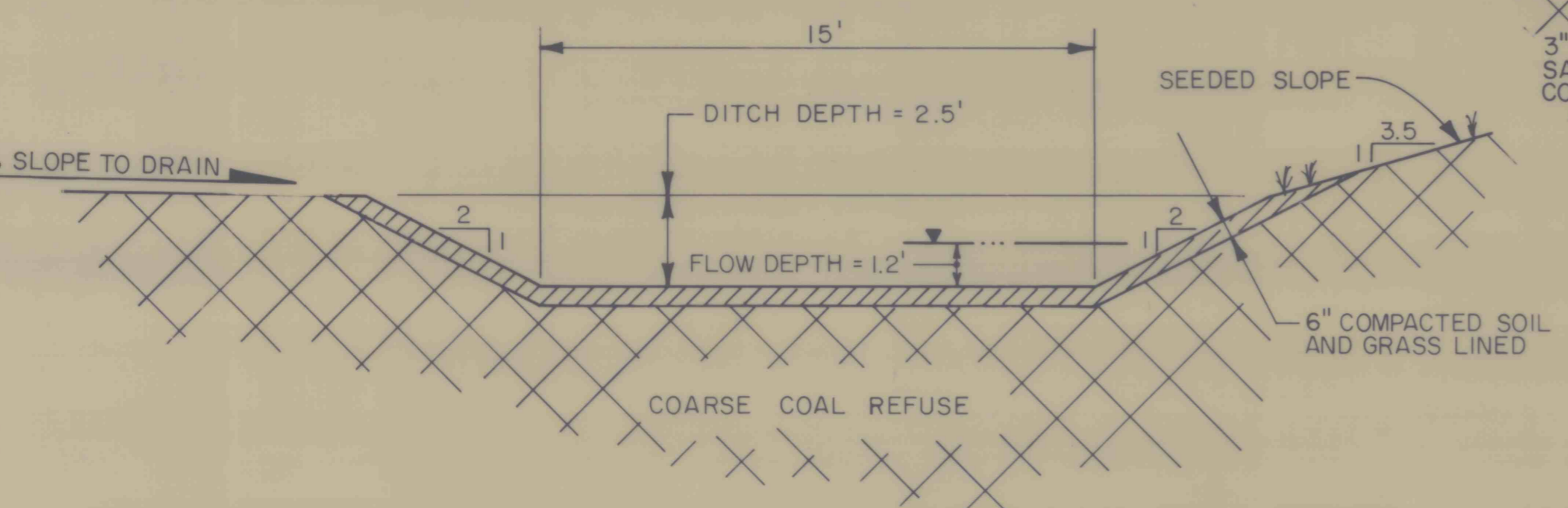
DETAIL 6
 SUBSURFACE DRAINS
 N.T.S.



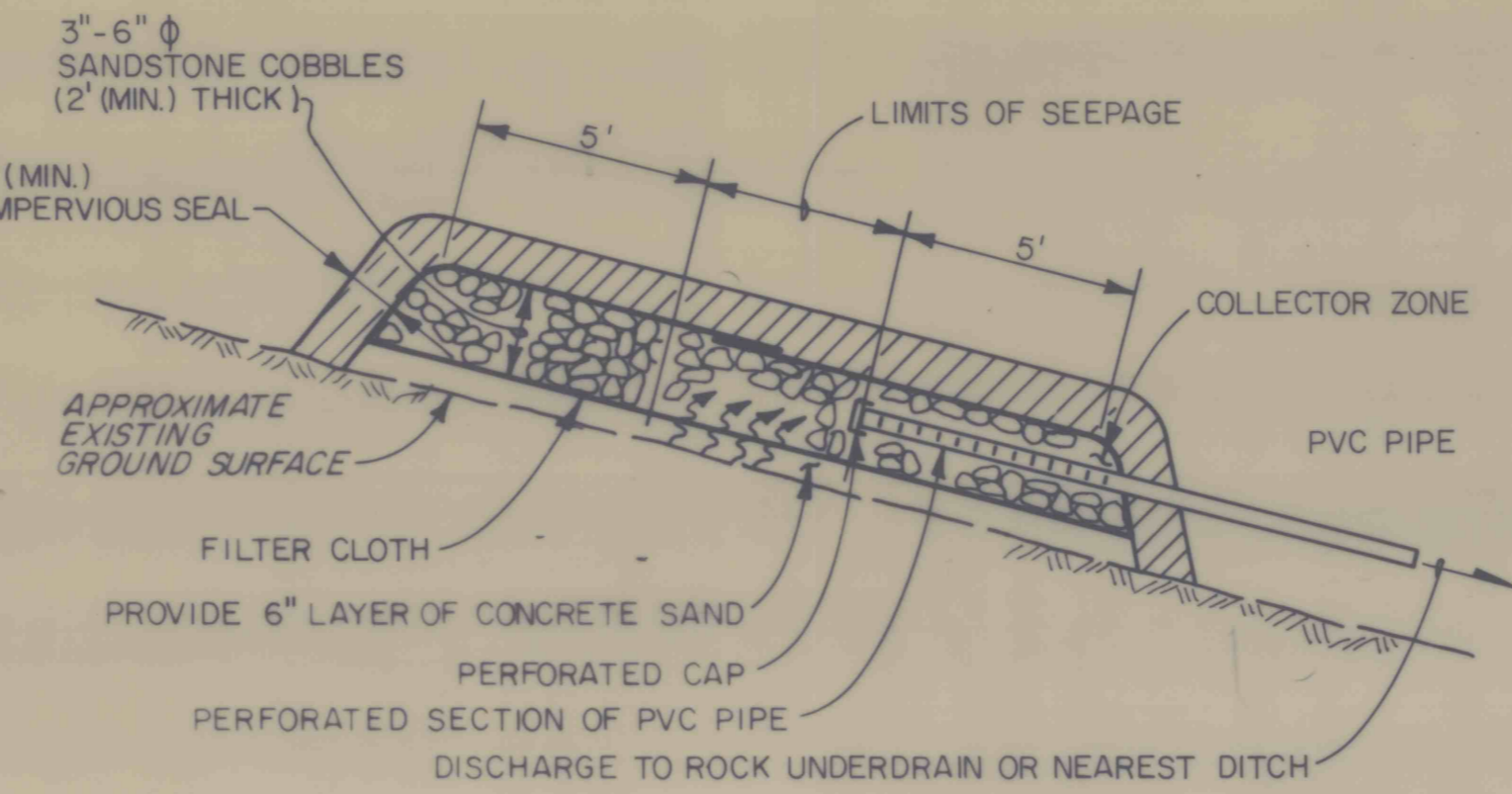
DETAIL 9
 DIVERSION DITCH E
 SCALE 4 0 4 8 FEET



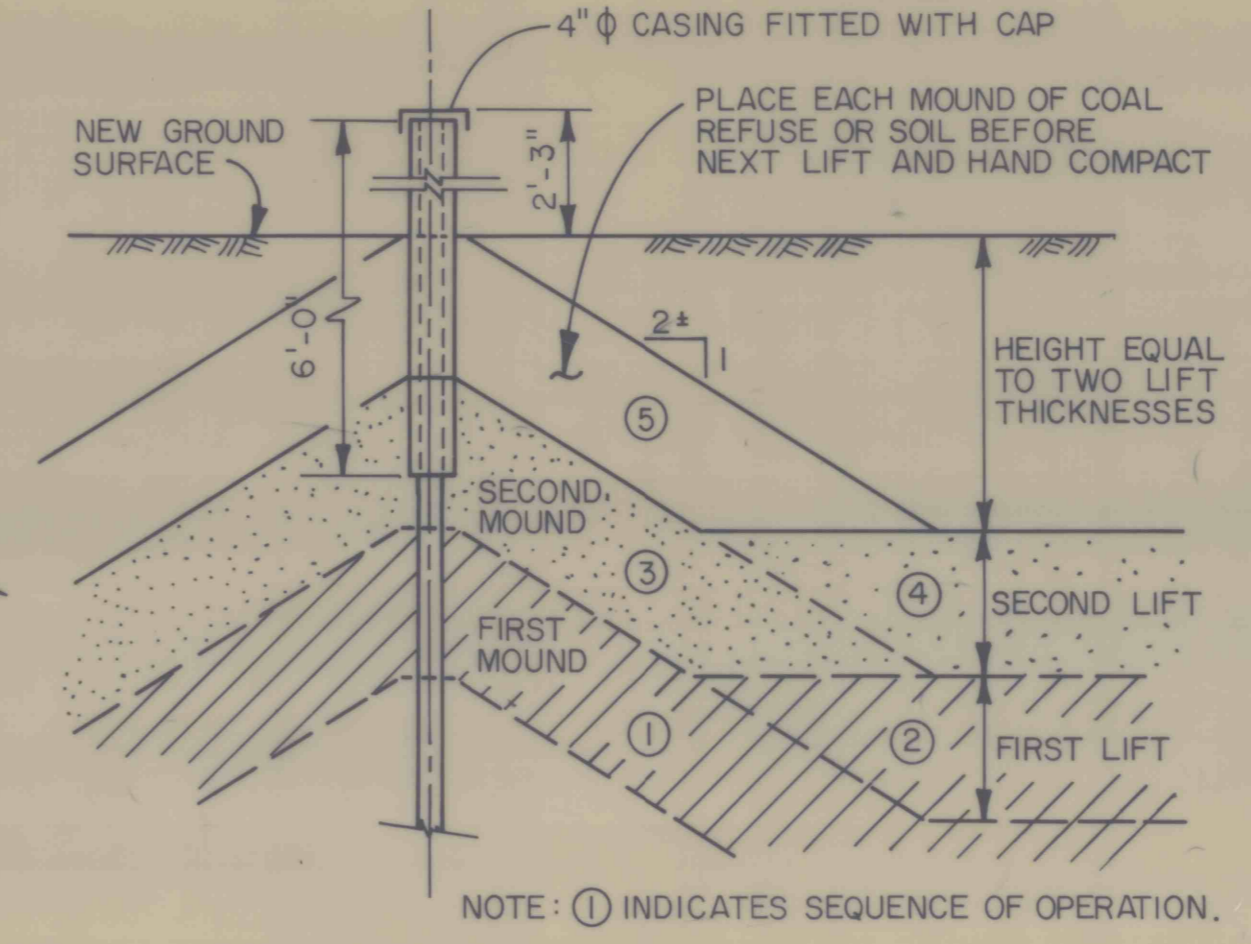
DETAIL 12
 CAST-IN-PLACE SURVEY MONUMENT
 N.T.S.



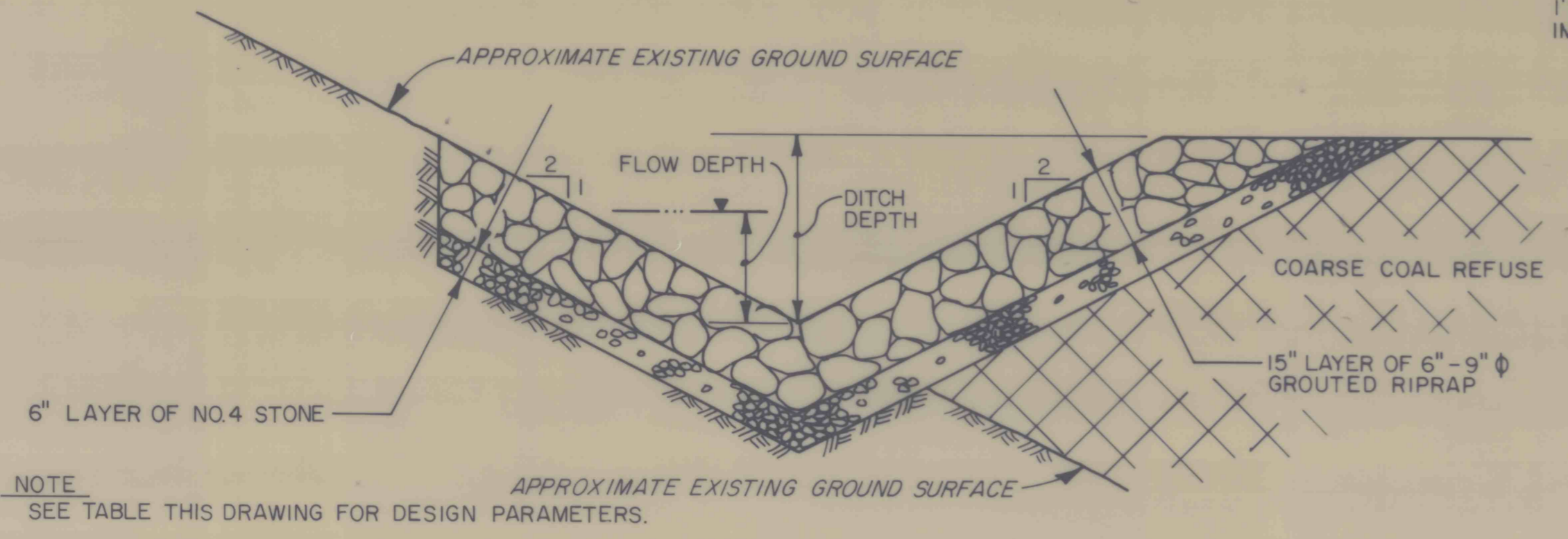
DETAIL 3
 PERIMETER DITCH D
 N.T.S.



DETAIL 7
 SPRING COLLECTOR ZONE
 N.T.S.



DETAIL 10
 PIEZOMETER EXTENSION PROCEDURE
 N.T.S.



DETAIL 4
 PERIMETER DITCHES A, B AND C
 N.T.S.

NOTE
 SEE TABLE THIS DRAWING FOR DESIGN PARAMETERS.

DRAWING NO. 78-359-E16	SHEET NO.	FIGURE NO. 18
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DETAILS - SHEET 1 OF 2
 BETHLEHEM MINE No. 101
 CENTURY, WEST VIRGINIA
 PREPARED FOR
 BETHLEHEM MINES CORPORATION
 BRIDGEPORT, WEST VIRGINIA

D'APPOLONIA