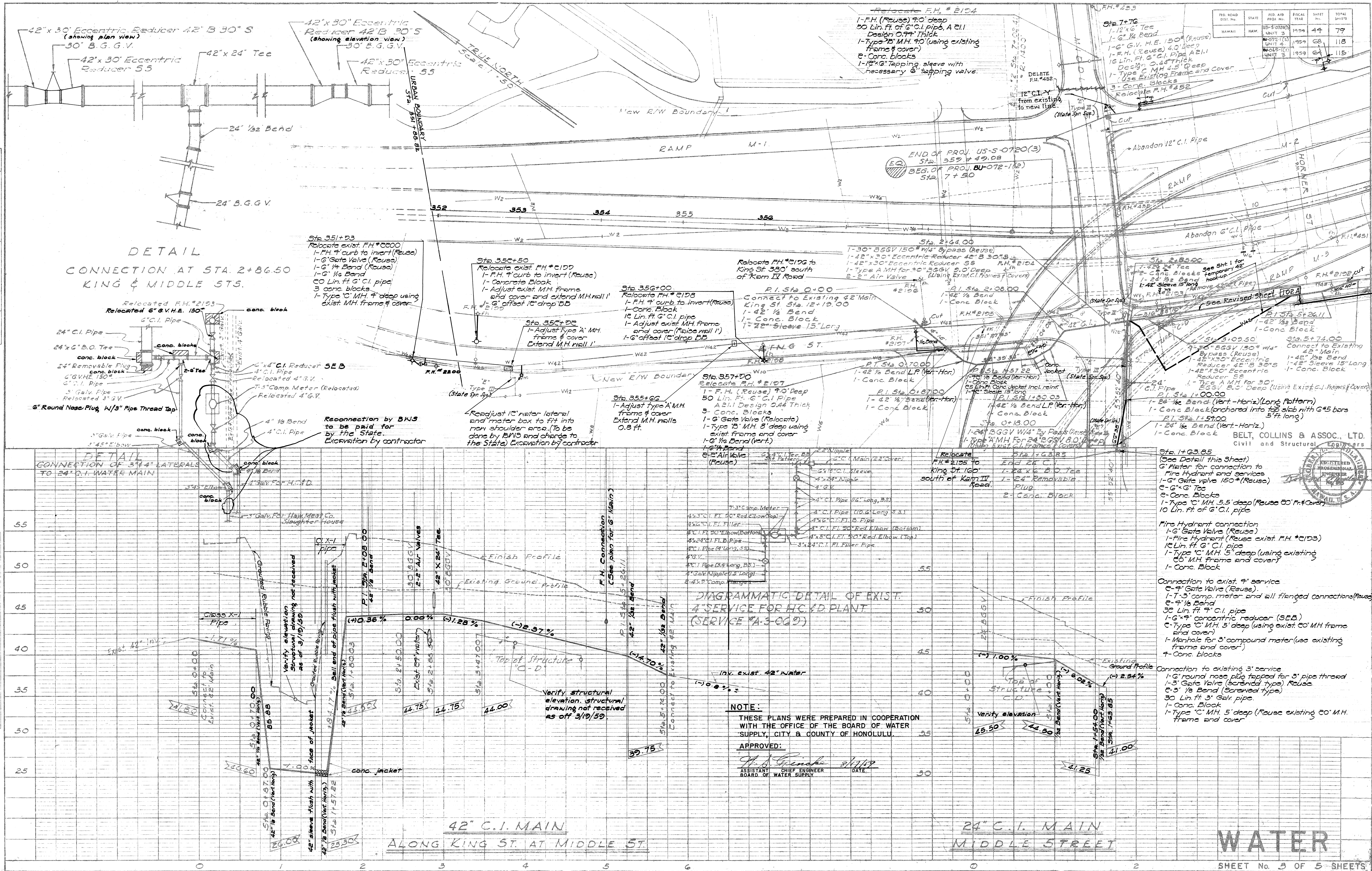


PLAN	DATE	BY	DATE	BY
SURVEYED				
PLOTTED				
NOTED				
NO. 1				

PROFILE	DATE	BY	DATE	BY
SURVEYED				
PLOTTED				
NOTED				
NO. 1				

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	105-5-0720(3)	1959	44	79
		UNIT 4	1959	68	118
		UNIT 3	1959	61	115



NOTE:
 THESE PLANS WERE PREPARED IN COOPERATION WITH THE OFFICE OF THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU.

APPROVED:
 [Signature]
 ASSISTANT CHIEF ENGINEER
 BOARD OF WATER SUPPLY

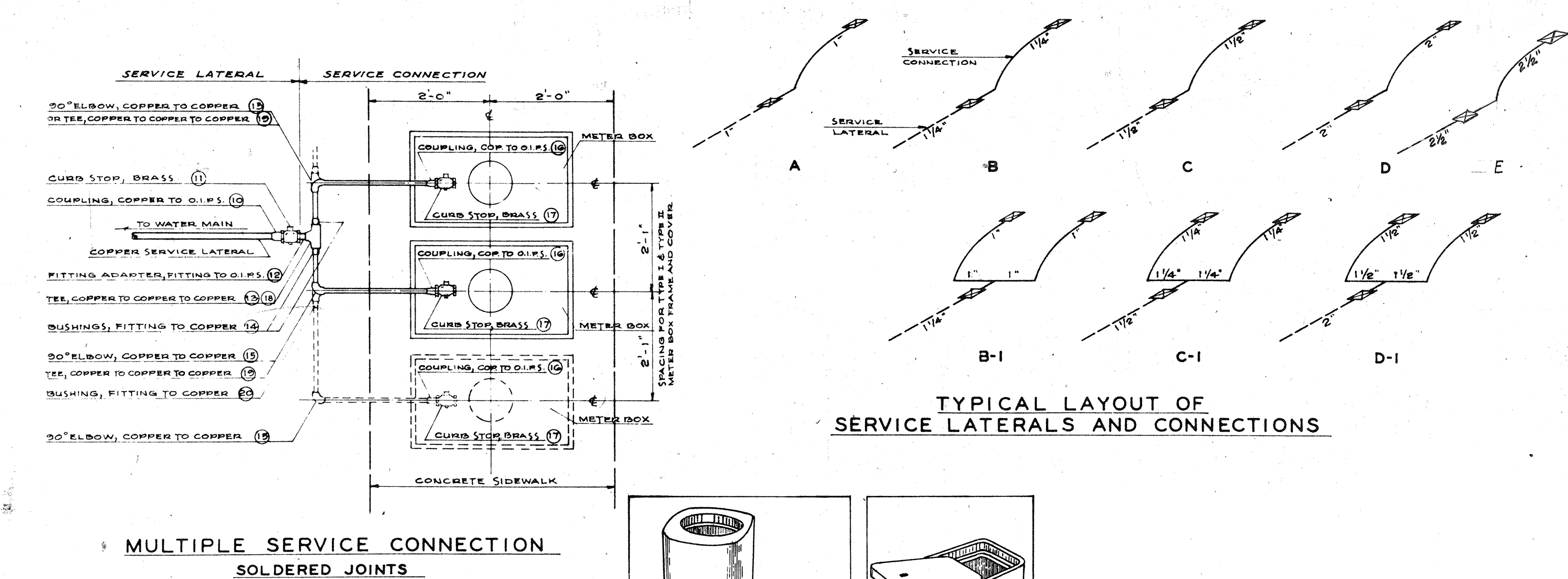
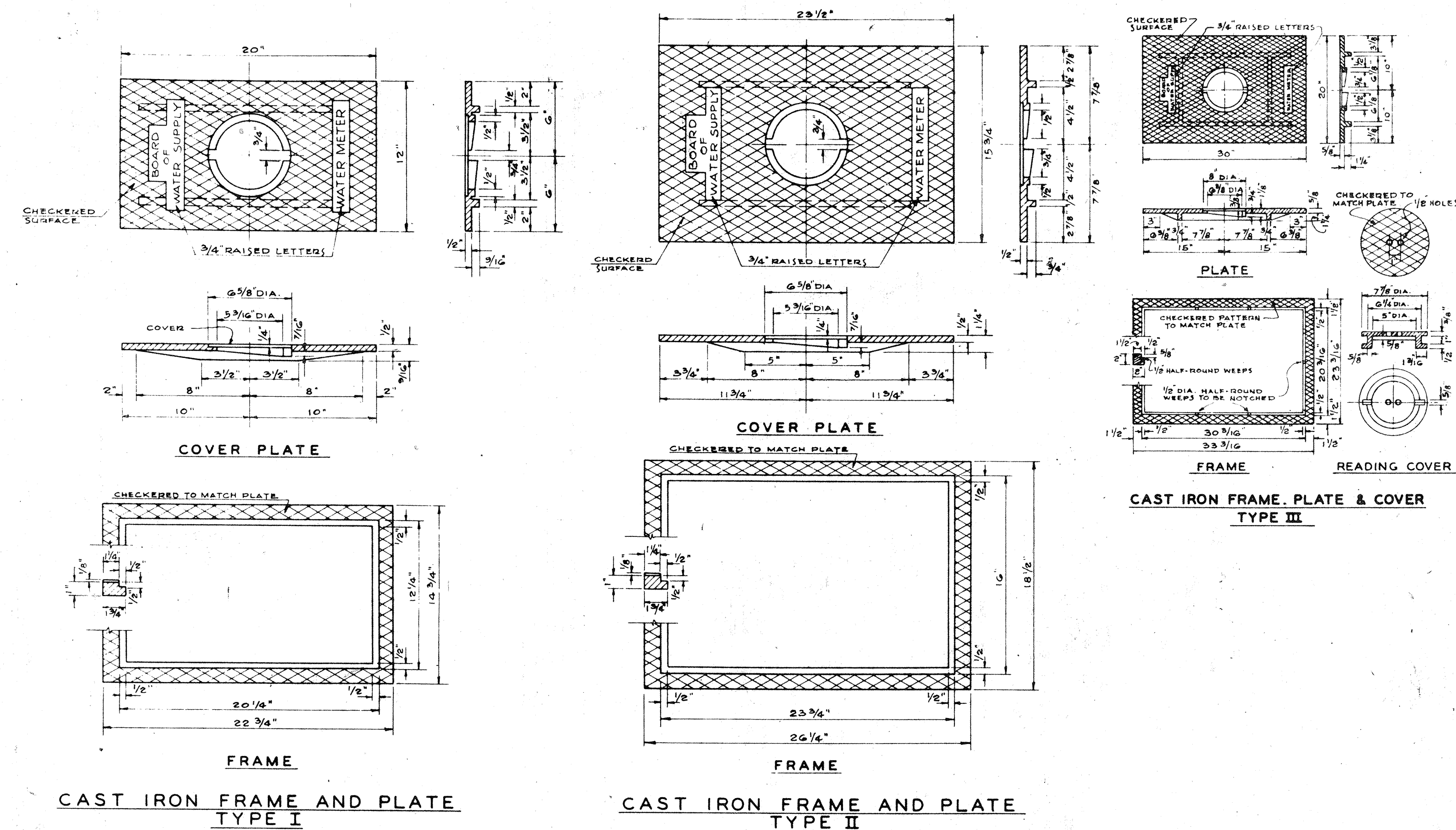
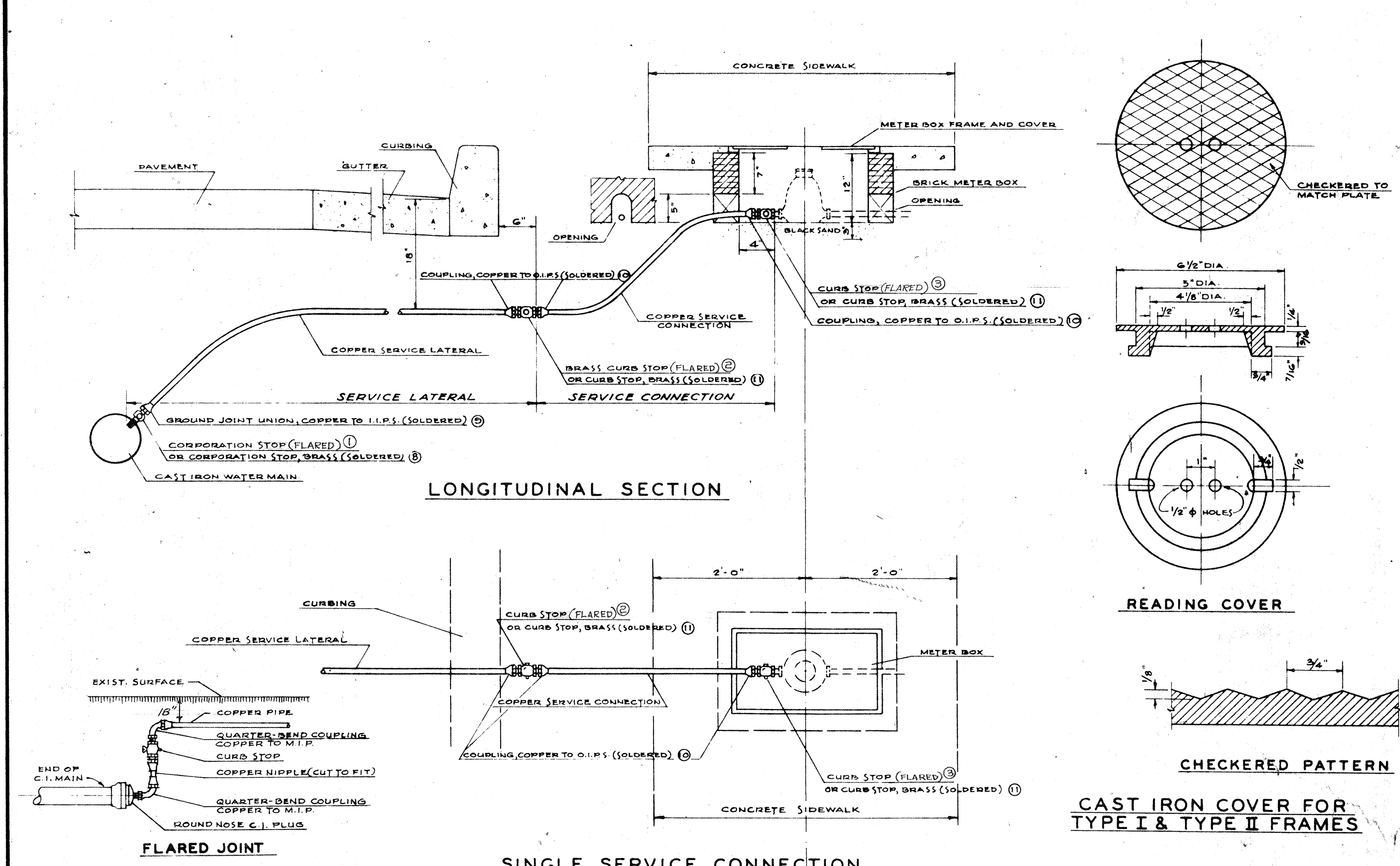
DATE: 8/1/59

Fire Hydrant connection
 1-G Gate Valve (Reuse)
 1-Fire Hydrant (Reuse exist. F.H. #C/D3)
 10 Lin. Ft. 6" C.I. pipe
 1-Type "C" M.H. 5' deep (using existing 60" M.H. frame and cover)
 1-Conc. Block

Connection to exist. 9" service
 1-T-3" comp. meter and all flanged connections (Reuse)
 2-4" 1/2 Bend
 30 Lin. Ft. 7" C.I. pipe
 1-G" 9" concentric reducer (SEB)
 1-Type "C" M.H. 5' deep (using exist. 60" M.H. frame and cover)
 1-3" compound meter (use existing frame and cover)
 4-Conc. blocks

Connection to existing 3" service
 1-G" round nose plug tapped for 3" pipe thread
 1-3" Gate Valve (screwed type) Reuse
 2-3" 1/2 Bend (screwed type)
 30 Lin. Ft. 3" Galv. pipe
 1-Conc. Block
 1-Type "C" M.H. 5' deep (Reuse existing 60" M.H. frame and cover)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	05-0720(3)	1959	46	77
		UNIT 3			
		BU-072-1(2)	1959	7C	118
		UNIT 4			
		BU-065-1(1)	1959	67	115
		UNIT 5			



NOTE:
USE OF COPPER PIPE AND FITTINGS WITH "SOLDERED" JOINTS OPTIONAL UNTIL FURTHER NOTICE.

NOTE:
THESE PLANS WERE PREPARED IN COOPERATION WITH THE OFFICE OF THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU.

APPROVED:
[Signature] 8/17/59
ASSISTANT CHIEF ENGINEER
BOARD OF WATER SUPPLY

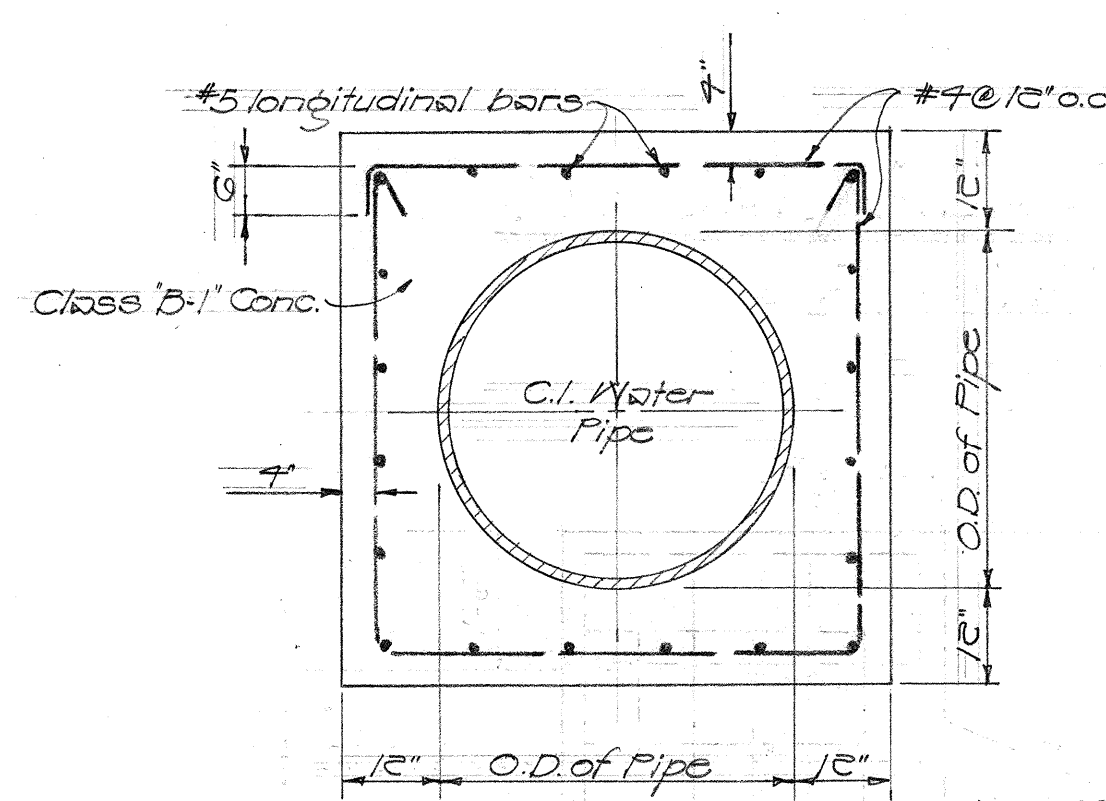
METER BOX DATA					
TYPE METER BOX	METER SIZES	OVERALL DIMENSIONS AT BOTTOM	OVERALL DIMENSIONS AT TOP	COMPLETE WEIGHT	OVERALL DIMENSIONS OF LID
A	5/8" or 3/4" Without Valve	7 1/4" x 7 1/4"	10" x 10"	45 lbs.	7 3/8" Dia.
B	5/8" or 3/4"	9 1/2" x 16"	12 1/4" x 18 3/8"	82 lbs.	8 3/4" x 14 1/2"

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
BOARD OF WATER SUPPLY
STANDARD DETAILS
MOANALUA ROAD LUNALILLO FREEWAY MIDDLE STREET
US-S-0720(3) UNIT 3
BU-072-1(2) UNIT 4
BU-065-1(1) UNIT 3

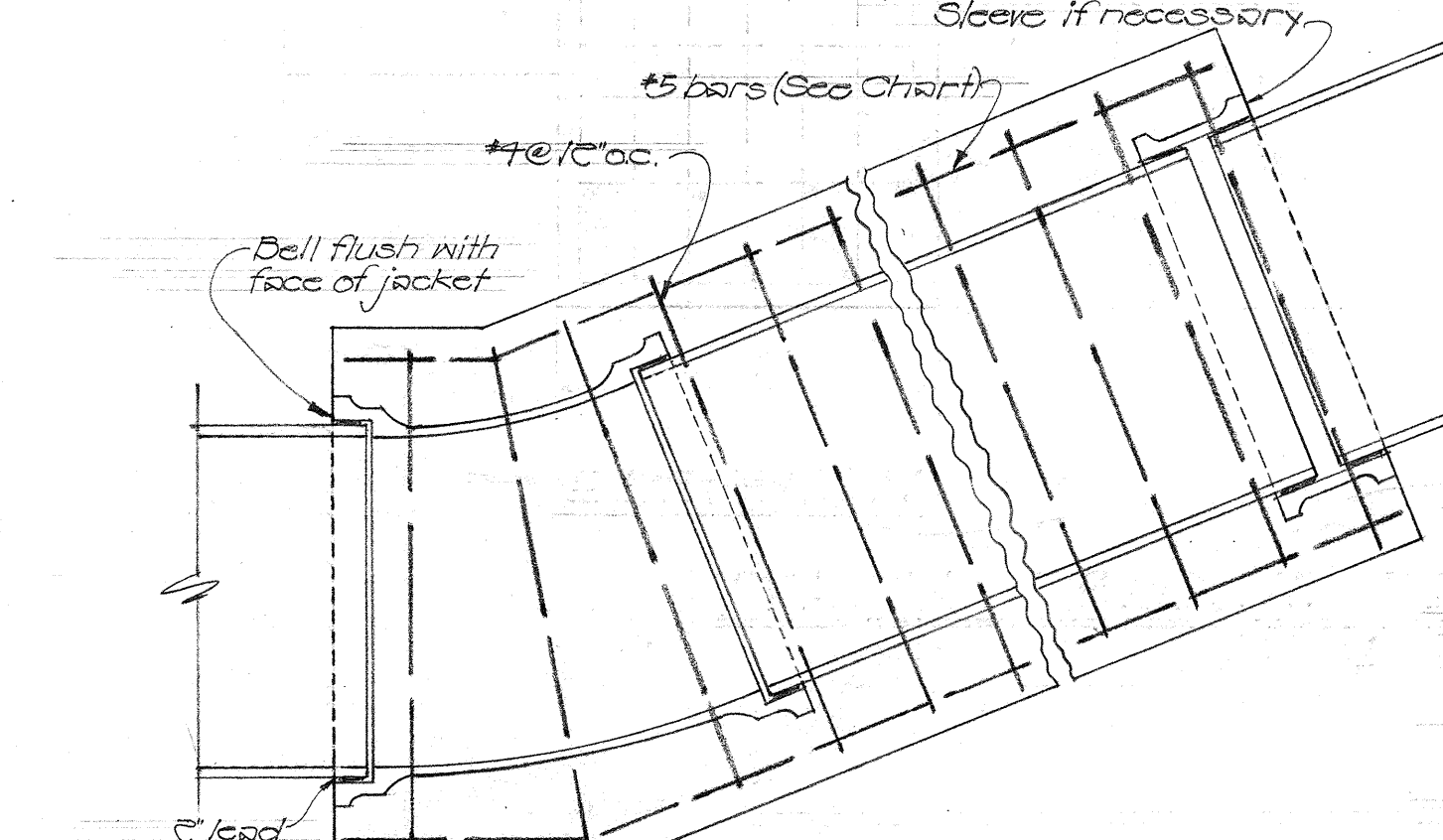
SHEET No. 2 OF 3 SHEETS

8526.46 8174.72 8161.67 105

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWAII	15-072(3) UNIT 3	1950	47	79
		BU-072-1(2) UNIT 4	1950	73	118
		BU-065-1(1) UNIT 3	1950	68	115

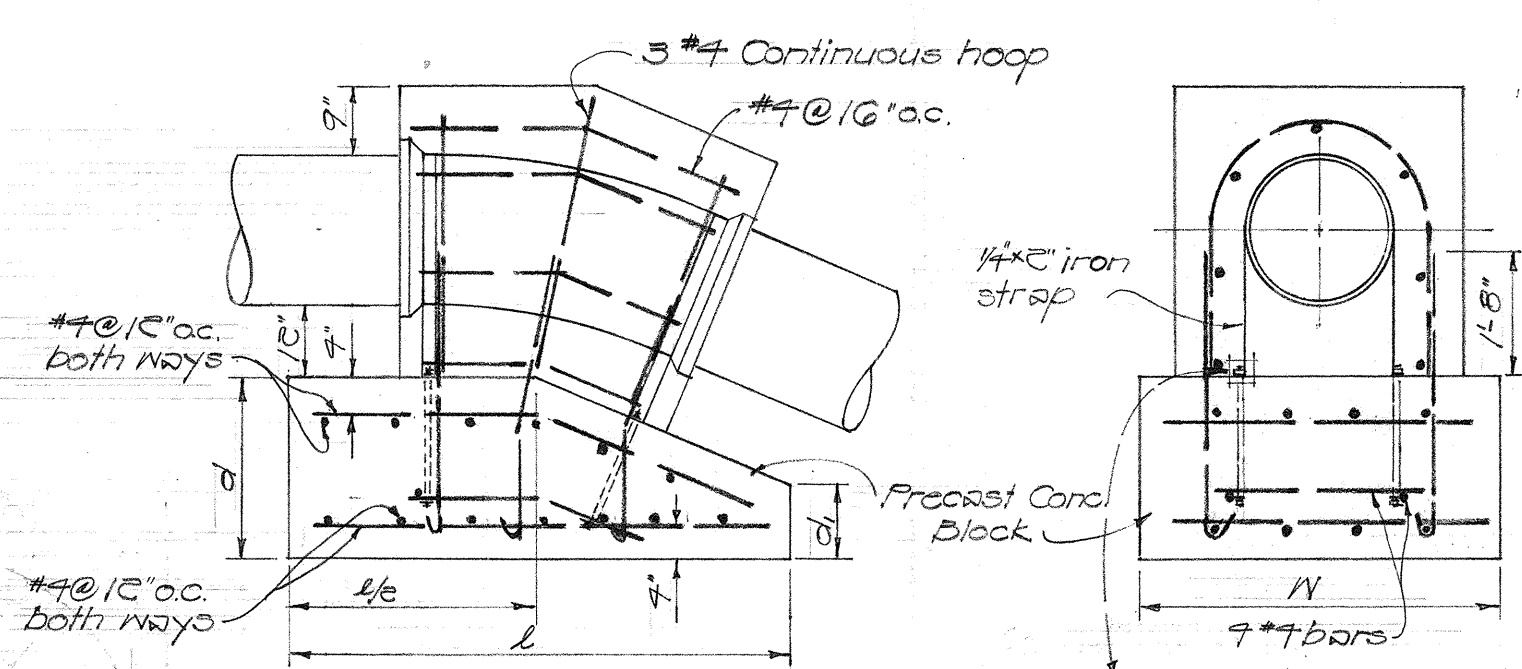


I.D. of Pipe	Size of Jacket	#4 bars	#5 Longitudinal Bars	Total
7 1/2"	28" x 28"	12 @ 15" o.c.	8	20
30"	60" x 60"	12 @ 15" o.c.	8	20
34"	50" x 50"	10 @ 15" o.c.	6	16
50"	76" x 76"	10 @ 15" o.c.	6	16
16"	76" x 76"	8 @ 15" o.c.	7	15
18"	38" x 38"	8 @ 15" o.c.	7	15
8"	38" x 38"	8 @ 15" o.c.	7	15
6"	38" x 38"	8 @ 15" o.c.	7	15
4"	30" x 30"	6 @ 15" o.c.	5	11



REINFORCED CONCRETE JACKET
Not to scale

NOTE:
Jacket to be poured after completion of test. Lead joint required at both faces of jacket. 1/2" depth of lead required at all embedded joints.

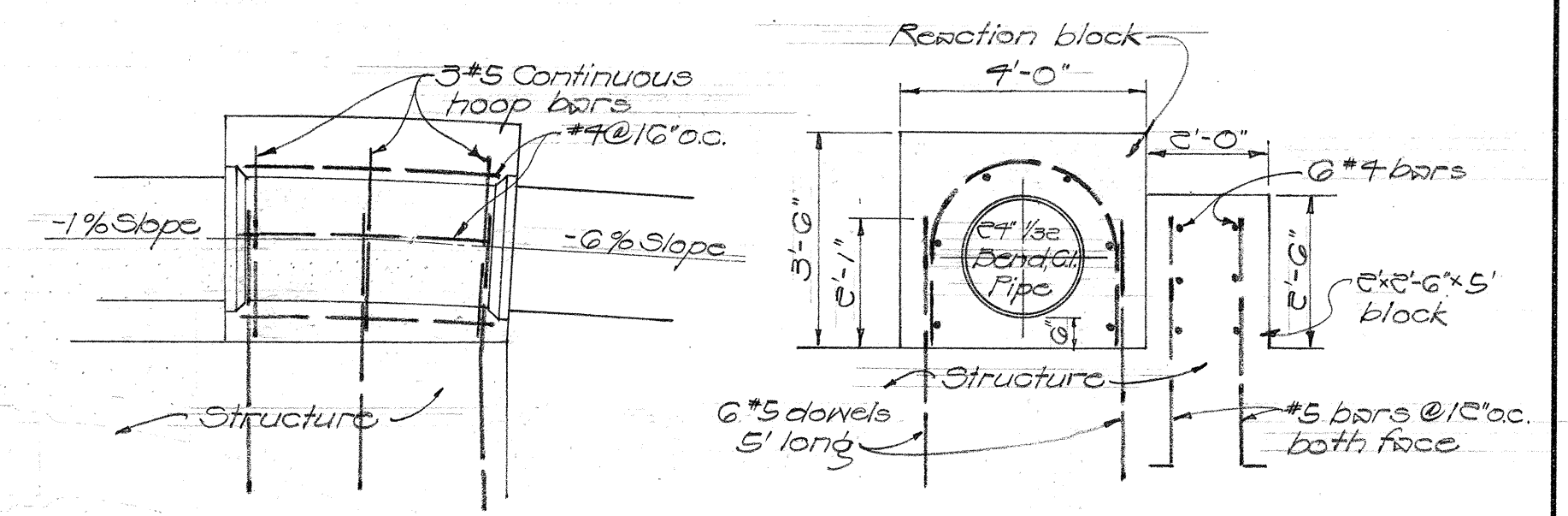


Dimensions of Precast Block for Top Vertical Bends (60 psi. Pressure)

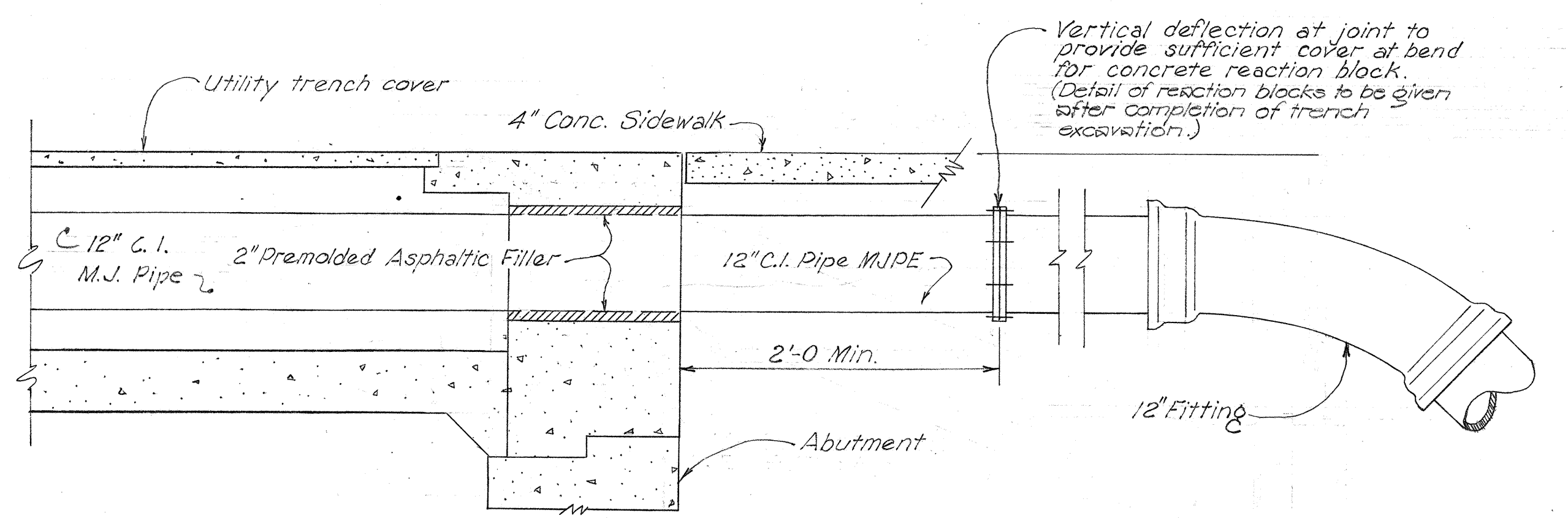
Bend	Vol. of Conc.	l	W	d	d ₁
6 1/2" 1/2" Bend	50 cf.	5'-6"	5'	6'-0"	1'-5"
6 1/2" 1/2" Bend	60 cf.	6'-0"	6'-0"	1'-0"	1'-0"
6 1/2" 1/2" Bend	50 cf.	6'-0"	6'-0"	1'-0"	1'-0"

TOP VERTICAL REACTION BLOCKS FOR KAM IV ROAD AT CONNECTIONS
Not to scale

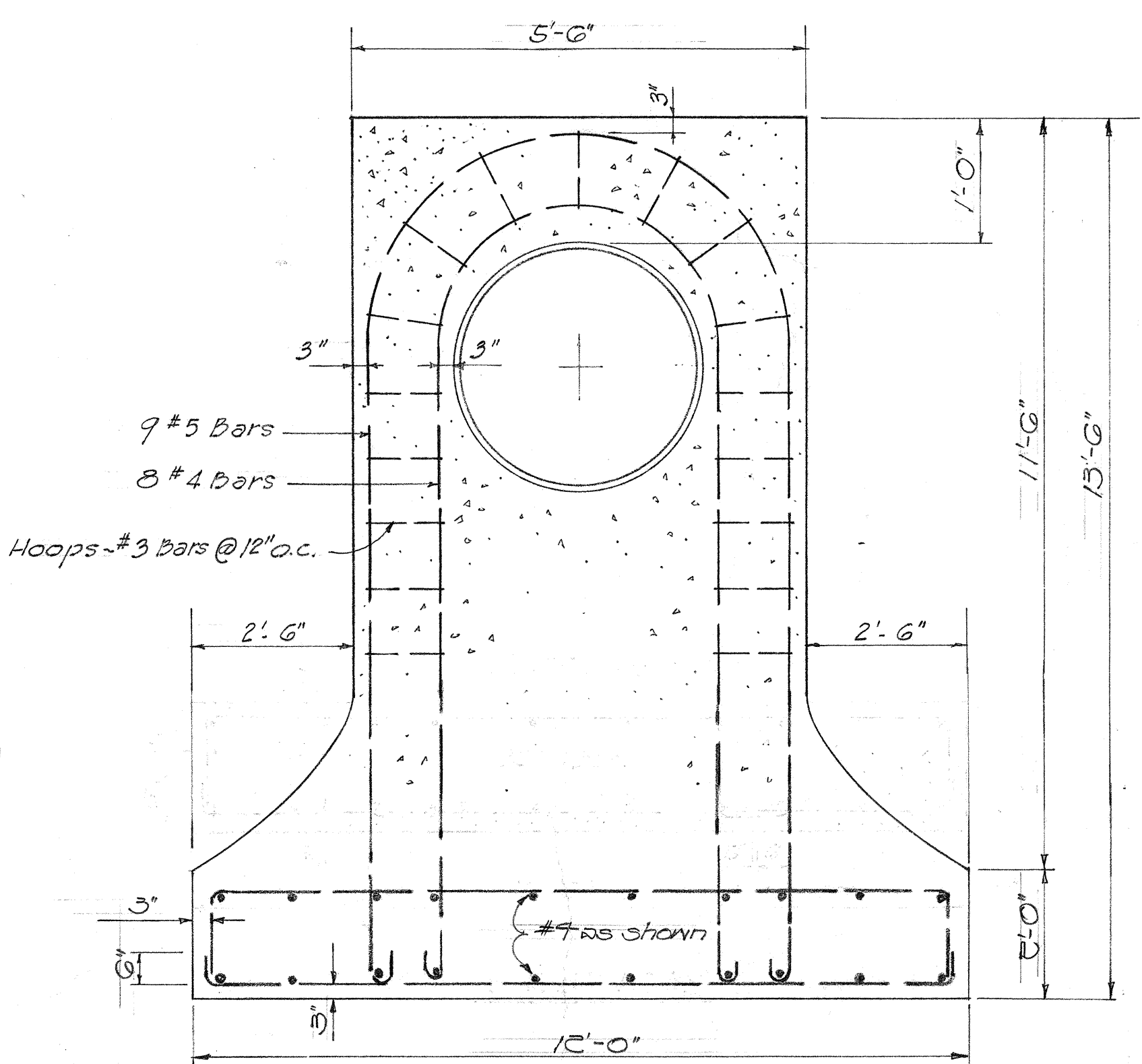
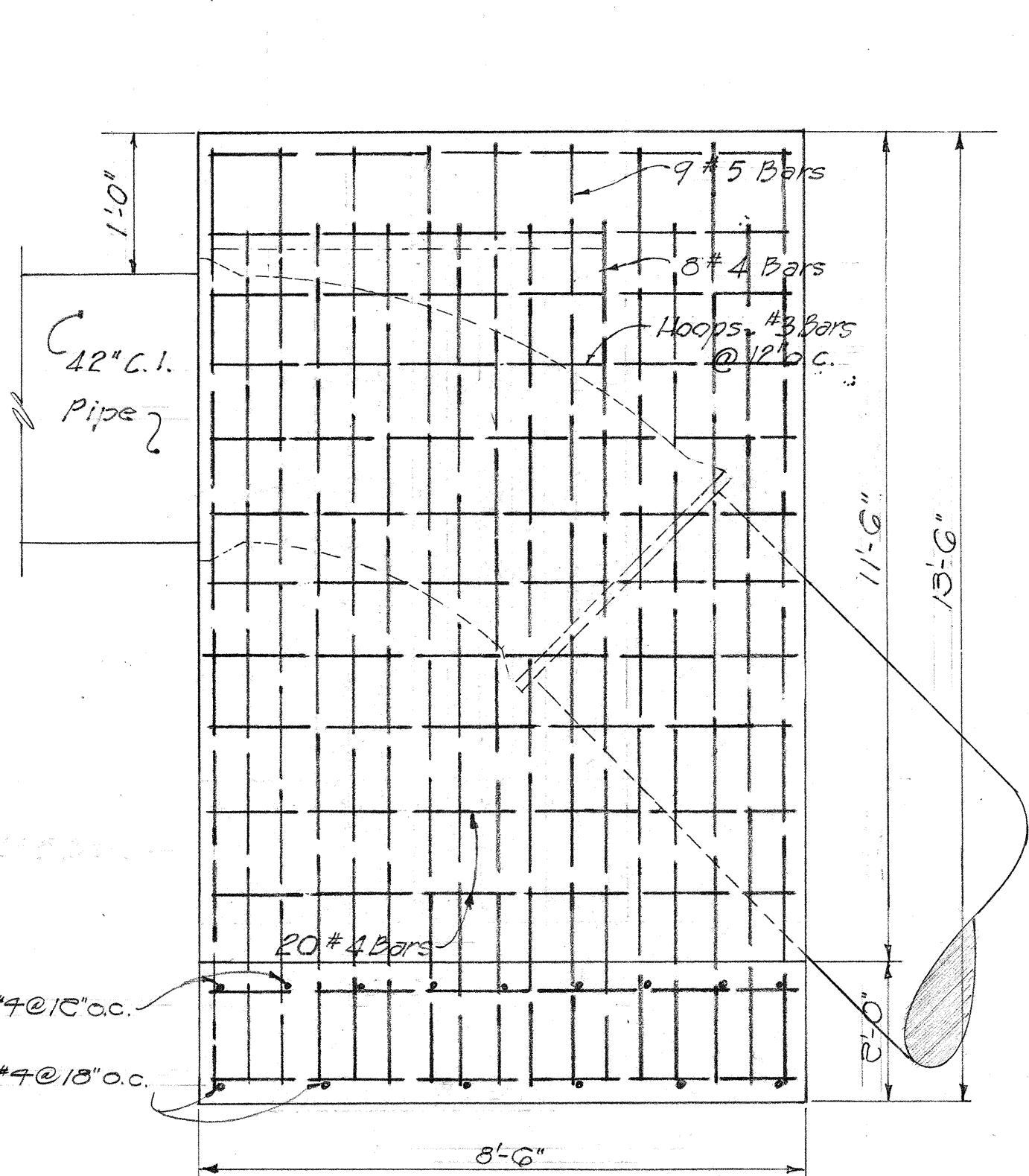
(Bends to be installed by BNS. Reaction blocks to be installed by Contractor.)



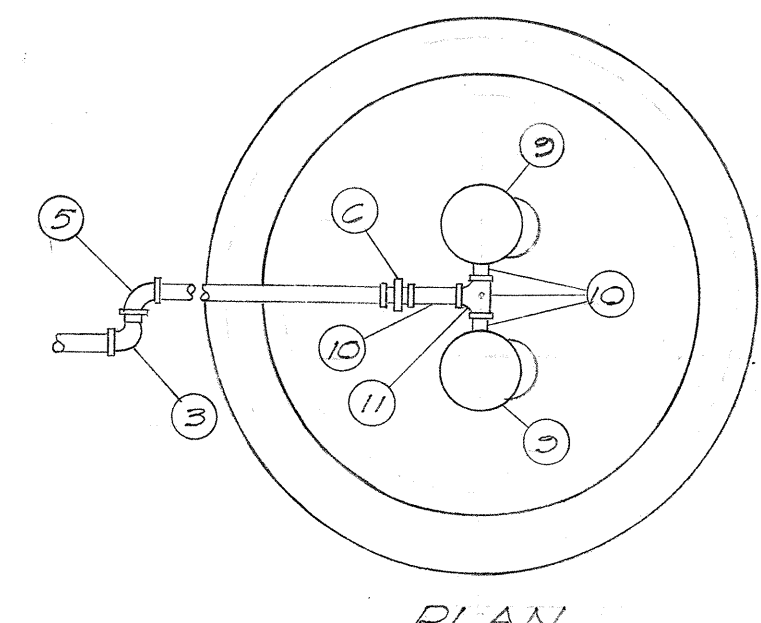
REACTION BLOCK FOR TOP VERTICAL-HORIZONTAL 6 1/2" 1/2" BEND AT STA. 1+00, MIDDLE STREET
Not to scale



12" C.I. PIPE CONNECTION (OLA LANE OVERPASS)

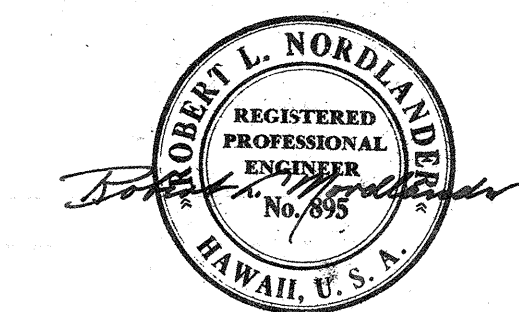
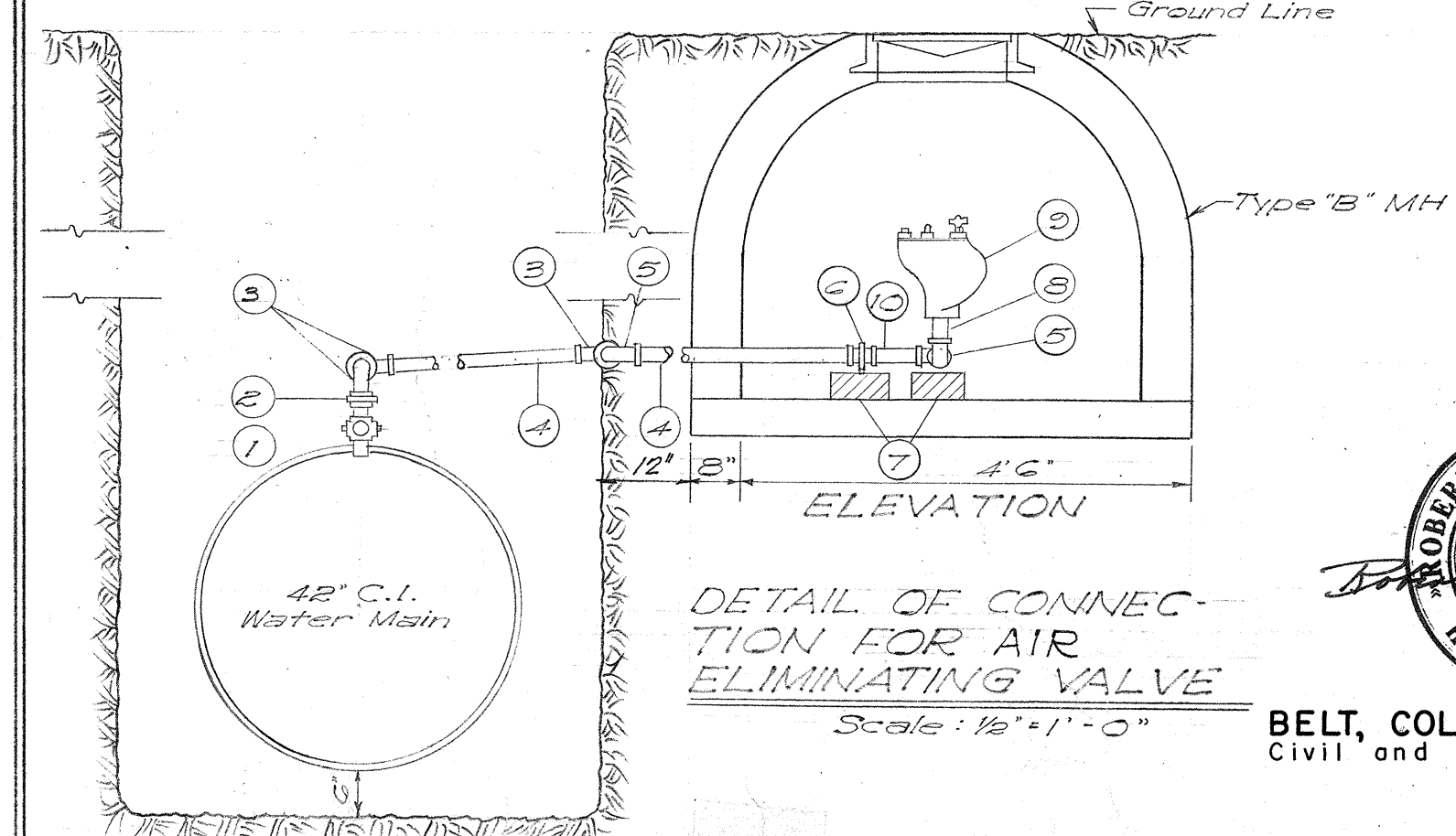


TYPICAL BLOCK FOR 72" 1/2 VERTICAL BEND
17.7 cu. yds. (Reaction block anchored in rock)
Not to scale
(Details subject to revision in field)



LIST OF MATERIALS

Item No.	Qty.	DESCRIPTION
1	1	1/2" Concentration Cock
2	1	2" Union, Galv.
3	3	2" St. Elbow, Galv.
4	2	2" Galv. Pipe, Cut to Fit
5	3	2" O' Elbow, Galv.
6	1	2" 3-Way Cock, Brass
7	2	Brick Support
8	2	2" x 4" Nipple, Galv.
9	2	2" Air Elim. Valve
10	3	2" x 6" Nipple, Galv.
11	1	2" Tee, Galv.



BELT, COLLINS & ASSOC., LTD.
Civil and Structural Engineers

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
MISC. WATER DETAILS

MOANALUA ROAD US-S-0720(3) UNIT 3
LUNALILO FREEWAY BU-072-1(2) UNIT 4
MIDDLE STREET BU-065-1(1) UNIT 3

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
QUANTITIES CHECKED BY	
NOTES CHECKED BY	
NO.	