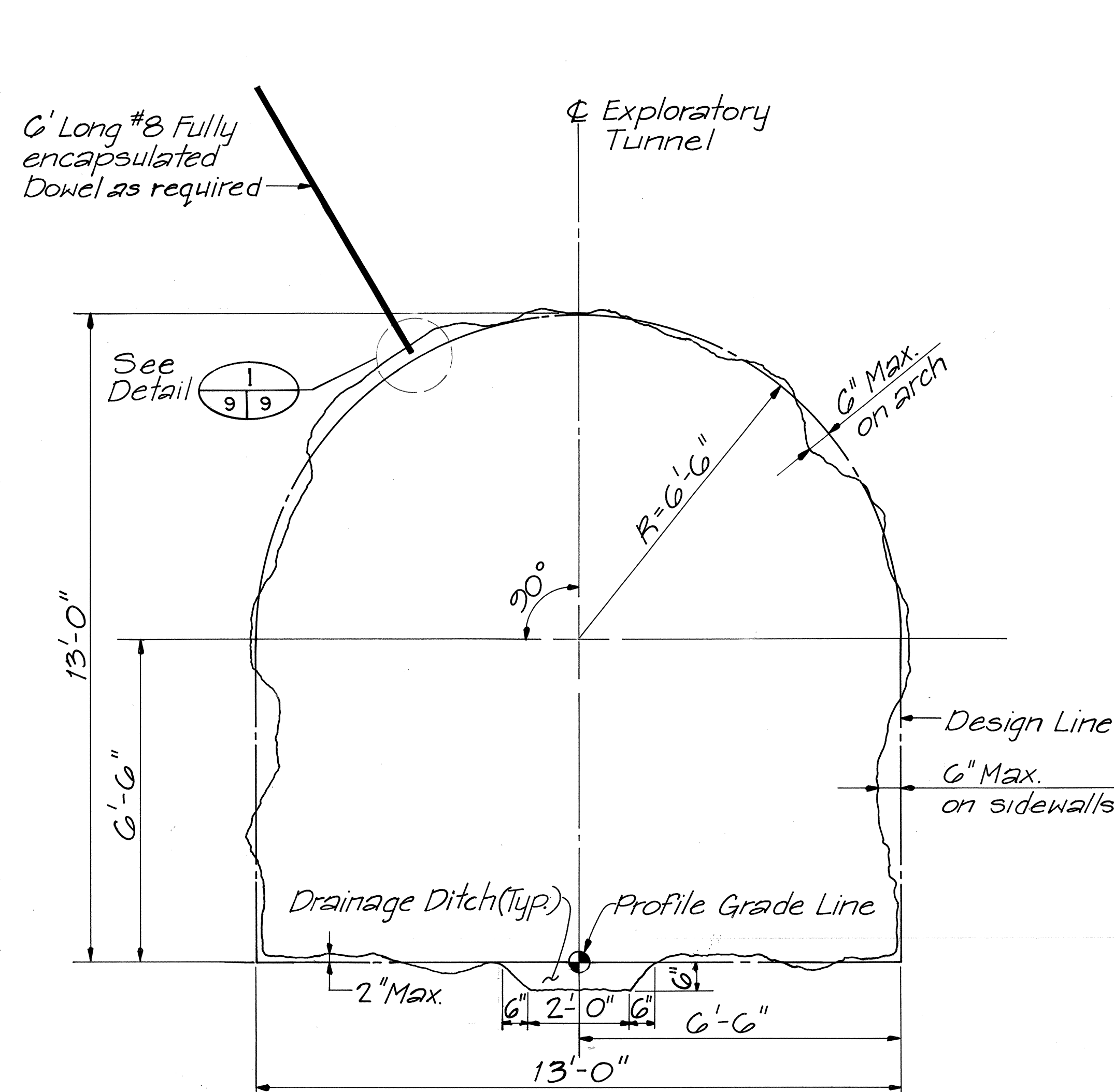


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(37)	1988	9	26

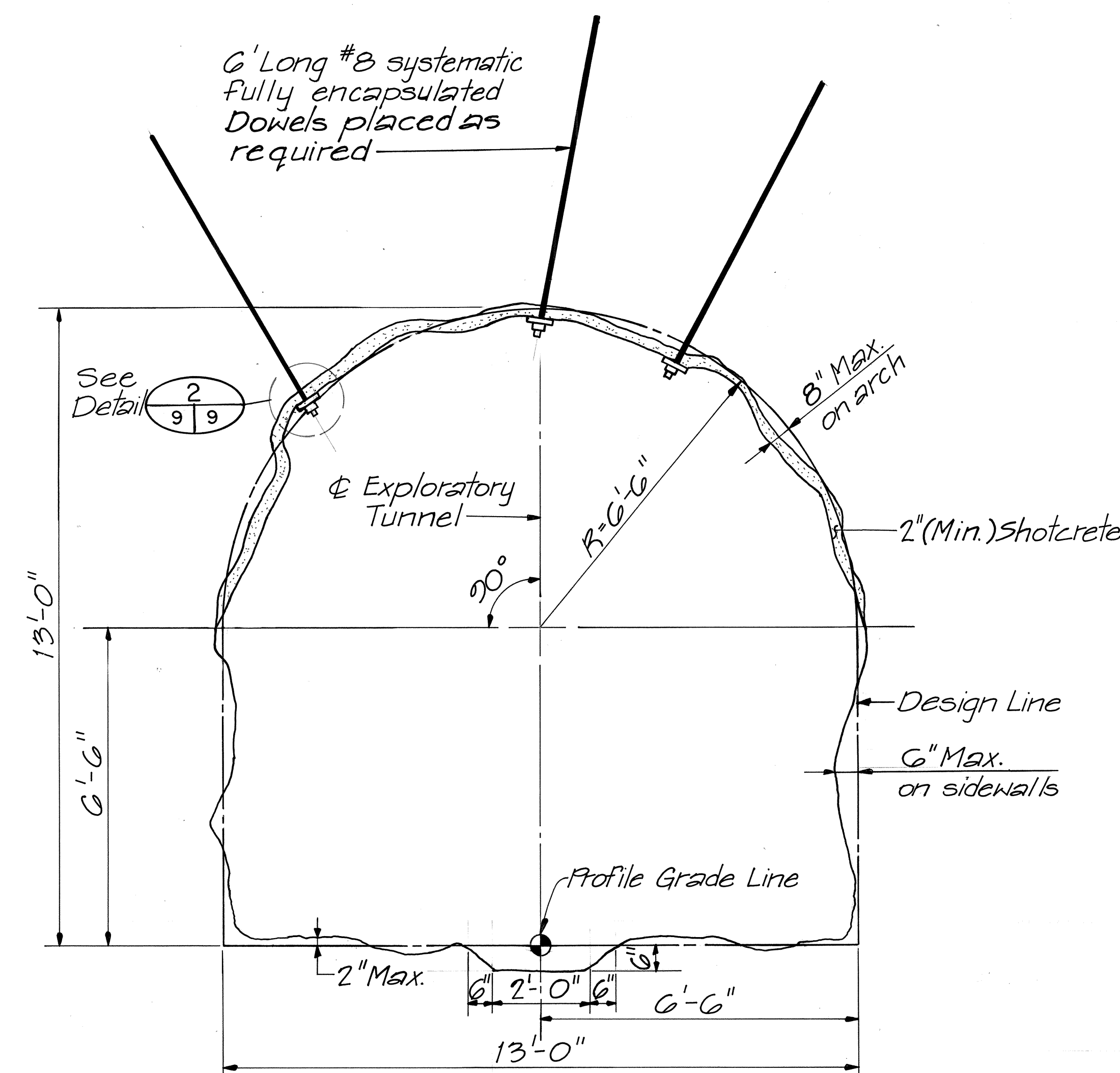
NOTES:

1. Depending on ground conditions, either Shotcrete shall be applied, or Dowels shall be installed in the tunnel, to the face, before drilling of the next round begins.
2. All ground support shall be installed within 25 Feet of the tunnel face.
3. Systematic Dowels shall be installed at an average rate of 1 Dowel per linear foot of Type B Tunnel to best reinforce the ground on a nominal pattern adjusted to best fit the geology.
4. Contractor shall locate position of ditch to suit his construction methods and equipment.



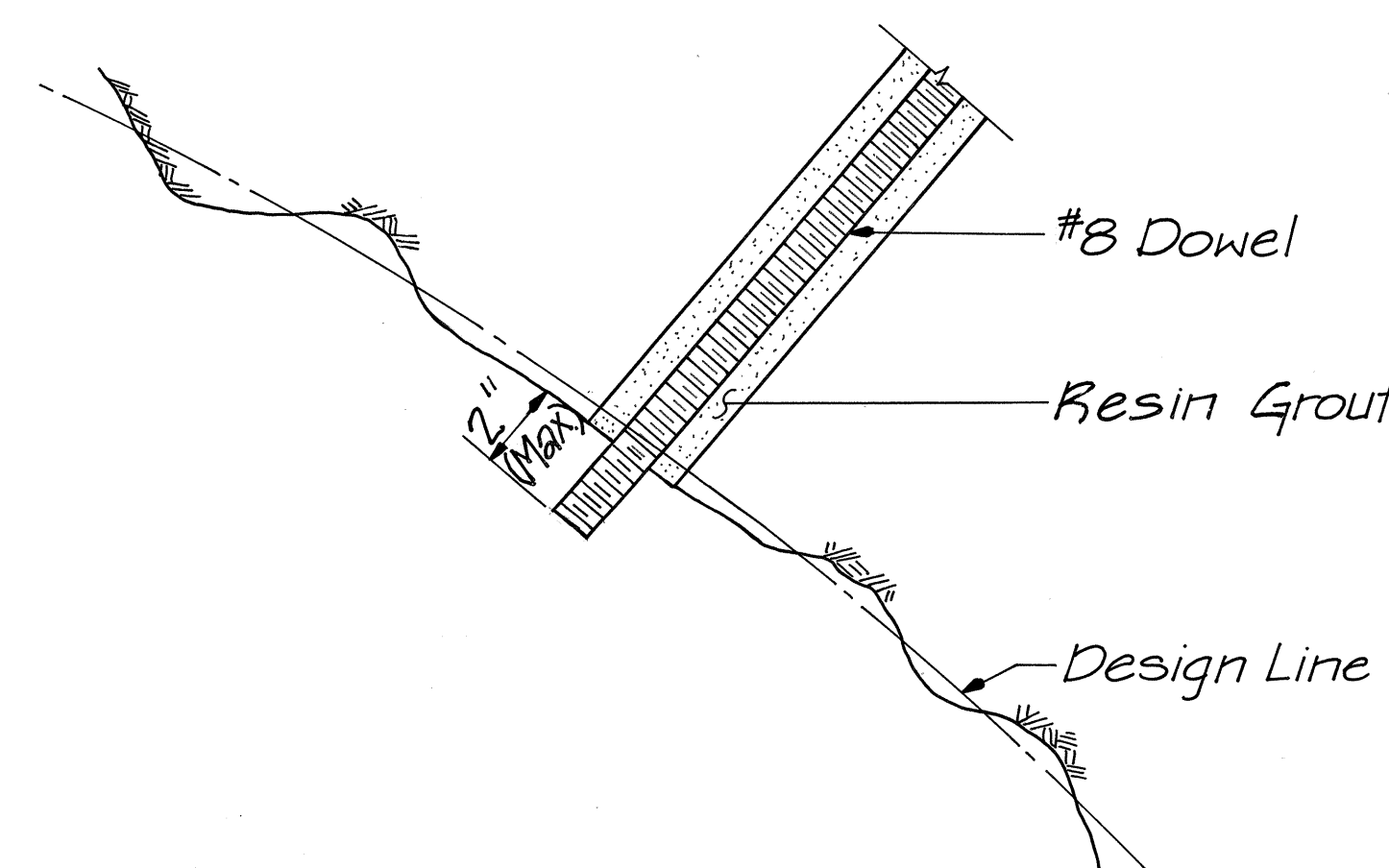
GROUND SUPPORT TYPE A

SCALE: 1/2" = 1'-0"



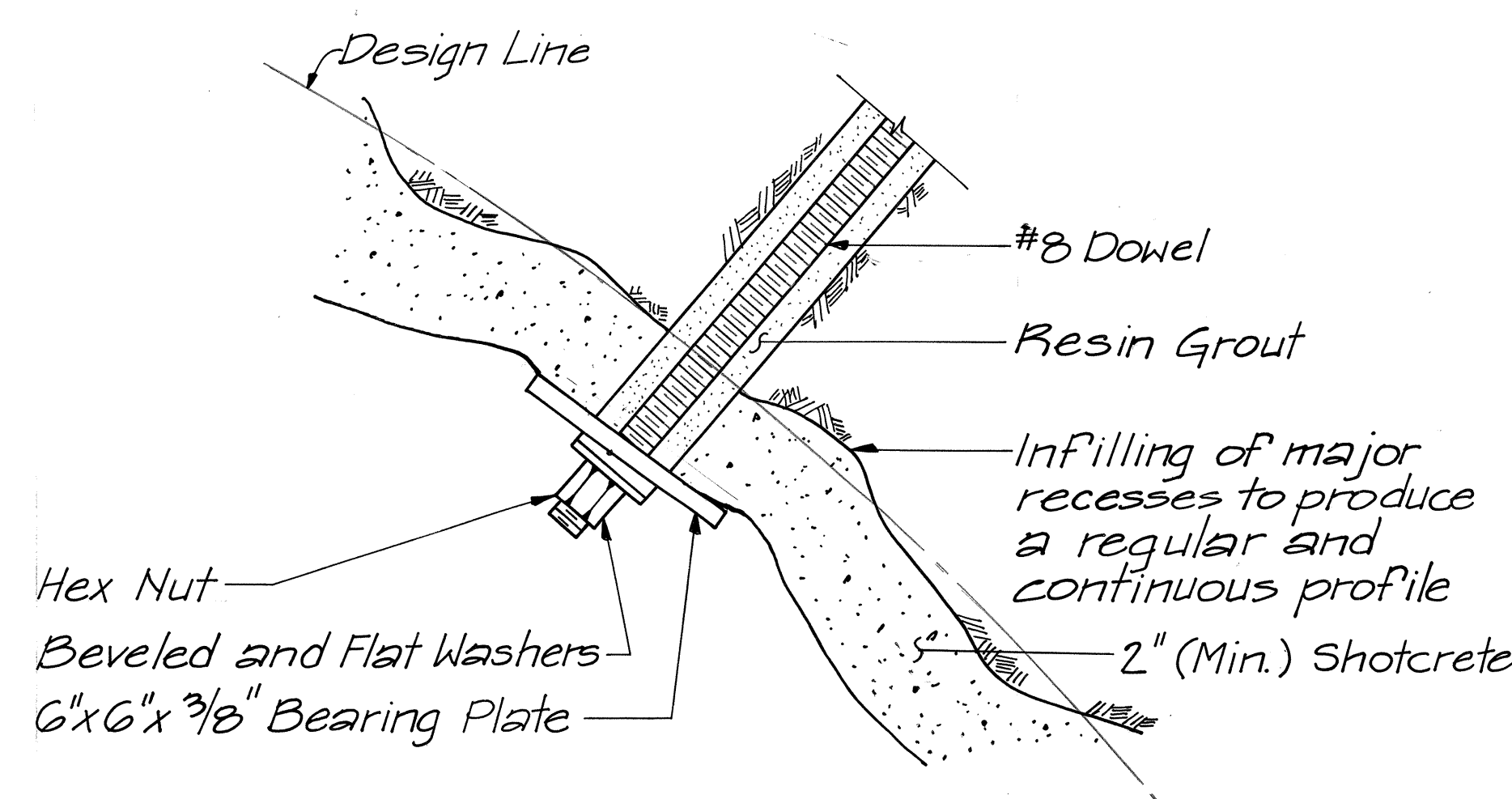
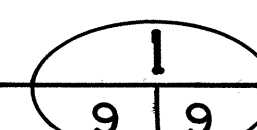
GROUND SUPPORT TYPE B

SCALE: 1/2" = 1'-0"



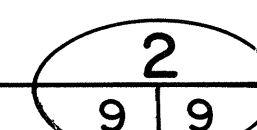
DETAIL 1

SCALE: 1/4" = 1'



DETAIL 2

SCALE: 1/4" = 1'



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OR UNDER MY SUPERVISION
William H. Hanks

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GROUND SUPPORT TYPES A & B
& DETAILS**

EXPLORATORY TUNNEL
INTERSTATE ROUTE H-3
F.A.I. PROJECT NO. I-H3-1(37)

SCALE: AS NOTED DATE: AUG. 1988

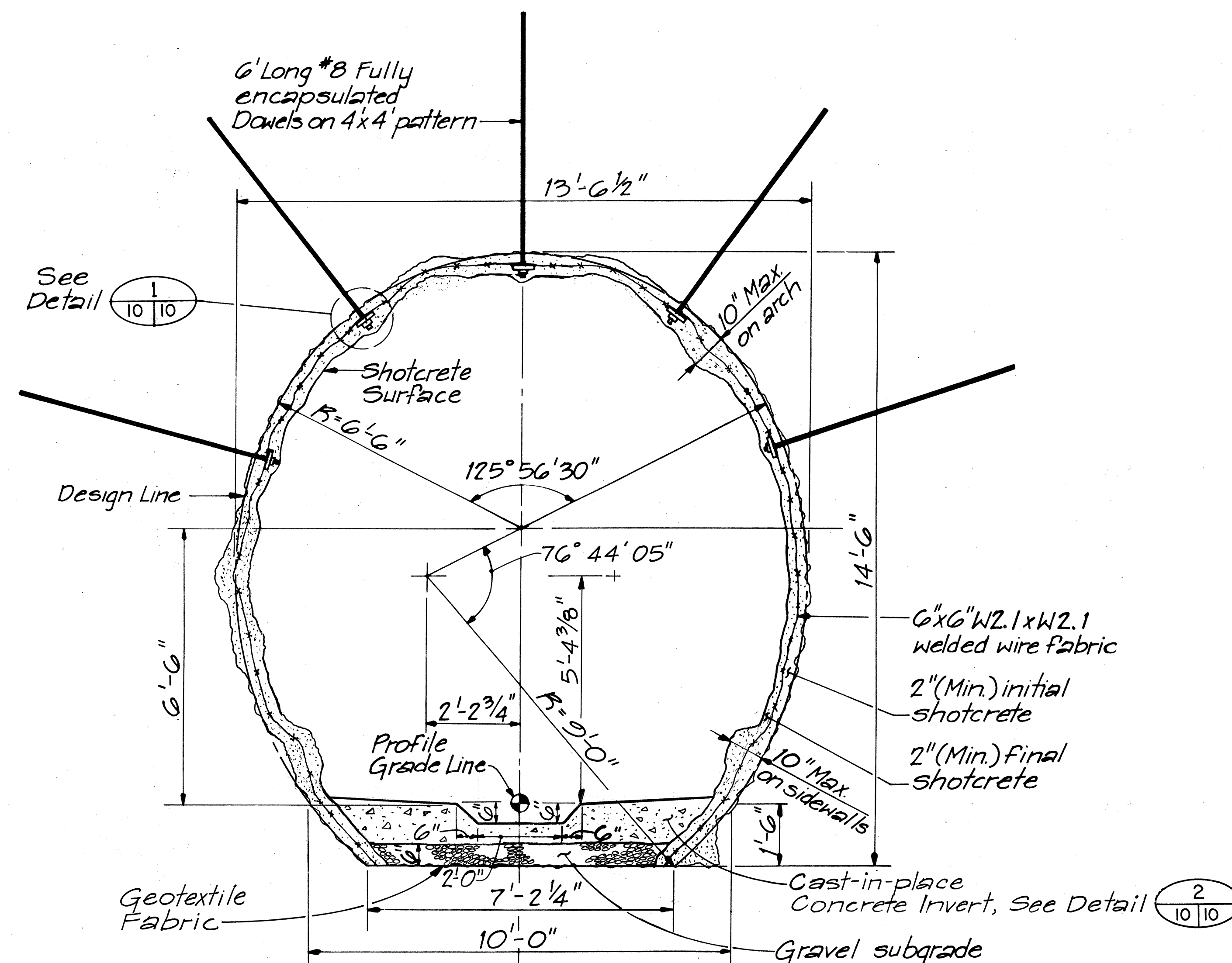
SHEET NO. OF SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(37)	1988	10	26

NOTES:

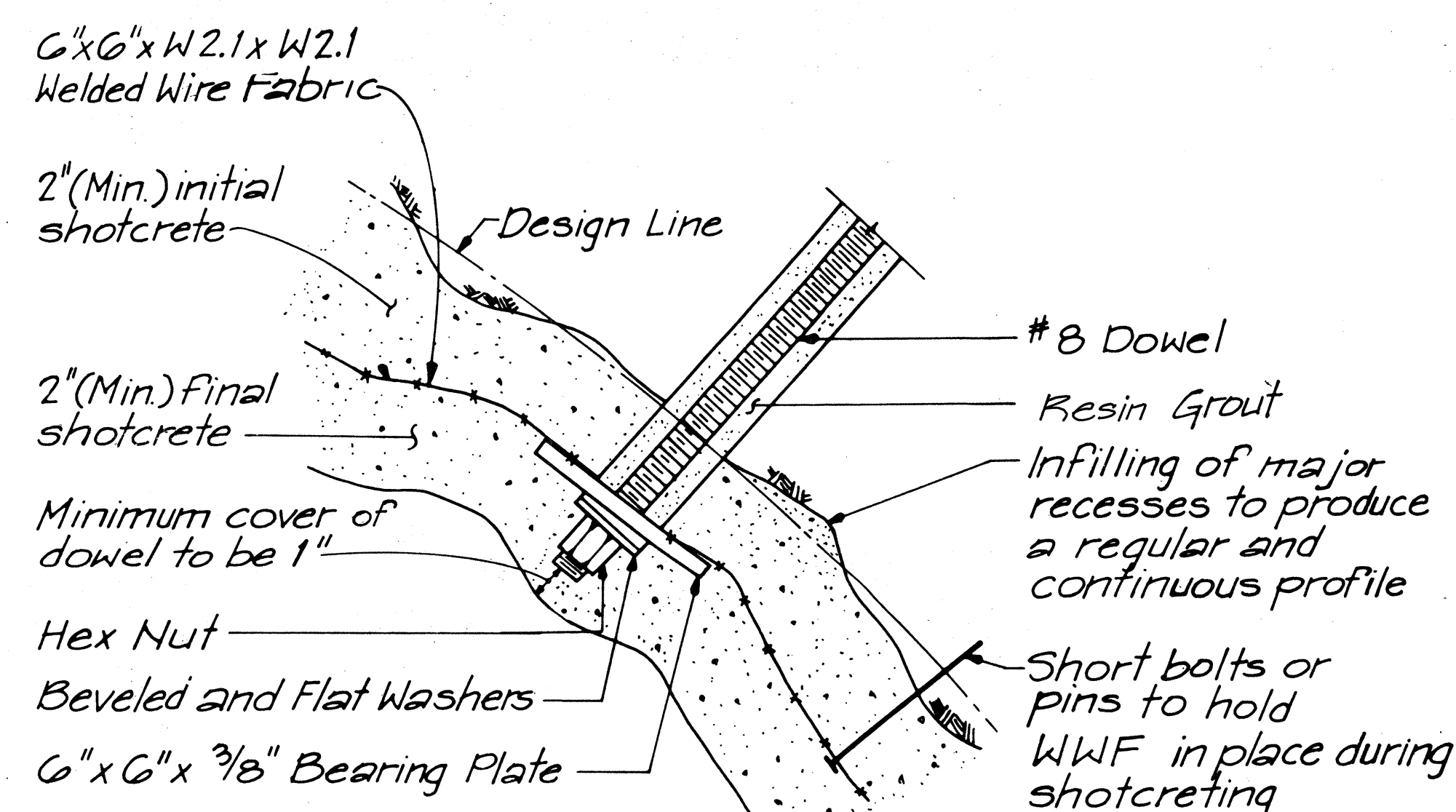
GROUND SUPPORT TYPE C USING DOWELS

1. Initial shotcrete (first layer) shall be applied before drilling of next round begins, or excavation begins if blasting is not used.
2. WWF, Dowels, and final shotcrete (second layer) shall be installed within 25 feet of the tunnel face.
3. Invert treatment shall be installed as specified.

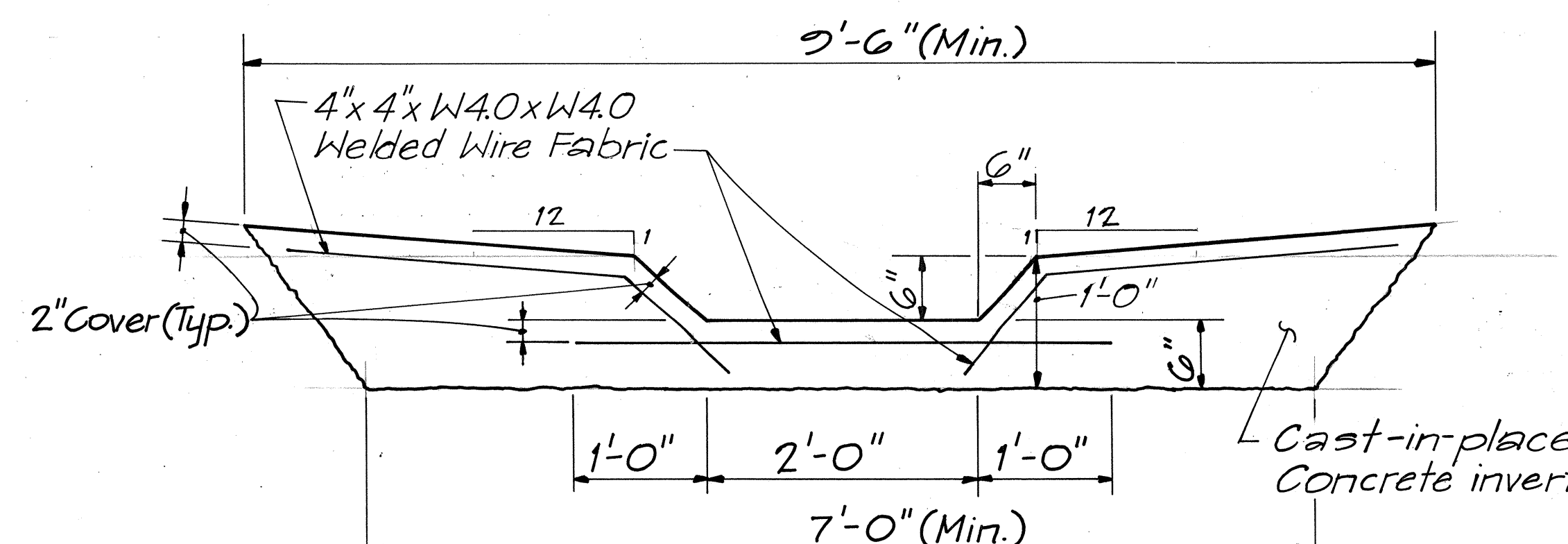


GROUND SUPPORT TYPE C USING DOWELS

SCALE: 1/2" = 1'-0"



DETAIL 1
SCALE: 1/4" = 1'



DETAIL 2
SCALE: 1" = 1'-0"



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
William H. Nakamura

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GROUND SUPPORT TYPE C & DETAIL	
EXPLORATORY TUNNEL	
INTERSTATE ROUTE H-3	
F.A.I. PROJECT NO. I-H3-1(37)	
SCALE: AS NOTED	DATE: AUG. 1988
SHEET NO. OF SHEETS	