

WATER NOTES

- Location of existing water mains and appurtenances shown on the plans are approximate only.
- Wherever connections to existing mains are shown on the plans, the contractor shall expose the existing mains prior to excavation of main trenches to verify their locations and depths.
- The contractor shall be responsible for all damages to existing water mains and appurtenances.
- Where RM, tile or concrete walls are to be constructed, the contractor shall provide, at his own expense, adequate size sleeves in wall at locations approved by the Board of Water Supply engineer to facilitate consumer water pipe extension into the property.
- The contractor shall notify the Board of Water Supply in writing one week prior to commencing work on the water system.
- All fittings, pipes, manhole frame and covers, rungs, etc. that are removed and not reused, shall be cleaned and returned to Territory's Oahu District Base Yard, 721 Kelikoi St, by the Contractor unless otherwise specified. All gate valves that are removed, cleaned and not reused shall be returned to BWS Kalihi Store Yard by the Contractor.
- All existing water manholes shall be adjusted to new grade.
- Temporary cleanouts shall be installed by contractor wherever necessary and the cost thereof shall be incidental to pipeline work.
- Wherever water mains are installed across cut banks of roadway, surfaces of such trenches shall be rip-rapped with approved rocks to prevent any erosion of backfilled materials unless otherwise requested.
- (T.H.) indicates Territory's share of cost. (B.W.S.) indicates Board of Water Supply's share of cost.
- All Fire Hydrants to be salvaged shall be removed and returned to BWS Kalihi Store Yard by the BWS Crew.
- 734 L.F. of 42" pipe removed from the existing line shall be cleaned and returned to BWS Kalihi Store Yard by the Contractor.
- All Valves, fittings, pipes Manhole frames and Covers, etc. that are removed and to be reused shall be cleaned, painted if called for in specification or proposal, and shall be made available at location of installation by the Contractor.

REFERENCE DRAWINGS

STANDARD WATER DETAILS
EXISTING UTILITIES

NOTE:

Provide 1" clear space between spigot ends at 6" Dresser Sleeve for expansion. (This is required for all 6" Transite Pipe encased in concrete on Bridge Structures.)

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(7) UNIT 5	1958	57	60

8-4-58

PLAN	DATE	BY	REVISION
NO.			

PROFILE	DATE	BY	REVISION
NO.			

New R/W Boundary

New R/W Boundary

TRUE NORTH
Scale 1"=50'

RICHARD KALIHI

STREAM

BEG. OF PROJ. No. U-072-1(7) UNIT 5 STA. 32+00

R/W & Control of Access Line

Water Meters

Water Meter

R/W & Control of Access Line

PI Sta. 0+00 (TH)

Connect to Existing 6" Main

Gulick Ave. Sta. 5+00

Left 10.5'

1-6" Bend

1-Conc. Block

1-6" Sleeve 15' Long

6 Lin. Ft. 6" C.I. Pipe

421.1 Design Q.44 Thick

GENERAL NOTE:

Provide 6" Double Hub Fitting with boss tapped for 2" x 2 1/2" Corporation along 6" main where 2 1/2" laterals are called for.

PI Sta. 2+22.00 (TH)

Connect to Existing 6" Main

1-6" 1/8 Bend

1-6" Sleeve 15' Long

1-Conc. Block

6 Lin. Ft. 6" C.I. Pipe

175.46 (T.H.)

PI Sta. 1+15.46 (T.H.)

1-6" 1/8 Bend (Bottom Vert.)

1-6" 1/8 Bend

2-Conc. Blocks

Sta. 1+68.07 (TH)

1-6" 1/8 Bend (Top Vert. Long Pattern)

1-6" Dresser Coupling

Sta. 0+53.96 (TH)

1-6" Dresser Coupling

1-6" 1/8 Bend (Top Vert. Long Pattern)

1-12" 1/8 Bend (Bot. Vert.)

1-Conc. Block

* Sta. 1+47 (TH)

1-12" 1/8 Bend (Long Pattern Top Vert.)

1-12" 1/8 Bend (Long Pattern Bot. Vert.)

1-Conc. Block

Sta. 0+90 (TH) *

1-12" 1/8 Bend (Long Pattern Top Vert.)

1-Conc. Block

Sta. 0+15 (TH)

1-12" 1/8 Bend (Long Pattern Top Vert.)

1-Conc. Block

Sta. 0+03 (TH)

1-12" Gate Valve (Reuse)

1 Type B Manhole 40" dia. (Using Existing 40" Frame & Cover)

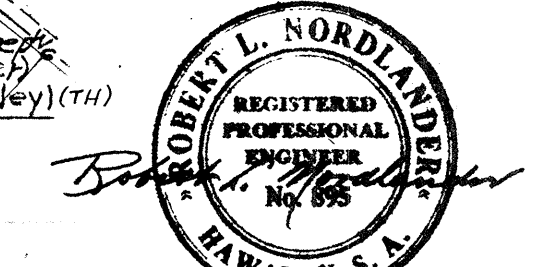
Sta. 0+00 (12" from Beckley Street)

Connect to Existing 12" Main

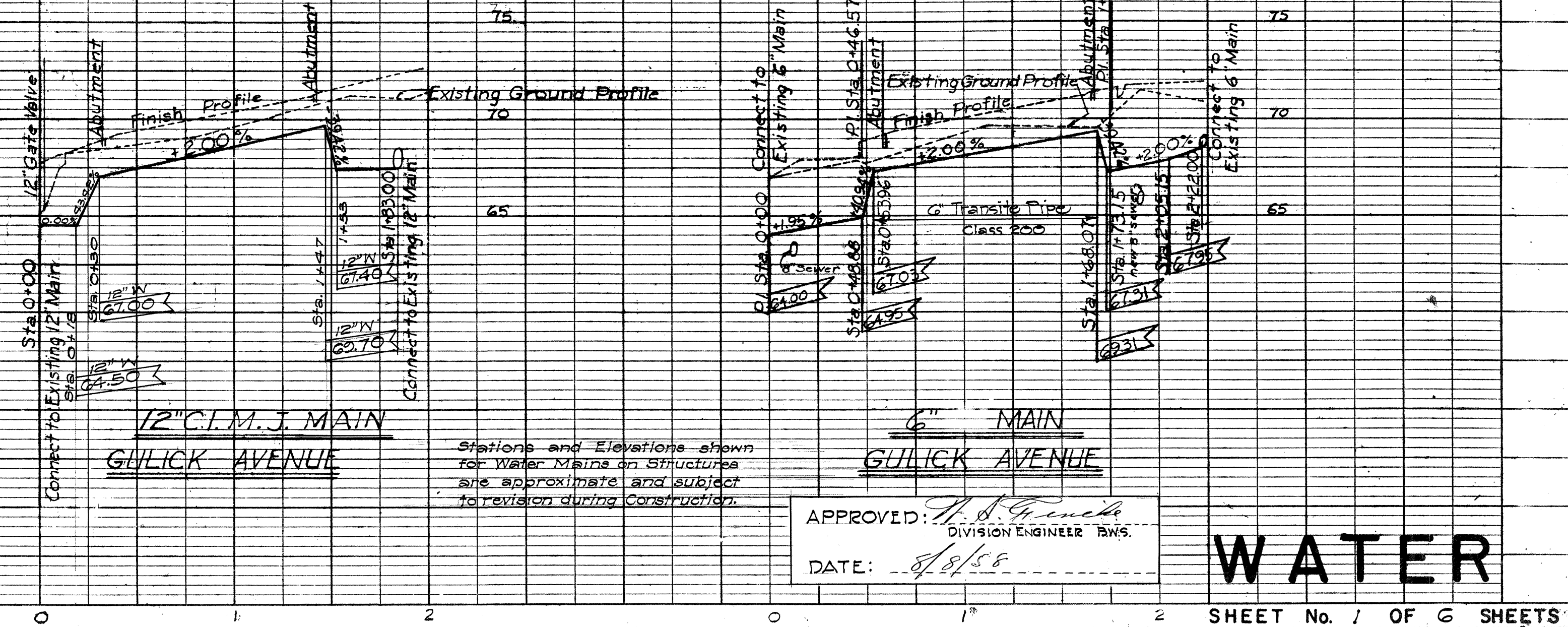
4 Lin. Ft. 12" C.I. Pipe

1-12" Sleeve, 14" Long

* 12" 1/8 Top Vertical Bend to have a minimum clearance of 2.0' from Bridge Abutment.



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



APPROVED: *[Signature]*
DIVISION ENGINEER BWS

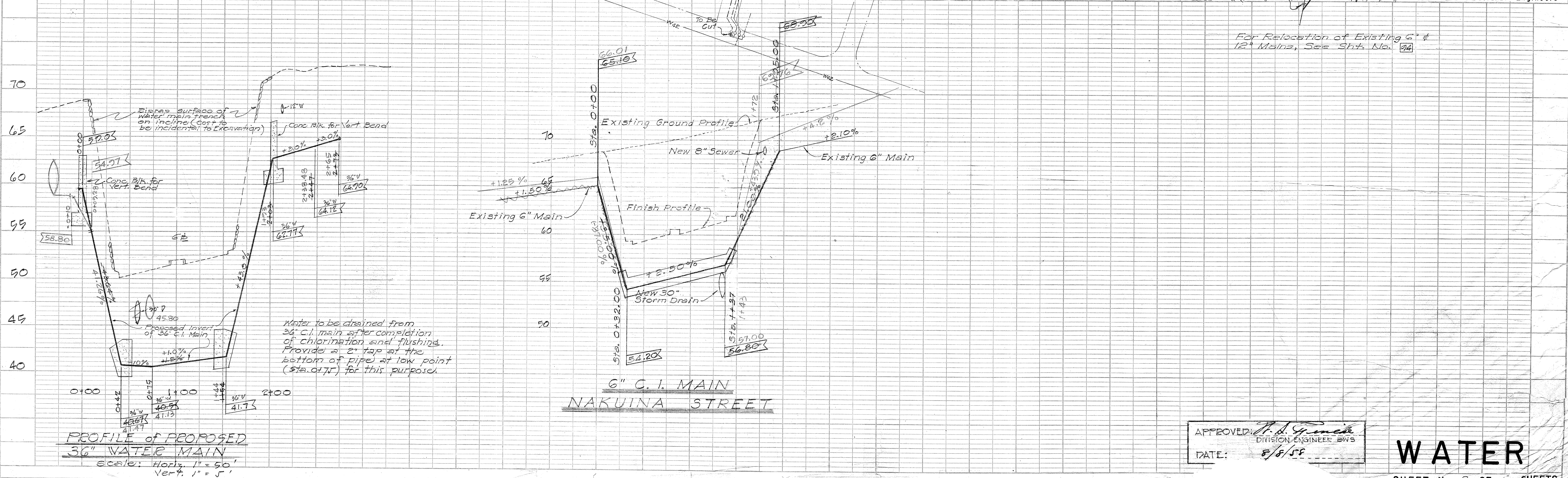
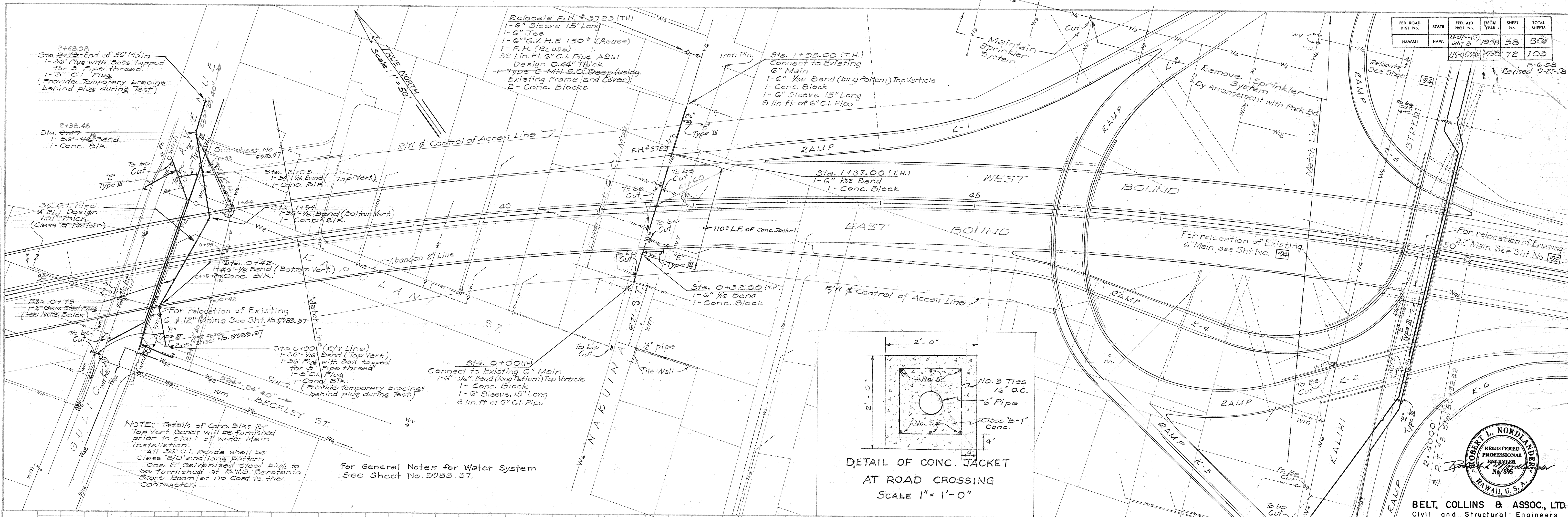
DATE: 8/8/58

WATER

SHEET No. 1 OF 6 SHEETS

PLAN	DATE	BY
SURVEYED		
NOTE BOOK		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
NO.		

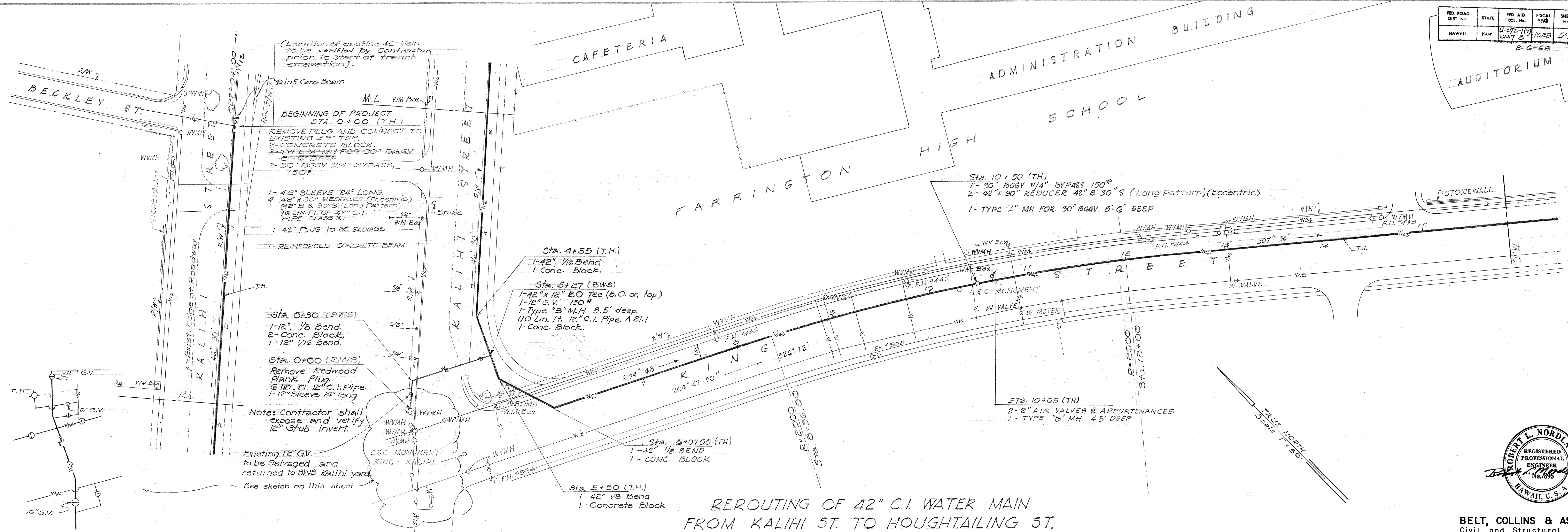
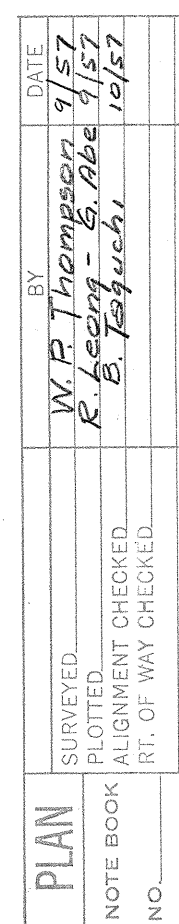
PROFILE	DATE	BY
SURVEYED		
NOTE BOOK		
GRADES CHECKED		
STRUCTURE NOTATION		
NO.		



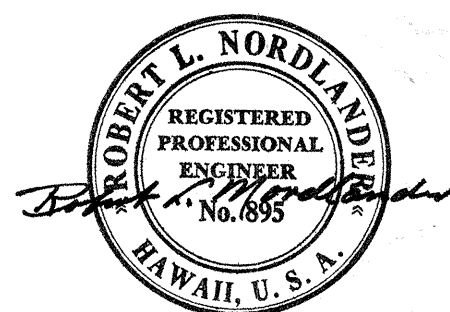
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	KAW.	4-072-1(7) UNIT 3	1958	59	80

8-6-58

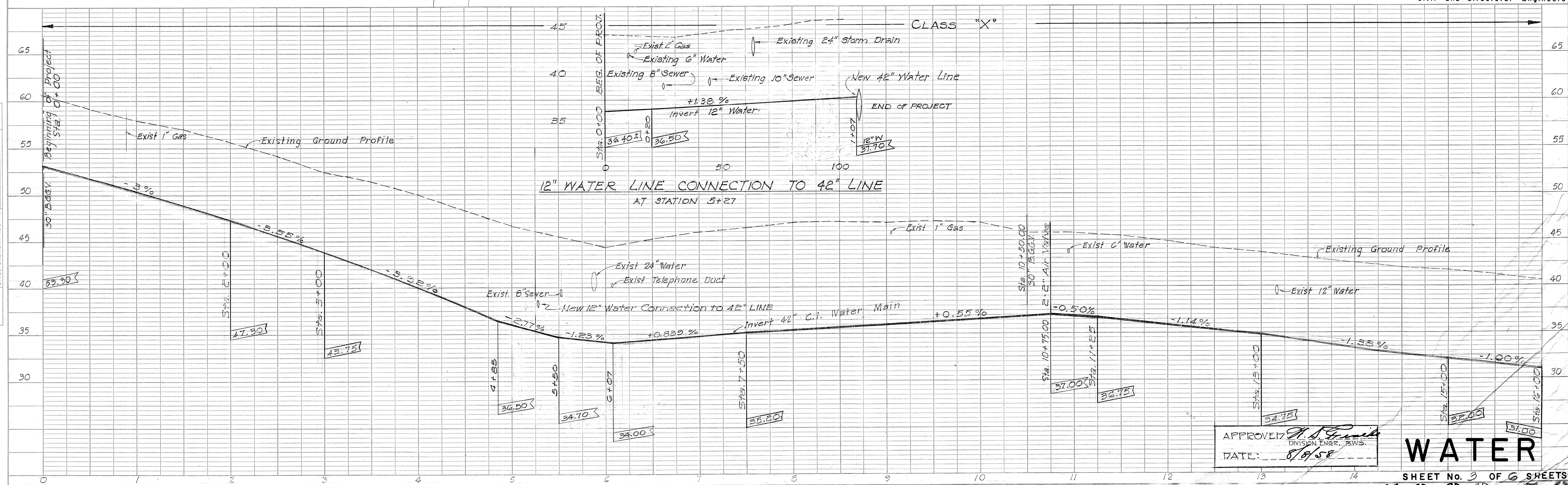
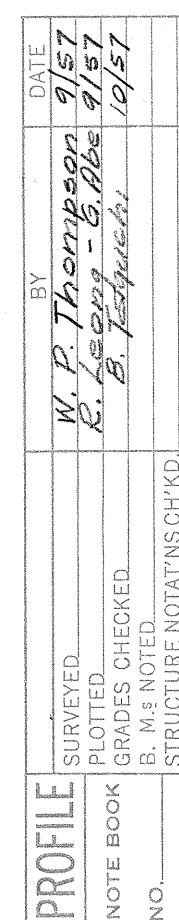
AUDITORIUM



REROUTING OF 42" C.I. WATER MAIN
FROM KALIHU ST. TO HOUGHTAILING ST.



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



APPROVED: *N. S. French*
DIVISION ENGR. BWS.
DATE: *8/8/58*

WATER

SHEET No. 3 OF 6 SHEETS

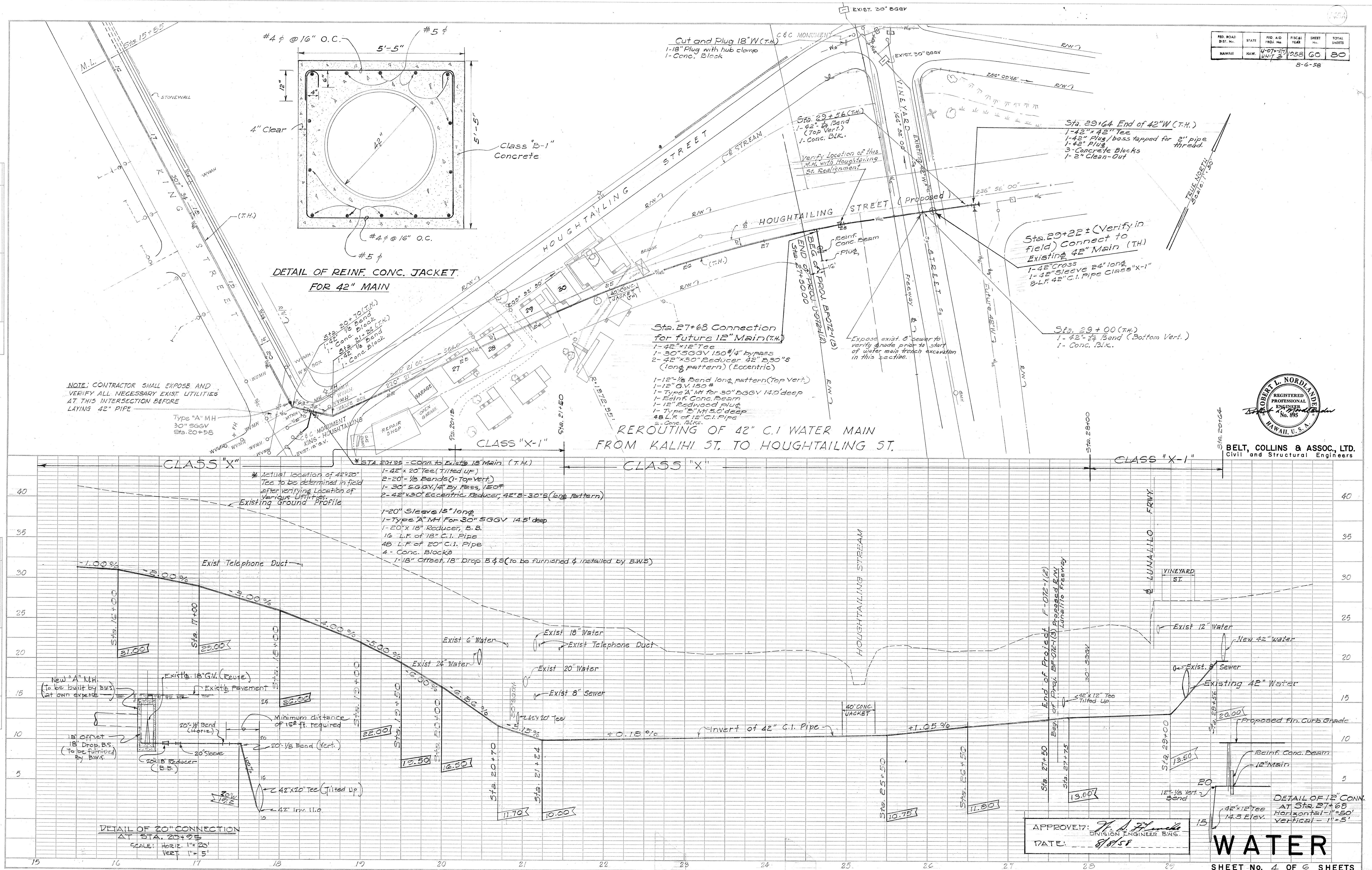
59 § 3. 59

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	4-07-1(7) UNIT 3	1958	60	80

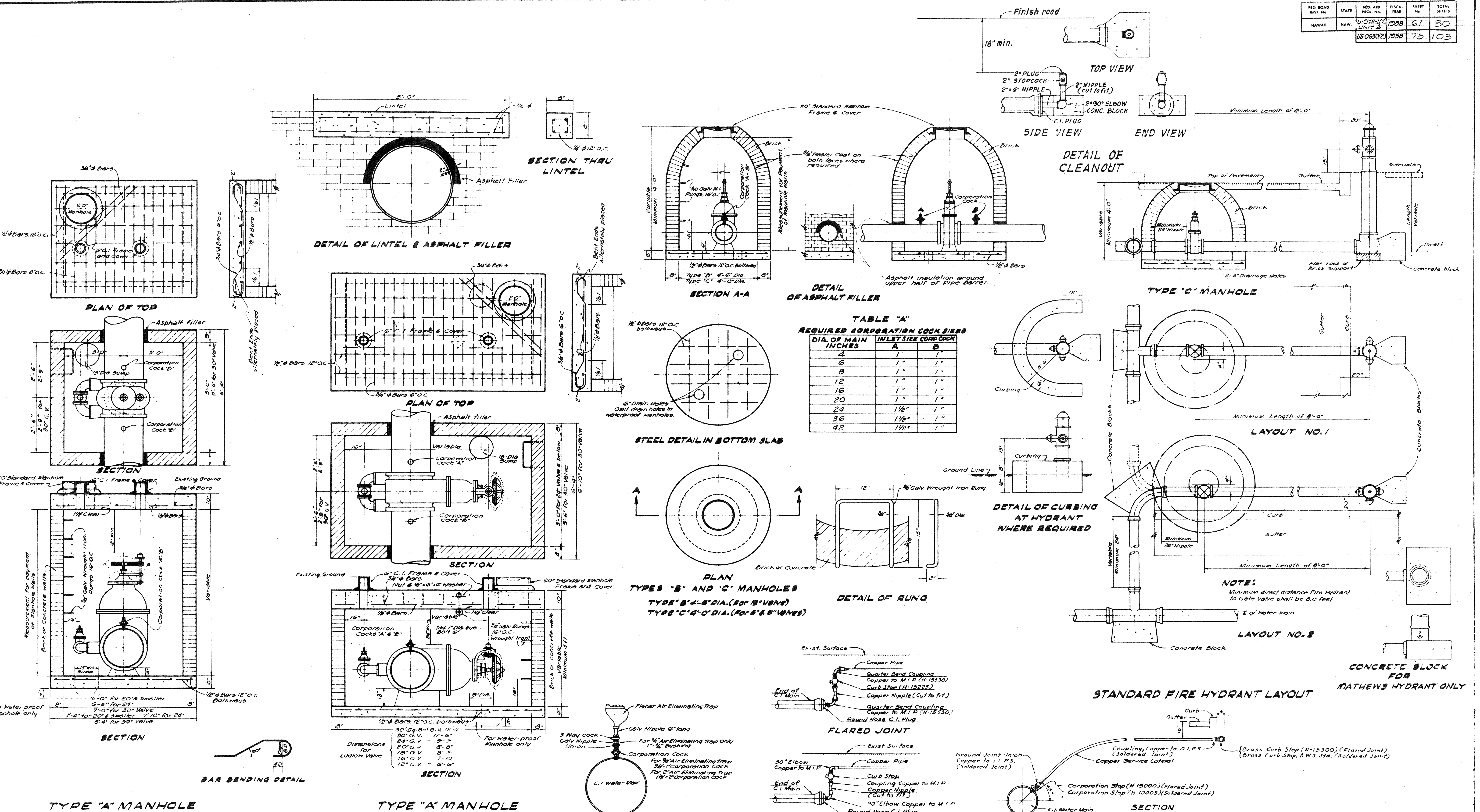
8-6-58

PLAN		BY	DATE
SURVISED		W. P. Thompson	9/57
PLOTTED		R. Long - G. Lee	10/57
ALIGNMENT CHECKED		B. Bagueh	10/57
RT. OF WAY CHECKED			
NO.			

PROFILE		BY	DATE
	SURVEYED	W. P. Thompson	9/57
	PLOTTED	R. Laing - G. Abe	9/57
NOTE BOOK	GRADES CHECKED	B. Jorgensen	10/57
NO.	B. M. NOTED		
	STRUCTURE NOTED	NSCHKD	



59 S 3 . 60 93



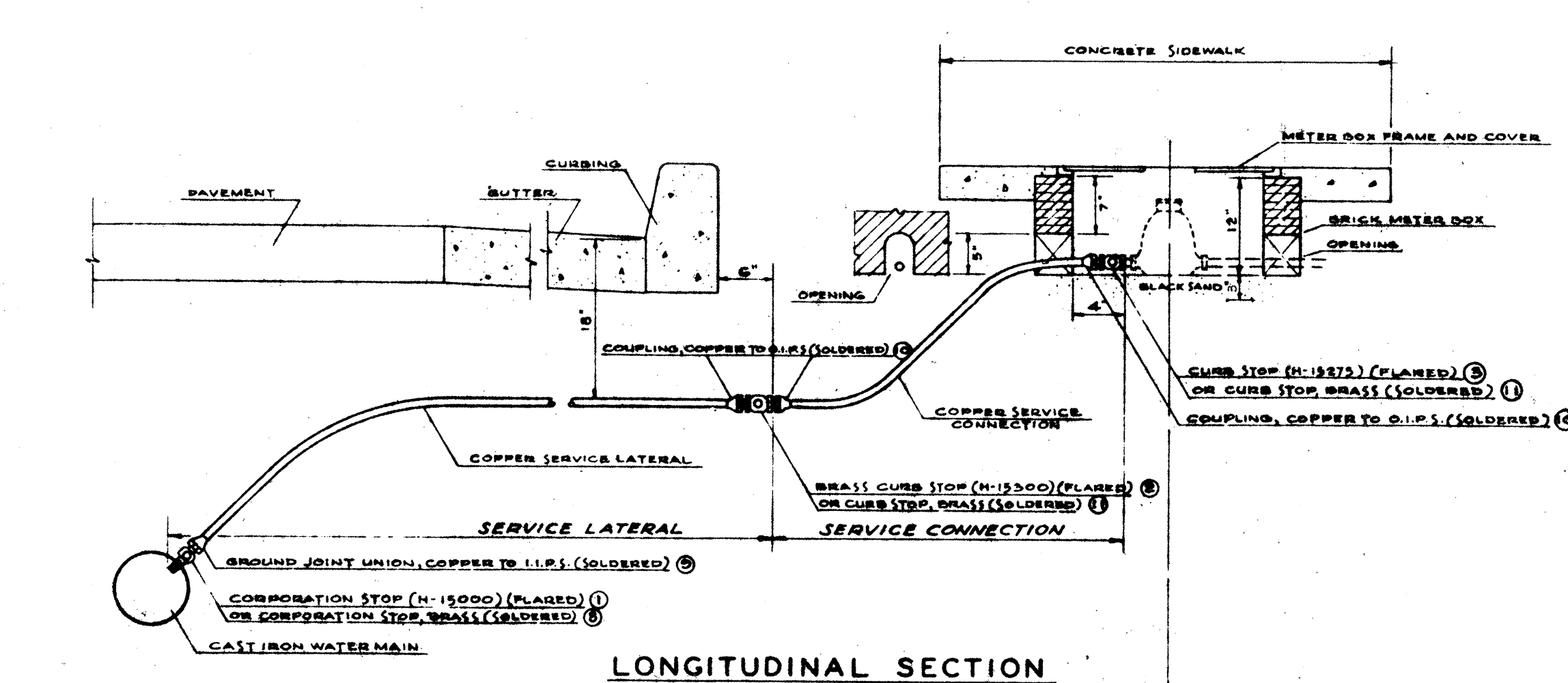
TYPE "A" MANHOLE
FOR SPUR-GEARED GATE VALVES

TYPE "A" MANHOLE
FOR BEVEL GEARED GATE VALVES

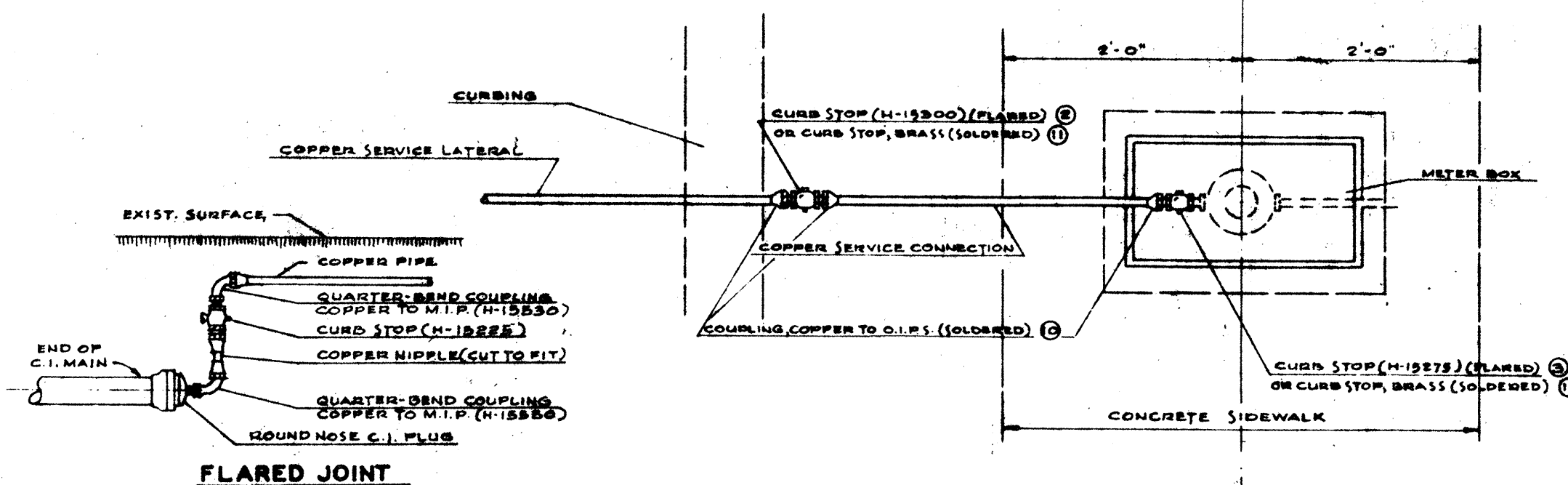
DETAIL OF CONNECTION FOR
FISHER AIR ELIMINATING TRAP

SERVICE LATERAL CONNECTION
AT END OF LINE

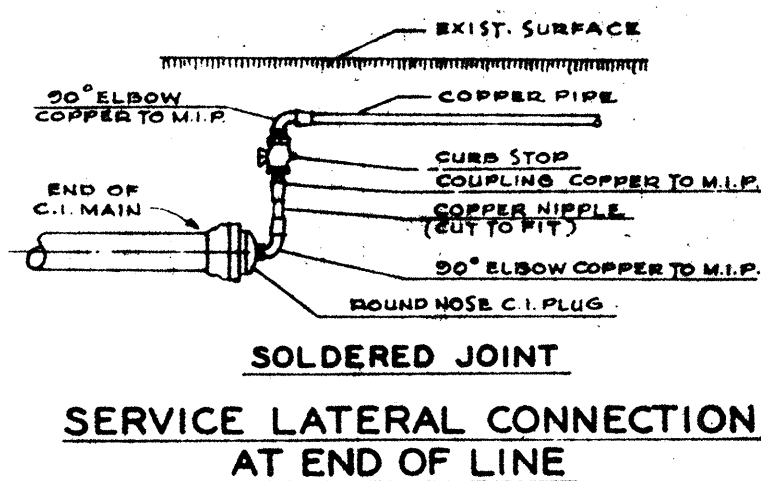
TYPICAL CONNECTION FOR
COPPER SERVICE LATERALS



LONGITUDINAL SECTION



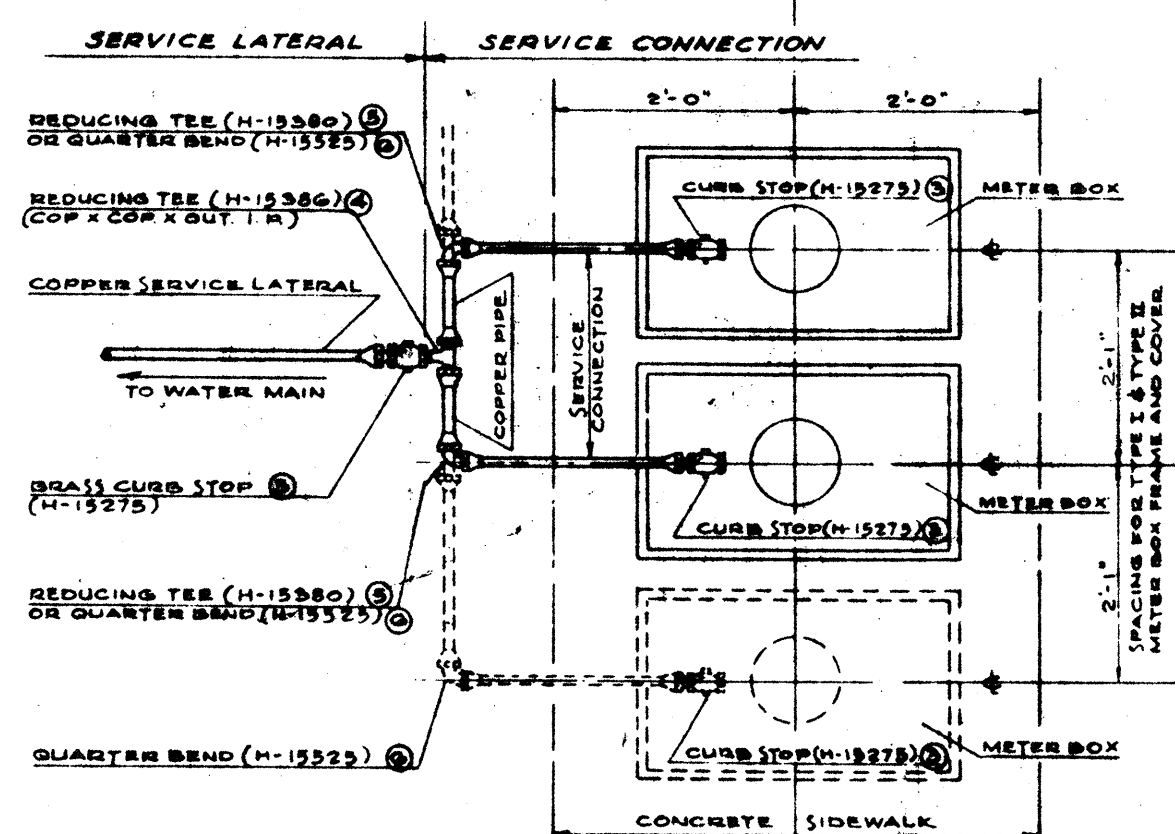
SINGLE SERVICE CONNECTION



SCHEDULE OF COPPER FITTINGS (FLARED JOINT)

ITEM NO.	DESCRIPTION	SINGLE SERVICE CONN.	MULTIPLE SERVICE CONN. TWO SERVICES	MULTIPLE SERVICE CONN. THREE SERVICES
1	CORPORATION STOP WITH STRAIGHT COUPLING NUT (H-15000)	1	1	1
2	BRASS CURB STOP (H-15300)	1	1	1
3	CURB STOP WITH TUBE NUT COPPER TO INSIDE I.P. (H-15275)	1	3	4
4	REDUCING TEE WITH TUBE NUTS - COPPER TO COPPER TO OUTSIDE I.P. (H-15380)	-	1	1
5	REDUCING TEE WITH TUBE NUTS - COPPER TO COPPER TO COPPER (H-15380)	-	-	1
6	1/4 BEND UNION COUPLING WITH TUBE NUTS - COPPER TO COPPER (H-15325)	-	2	2
7	THREE PART UNION COUPLING (H-15400) OR SOLDER COUPLING	TO BE USED IN SPLICING ODD LENGTHS OF COPPER PIPE		

NOTE: REFERENCE NUMBERS SHOWN ARE FROM MUELLER CATALOG "H" FOR PURPOSES OF IDENTIFYING FITTINGS. APPROVED EQUAL MAY BE USED.

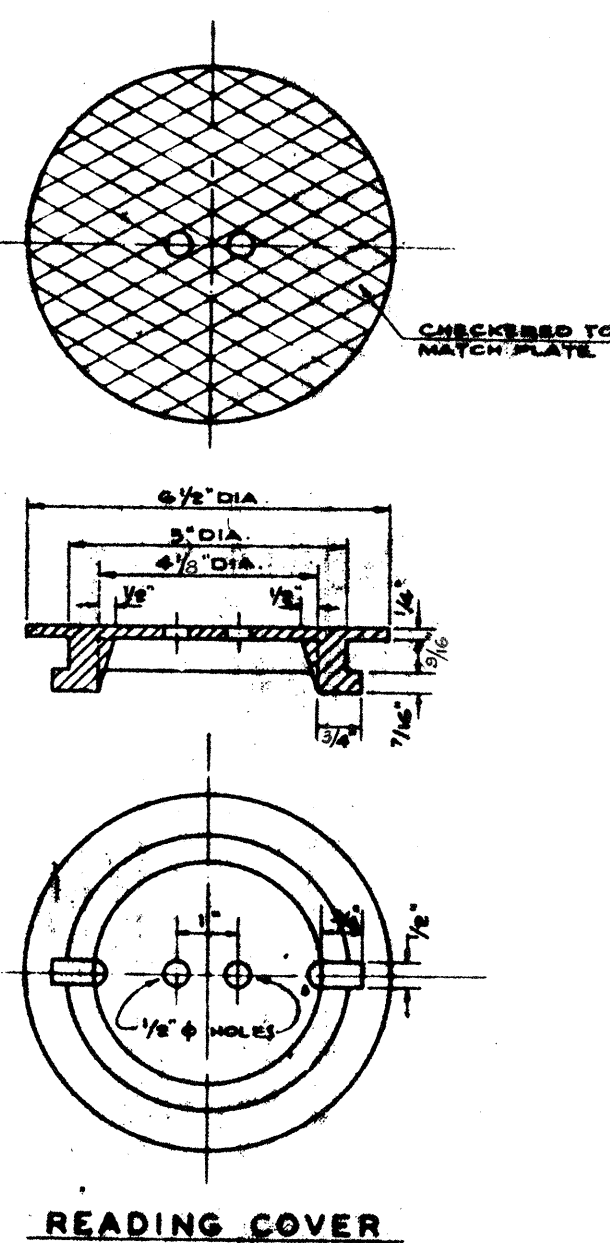


MULTIPLE SERVICE CONNECTION FLARED JOINTS

SCHEDULE OF COPPER FITTINGS (SOLDERED JOINT)

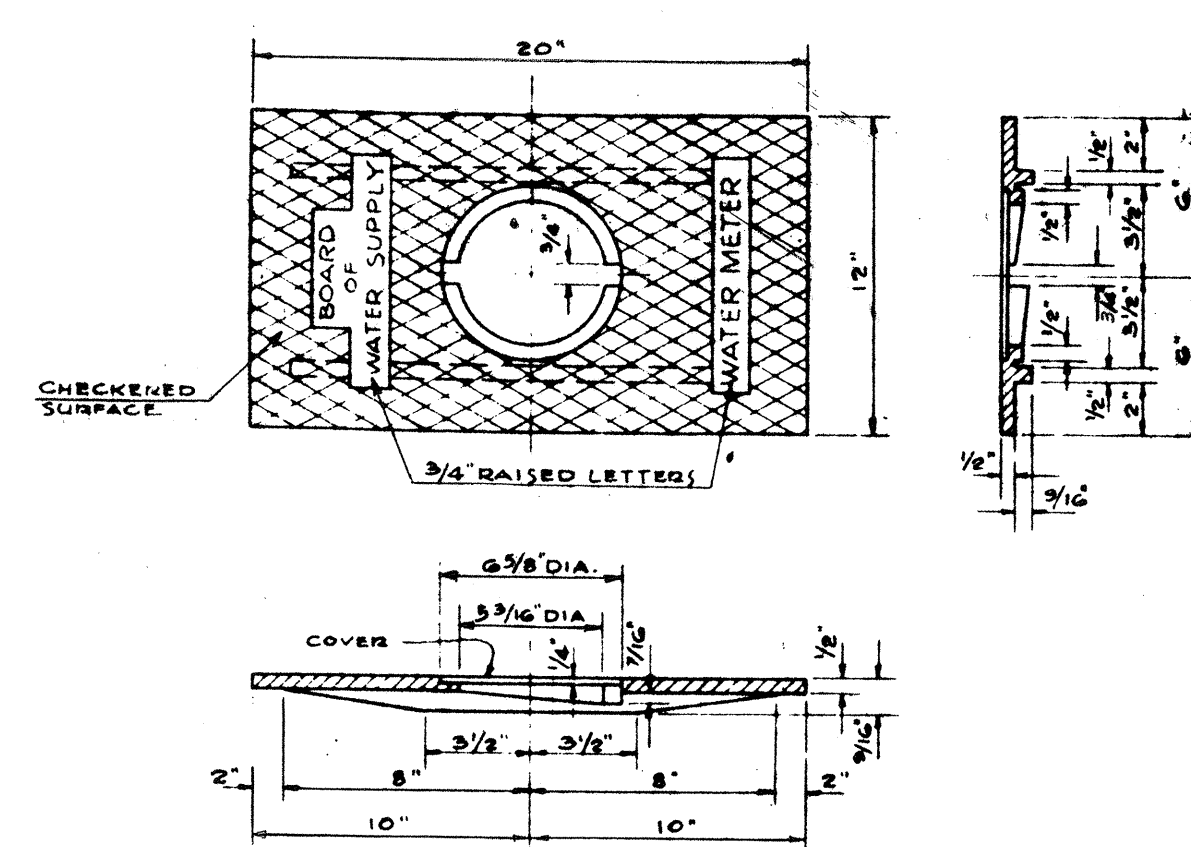
ITEM NO.	DESCRIPTION	SINGLE SERVICE CONN.	MULTIPLE SERVICE CONN. TWO SERVICES	MULTIPLE SERVICE CONN. THREE SERVICES
8	CORPORATION STOP, BRASS (H-10003)	1	1	1
9	GROUND JOINT UNION/A-1422M COPPER TO I.P.S. (A-1427)	1	1	1
10	COUPLING, COPPER TO O.I.P.S. (A-1535 TO A-1578)	2	1	1
11	CURB STOP, BRASS (B.W.S. STANDARD)	1	1	1
12	FITTING ADAPTER (A-1555 TO FITTING TO O.I.P.S. A-1578)	-	1	1
13	TEE, COPPER TO COPPER TO COPPER (A-1546 TO A-1710)	-	1	1
14	BUSHINGS, FITTING TO COPPER (A-1545 TO A-1565)	-	2	2
15	90° ELBOW, COPPER TO COPPER (A-1557 TO A-1703)	-	2	2
16	COUPLING, COPPER TO O.I.P.S. (A-1535 TO A-1578)	1	2	3
17	CURB STOP, BRASS (B.W.S. STANDARD)	1	2	3
18	REDUCING TEE, COPPER TO COPPER TO COPPER (SUBSTITUTE FOR ITEM NUMBER 13 & 14) (A-1546 TO A-1710)	-	1	1
19	TEE, COPPER TO COPPER TO COPPER (A-1546 TO A-1710)	-	-	1
20	BUSHING, FITTING TO COPPER (A-1545 TO A-1565)	-	-	1
21	REDUCING TEE, COPPER TO COPPER TO COPPER (SUBSTITUTE FOR ITEM NUMBER 13 & 14) (A-1546 TO A-1710)	-	-	1

NOTE: REFERENCE NUMBERS SHOWN ARE FROM MUELLER CATALOG "H" AND (A-1424) ARE FROM MUELLER BRASS CO. "STREAMLINE" CATALOG "H". APPROVED EQUAL MAY BE USED.

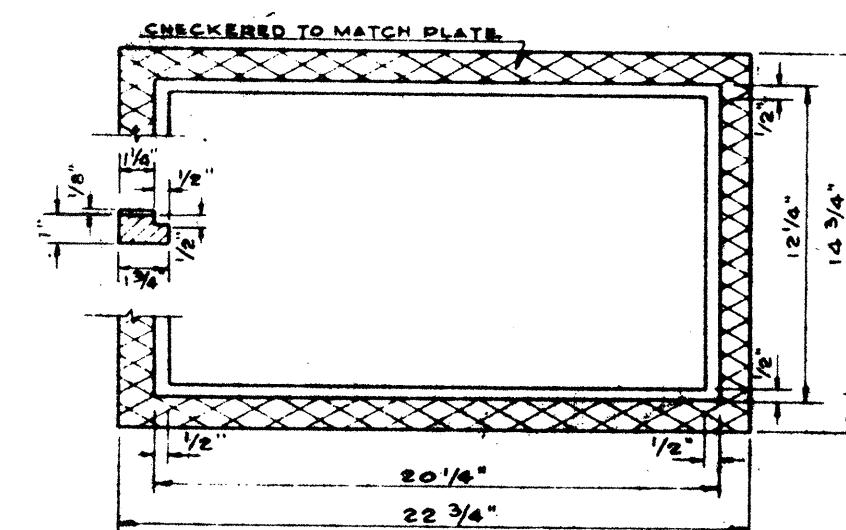


READING COVER

CAST IRON COVER FOR TYPE I & TYPE II FRAMES

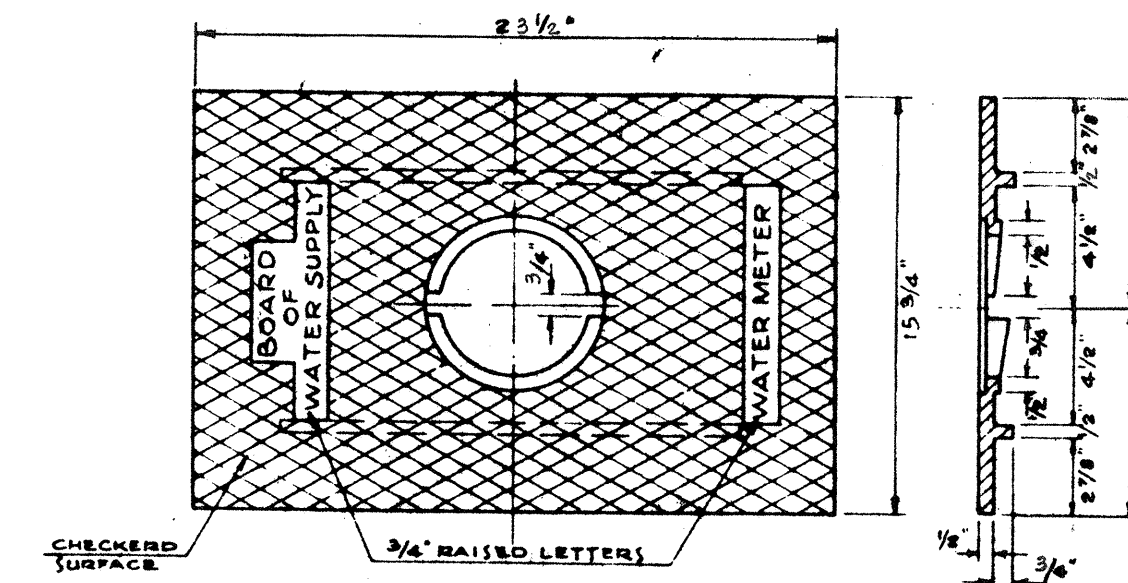


COVER PLATE

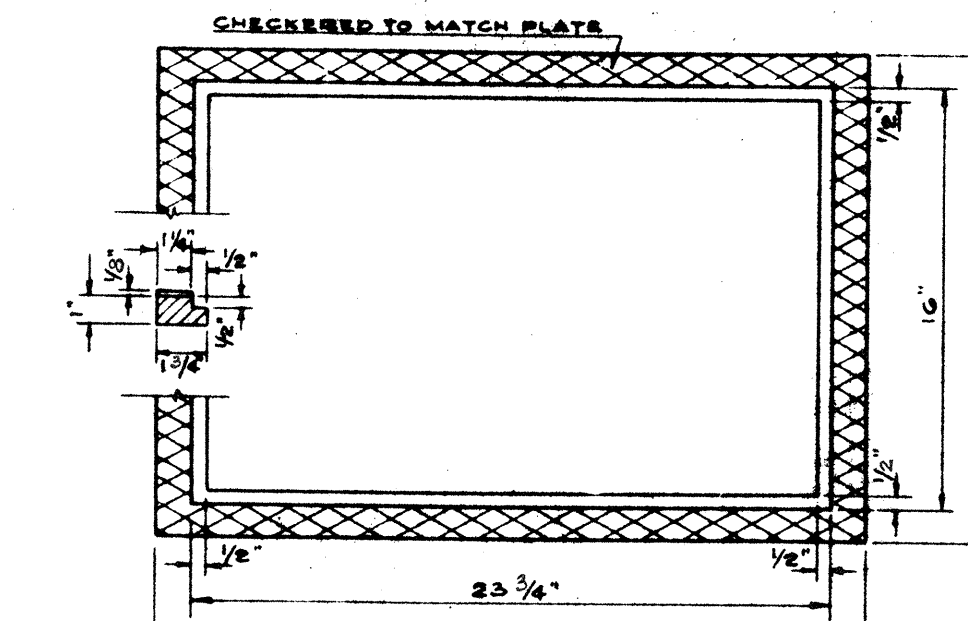


FRAME

CAST IRON FRAME AND PLATE TYPE I

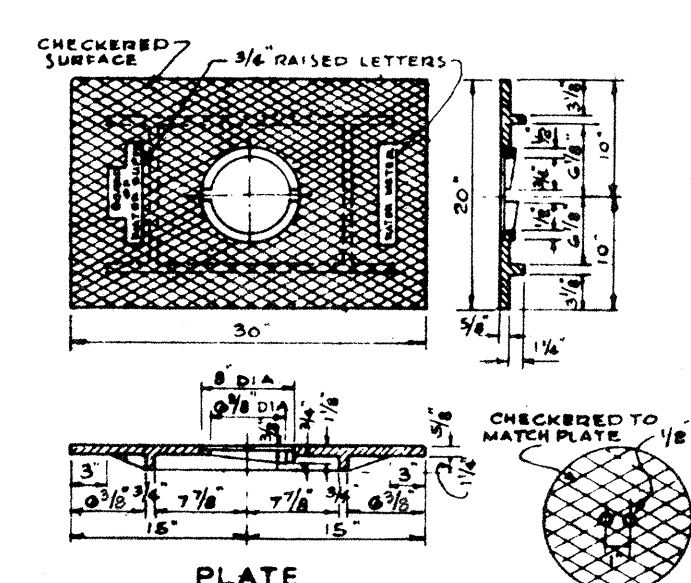


COVER PLATE

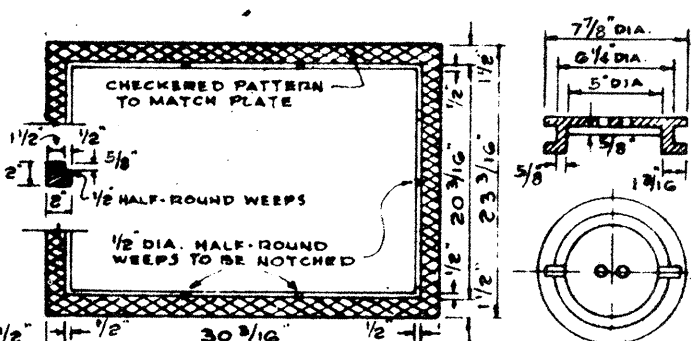


FRAME

CAST IRON FRAME AND PLATE TYPE II

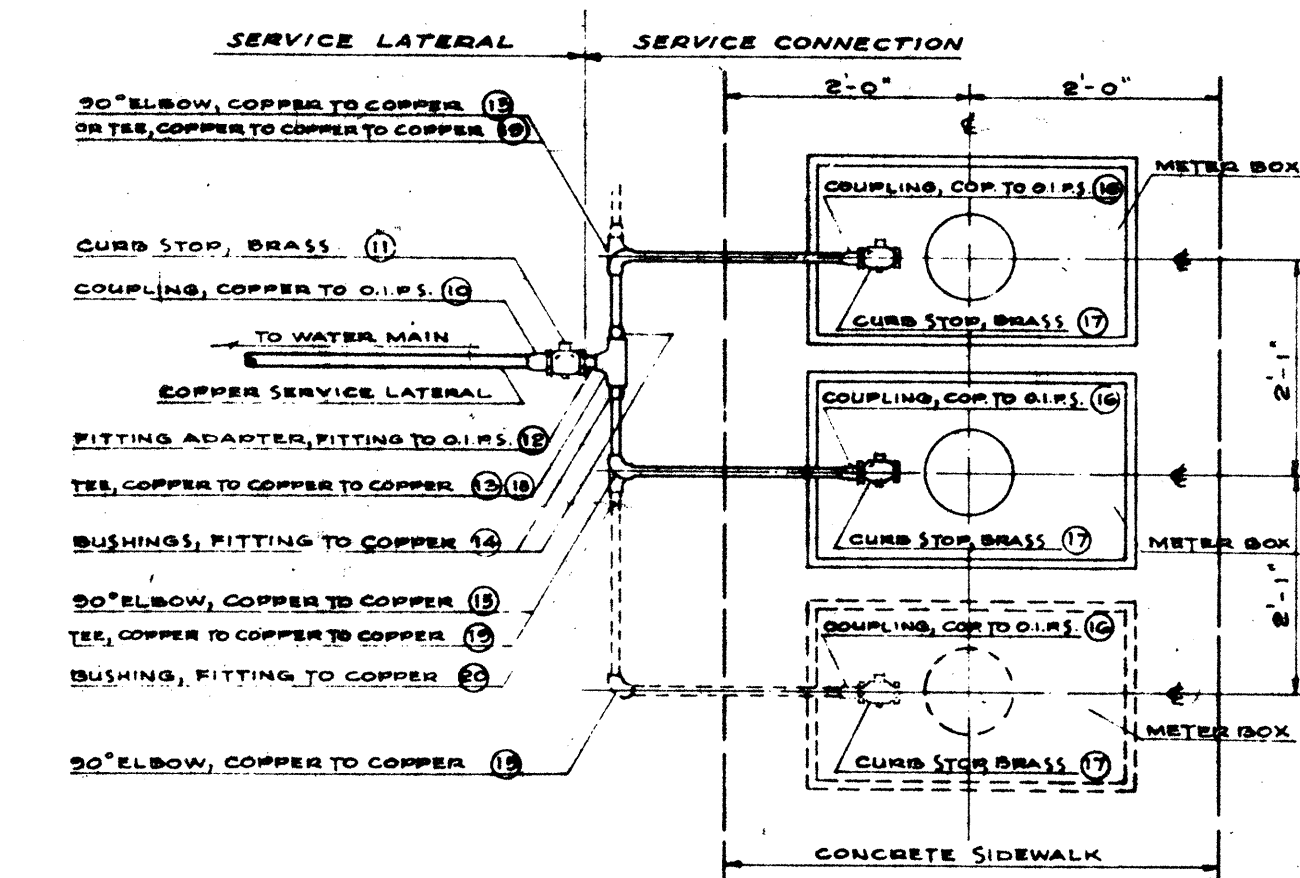


PLATE



FRAME

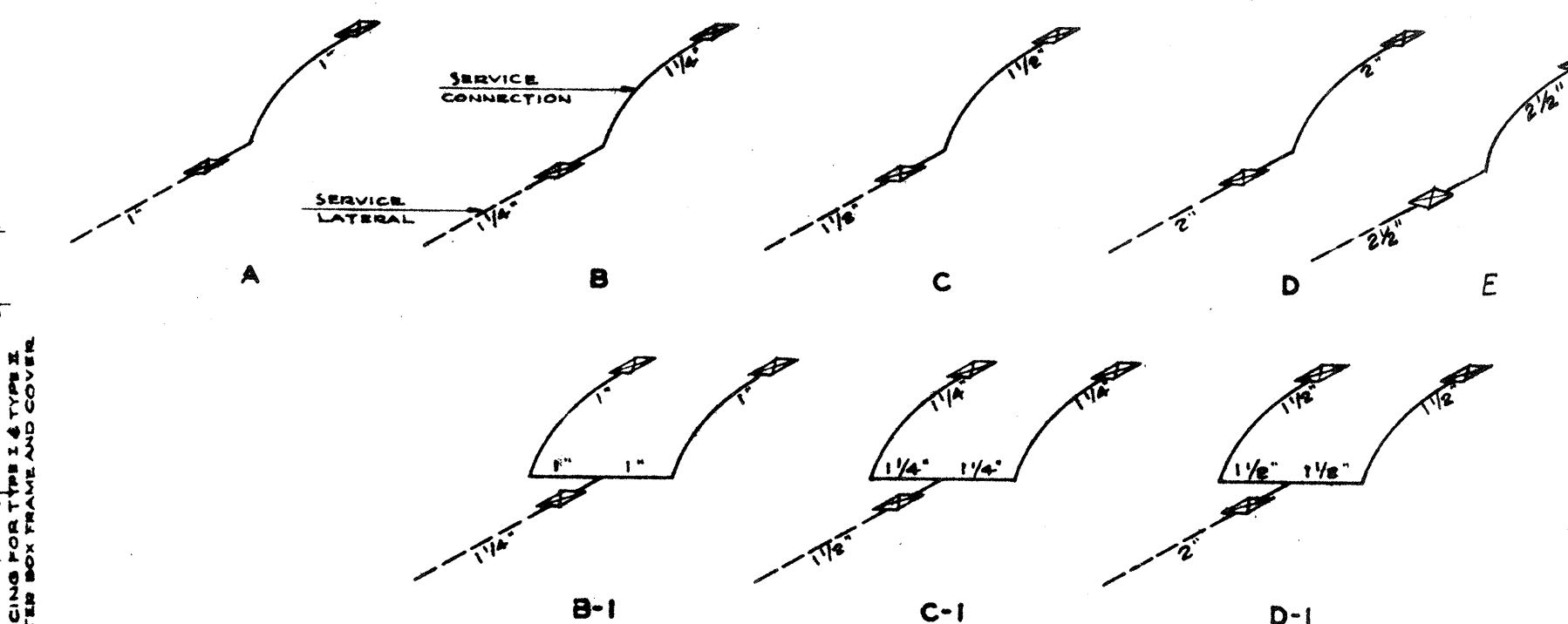
CAST IRON FRAME, PLATE & COVER TYPE III



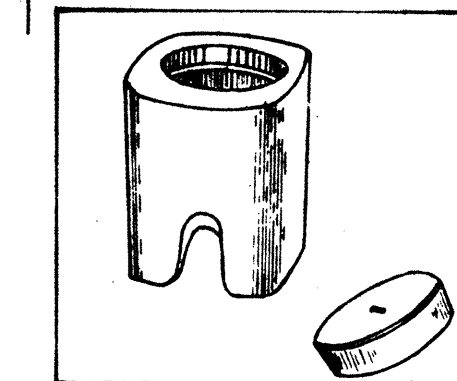
MULTIPLE SERVICE CONNECTION SOLDERED JOINTS

NOTE:

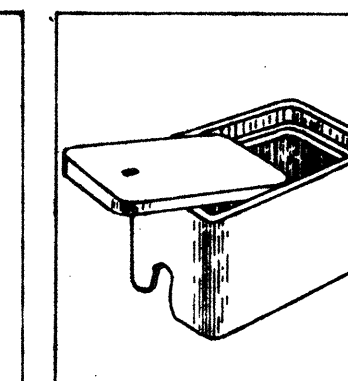
USE OF COPPER PIPE AND FITTINGS WITH "SOLDERED" JOINTS OPTIONAL UNTIL FURTHER NOTICE.



TYPICAL LAYOUT OF SERVICE LATERALS AND CONNECTIONS



TYPE "A" METER BOX



TYPE "B" METER BOX

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 16 3/8"	82 lbs.	8 3/4" x 14 1/2"

TERRITORIAL HIGHWAY DEPARTMENT TERRITORY OF HAWAII BOARD OF WATER SUPPLY STANDARD DETAILS

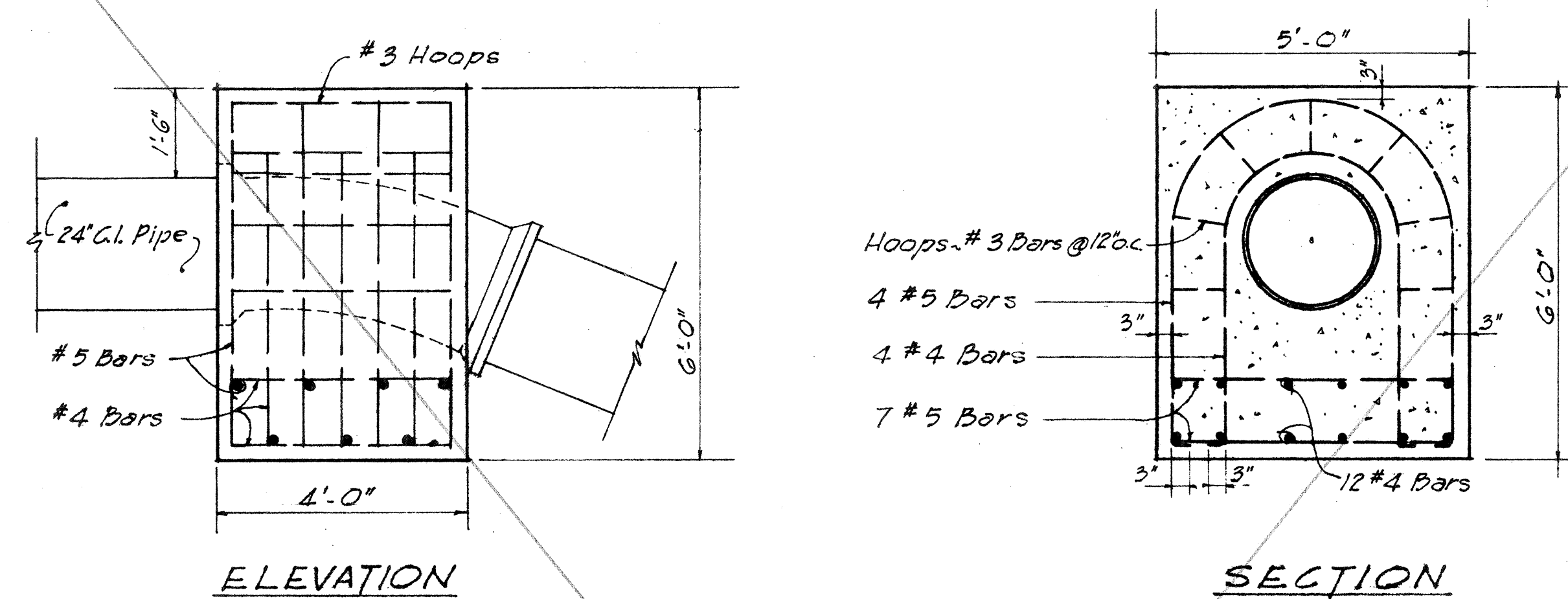
LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHI STREET US-0630(2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(7) UNIT 3	1958	63	80
		US 0630(2)	1958	77	103

8-6-58

TYPICAL REACTION BLOCK DETAILS FOR VERTICAL BENDS (SUBJECT TO REVISION)

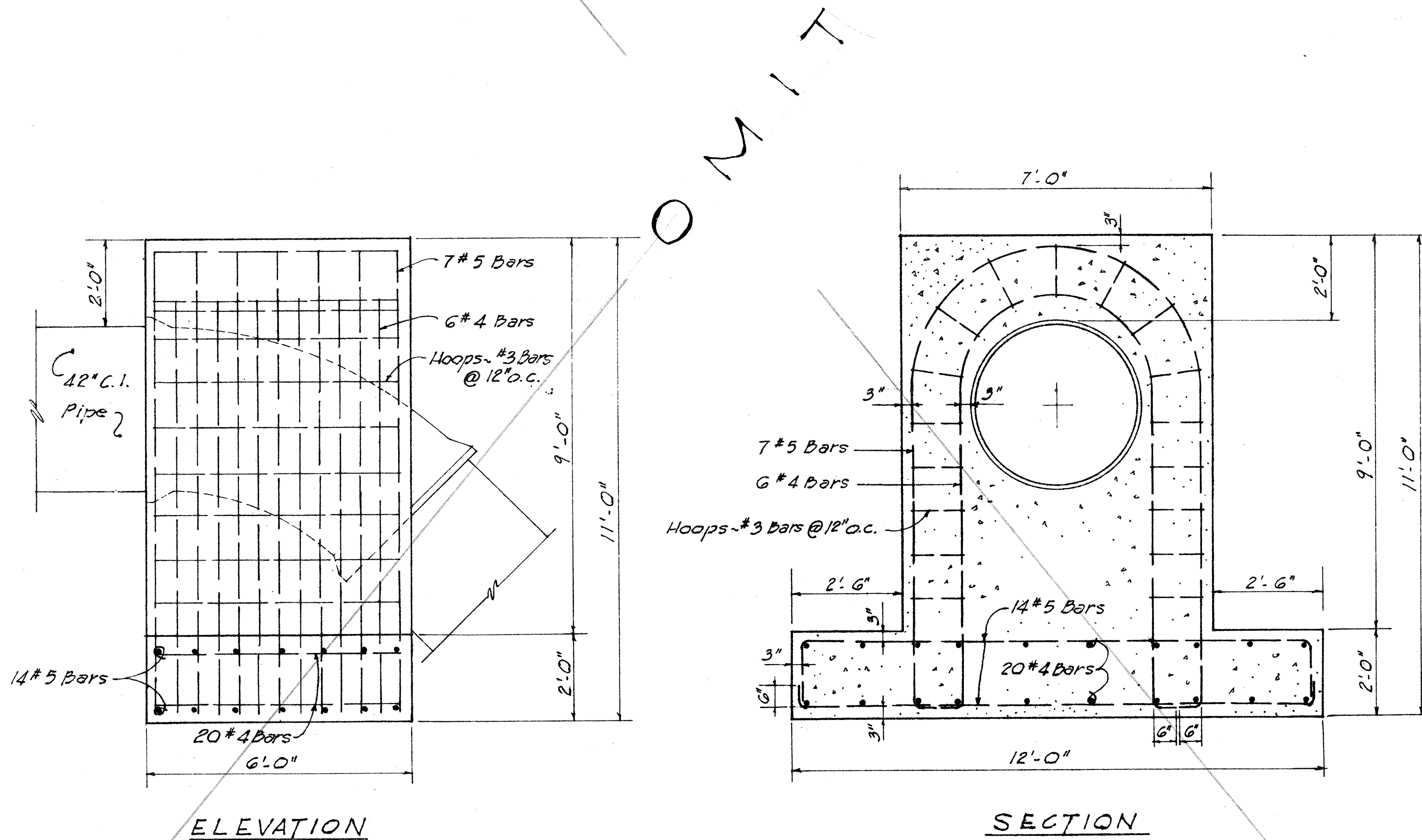
Scale ~ 1/2" = 1'-0"



ELEVATION

SECTION

TYPICAL BLOCK FOR 24" 1/16 VERTICAL BEND 4 cu. yds.



ELEVATION

SECTION

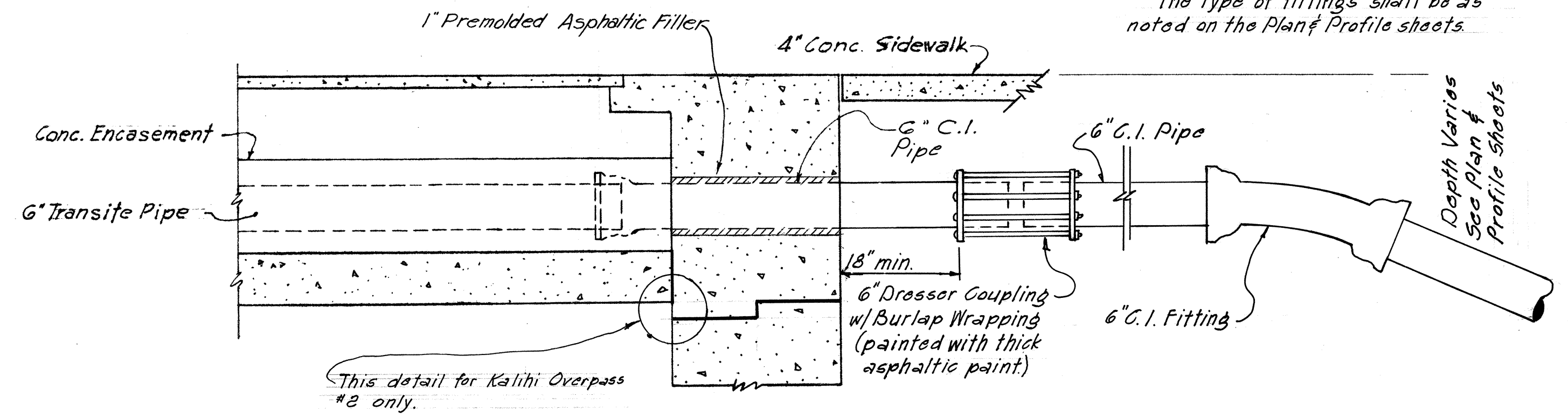
TYPICAL BLOCK FOR 42" 1/8 VERTICAL BEND 16.8 cu. yds.

TYPICAL CONNECTION DETAILS AT STRUCTURE ABUTMENT

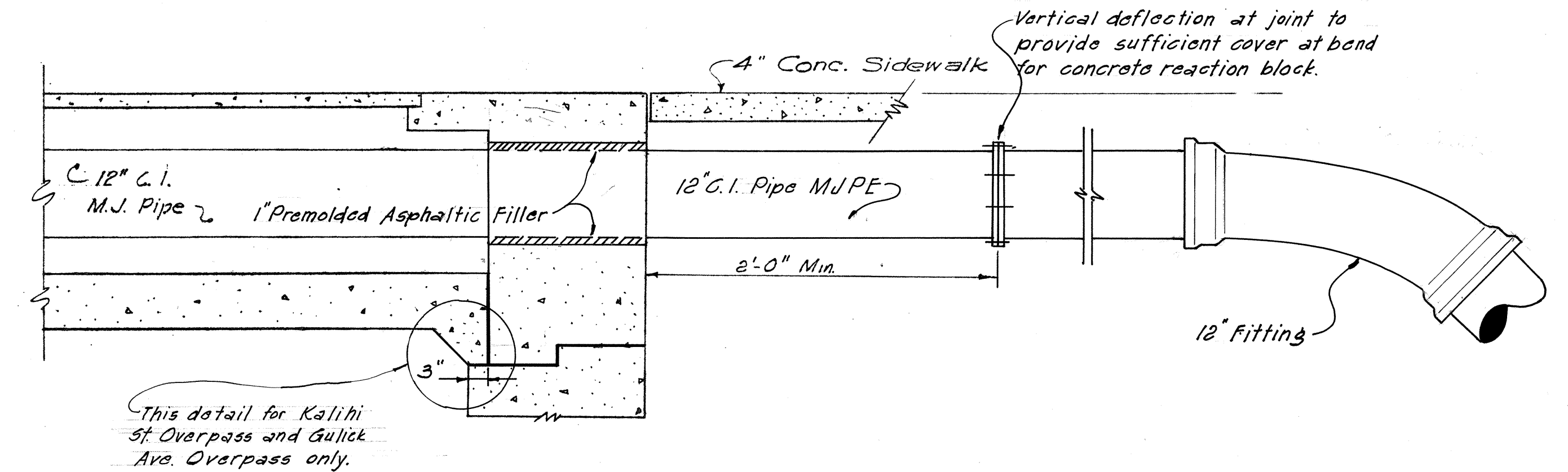
Scale ~ 3/4" = 1'-0"

NOTE:

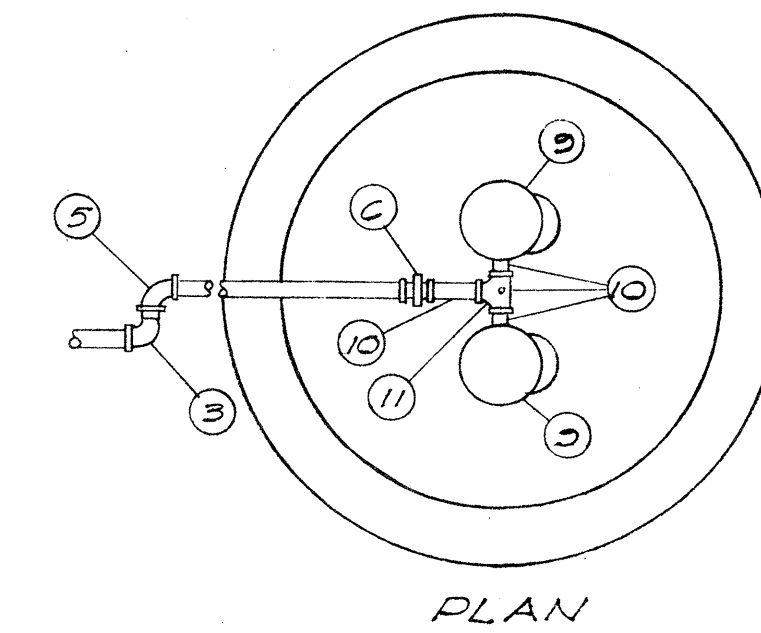
The type of fittings shall be as noted on the Plan & Profile sheets.



6" C.I. PIPE CONNECTION



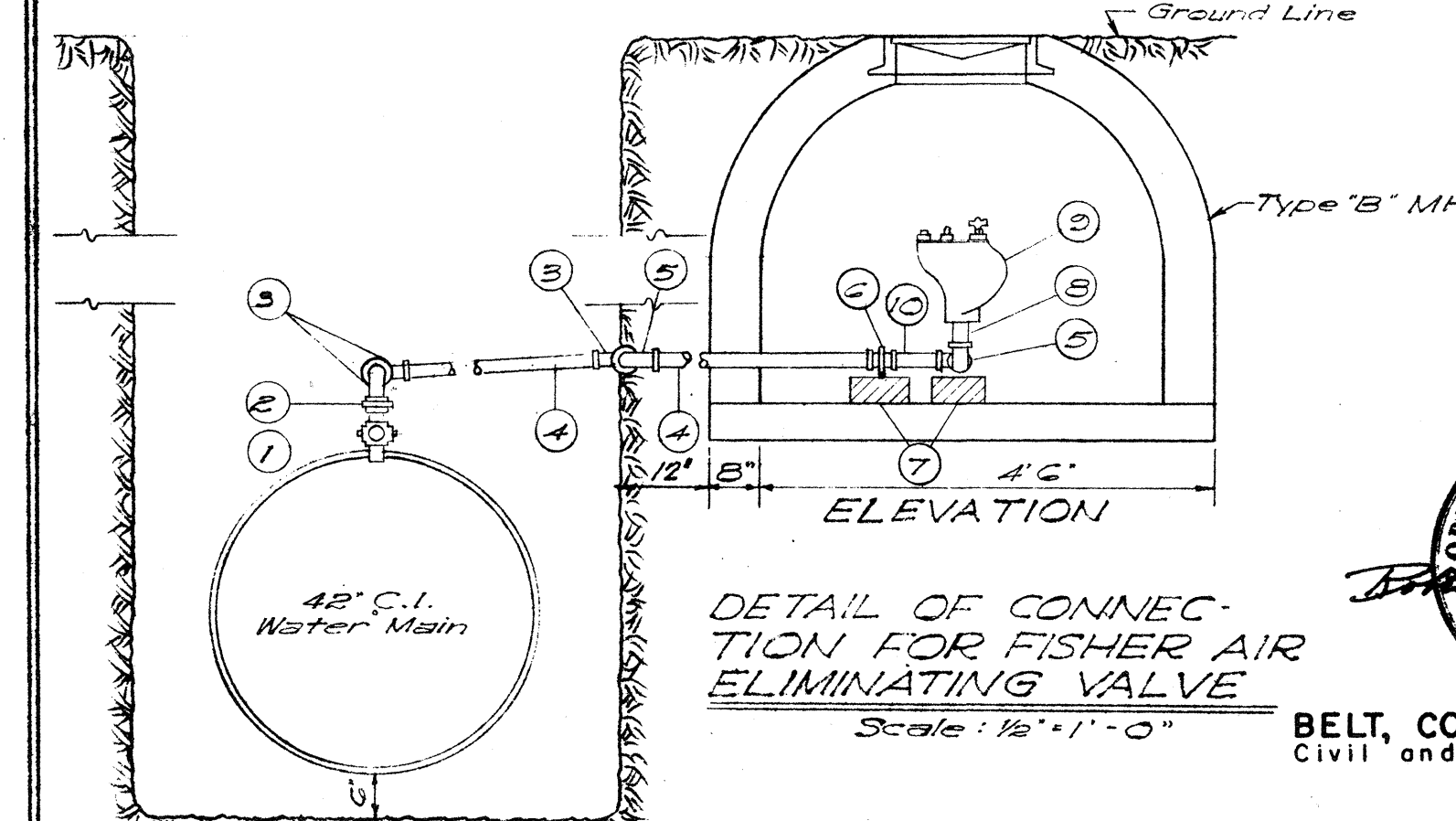
12" C.I. PIPE CONNECTION



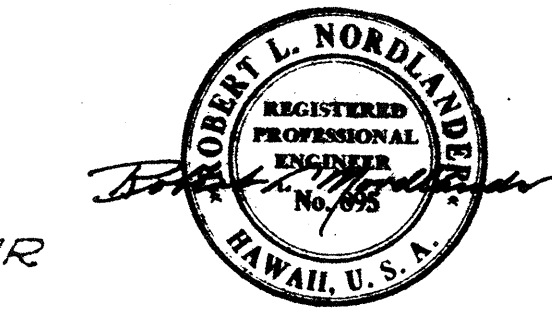
PLAN

LIST OF MATERIALS

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



DETAIL OF CONNECTION FOR FISHER AIR ELIMINATING VALVE
Scale: 1/2" = 1'-0"



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

APPROVED: *[Signature]*
DIVISION ENGINEER
BOARD OF WATER SUPPLY
DATE: 8/7/58

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

MISC. WATER DETAILS

LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHI STREET US 0630(2)

SHEET NO. 3 OF 3 SHEETS

5983.63 5984.77 28

ORIGINAL	DATE
DESIGNED BY	
DRAWN BY	
CHECKED BY	
QUANTITIES CHECKED BY	
NOTE BOOK	
No.	