

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-PP-078(6)	1976	66	142

FOR PLAN AND DETAILS
SEE SHEET C.O. 665-1

TRUE NORTH
SCALE: 1"=50'

BEGIN MAIN "A"
STA. 0+00 =
EC STA. 131+70 ±
Ø 0/5 40' RT.
CONNECT TO EXIST.
6" WATER MAIN
1-6" 1/8 BEND
2-CONC. BLOCKS

CUT & PLUG
8" C.I. MAIN

MAIN "C"
STA. 2+00
FSR STA. 18+23
Ø 0/5 40' RT.
1-6" x 6" x 4" TEE
1-6" CROSS
1-6" x 4" REDUCER
3-CONC. BLOCKS

MAIN "C"
STA. 1+87
FSR STA. 18+23
Ø 0/5 30' RT.
1-AIR RELIEF VALVE
W/ MANHOLE

END MAIN "C"
STA. 2+85 =
FSR STA. 17+45 ±
Ø 0/5 40' RT.
1-4" x 4" x 3" TEE
1-CONC. BLOCK

MAIN "C" STA. 0+35 =
FSR STA. 17+85 ±
Ø 0/5 40' LT.
1-6" x 6" x 4" TEE
1-CONC. BLOCK

BEGIN MAIN "C" & "D"
STA. 0+00 =
FSR STA. 16+84 ±
Ø 0/5 40' LT.
CONNECT TO EXIST.
6" WATER MAIN
1-6" CROSS
1-6" x 4" REDUCER
1-CONC. BLOCK

END MAIN "D"
STA. 0+50 =
FSR STA. 16+35 ±
Ø 0/5 42' LT.

MAIN "A"
STA. 1+0 =
LOOP "E"
STA. 3+53
Ø 0/5 15' RT.
1-6" x 6" x 3" TEE
1-CONC. BLOCK

END MAIN "A"
STA. 1+95 ±
CONNECT TO EXIST.
6" WATER MAIN
1-6" 1/8 BEND
1-CONC. BLOCK

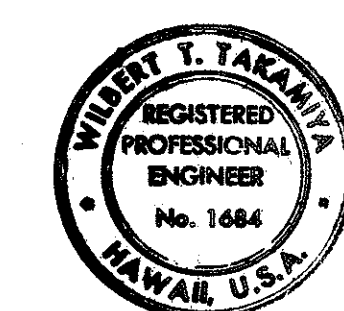
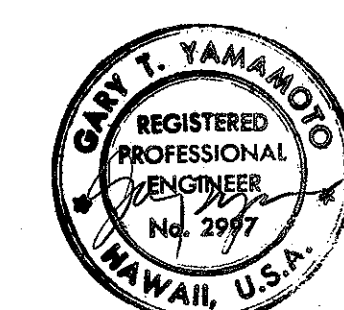
END MAIN "B"
STA. 1+38
RAMP "D" STA. 13+80 ±
Ø 0/5 25' RT.
1-4" TEE
1-CONC. BLOCK

BEGIN MAIN "B"
STA. 0+00 =
MAIN "A" STA. 0+73
1-6" x 6" x 4" TEE
1-CONC. BLOCK

MAIN "A" STA. 0+76 =
LOOP "E" STA. 3+65
Ø 0/5 24' LT.
1-6" x 6" x 3" TEE
1-CONC. BLOCK

NOTE:

1. WATERING OF LANDSCAPED AREAS DURING "PLANT ESTABLISHMENT PERIOD" WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONNECTION OF SPRINKLER SYSTEM TO BWS MAIN TO BE DONE BY OTHERS MAY NOT BE COMPLETED IN TIME FOR USAGE OF THE SPRINKLER SYSTEM.



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2/2/78	ADDED CROSS REFERENCE
DATE	REVISION

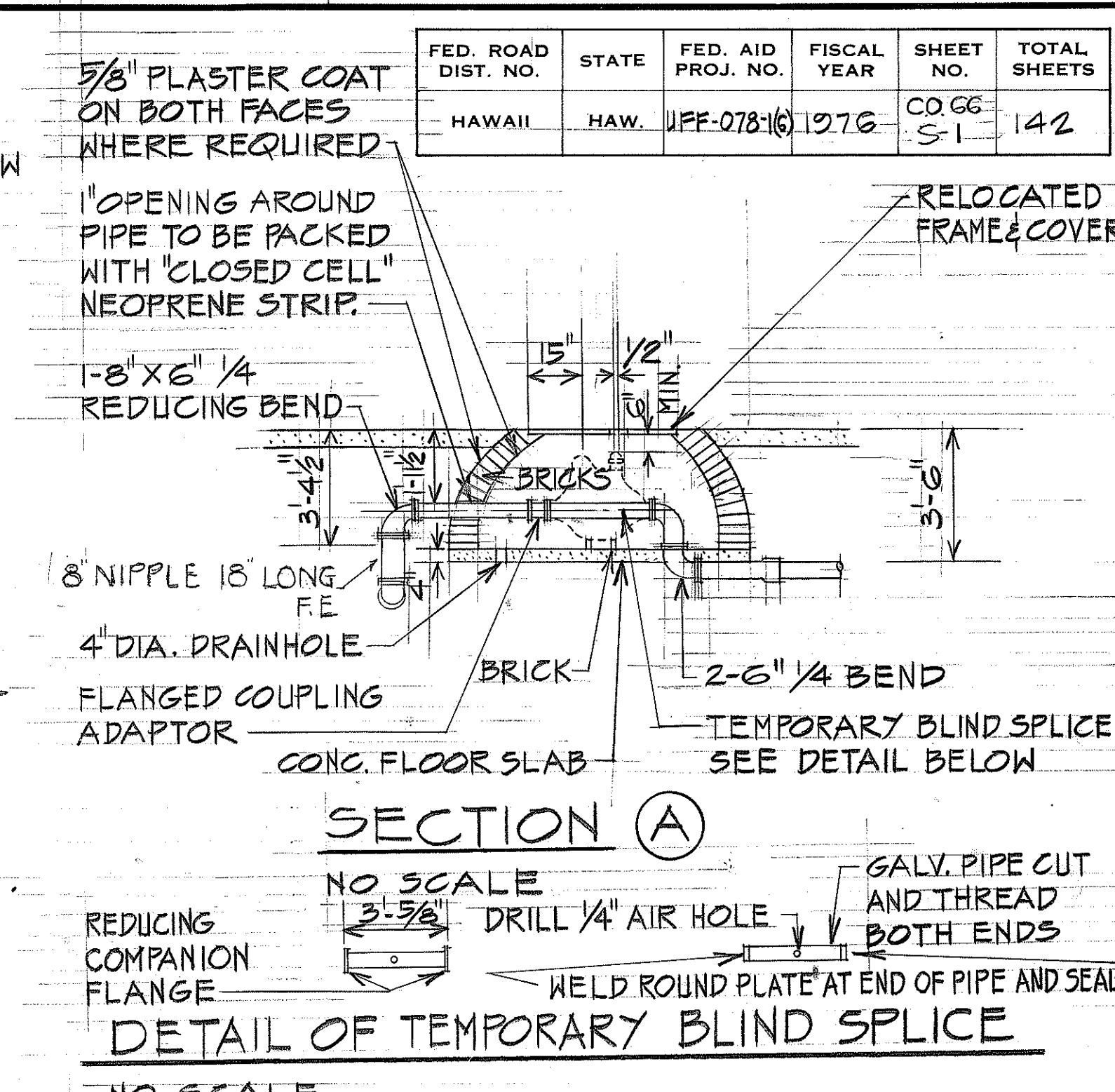
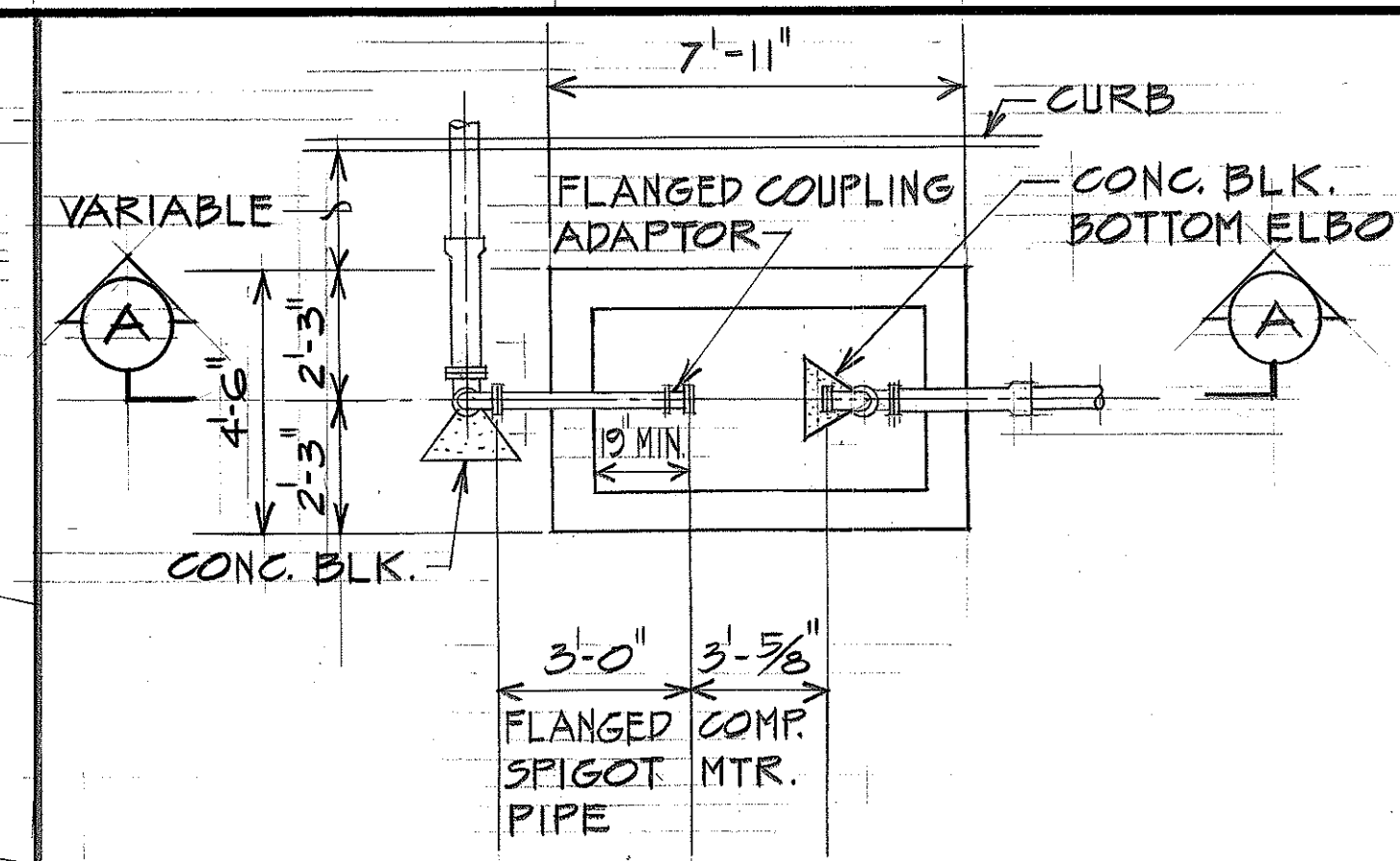
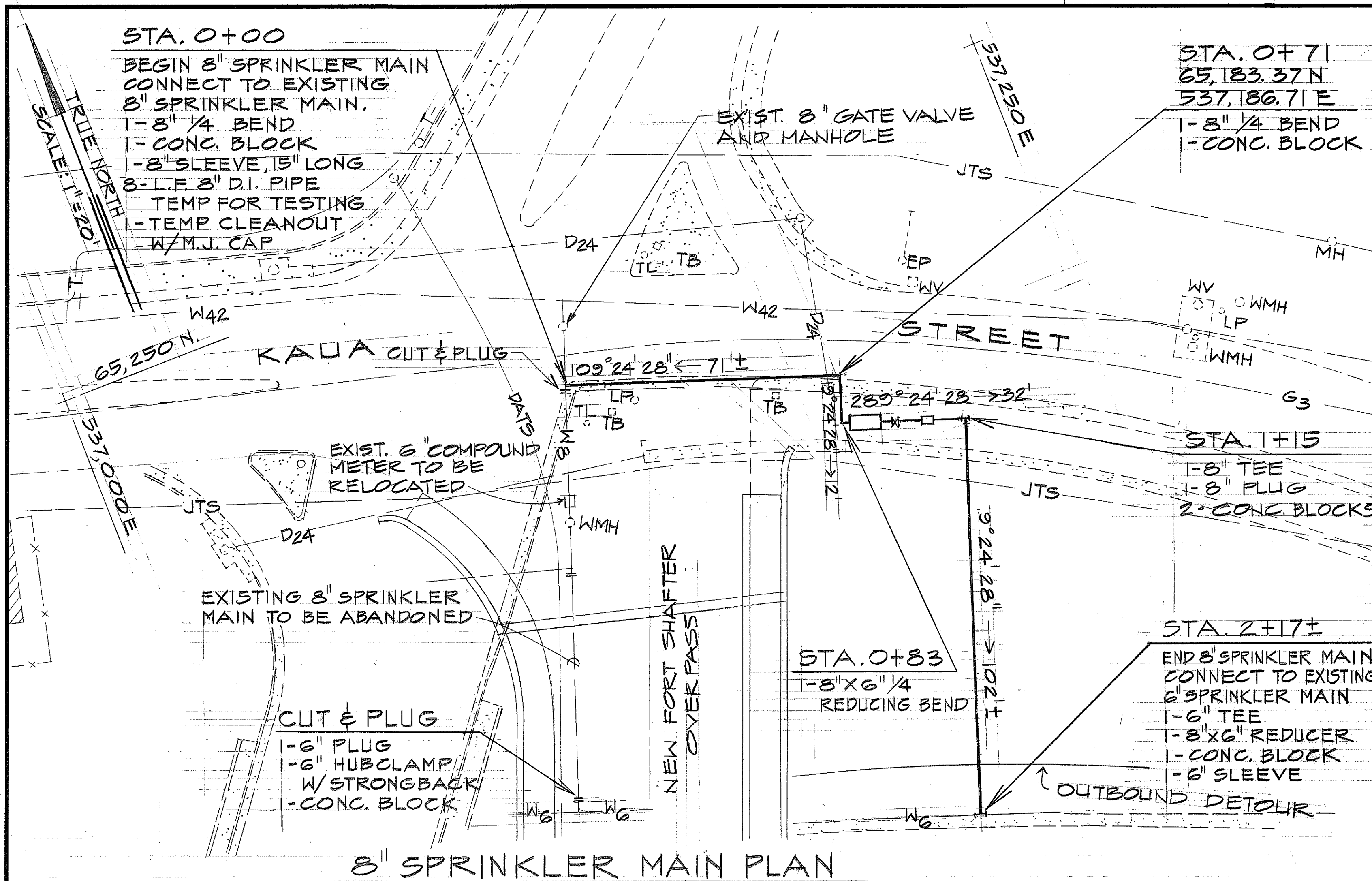
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER MAINS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 1
F.A. Proj. No. U-PP-078-1(6)
SCALE: AS SHOWN DATE: JUNE 25, 1976

SHEET NO. 1 OF 12 SHEETS

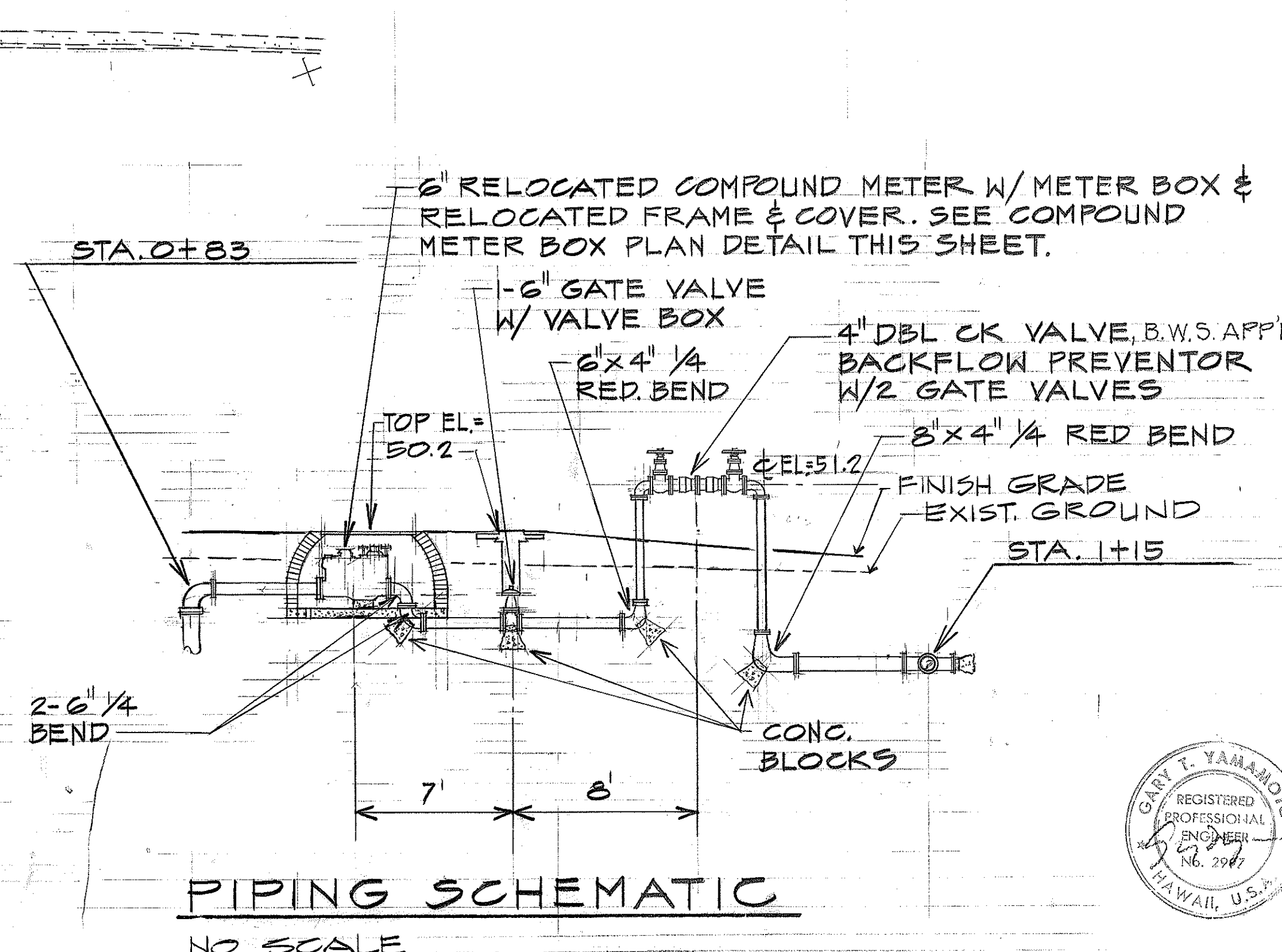
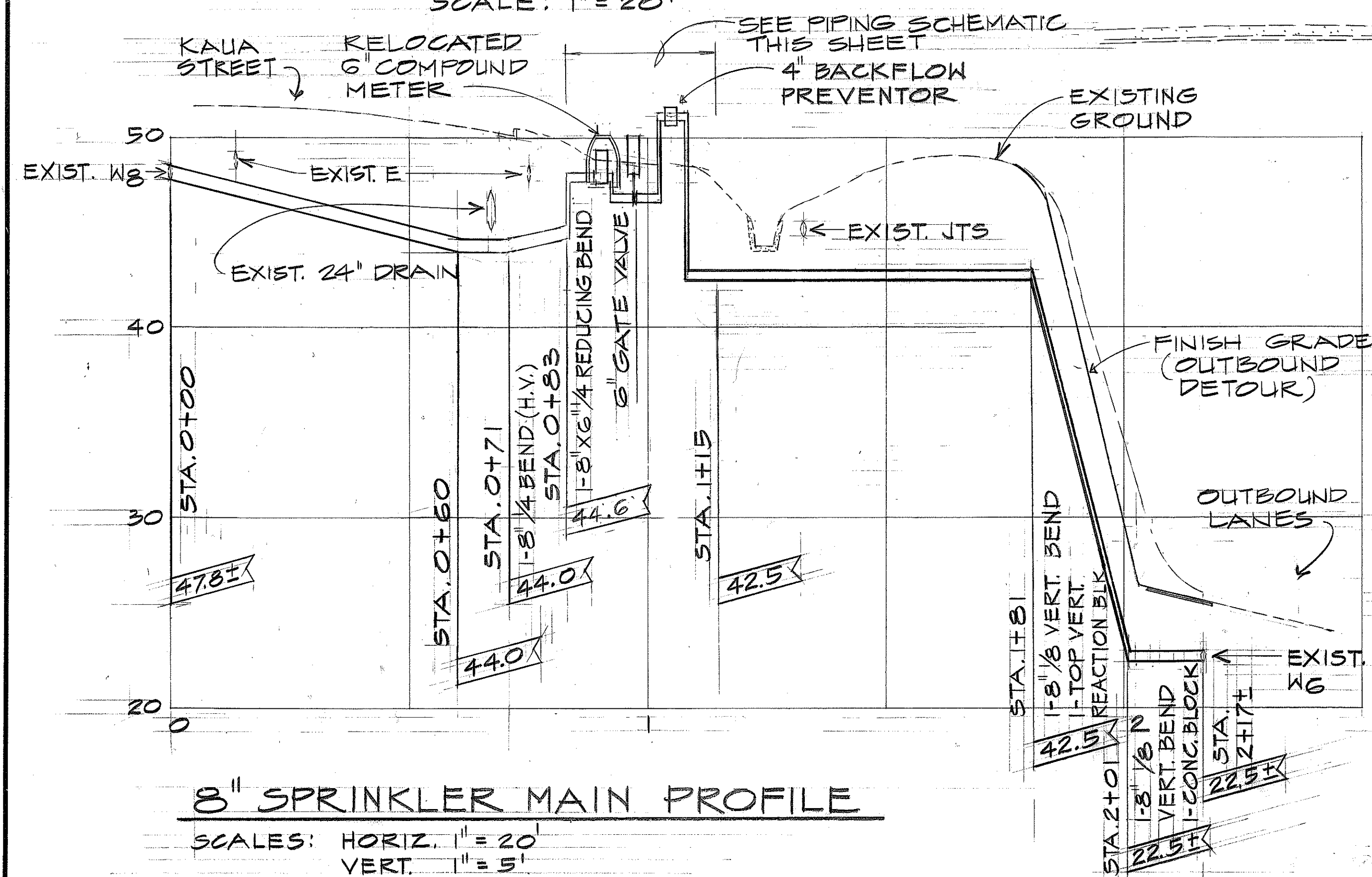
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-F-078-1(6)	1976	CO 66 S-1	142



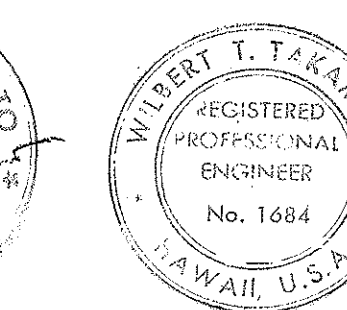
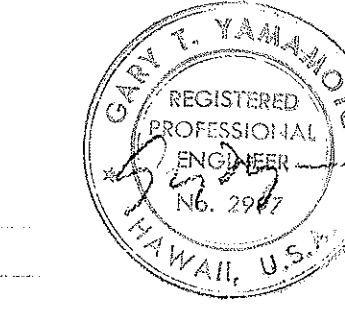
FITTING	BEARING AREA SQ. FT.
6"x4" 1/4 RED. BEND.	2.0
8"x4" 1/4 RED. BEND.	3.0
6" 1/4 BEND	2.0
6" TEE OR PLUG	2.0
8" 1/8 BEND	2.0
8" 1/4 BEND	3.0
8" TEE OR PLUG	2.0

- NOTES:**
- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 1976, AS AMENDED, OF THE HAWAII HIGHWAYS DIVISION, DEPARTMENT OF TRANSPORTATION AND OF THE BOARD OF WATER SUPPLY STANDARD SPECIFICATION AND DETAILS.
 - CONCRETE VOLUME FOR TOP VERTICAL REACTION BLOCK.
8" BEND 1.5 CU. YD. (EST. ONLY)
 - THE DOUBLE CHECK VALVE ASSEMBLY SHOWN FOR THE PURPOSE OF ILLUSTRATION ONLY. DETAILS OF ACTUAL ASSEMBLY SELECTED MAY VARY WITH MANUFACTURER. THE 4" DOUBLE CHECK VALVE SHALL BE A TYPE APPROVED BY THE B.W.S. AND SHALL HAVE A MAXIMUM LOSS OF 6 PSI AT FLOW RATE OF 150 GPM FOR ENTIRE ASSEMBLY
 - ALL PIPES SHALL BE DUCTILE IRON CLASS 52 WITH TEST PRESSURE OF 150 PSI.
 - CONTRACTOR SHALL REFER TO SHEET 38 FOR ADDITIONAL NOTES.

Approved for cross-connection control requirements.
Tahuli Uyemura
 Board of Water Supply
 4-15-77
 Date



APPROVED BY:
[Signature] 4/14/77
 CHIEF PLANNING AND ENGINEERING B.W.S. DATE



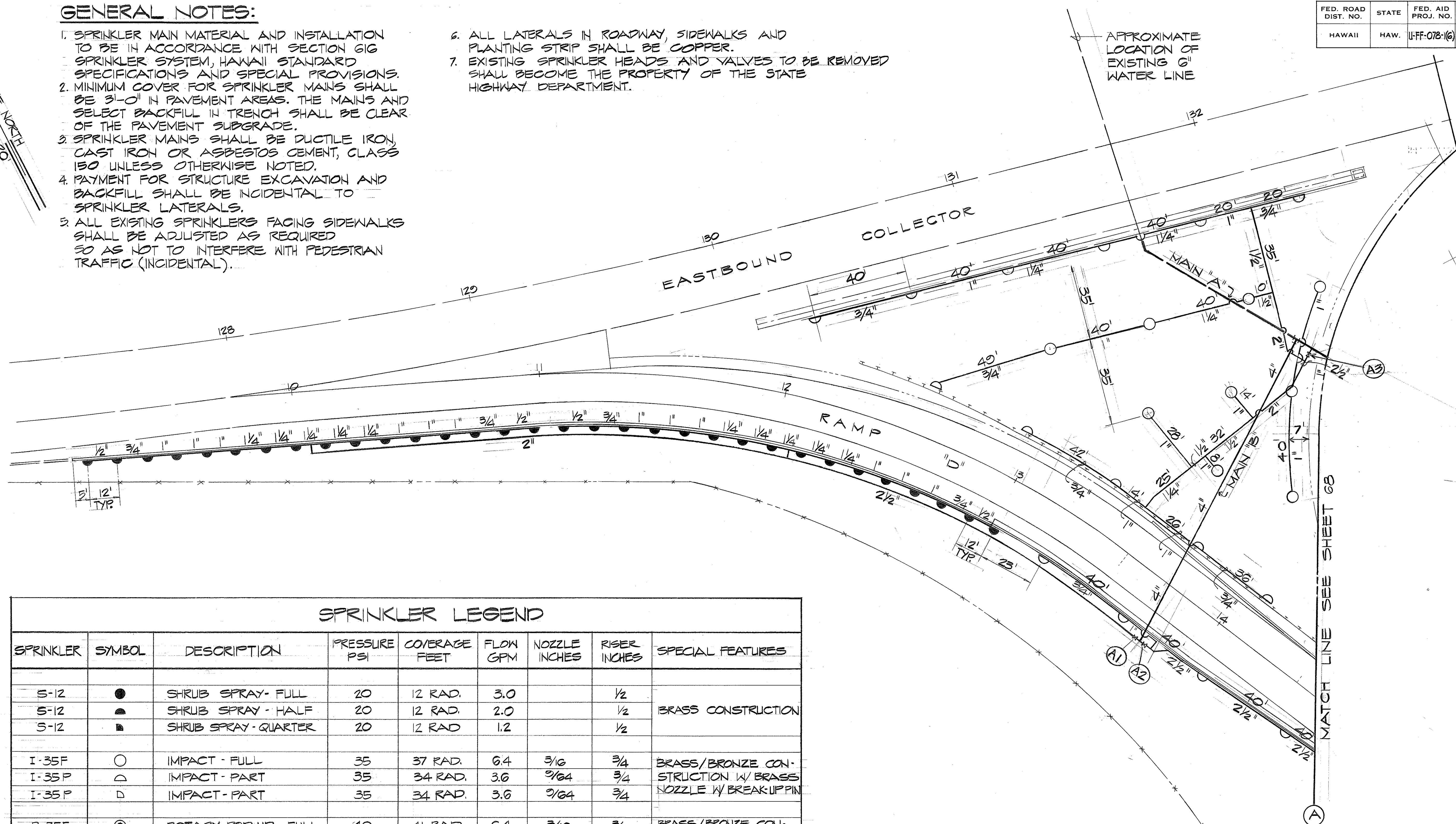
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 (RELOCATION)
SPRINKLER MAIN
 MOANALUA ROAD
 PUULOA I.C. TO MIDDLE ST. - UNIT 1
 F.A. Proj. No U-F-078-1(6)
 SCALE: AS SHOWN DATE: 2/2/78
 SHEET No. OF SHEETS

GENERAL NOTES:

1. SPRINKLER MAIN MATERIAL AND INSTALLATION TO BE IN ACCORDANCE WITH SECTION GIG SPRINKLER SYSTEM, HAWAII STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. MINIMUM COVER FOR SPRINKLER MAINS SHALL BE 3'-0" IN PAVEMENT AREAS. THE MAINS AND SELECT BACKFILL IN TRENCH SHALL BE CLEAR OF THE PAVEMENT SUBGRADE.
3. SPRINKLER MAINS SHALL BE DUCTILE IRON, CAST IRON OR ASBESTOS CEMENT, CLASS 150 UNLESS OTHERWISE NOTED.
4. PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL SHALL BE INCIDENTAL TO SPRINKLER LATERALS.
5. ALL EXISTING SPRINKLERS FACING SIDEWALKS SHALL BE ADJUSTED AS REQUIRED SO AS NOT TO INTERFERE WITH PEDESTRIAN TRAFFIC (INCIDENTAL).

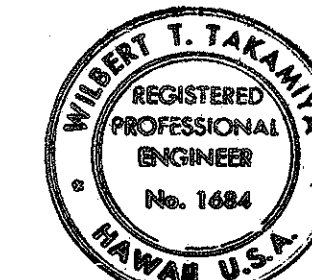
6. ALL LATERALS IN ROADWAY, SIDEWALKS AND PLANTING STRIP SHALL BE COPPER.
7. EXISTING SPRINKLER HEADS AND VALVES TO BE REMOVED SHALL BECOME THE PROPERTY OF THE STATE HIGHWAY DEPARTMENT.

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SPRINKLER LEGEND

SPRINKLER	SYMBOL	DESCRIPTION	PRESSURE PSI	COVERAGE FEET	FLOW GPM	NOZZLE INCHES	RISER INCHES	SPECIAL FEATURES
S-12	●	SHRUB SPRAY - FULL	20	12 RAD.	3.0		1/2	BRASS CONSTRUCTION
S-12	◐	SHRUB SPRAY - HALF	20	12 RAD.	2.0		1/2	
S-12	◑	SHRUB SPRAY - QUARTER	20	12 RAD.	1.2		1/2	
I-35F	○	IMPACT - FULL	35	37 RAD.	6.4	3/16	3/4	BRASS/BRONZE CONSTRUCTION W/ BRASS NOZZLE W/ BREAK-UP PIN
I-35P	◐	IMPACT - PART	35	34 RAD.	3.6	3/16	3/4	
I-35P	◑	IMPACT - PART	35	34 RAD.	3.6	3/16	3/4	
R-35F	⊙	ROTARY POP UP - FULL	40	41 RAD.	6.4	3/16	3/4	BRASS/BRONZE CONSTRUCTION W/ BRASS NOZZLE W/ BRASS HSG.
R-35P	◐	ROTARY POP UP - PART	40	38 RAD.	3.6	3/16	3/4	
P-12	◐	POP-UP LAWN - HALF	20	12 RAD.	2.0		1/2	BRASS CONSTRUCTION
P-12	◑	POP-UP LAWN - QUARTER	20	12 RAD.	1.2		1/2	
	Ⓢ	STATION AUTOMATIC CONTROLLER						PEDESTAL MTD.
	ⓧ	ELECTRIC REMOTE CONTROL VALVE						24 VOLT WATERPROOF SOLENOID INSTALL IN VALVE BOX W/ COVER



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

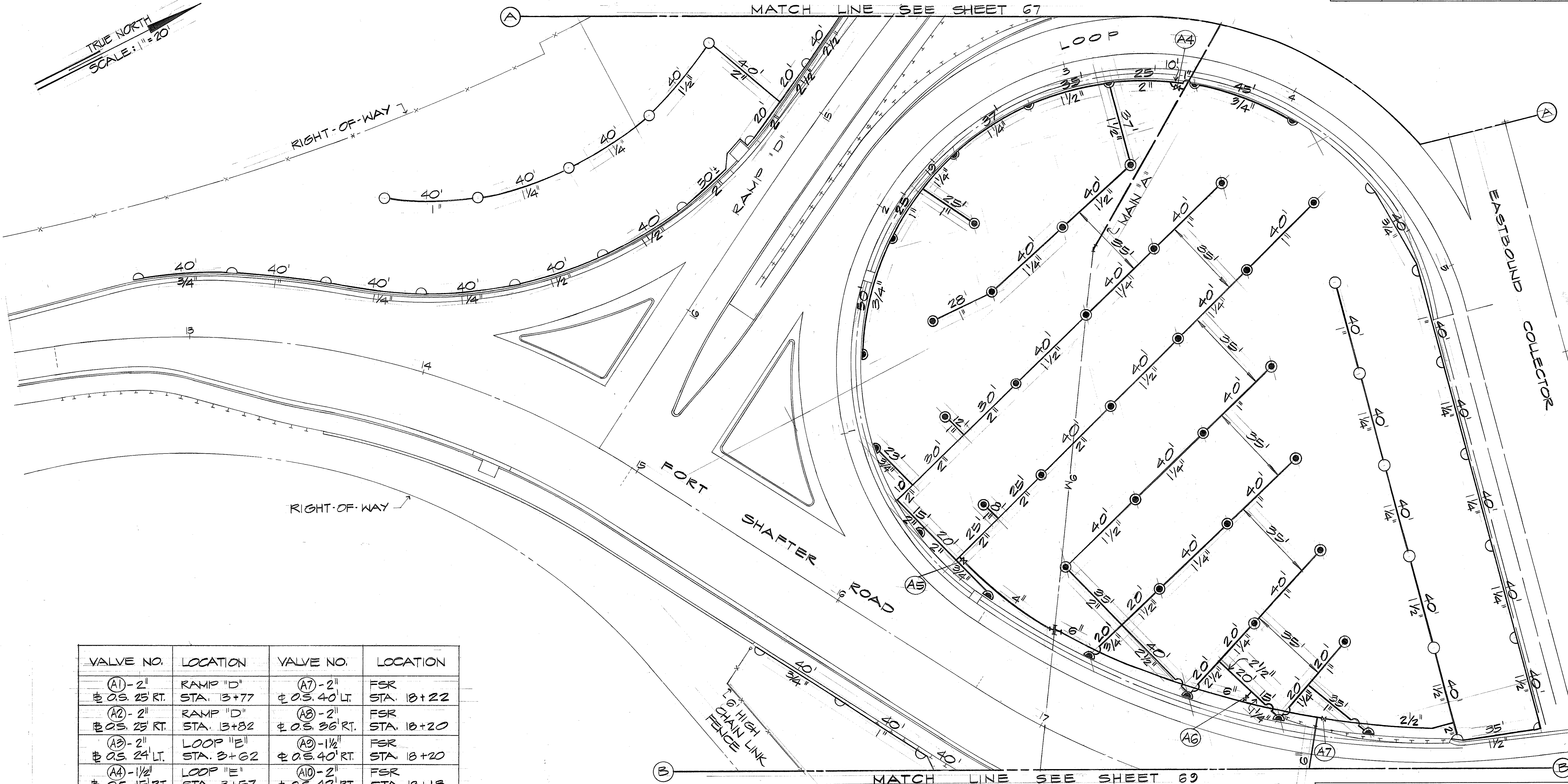
SPRINKLER SYSTEM

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 1
F.A. Proj. No. U-FF-078-1(6)
SCALE: AS SHOWN DATE: JUNE 25, 1976

SHEET No. 2 OF 12 SHEETS

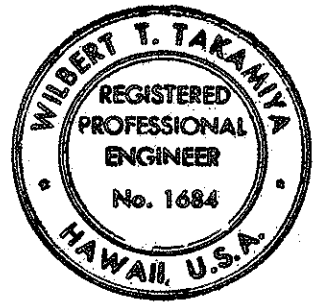
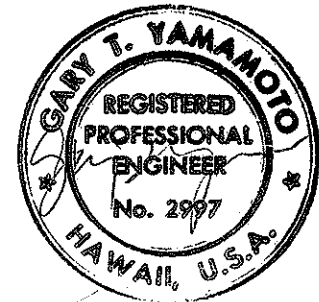
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-FF-078-1(6)	1976	68	142

TRUE NORTH
SCALE: 1"=20'



VALVE NO.	LOCATION	VALVE NO.	LOCATION
(A1)-2"	RAMP "D"	(A7)-2"	FSR
± O.S. 25' RT.	STA. 13+77	± O.S. 40' LT.	STA. 18+22
(A2)-2"	RAMP "D"	(A8)-2"	FSR
± O.S. 25' RT.	STA. 13+82	± O.S. 36' RT.	STA. 18+20
(A3)-2"	LOOP "E"	(A9)-1 1/2"	FSR
± O.S. 24' LT.	STA. 13+62	± O.S. 40' RT.	STA. 18+20
(A4)-1 1/2"	LOOP "E"	(A10)-2"	FSR
± O.S. 15' RT.	STA. 13+57	± O.S. 42' RT.	STA. 18+18
(A5)-2"	FSR	(A11)-2"	FSR
± O.S. 42' LT.	STA. 16+35	± O.S. 40' RT.	STA. 17+40
(A6)-2"	FSR	(A12)-2"	FSR
± O.S. 40' LT.	STA. 17+85	± O.S. 42' RT.	STA. 17+42

DATE _____
SURVEY PLOTTED BY _____
DRAWN BY _____
DESIGNED BY _____
CHECKED BY _____
ORIGINAL PLAN _____
NOTE BOOK _____
No. _____



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

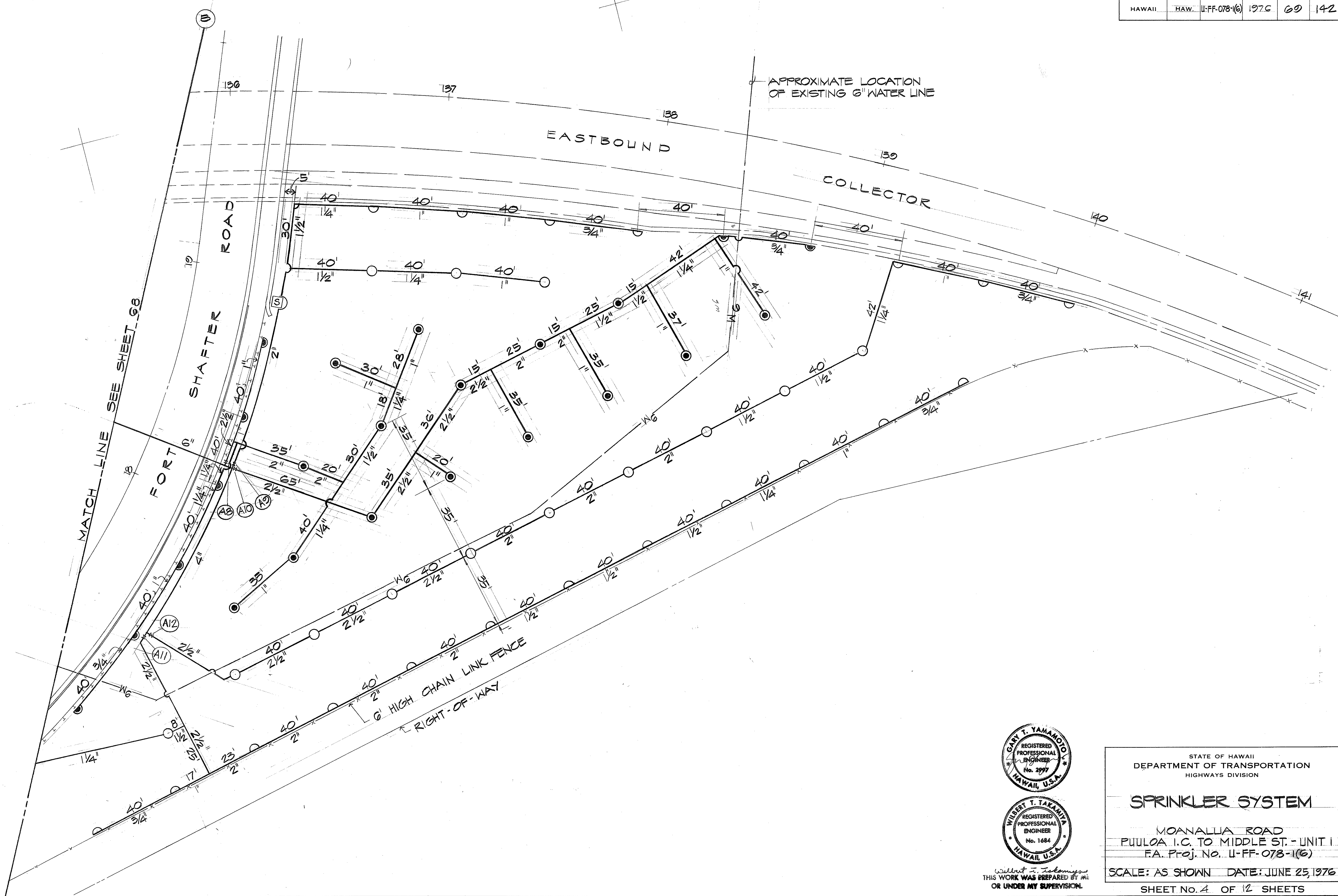
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.-UNIT 1
F.A. Proj. No. U-FF-078-1(6)

SCALE: AS SHOWN DATE: JUNE 25, 1976

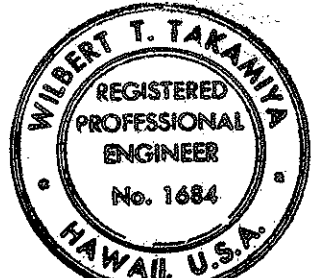
SHEET NO. 3 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-FF-078-1(6)	1976	69	142

TRUE NORTH
SCALE: 1"=20'



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
TRACED BY		
NOTED BY		
CHECKED BY		
NO.		



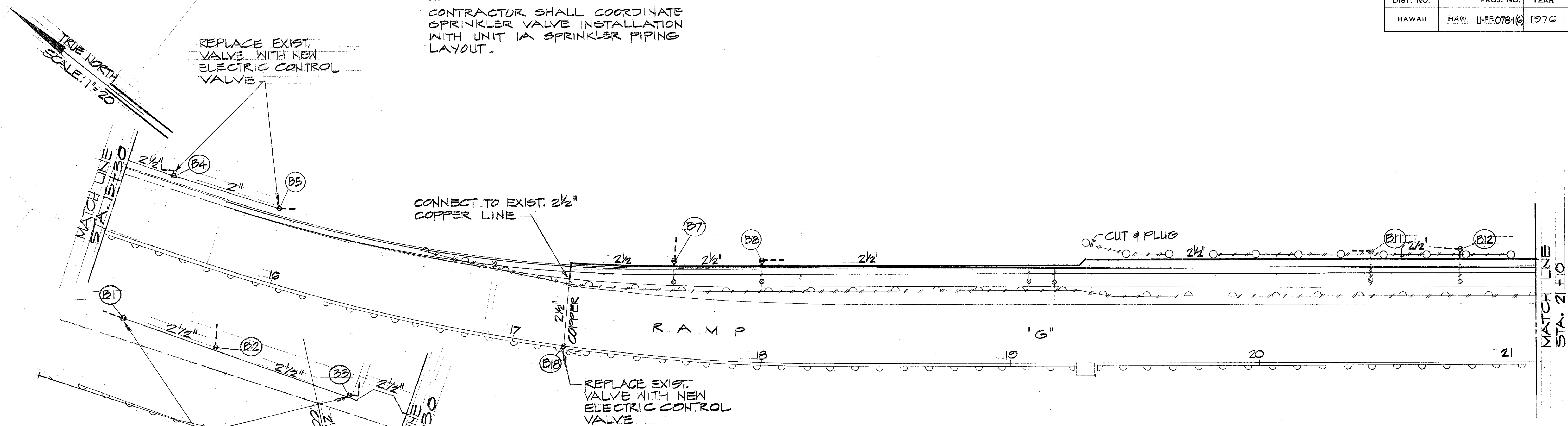
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
SPRINKLER SYSTEM
MOANALUA ROAD PUULOA I.C. TO MIDDLE ST. - UNIT I F.A. Proj. No. U-FF-078-1(6)
SCALE: AS SHOWN DATE: JUNE 25, 1976
SHEET NO. 4 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-FF-078-1(6)	1976	70	142

NOTE :

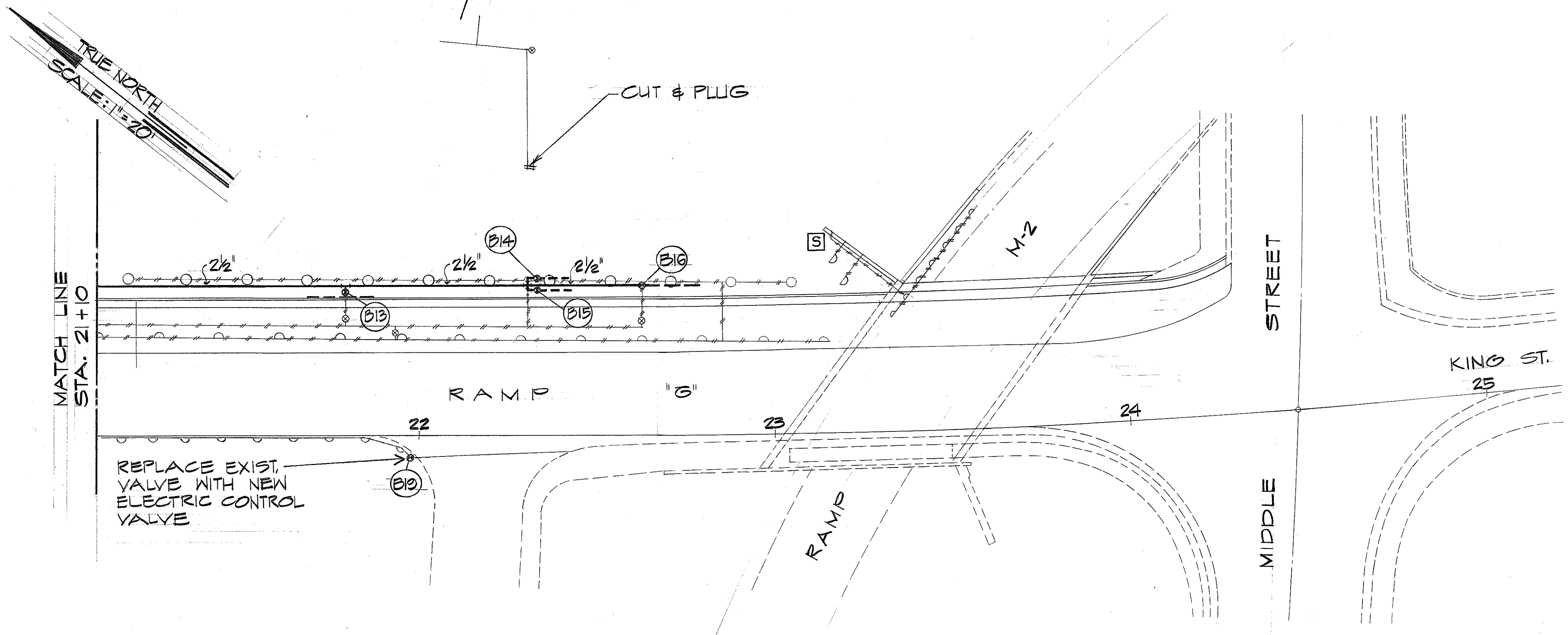
CONTRACTOR SHALL COORDINATE SPRINKLER VALVE INSTALLATION WITH UNIT 1A SPRINKLER PIPING LAYOUT.



PLAN
SCALE : 1" = 20'

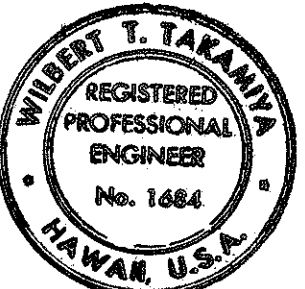
LEGEND:

- LATERAL (BY OTHERS)
- o---o---o--- EXISTING SPRINKLERS & LATERALS TO BE REMOVED
- o--- NEW ELECTRIC CONTROL VALVES
- NEW LATERAL
- o--- EXISTING ANGLE CONTROL VALVE



PLAN
SCALE : 1" = 20'

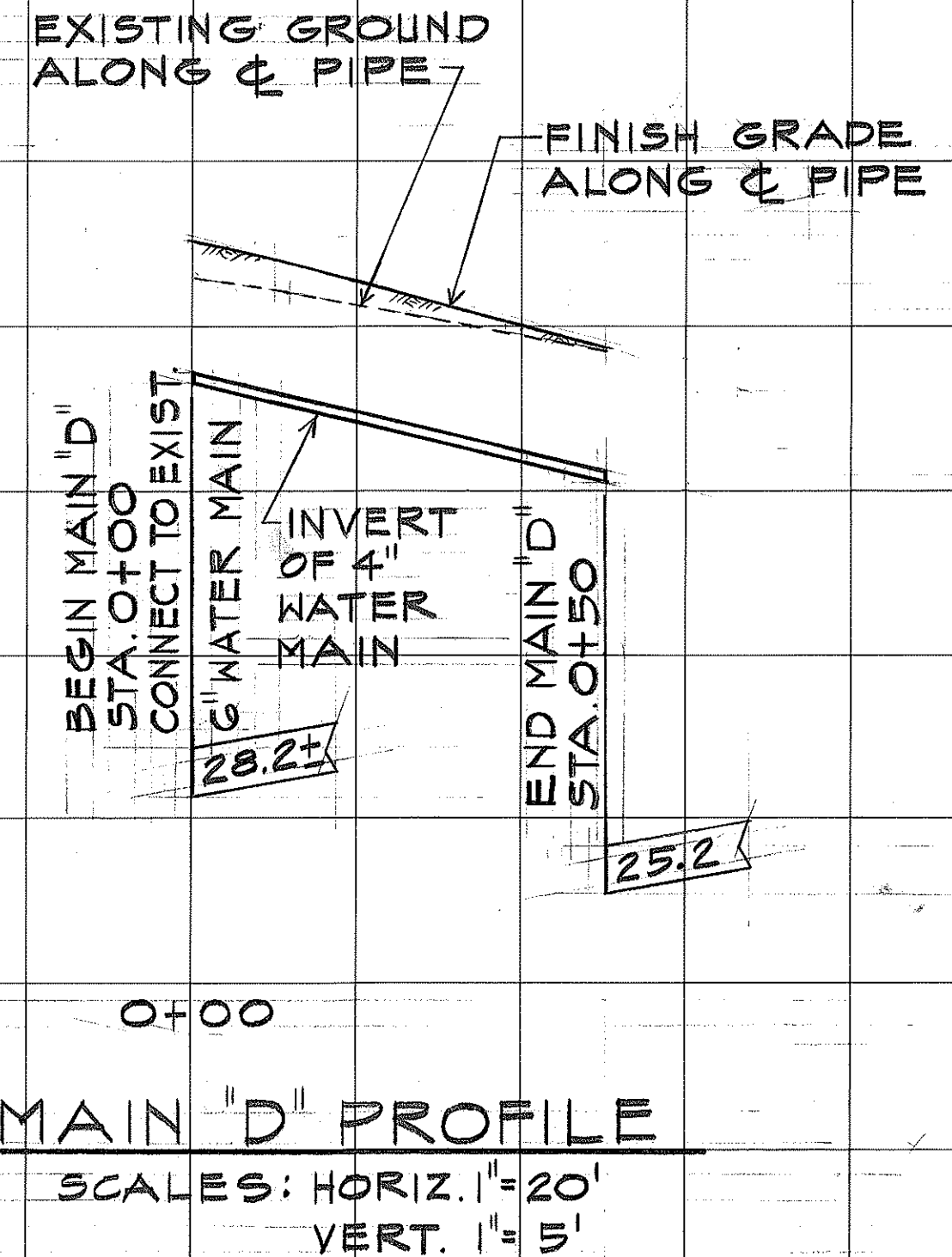
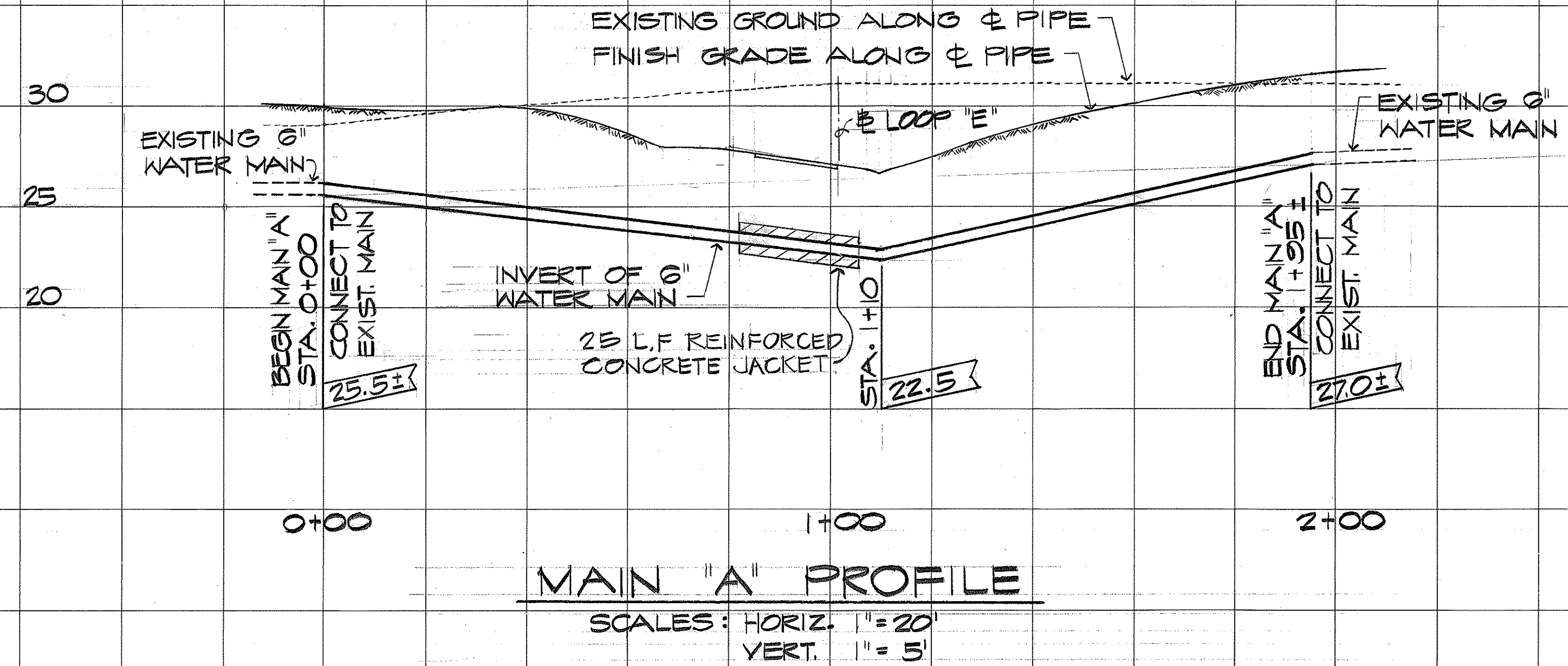
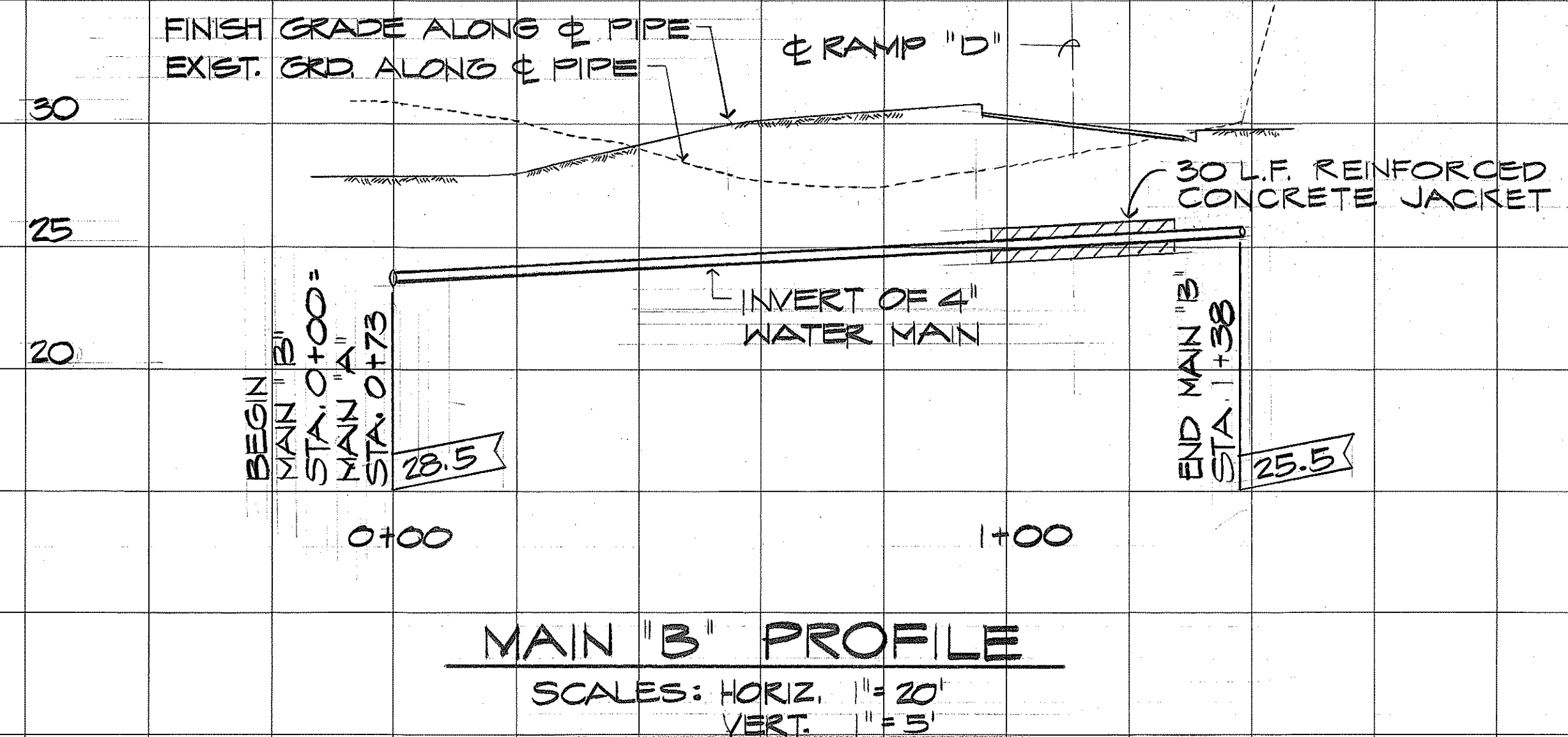
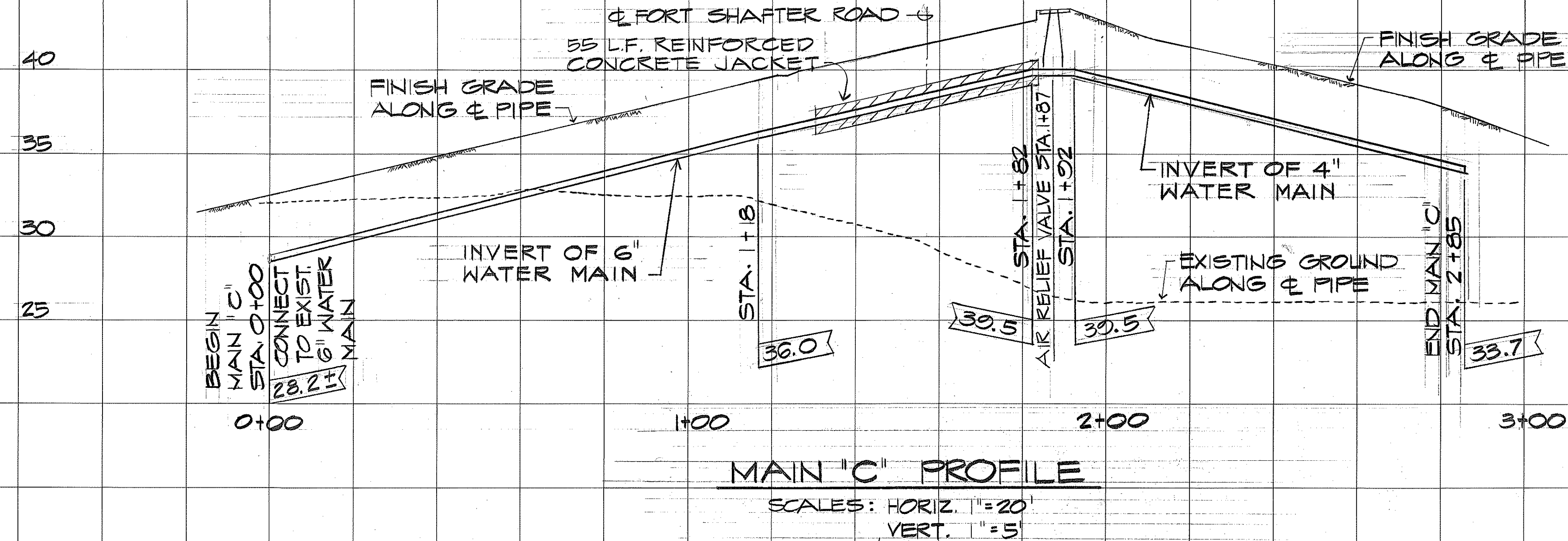
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTE BOOK	
NO.	



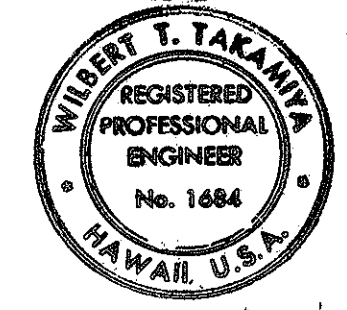
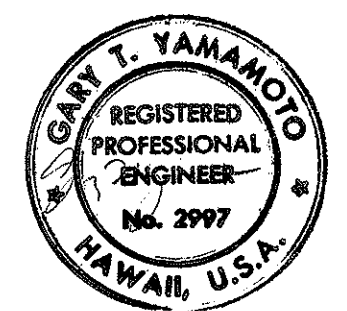
Willbert T. Takahira
1700 WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

3/7/78	REVISED SPRINKLER PLANS & ADD NOTES.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SPRINKLER SYSTEM	
MOANALUA ROAD PUULOA I.C. TO MIDDLE ST.-UNIT 1 FA. Proj. No. U-FF-078-1(6)	
SCALE: AS SHOWN DATE: JUNE 25, 1976	
SHEET NO. 5 OF 12 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-FF-078-1(6)	1976	71	142



ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DRAWN BY	
NOTE BOOK	TRACED BY	
No.	QUANTITIES BY	
	CHECKED BY	



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

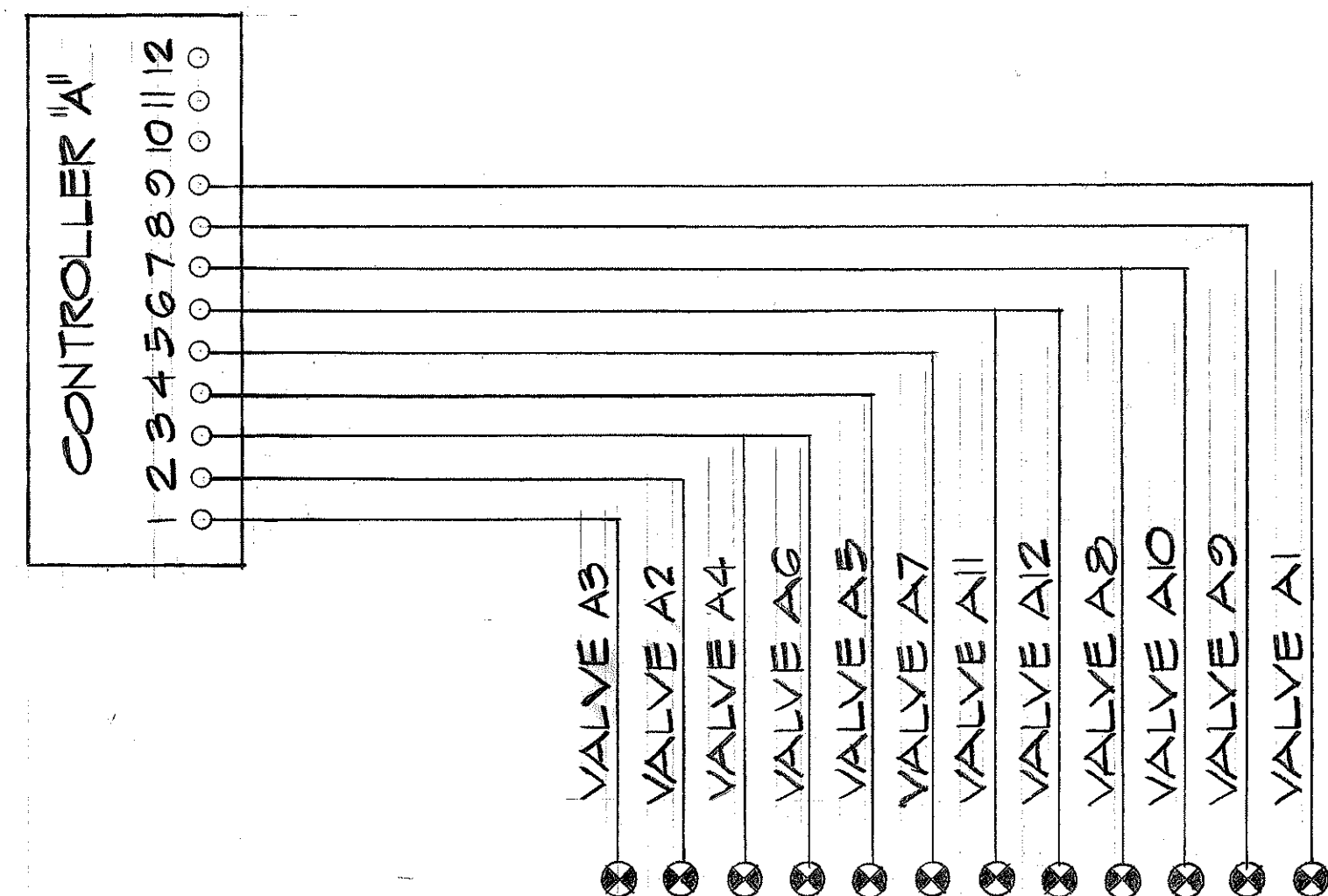
**SPRINKLER MAINS
 PROFILES**

MOANALUA ROAD
 PUULOA I.C. TO MIDDLE ST. - UNIT 1
 FA. Proj. No. U-FF-078-1(6)

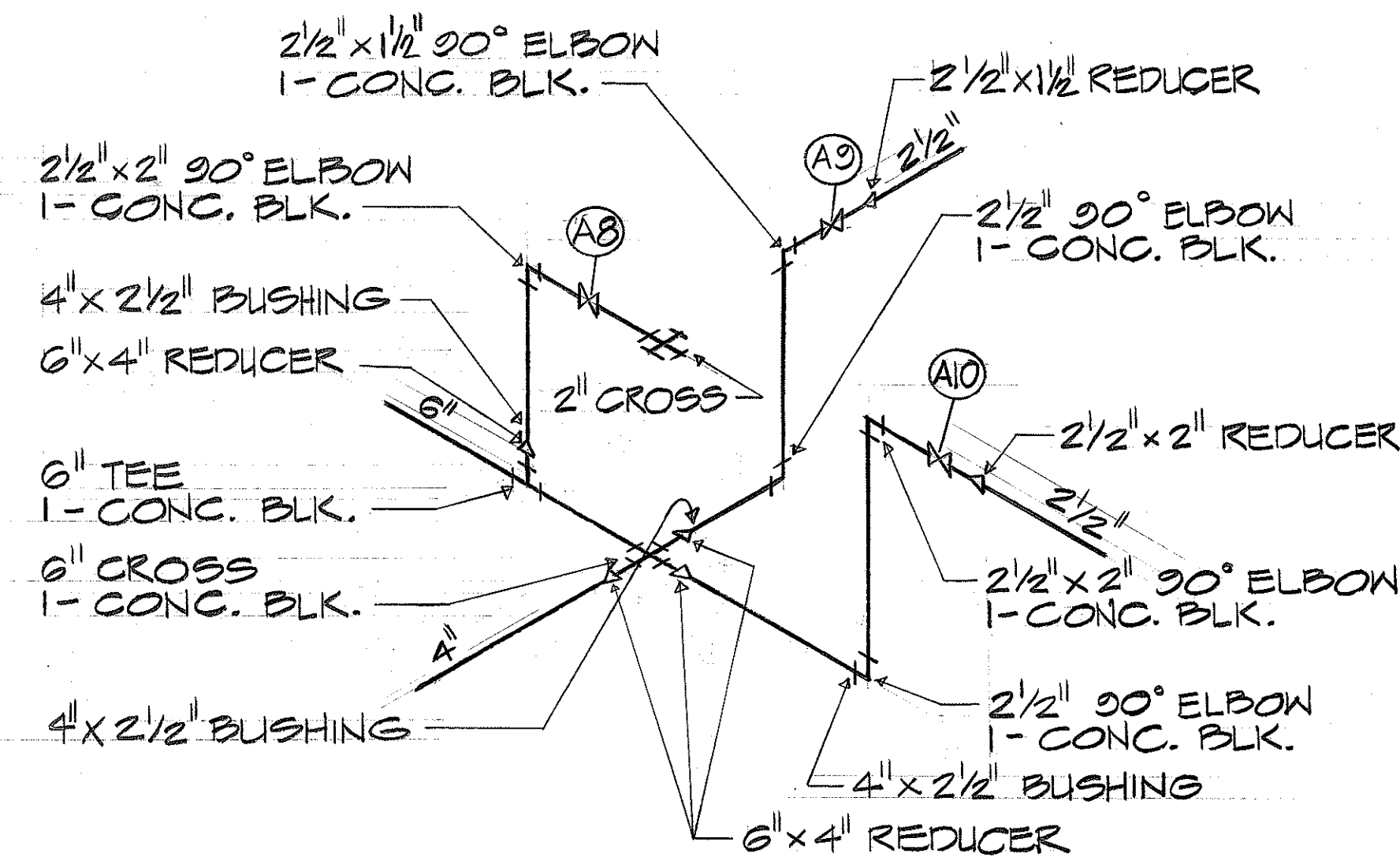
SCALE: AS SHOWN DATE: JUNE 23, 1976

SHEET NO. 6 OF 12 SHEETS

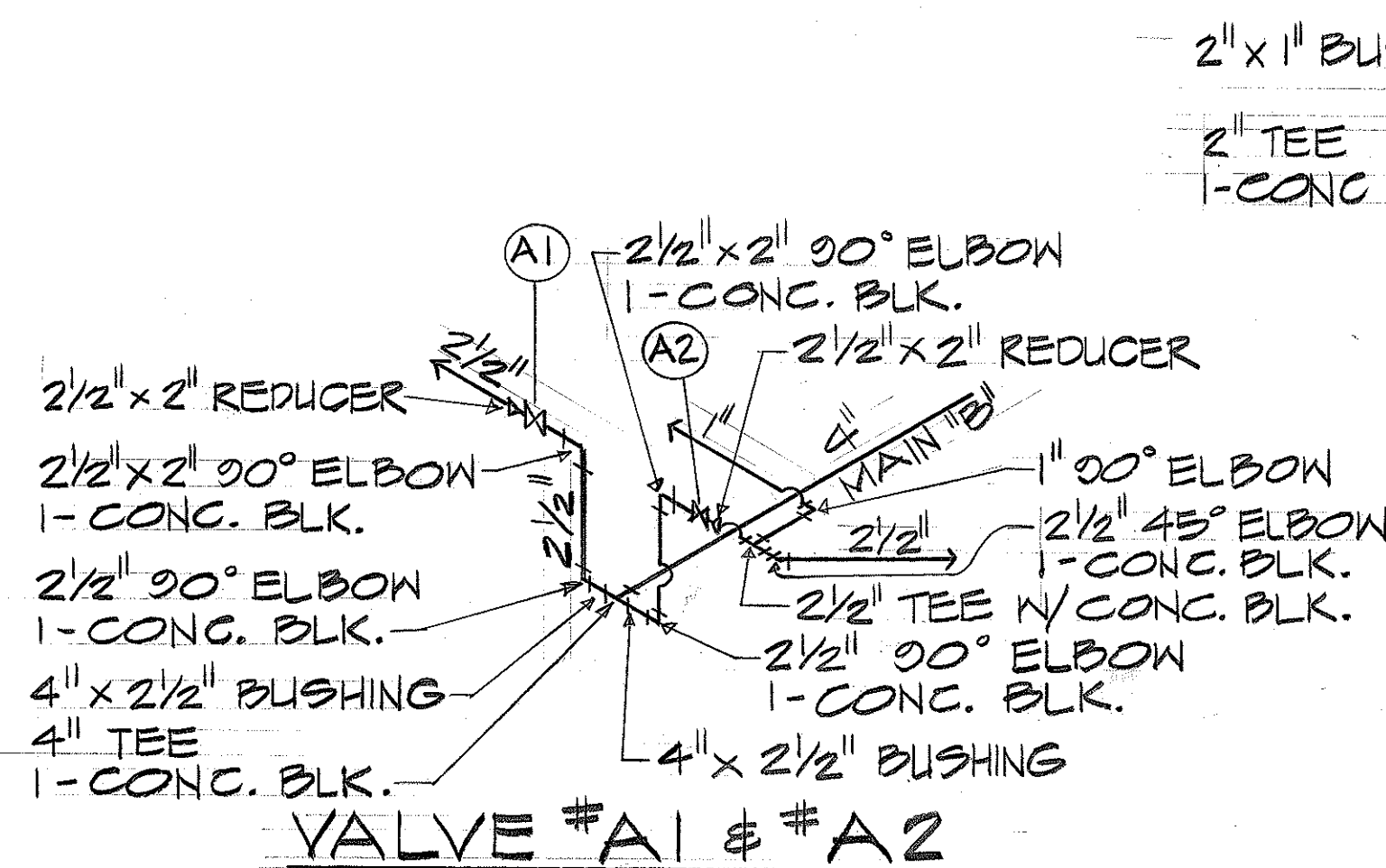
NOTE:
ALL WIRES ARE NO. 14 WIRES.



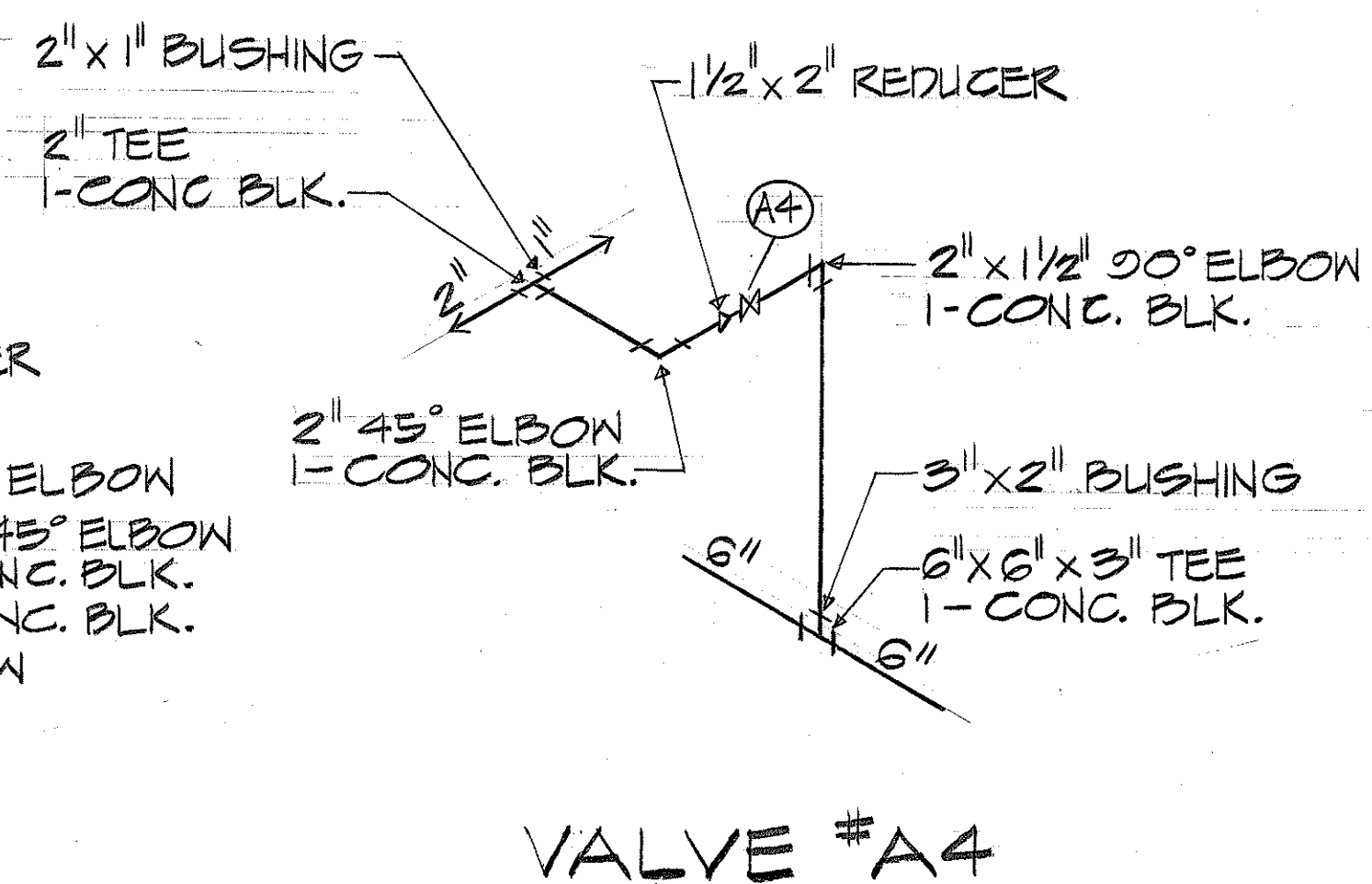
OPERATING SCHEDULE CONTROLLER 'A'		
DAY OF OPERATION: M, T, W, T, F, S		
STARTING TIME: 9:00 A.M.		
STATION NUMBER		
1		44 MIN.
2		36 MIN.
3		36 MIN.
4		36 MIN.
5		36 MIN.
6		36 MIN.
7		36 MIN.
8		36 MIN.
9		6 MIN.



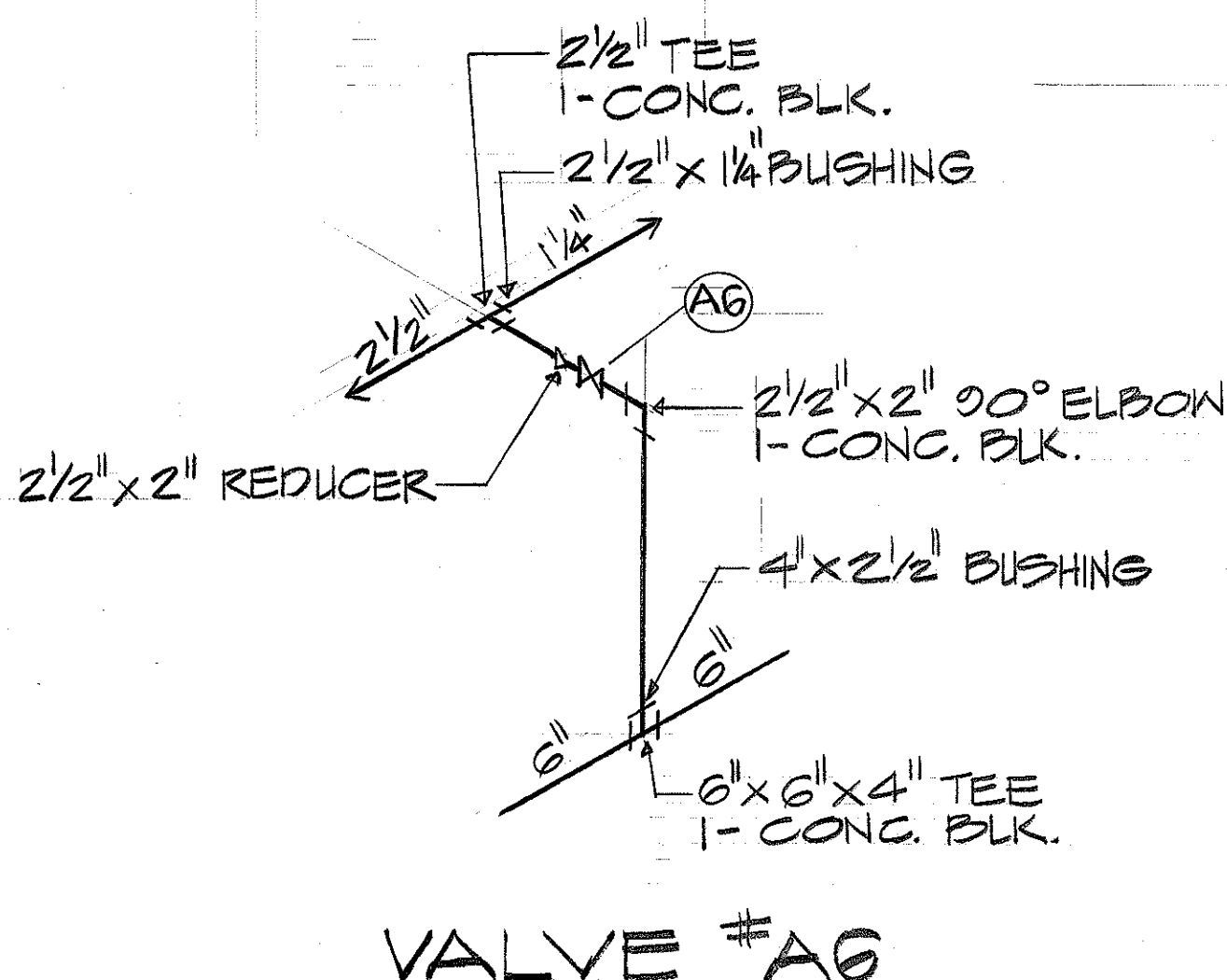
VALVE #A8, #A9 & #A10



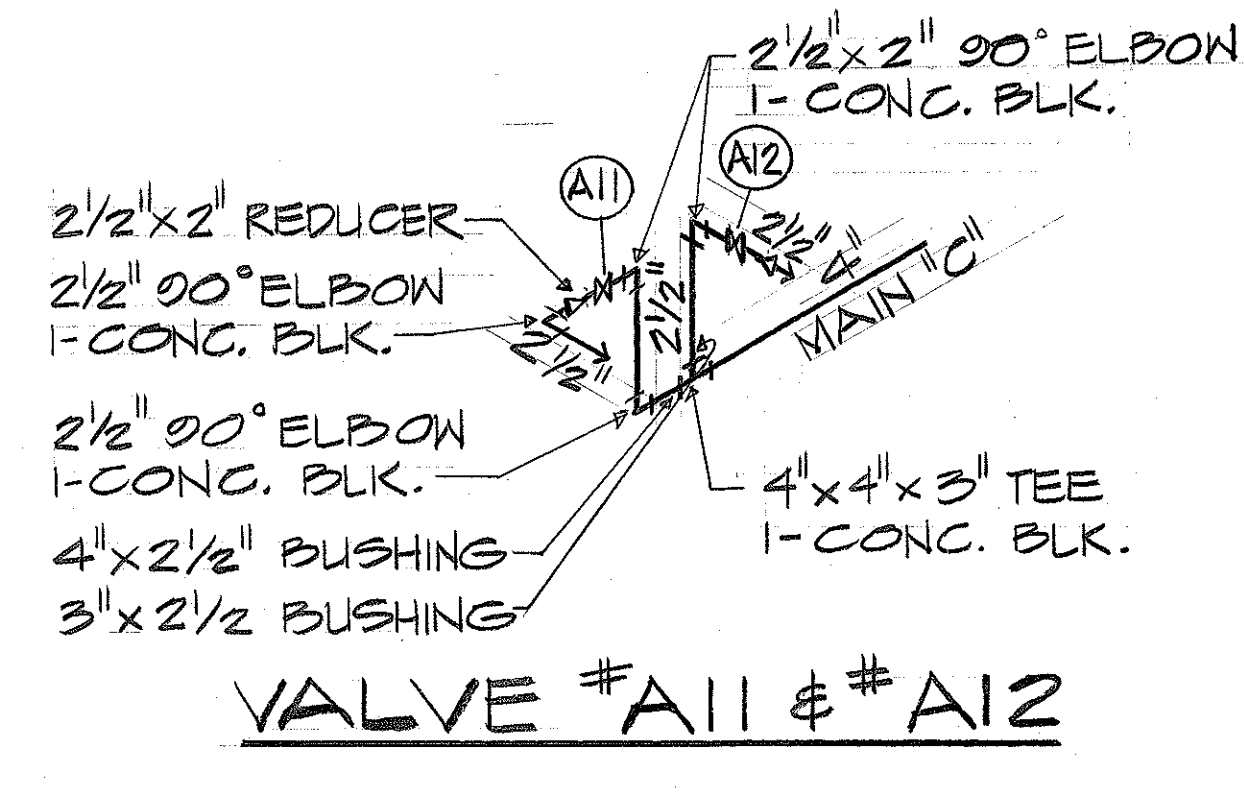
VALVE #A1 & #A2



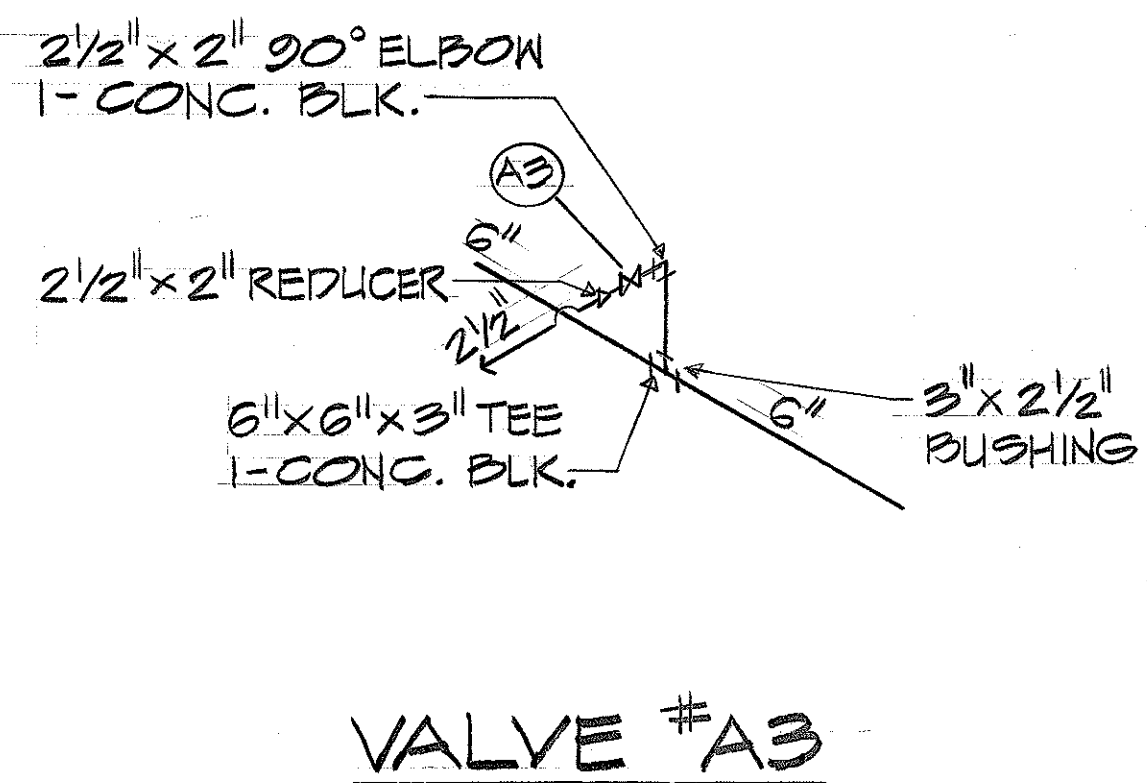
VALVE #A4



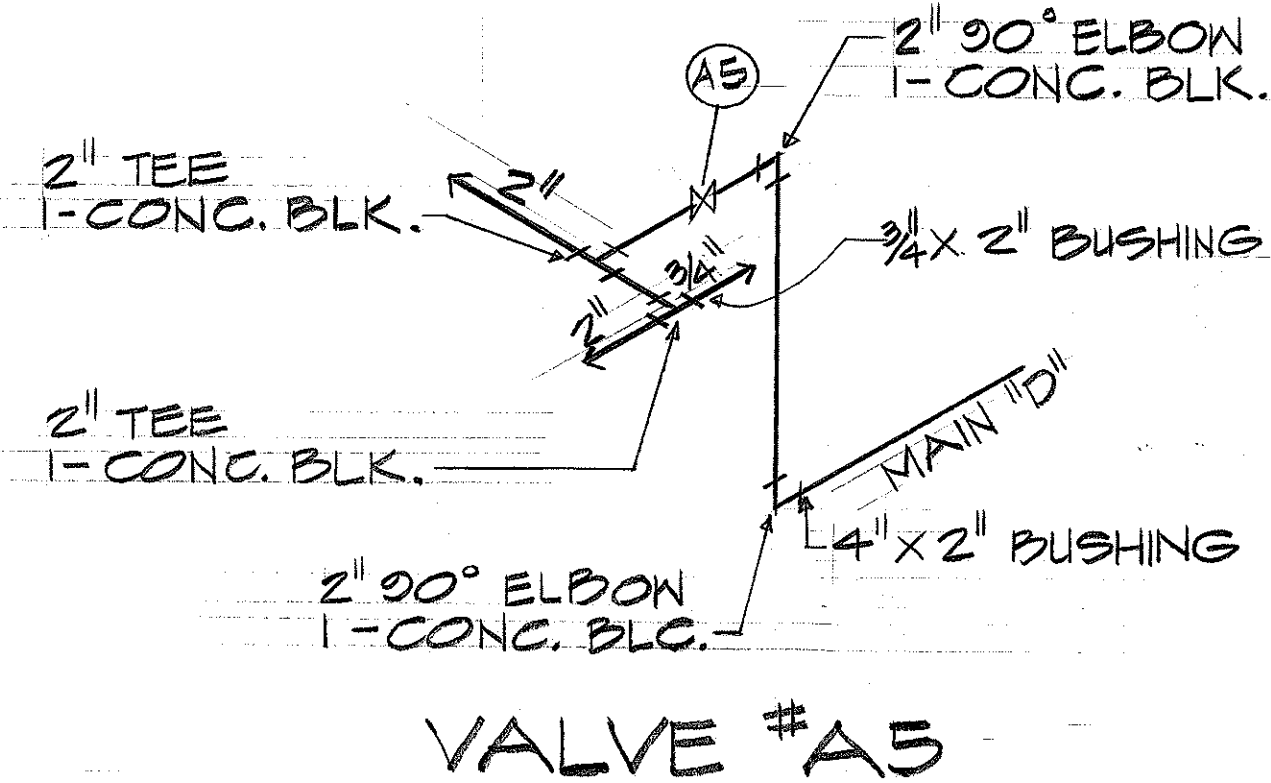
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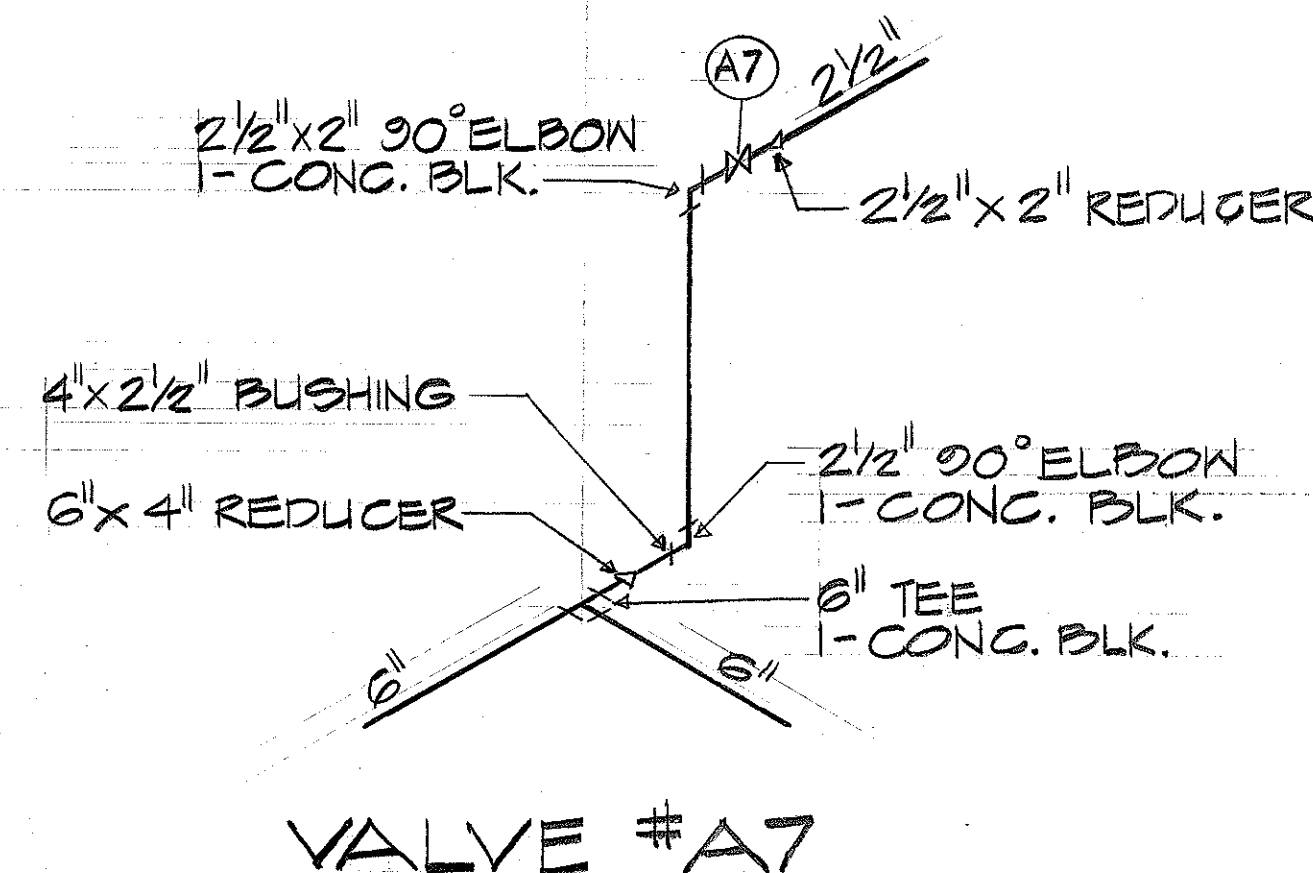
VALVE #A11 & #A12



VALVE #A3

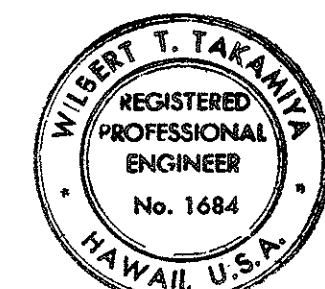
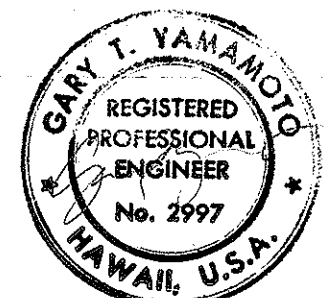


VALVE #A5



VALVE #A7

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
CHECKED BY: _____
NOTE BOOK: _____
No. _____



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

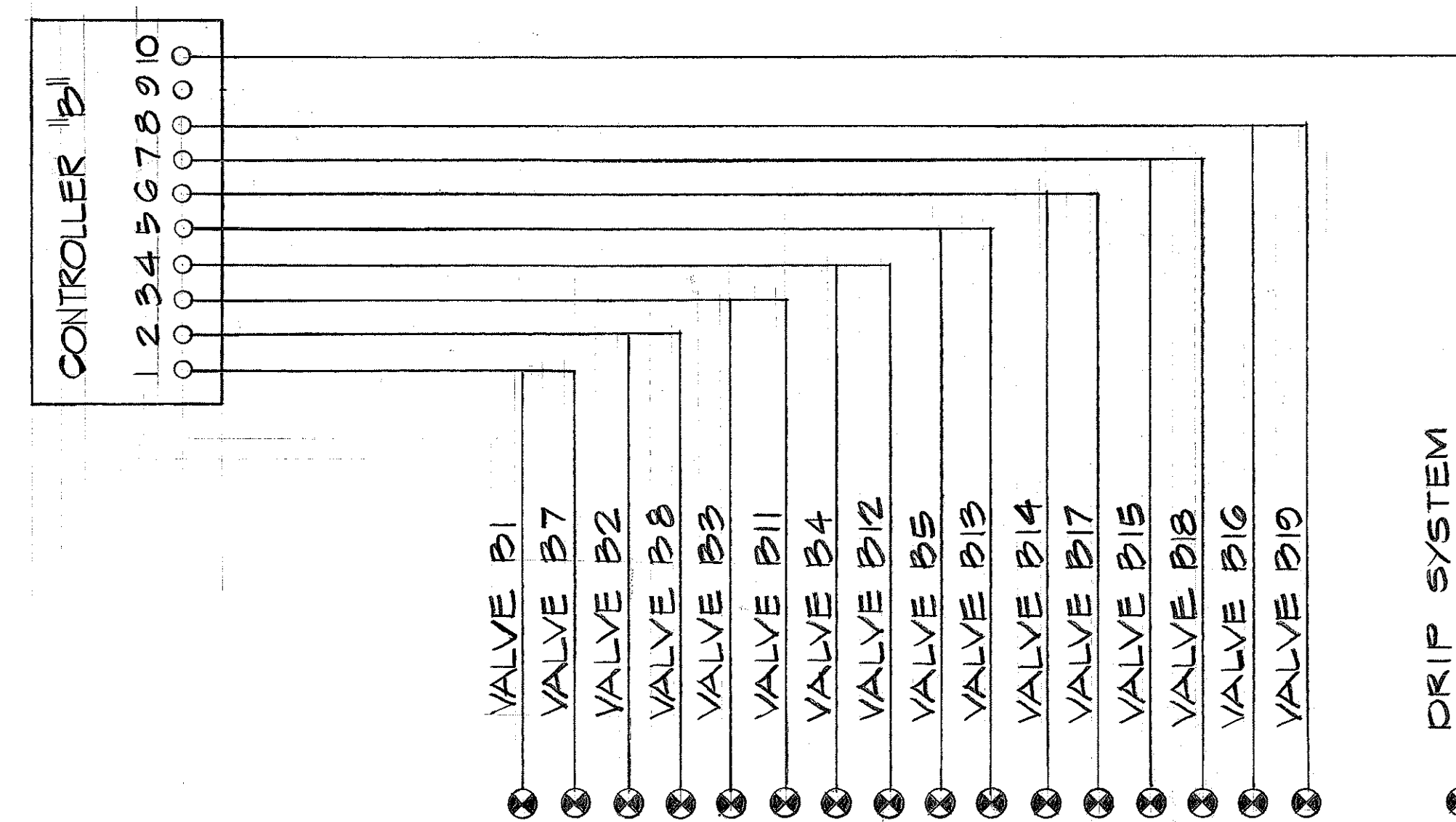
SPRINKLER DETAILS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT I
F.A. Proj. No. U-FF-078-1(6)

SCALE: NONE DATE: JUNE 25, 1976

SHEET NO. 7 OF 12 SHEETS

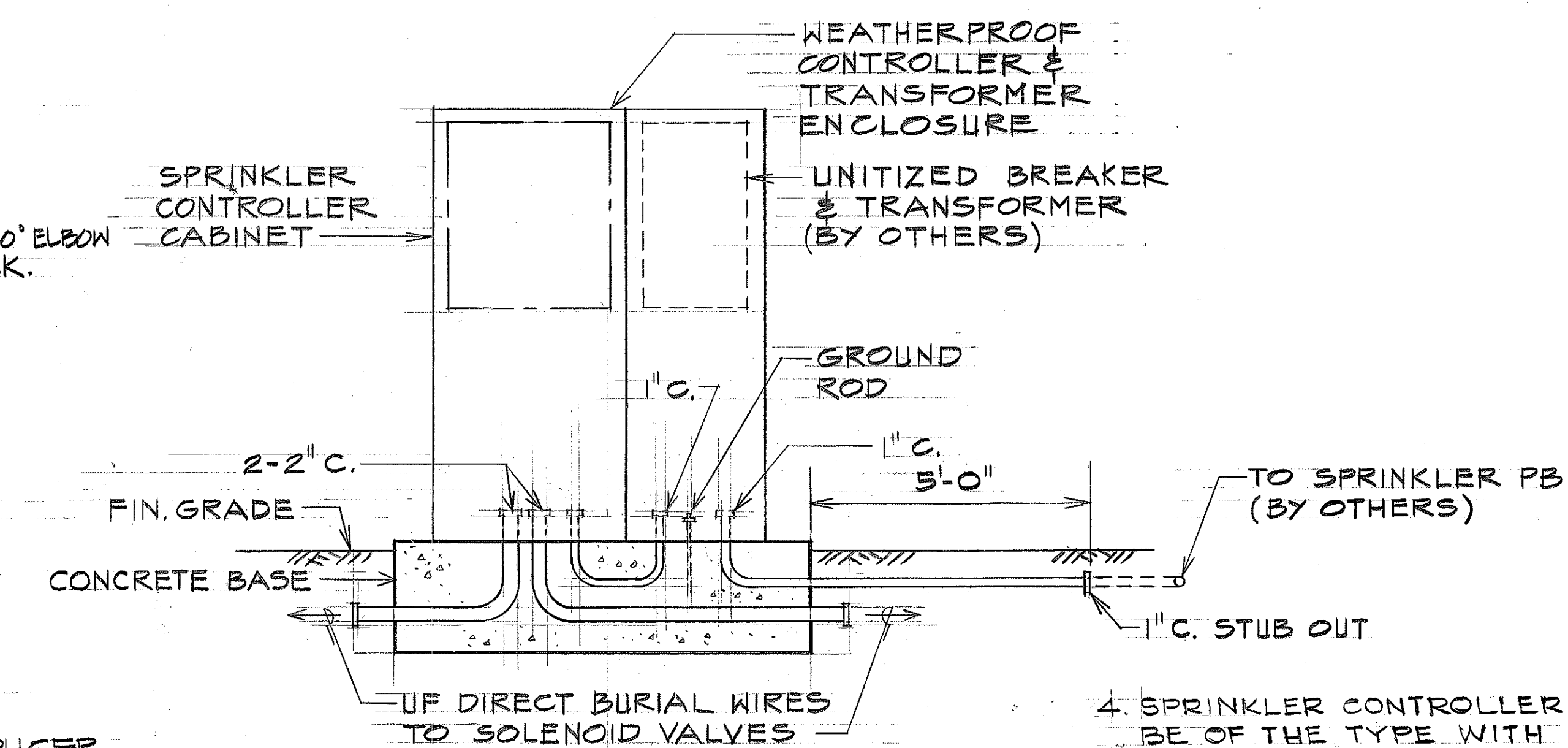
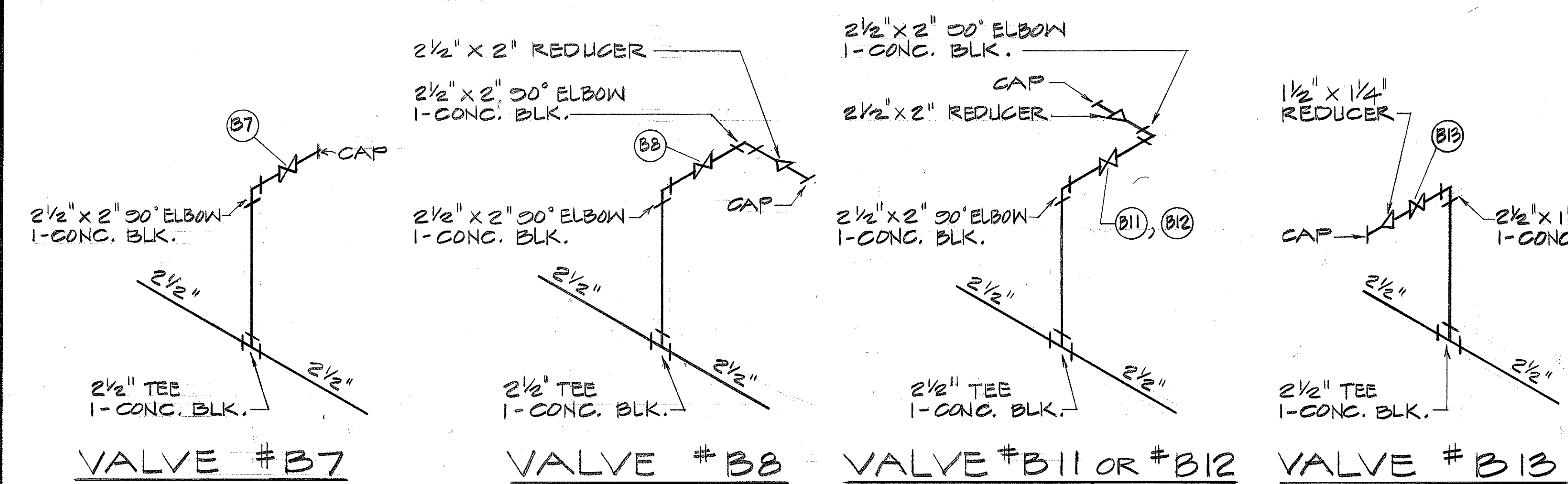
NOTE:
ALL WIRES ARE NO. 14 WIRES.



WIRING DIAGRAM

OPERATING SCHEDULE CONTROLLER "B"		
DAY OF OPERATION: M, T, W, TH, F, S		
STARTING TIME: 9:00 A.M.		
STATION NUMBER		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

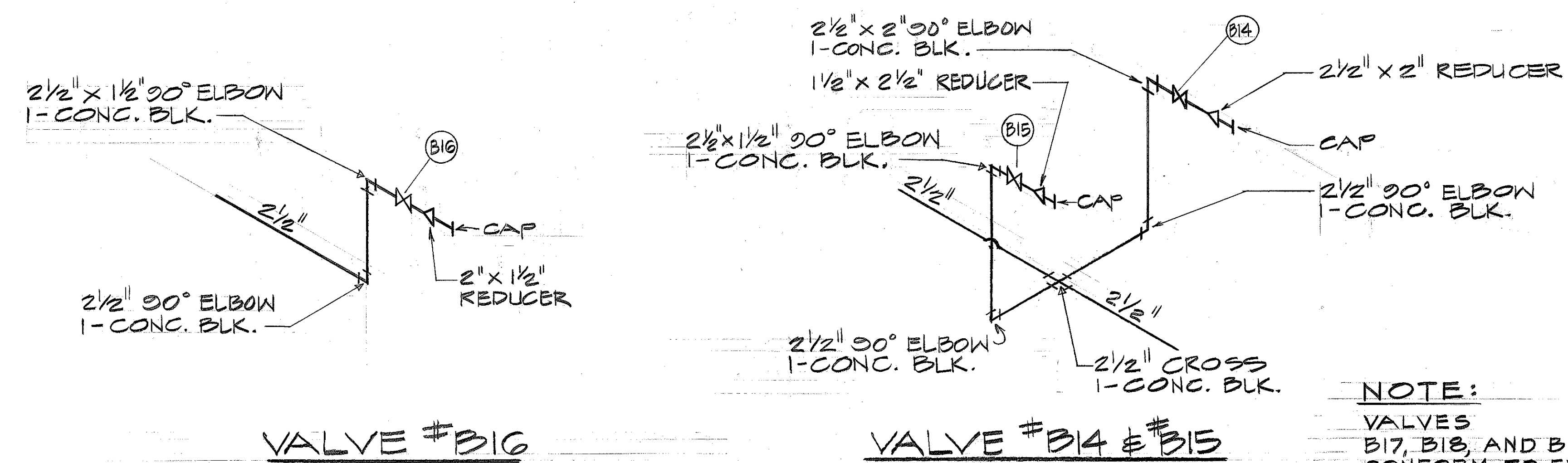
VALVE NO.	LOCATION	VALVE NO.	LOCATION
(B1) - 2" 0.5. 30' LT.	RAMP "G" STA. 14+10	(B11) - 2" 0.5. 44' LT.	RAMP "G" STA. 20+45
(B2) - 2" 0.5. 30' LT.	RAMP "G" STA. 14+52	(B12) - 2" 0.5. 45' LT.	RAMP "G" STA. 20+80
(B3) - 2" 0.5. 30' LT.	RAMP "G" STA. 15+07	(B13) - 1 1/2" 0.5. 40' LT.	RAMP "G" STA. 21+79
(B4) - 2" 0.5. 30' LT.	RAMP "G" STA. 15+50	(B14) - 2" 0.5. 44' LT.	RAMP "G" STA. 22+33
(B5) - 2" 0.5. 30' LT.	RAMP "G" STA. 15+95	(B15) - 1 1/2" 0.5. 41' LT.	RAMP "G" STA. 22+33
		(B16) - 1 1/2" 0.5. 42' LT.	RAMP "G" STA. 22+63
(B7) - 2" 0.5. 30' LT.	RAMP "G" STA. 17+62	(B17) - 1 1/2" 0.5. 2' RT.	RAMP "G" STA. 15+07
(B8) - 2" 0.5. 41' LT.	RAMP "G" STA. 17+99	(B18) - 2" 0.5. 2' RT.	RAMP "G" STA. 17+21
		(B19) - 1 1/2" 0.5. 6' RT.	RAMP "G" STA. 21+08



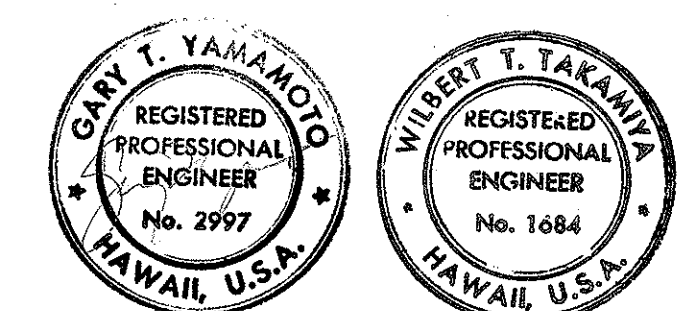
SPRINKLER CONTROLLER DETAIL

- NOTES:**
1. CONCRETE BASE TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATION.
 2. SEE SHT E-8, (F) FOR ELECTRICAL DETAILS.
 3. SPRINKLER CONTROLLER DET. TYPICAL FOR CONTROLLER "A" & "B"

4. SPRINKLER CONTROLLER "B" SHALL BE OF THE TYPE WITH LONG TIMING CAPABILITY.

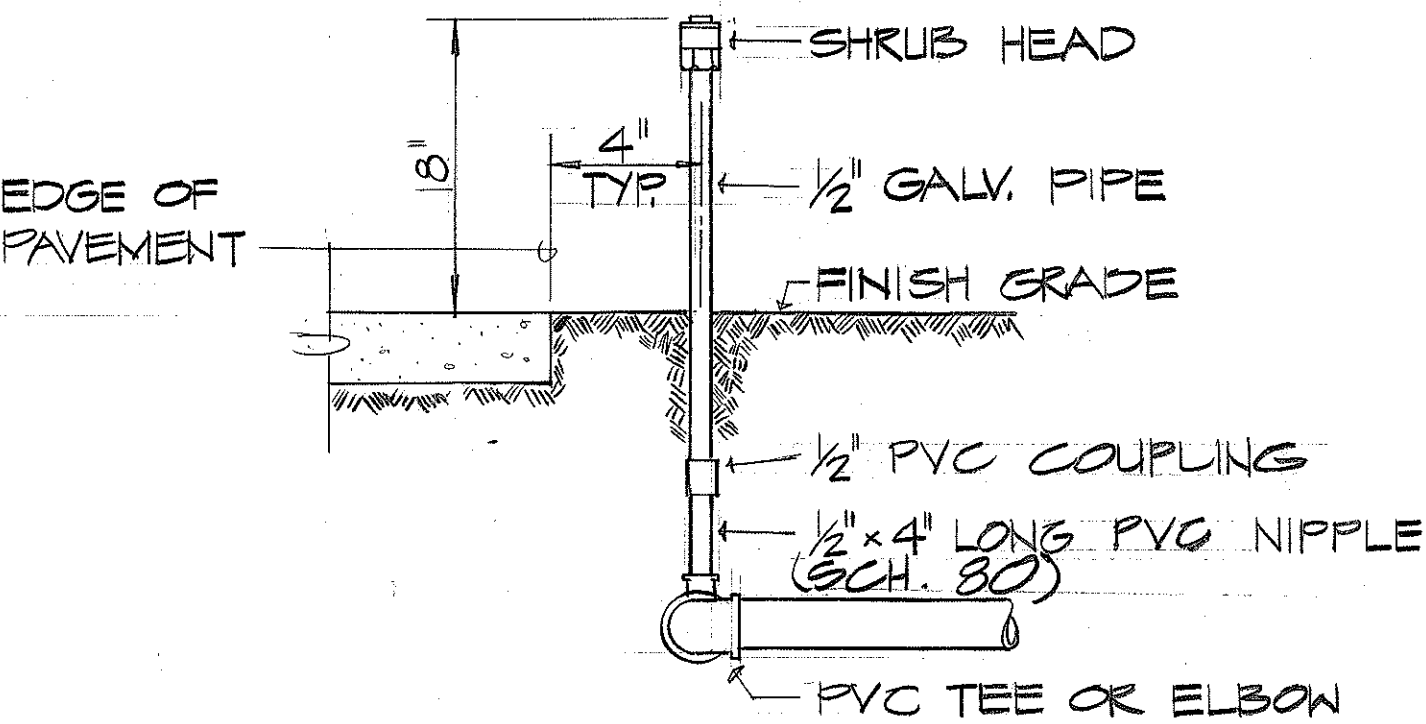


NOTE:
VALVES B17, B18, AND B19 SHALL CONFORM TO EXISTING PIPING

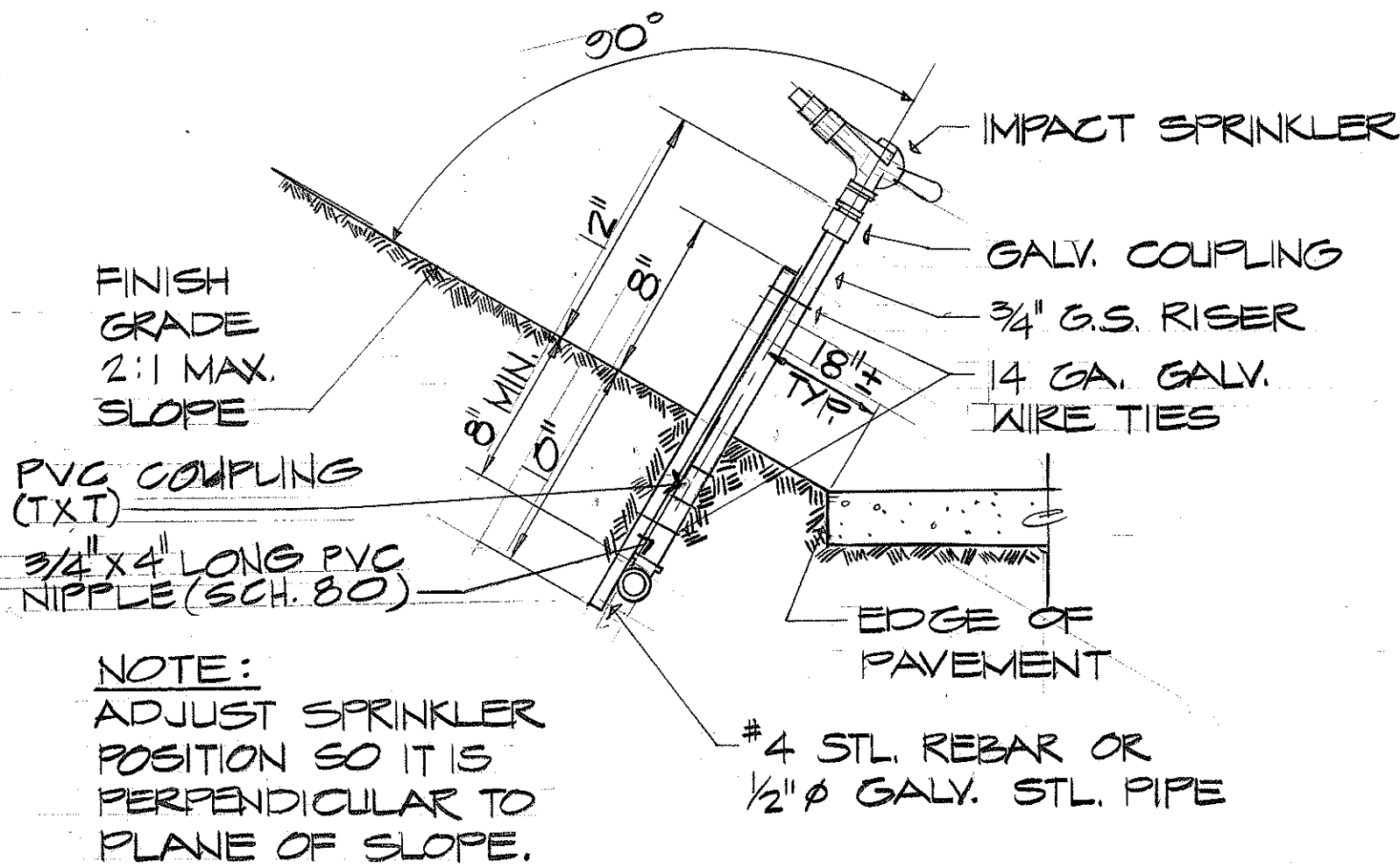


DATE	REVISION
3/7/78	REVISED VALVE DETAILS DELETED VALVES #6, #9 & #10.
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SPRINKLER DETAILS	
MOANALUA ROAD PUULOA I.C. TO MIDDLE ST. - UNIT 1 F.A. PROJ. NO. U-FF-078-1(6)	
SCALE: NONE	DATE: JUNE 25, 1976
SHEET NO. 8 OF 12 SHEETS	

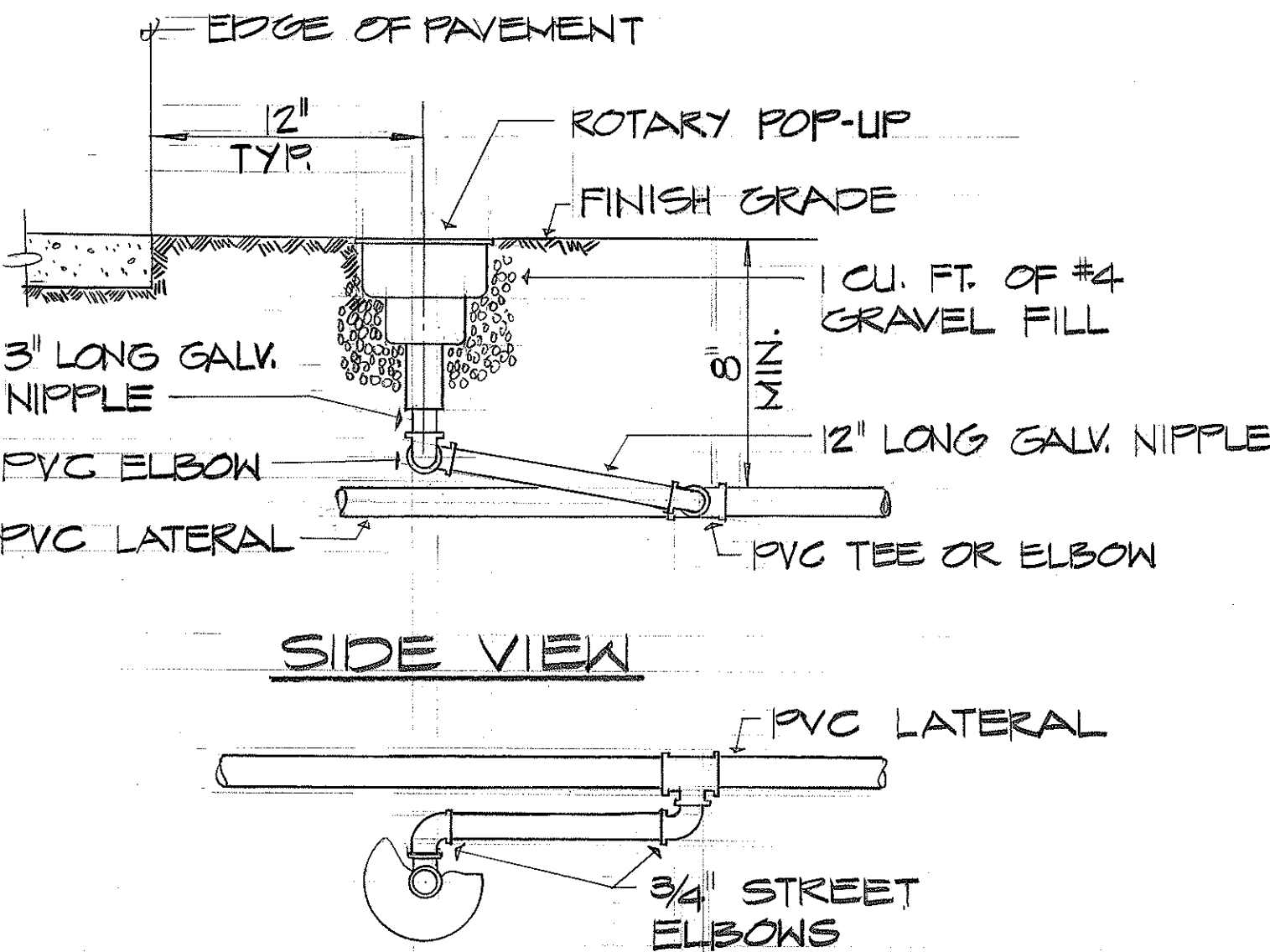
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-FF-078-1(6)	1976	74	142



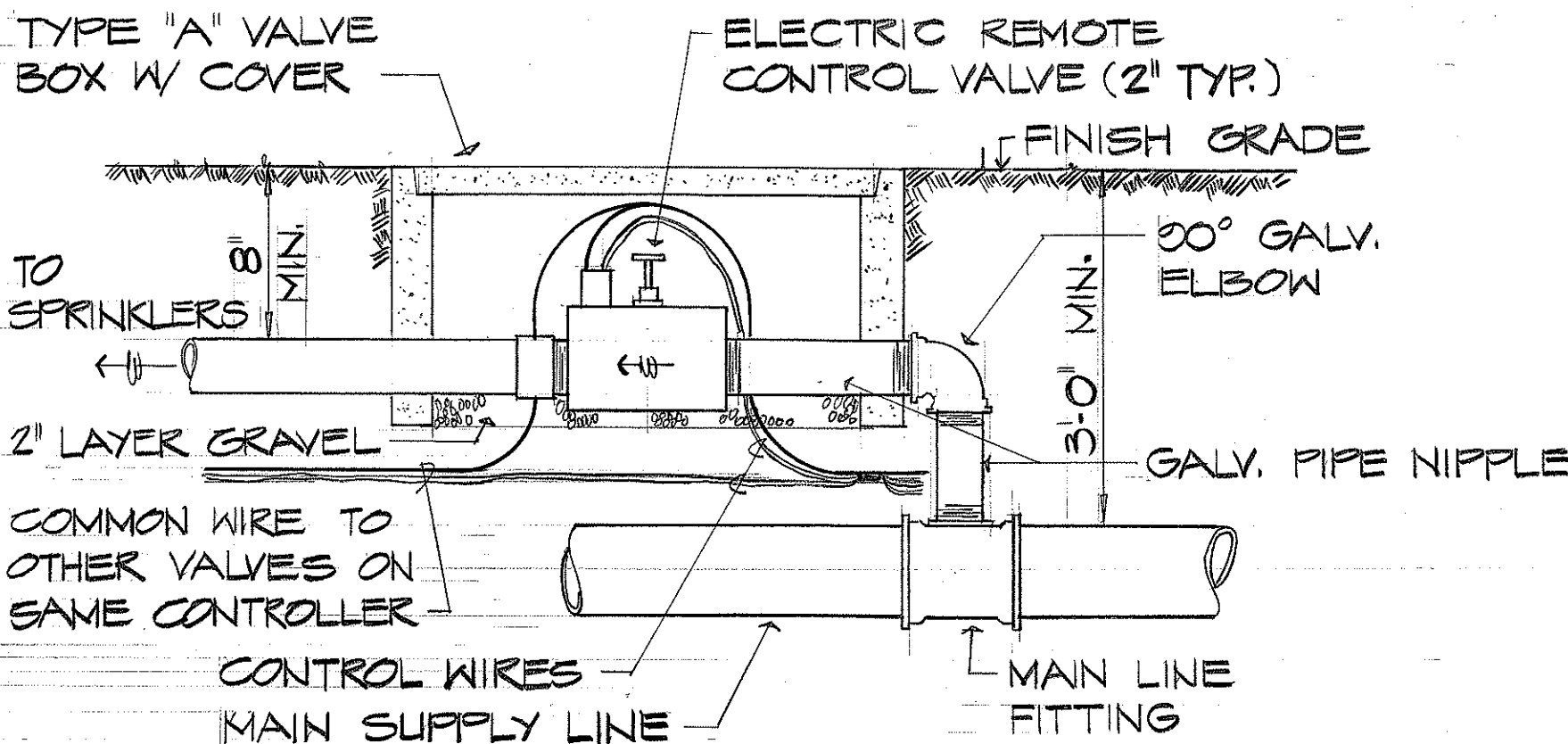
TYP. SHRUB HEAD DETAIL
NO SCALE



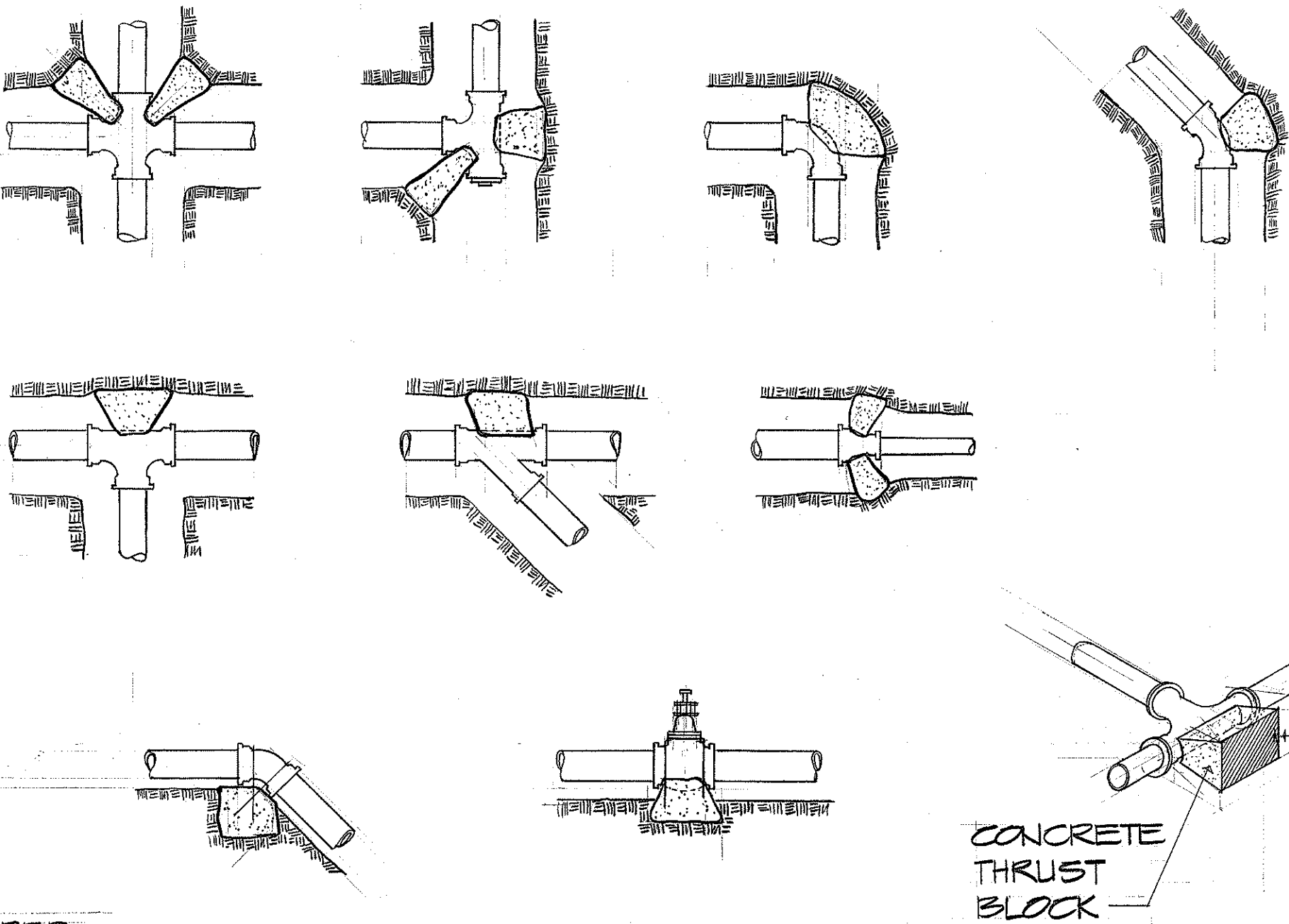
TYP. IMPACT HEAD DETAIL
NO SCALE



TYP. ROTARY POP-UP DETAIL
NO SCALE

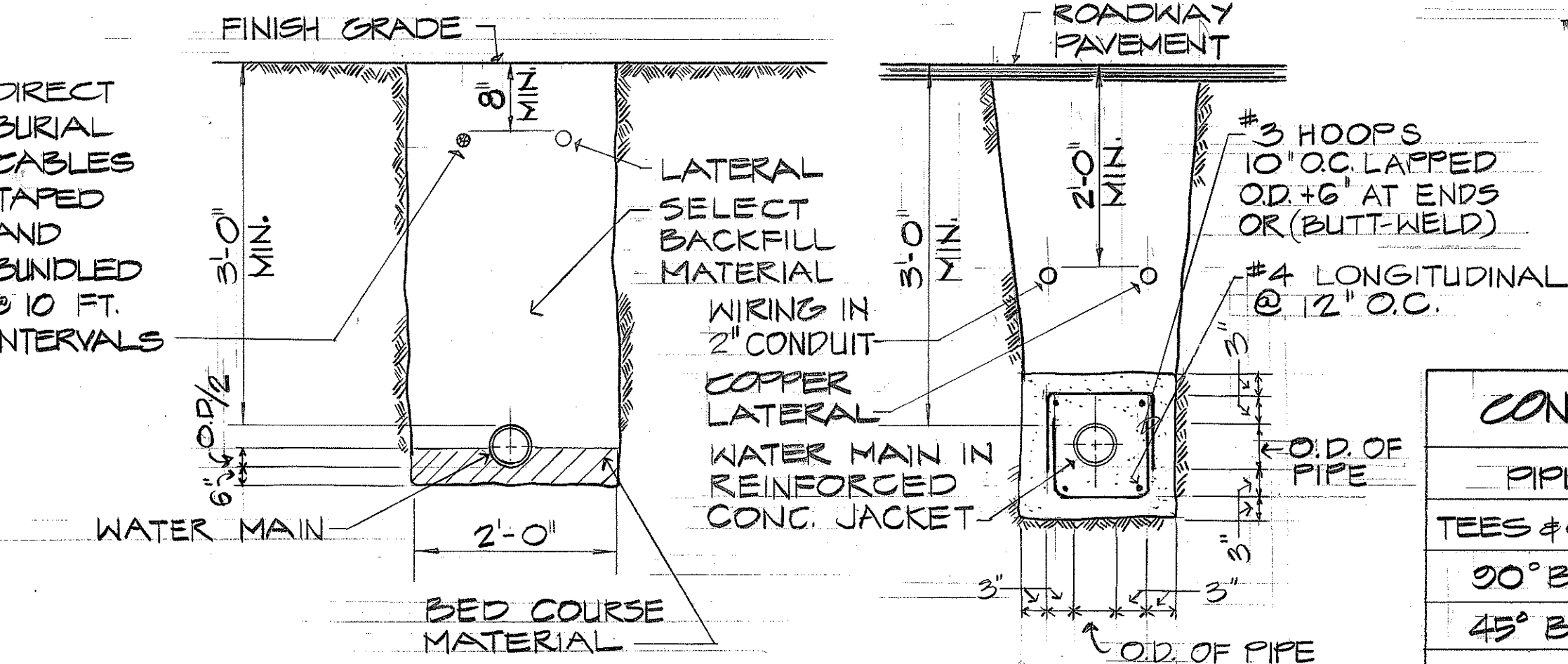


TYP. SOLENOID VALVE DETAIL
NO SCALE

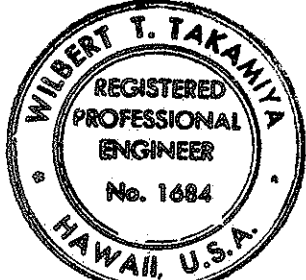


CONC. THRUST BLOCK DETAILS
NO SCALE

CONCRETE THRUST BLOCK BEARING AREA (SQ. FT.)							
PIPE SIZES	6"	4"	2 1/2"	2"	1 1/2"	1 1/4"	1"
TEES & CROSSES	3.00	1.25	0.50	0.50	0.50	0.50	—
90° BENDS	4.00	2.00	0.75	0.50	0.50	0.50	—
45° BENDS	2.25	1.00	0.50	0.50	0.50	0.50	—



TYPICAL TRENCHING DETAILS
NO SCALE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

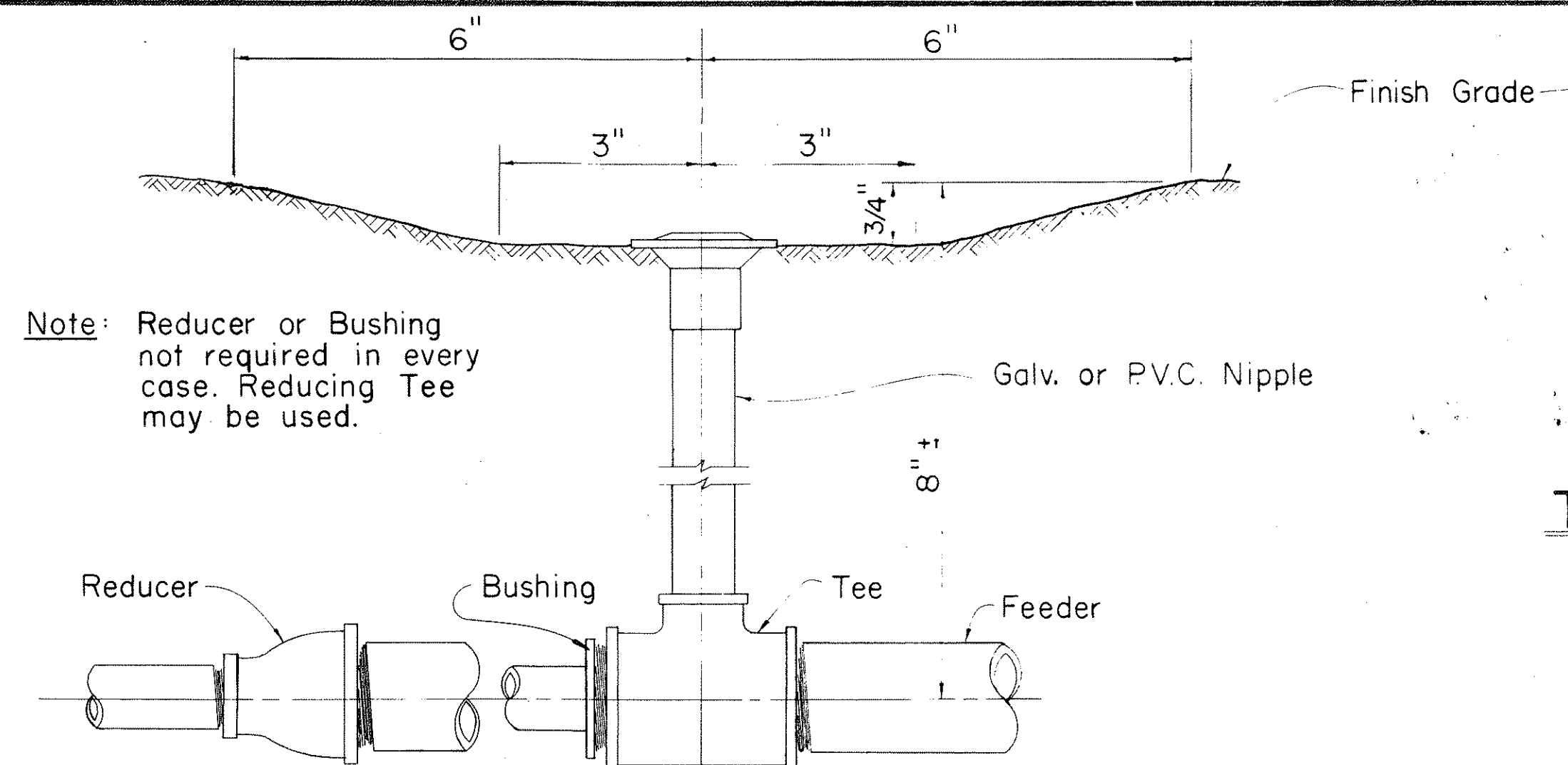
SPRINKLER DETAILS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.- UNIT I
F.A. Proj. No. U-FF-078-1(6)

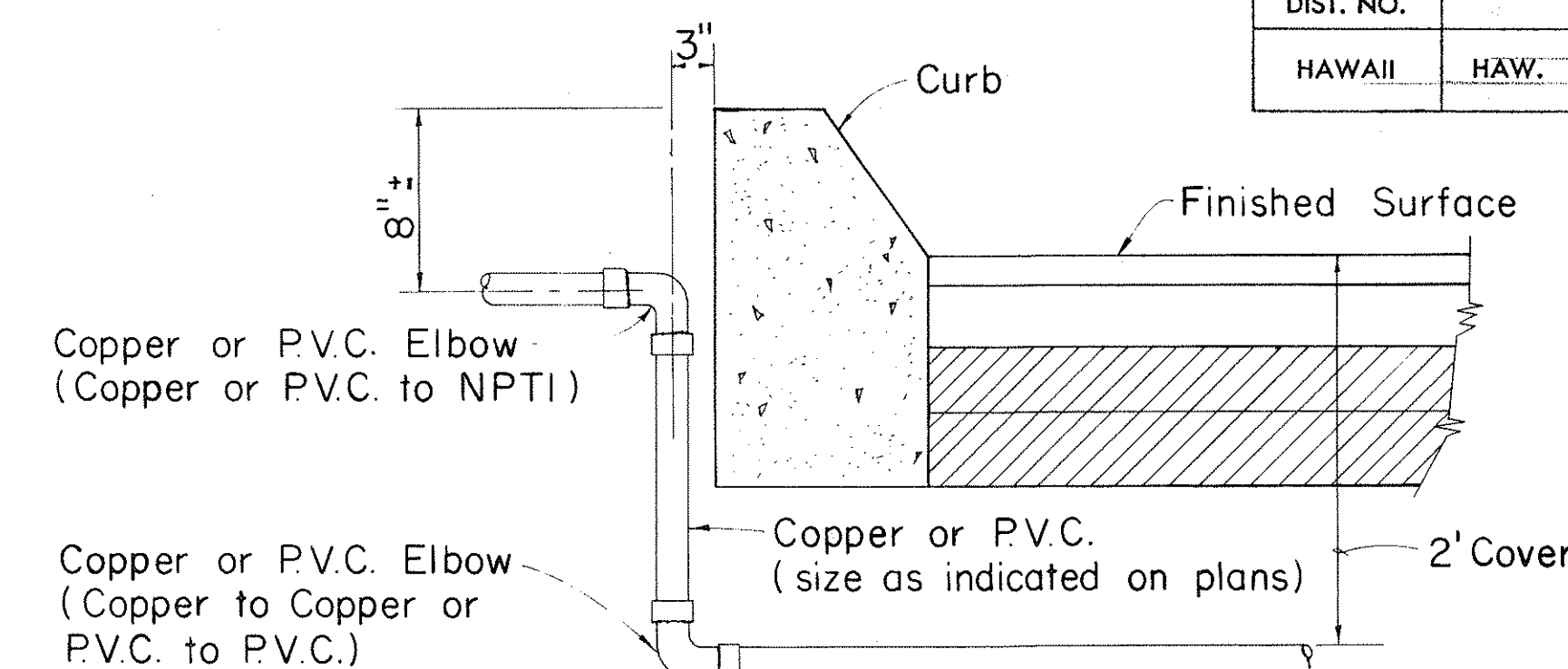
SCALE: AS SHOWN DATE: JUNE 25, 1976

SHEET NO. 9 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-FF078-16	1976	75	142

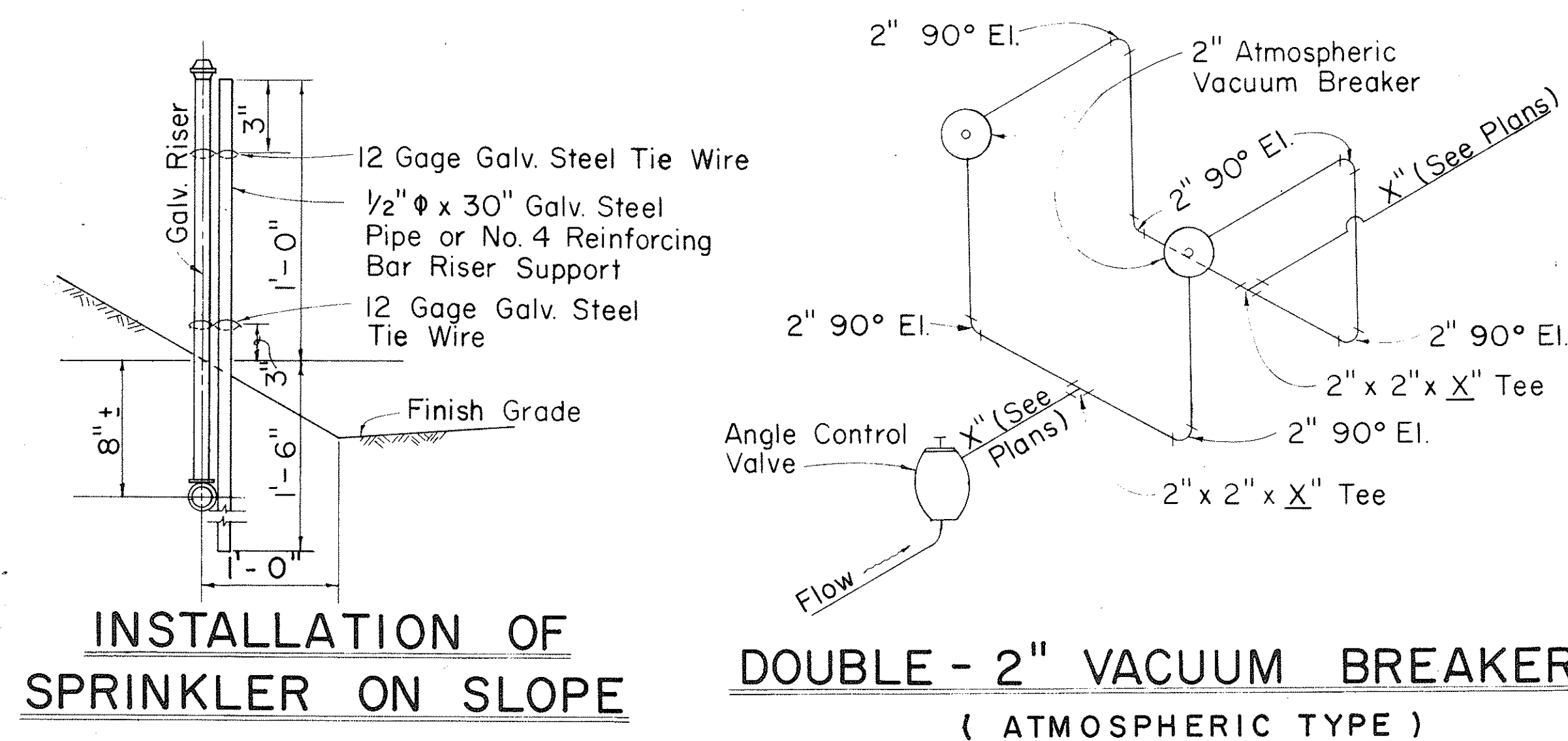


TYPICAL DETAIL OF SPRINKLER HEAD AT CONC. CURB



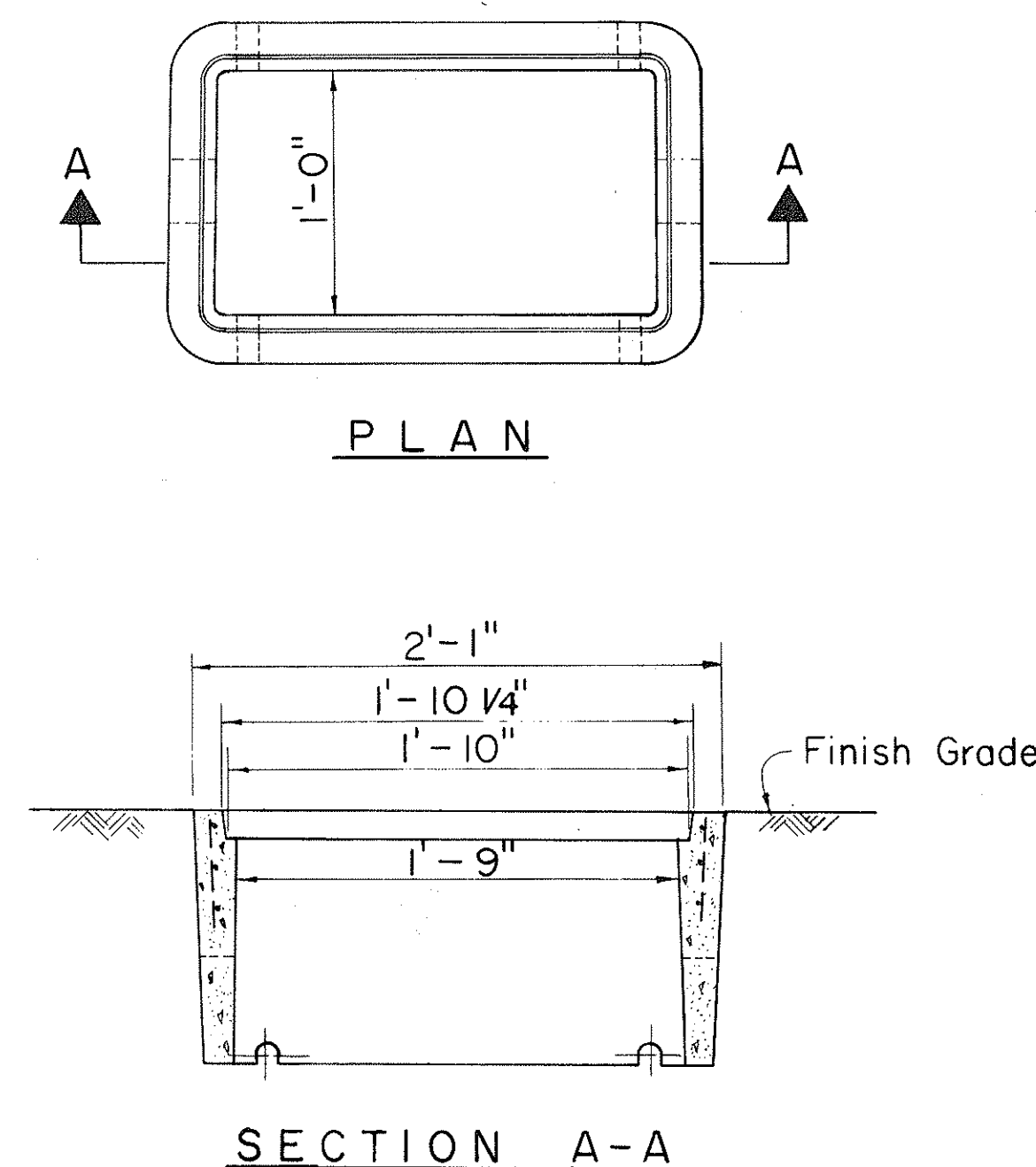
TYPICAL DETAIL OF ROADWAY CROSSING

CONNECTION OF SPRINKLER HEAD TO FEEDER



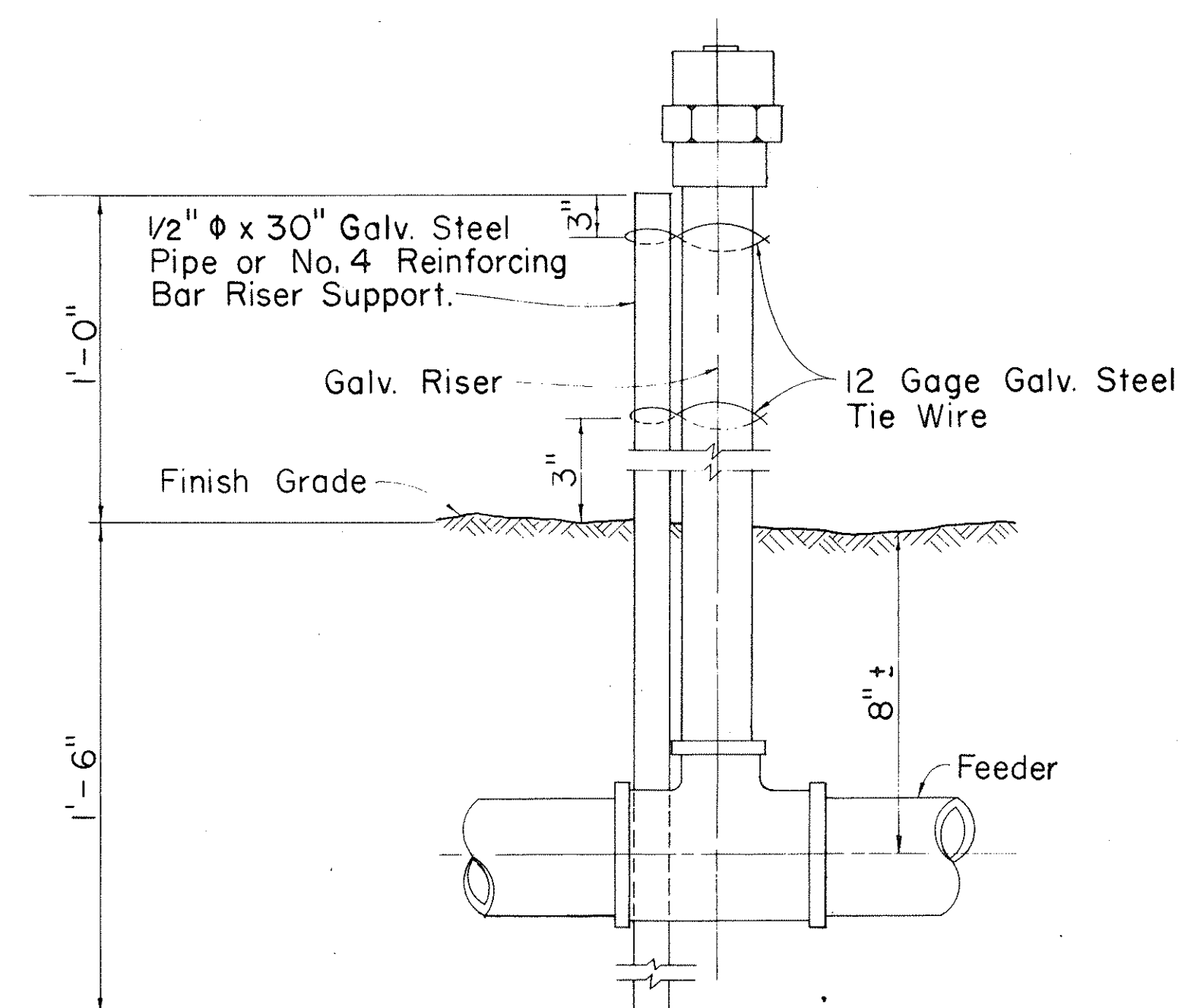
INSTALLATION OF SPRINKLER ON SLOPE

DOUBLE - 2" VACUUM BREAKER (ATMOSPHERIC TYPE)

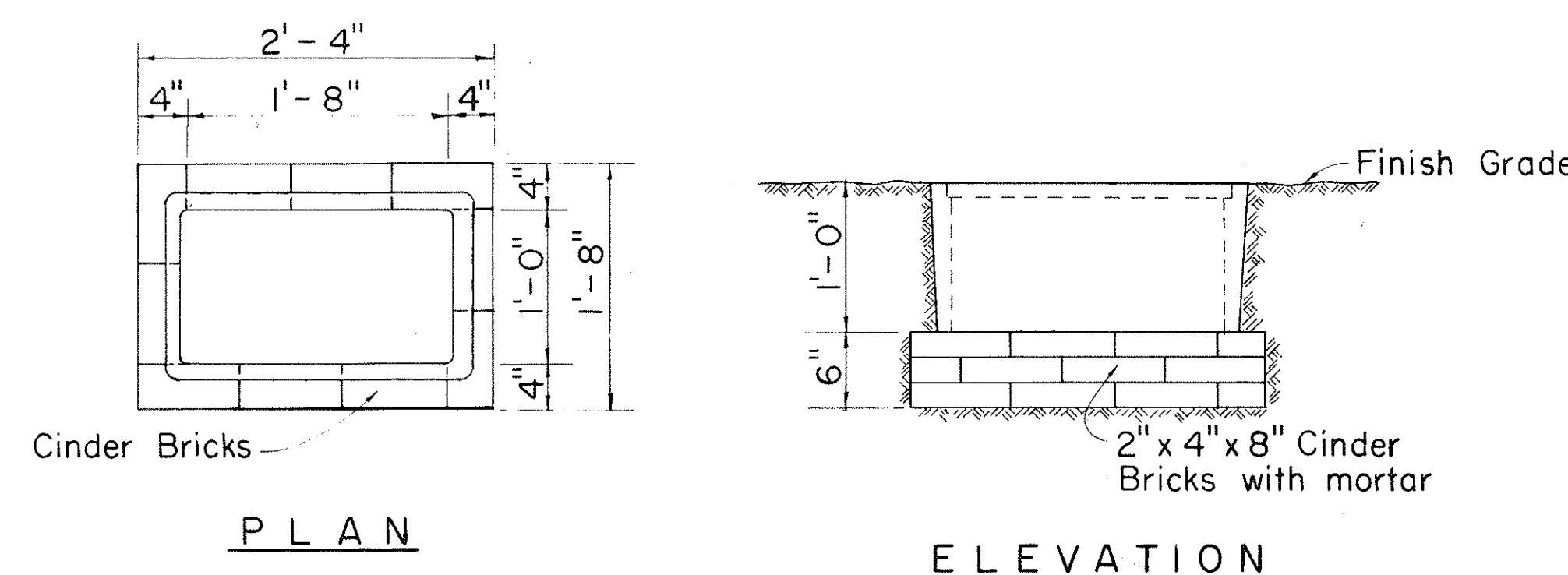


TYPE "A" VALVE BOX

- GENERAL NOTES**
1. Type "A" Valve Box and Pressure Regulator Box is similar to a Honolulu Board of Water Supply Type "X" Meter Box. However, instead of the words "Board of Water Supply" and "Water Meter" on the Cast Iron Covers, imprint the words "Sprinkler Valve" on the Valve Box Cover and "Pressure Regulator" on the Pressure Regulator Box Cover.
 2. Locate the sprinkler valve at a sufficient depth in the Valve Box to make it operable with the cover in place.
 3. Side openings in the Brick wall for the Pressure Regulator Box shall be provided to correspond to the location of the regulator inlet and outlet.
 4. Riser less than 20" will not require support.
 5. Riser support will be considered incidental to the various items of the sprinkler system.



DETAIL OF SPRINKLER HEAD ON RISER



PRESSURE REGULATOR BOX

APPROVAL RECOMMENDED:

 HYDRAULIC DESIGN ENGINEER 6-5-71
 DATE

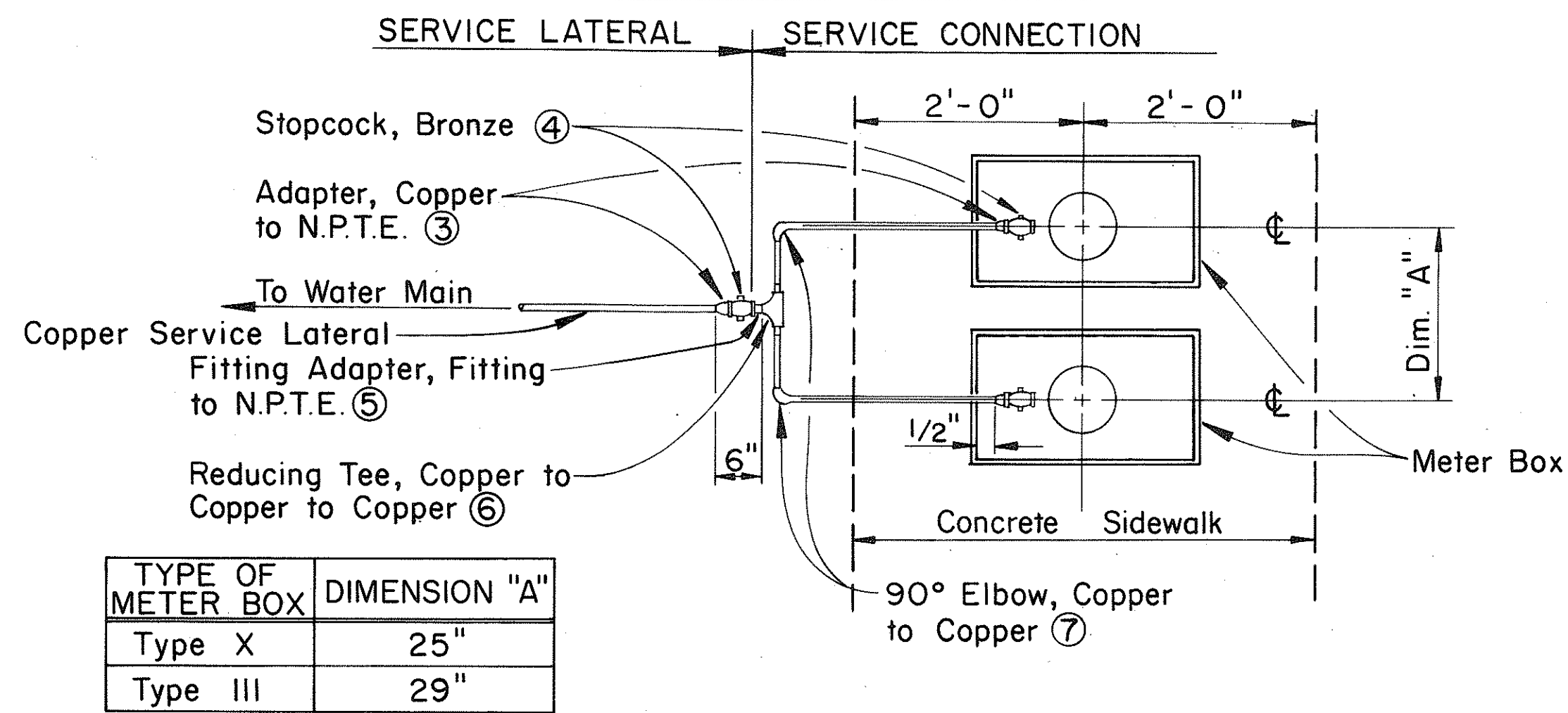
APPROVED:

 ASSISTANT CHIEF, ENGINEERING 6-5-71
 DATE

NO.	REVISION	APPROVED BY	DATE
1.	This sheet supersedes sheet DH18 dated December 17, 1969.	H.C.	6-5-71

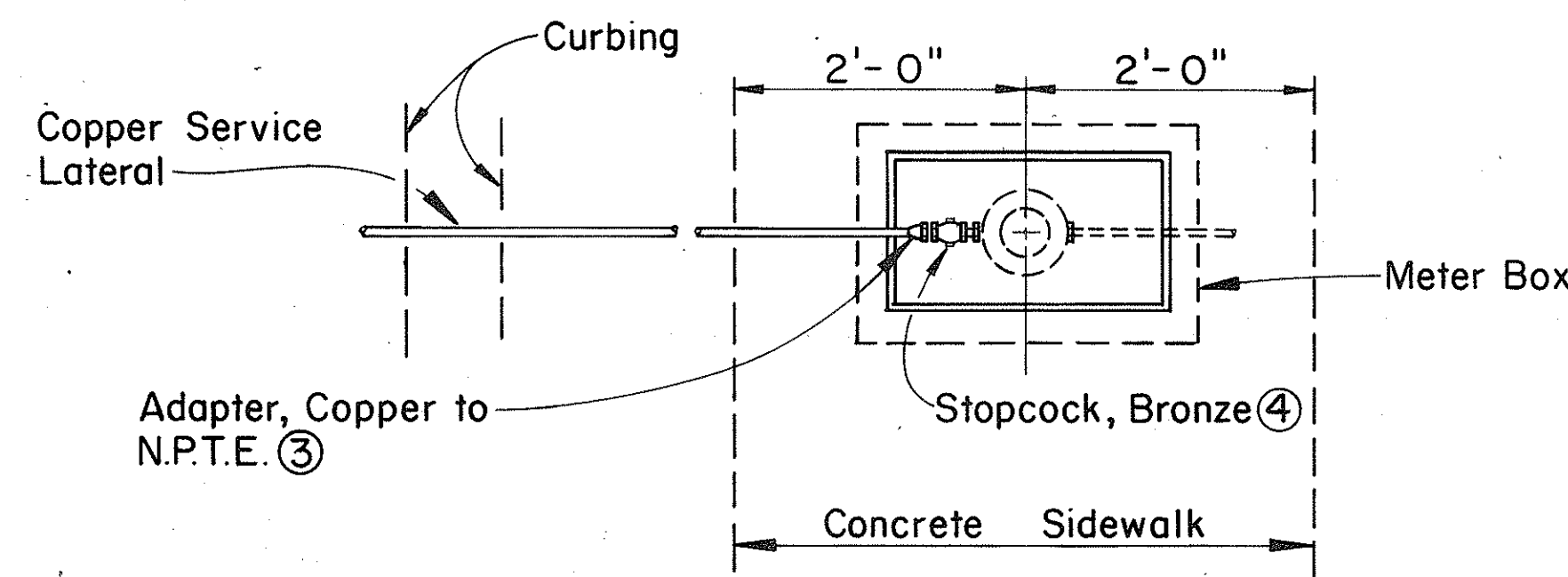
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS SPRINKLER SYSTEM
Not to Scale
SHEET No. 10 OF 12 SHEETS DH 18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IFE-078-1(6)	1976	C.O. 75 S-1	142



MULTIPLE SERVICE CONNECTION

FIGURE 24



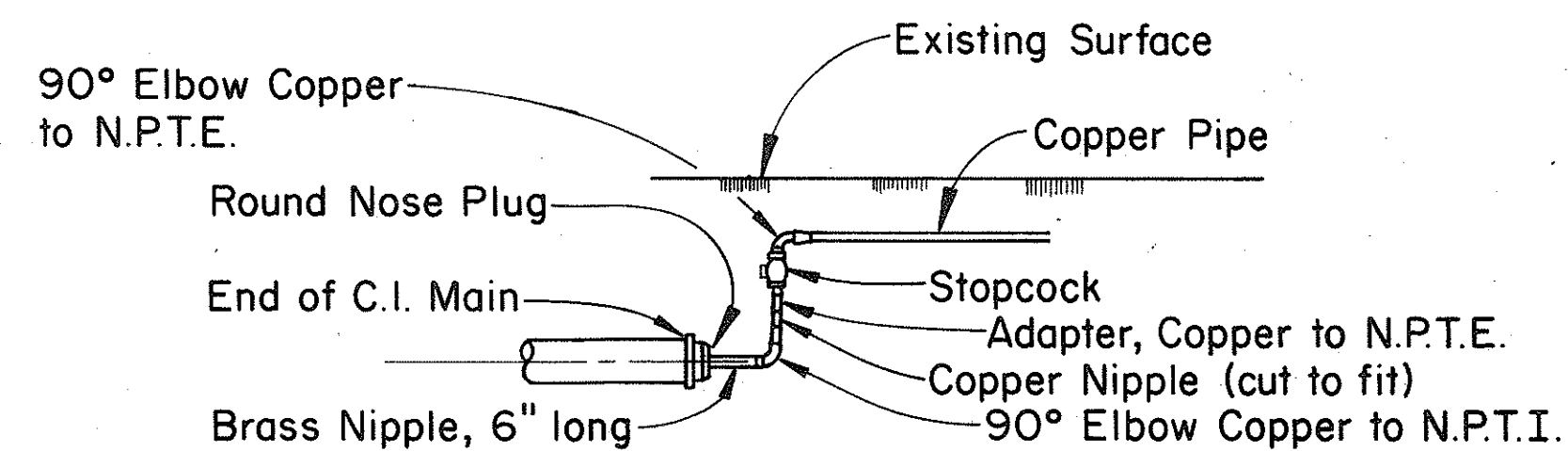
SINGLE SERVICE CONNECTION

FIGURE 23

ITEM NO.	DESCRIPTION	SINGLE SERVICE CONN.	MULTIPLE SERVICE CONN.
1	Corporation Stop Bronze (H-10003)	1	1
2	Ground Joint Union Copper to N.P.T.I.	1	1
3	Adapter, Copper to N.P.T.E.	1	3
4	Stopcock, Bronze	1	3
5	Fitting Adapter, Fitting to N.P.T.E.	-	1
6	Reducing Tee, Copper to Copper to Copper	-	1
7	90° Elbow, Copper to Copper	-	2

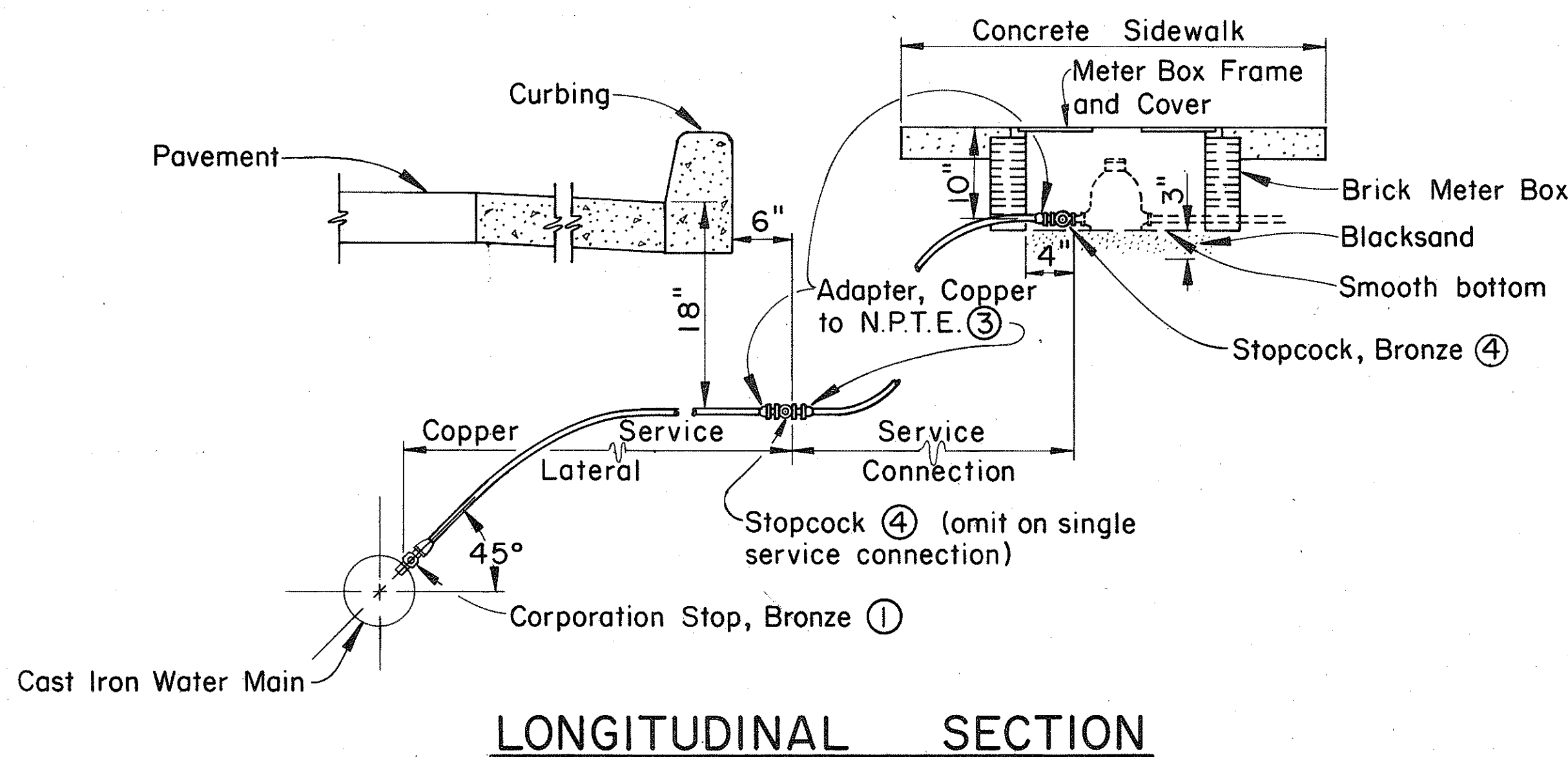
SCHEDULE OF COPPER FITTINGS

FIGURE 25



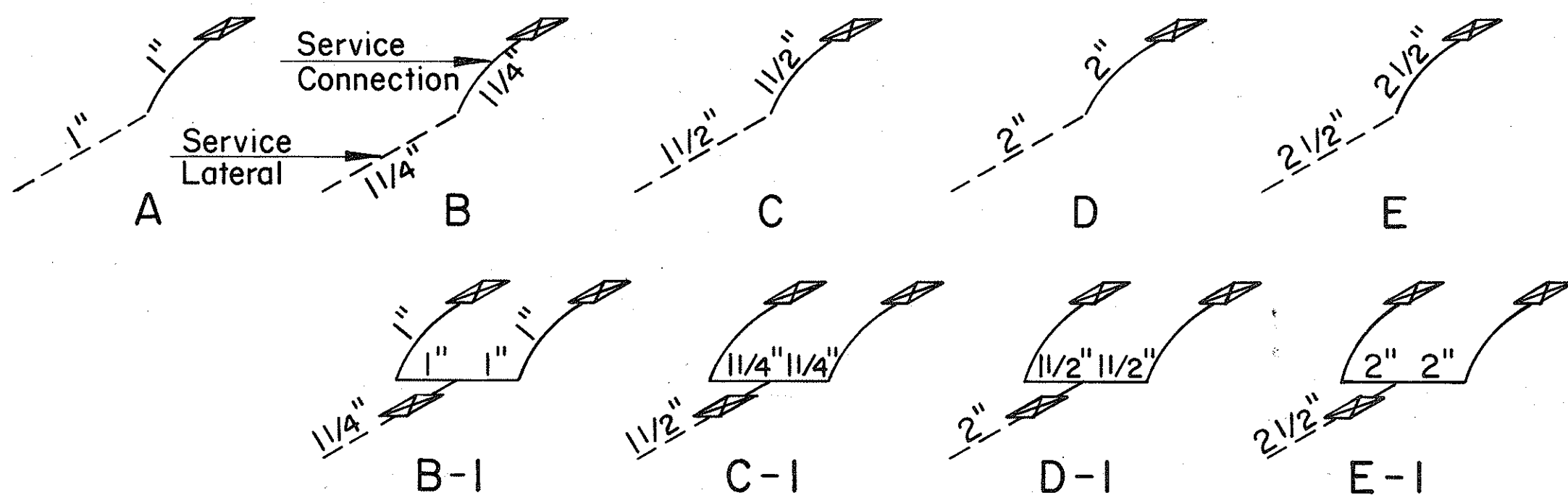
SERVICE LATERAL CONNECTION AT END OF LINE

FIGURE 26



LONGITUDINAL SECTION

FIGURE 22



TYPICAL LAYOUT OF SERVICE LATERALS AND CONNECTIONS

FIGURE 27

APPROVED:
[Signature]
 ASSISTANT CHIEF ENGINEER
 BOARD OF WATER SUPPLY
 DATE 1/24/73

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
 BOARD OF WATER SUPPLY

SHEET No. OF SHEETS

C.O. 75 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	UFF-078-1(6)	1976	76	142



SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11-FF-078-1(6)	1976	77	142

Q U A N T I T I E S

[illegible]

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OR UNDER MY SUPERVISION