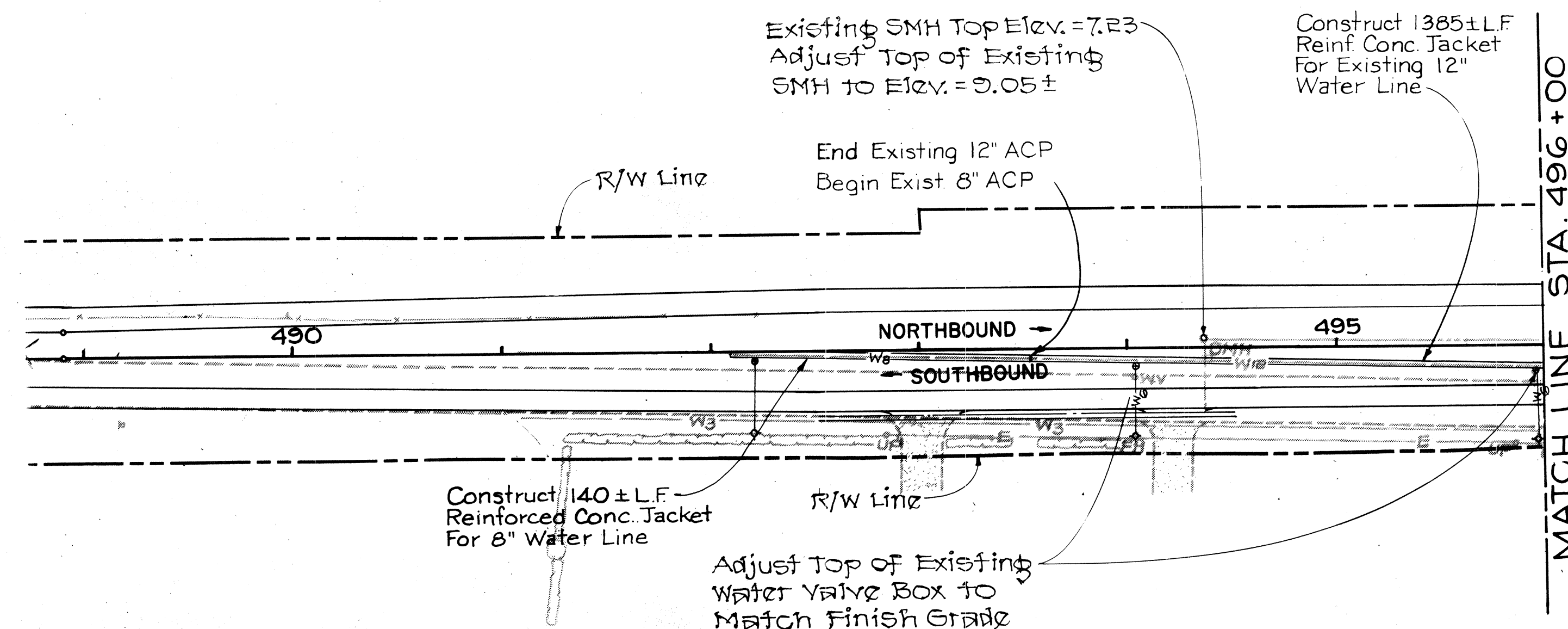


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQF-RF-031-1(6)	1978	158	262

ESTIMATED QUANTITIES FOR WATER & SEWER UTILITY WORK

ITEM NO.	ITEM	ESTIMATED QUANTITIES
206.2040	Structure Excavation For Water System	1883 C.Y.
206.2050	" " " Sewer "	210 C.Y.
604.4300	Adjusting Type SA Cast Iron Frame & Cover For Sewer Manhole	5 Each
604.4550	" Water Valve Box Frame & Cover	6 Each
624.1050	Furnishing and Installing 12-inch, Thickness Class 2 Mechanical Joint or Push-On Joint Cementlined Ductile Iron Pipe.	120 L.F.
624.1650	Furnishing and Installing Class 250, Mechanical Joint or Push-On Joint Cast Iron Fittings.	1110 Lb.
624.1690	Furnishing and Installing 2-inch Galvanized Iron Pipe.	195 L.F.
624.1695	Furnishing and Installing 6-inch Galvanized Iron Pipe Sleeve	140 L.F.
624.8700	Reinforced Conc. Jacket For 6 -inch Water Main	220 L.F.
624.8705	" " " " 8 -inch " "	140 L.F.
624.8710	" " " " 12 -inch " "	1825 L.F.
624.8720	" " " " 16 -inch " "	140 L.F.
624.8730	" " " " 18 -inch " "	470 L.F.
624.9010	Disinfection of 12-inch Water Main	L.S.
624.9011	Disinfection of 2-inch Galvanized Iron Water Line.	L.S.
625.2810	Reinforced Conc. Jacket For 8 -inch VCP Sewer	140 L.F.
625.2900	" " " " 8 -inch Irrigation Line	80 L.F.
625.2910	" " " " 12 -inch Force Main	80 L.F.
625.2930	" " " " 16 -inch " "	80 L.F.



TRUE NORTH
SCALE: 1" = 50'

Existing SMH Top Elev. = 7.07
Adjust Top of Existing
SMH to Elev. = 8.12 ±

Existing SMH Top Elev. = 7.14
Adjust Top of Existing
SMH to Elev. = 7.45 ±

Existing SMH Top Elev. = 8.48
Adjust Top of Existing
SMH to Elev. = 10.90 ±

6" Galvanized Pipe
Sta. 506+60
Top Conc. Jacket
Elev. = 4.32

Top Conc. Jacket
Elev. = 6.45

Construct 1385 ± L.F.
Reinforced Concrete
Jacket for Existing
12" Water Line

Adjust Top of Existing
Water Valve Box to
Match Finish Grade

Adjust Top of Existing
Water Valve Box to
Match Finish Grade

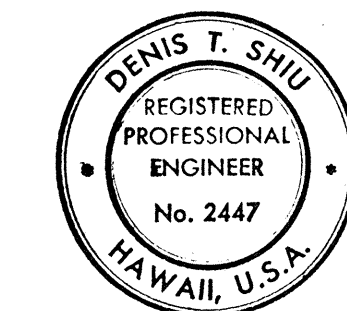
PLAN - AT KIHAI ROAD

SCALE: 1" = 50'

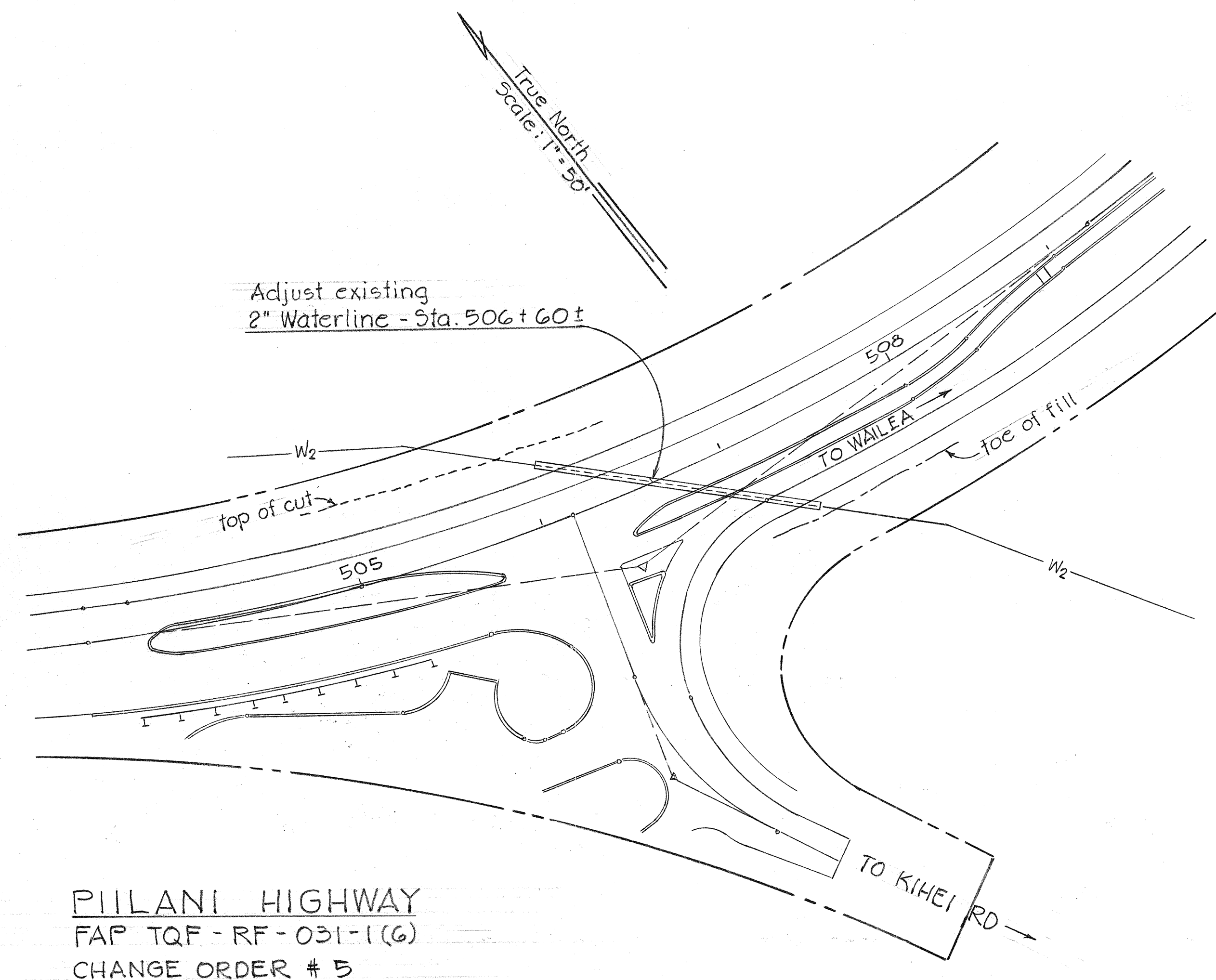
APPROVED:

DIRECTOR, DEPT. OF WATER SUPPLY,
COUNTY OF MAUI

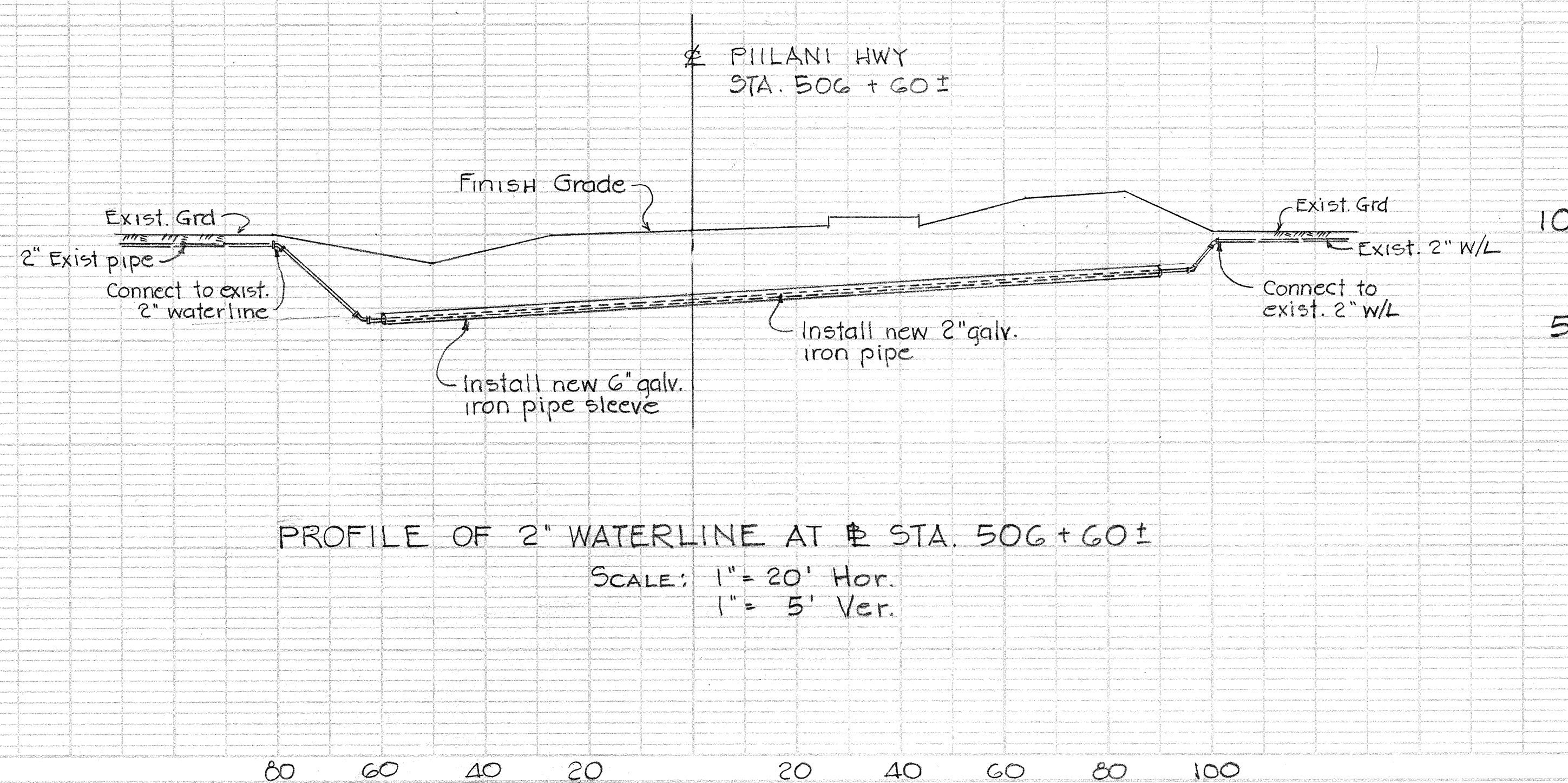
10-10-78 Revised Estimated Quantities; Added
Reinf. Conc. Jacket for Water Line
DATE REVISION
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
WATER AND SEWER
UTILITIES PLAN
PIILANI HIGHWAY
VICINITY OF MOKULELE HIGHWAY TO
VICINITY OF KILOHANA STREET
F.A. PROJECT NO. F-RF-031-1(6)
SCALE: AS SHOWN DATE: SEPT. 1978
SHEET No. 1 OF 3 SHEETS



THIS WORK WAS PRE-
PARED BY ME OR UNDER
MY SUPERVISION.
Denis T. Shiu



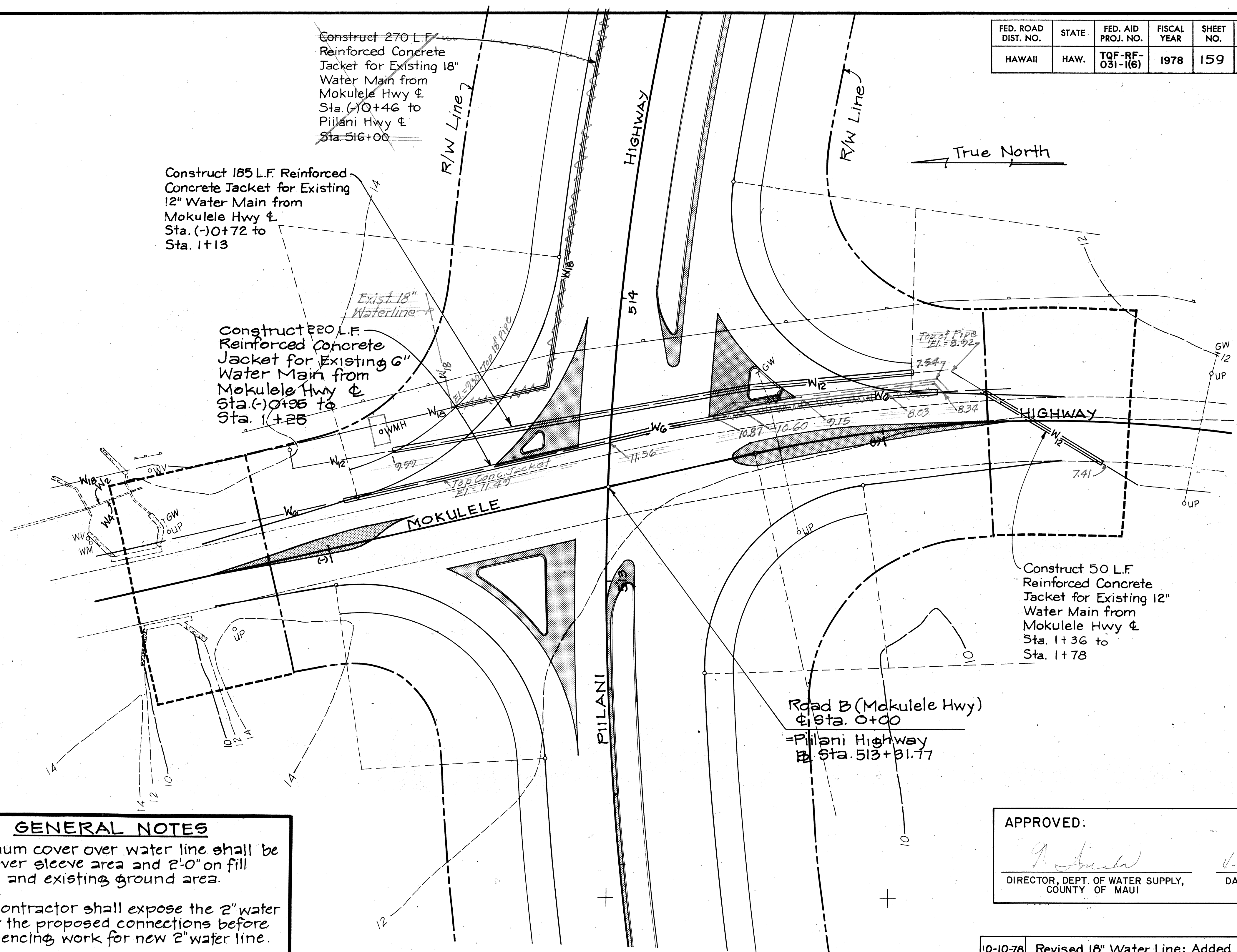
- ### GENERAL NOTES:
1. Minimum cover over pipe sleeve shall be 3'-0", and 2'-0" on fill slope.
 2. Contractor shall expose exist. 2" waterline at the proposed connections before starting work to new waterline.
 3. Exact location and elevation of the 2" waterline shall be verified by the Contractor.
 4. 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
 5. The Contractor shall be responsible and shall pay for all damages to exist. waterline.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQF-RF- 031-1(6)	1978	159	262

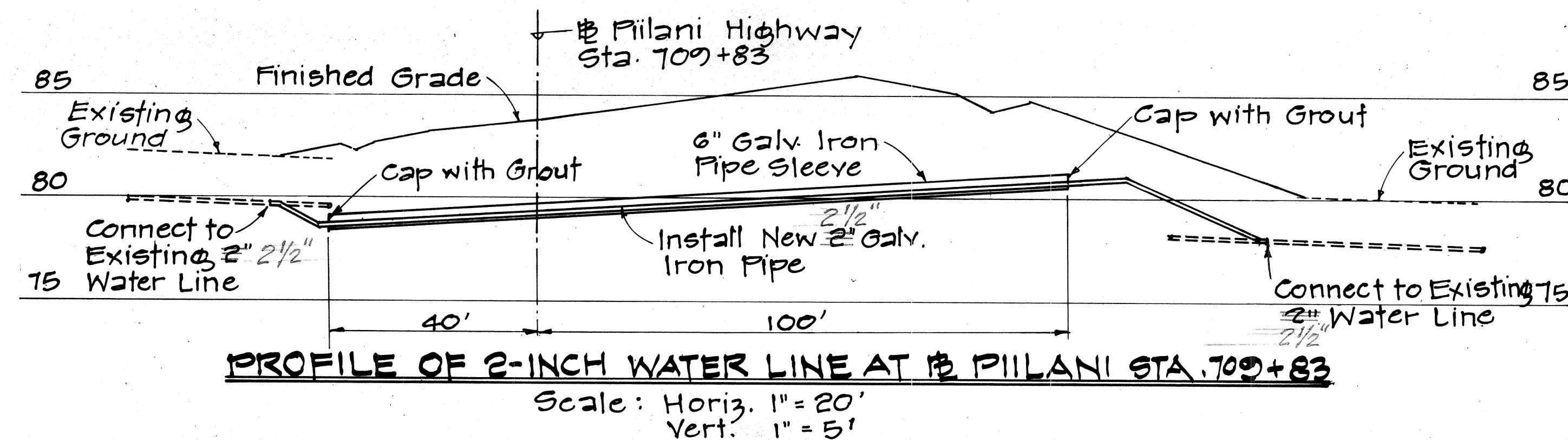
NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL MATERIALS AND CONSTRUCTION OF WATER AND SEWER 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.
2. PRIOR TO EXCAVATING FOR UTILITY LINES, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATER AND SEWER LINES AND APPURTENANCES. EXCAVATION AROUND EXISTING LINES SHALL BE DONE BY HAND.
3. THE EXISTENCE AND LOCATION OF WATER AND SEWER LINES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT ARE NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL BEAR ALL COSTS FOR THE REPAIR OF DAMAGES TO EXISTING LINES DUE TO HIS CONSTRUCTION ACTIVITIES.
4. CONTINUOUS WATER AND SEWER SERVICES SHALL BE PROVIDED DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY MAUI COUNTY, DEPARTMENT OF WATER SUPPLY AND DEPARTMENT OF PUBLIC WORKS IN WRITING ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER LINE AND SEWER LINES, RESPECTIVELY.
6. APPROVAL BY THE DEPARTMENT OF WATER SUPPLY AND DEPARTMENT OF PUBLIC WORKS IS ONLY TO ASSURE THAT THE ADJUSTMENTS TO THE WATER SYSTEM AND SEWER SYSTEM ARE IN CONFORMANCE TO EACH DEPARTMENT'S STANDARDS. DISCREPANCIES, IF ANY, OF ALIGNMENTS, GRADES, ETC. SHALL NOT BE THE RESPONSIBILITY OF THE DEPARTMENT OF WATER SUPPLY AND THE DEPARTMENT OF PUBLIC WORKS.



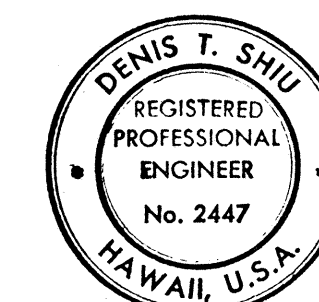
GENERAL NOTES

1. Minimum cover over water line shall be 3'-0" over sleeve area and 2'-0" on fill slope and existing ground area.
2. The Contractor shall expose the 2" water line at the proposed connections before commencing work for new 2" water line.



PLAN- AT MOKULELE HIGHWAY

Scale : $1'' = 20'$



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lenis T. Shier

APPROVED:

G. Smith 4-2-79
DIRECTOR, DEPT. OF WATER SUPPLY, DATE
COUNTY OF MAUI

10-10-78	Revised 18" Water Line; Added 12" Water Line Concrete Jacket for 12" and 18" Water Lines
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DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
WATER AND SEWER
UTILITIES PLAN

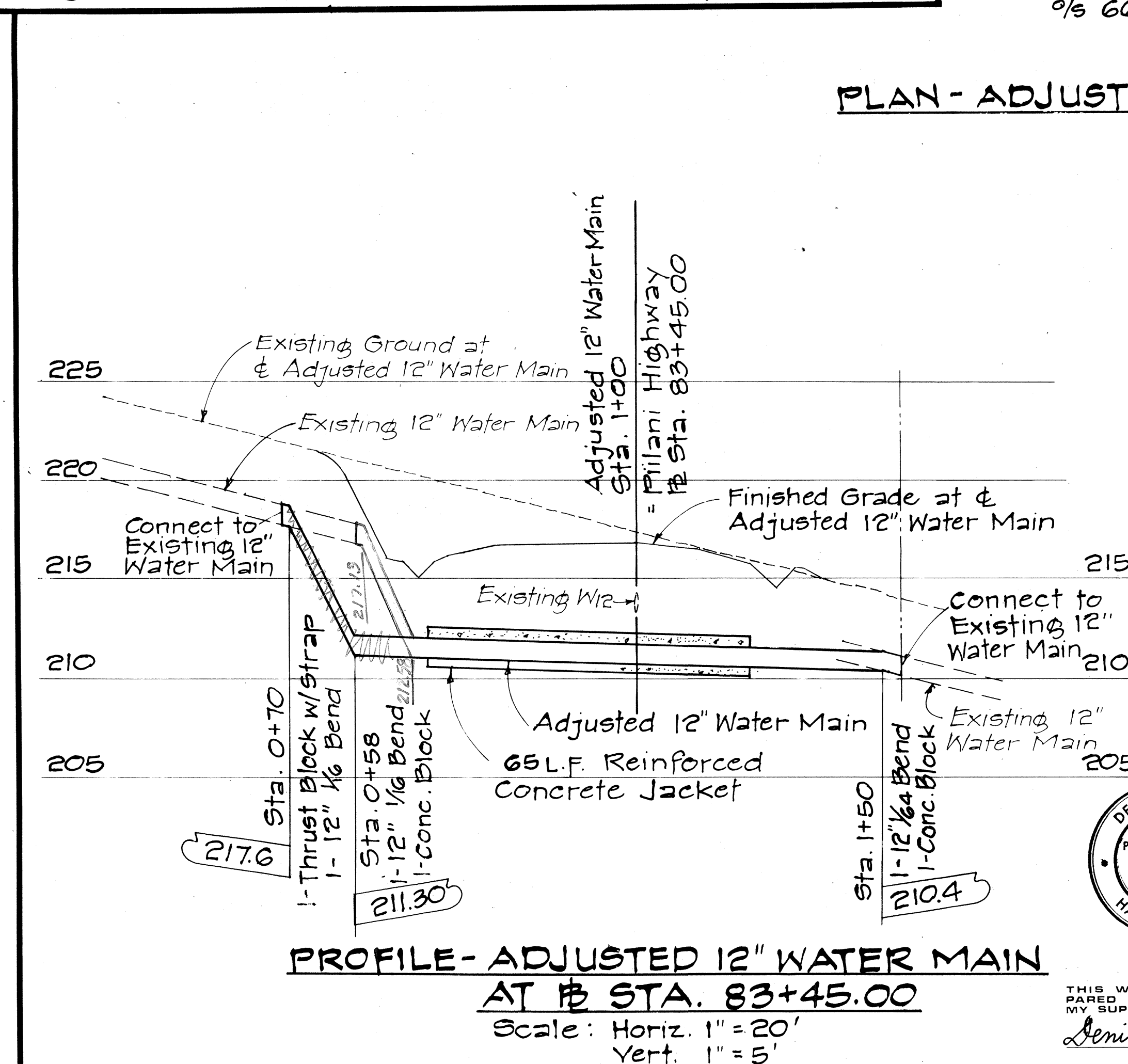
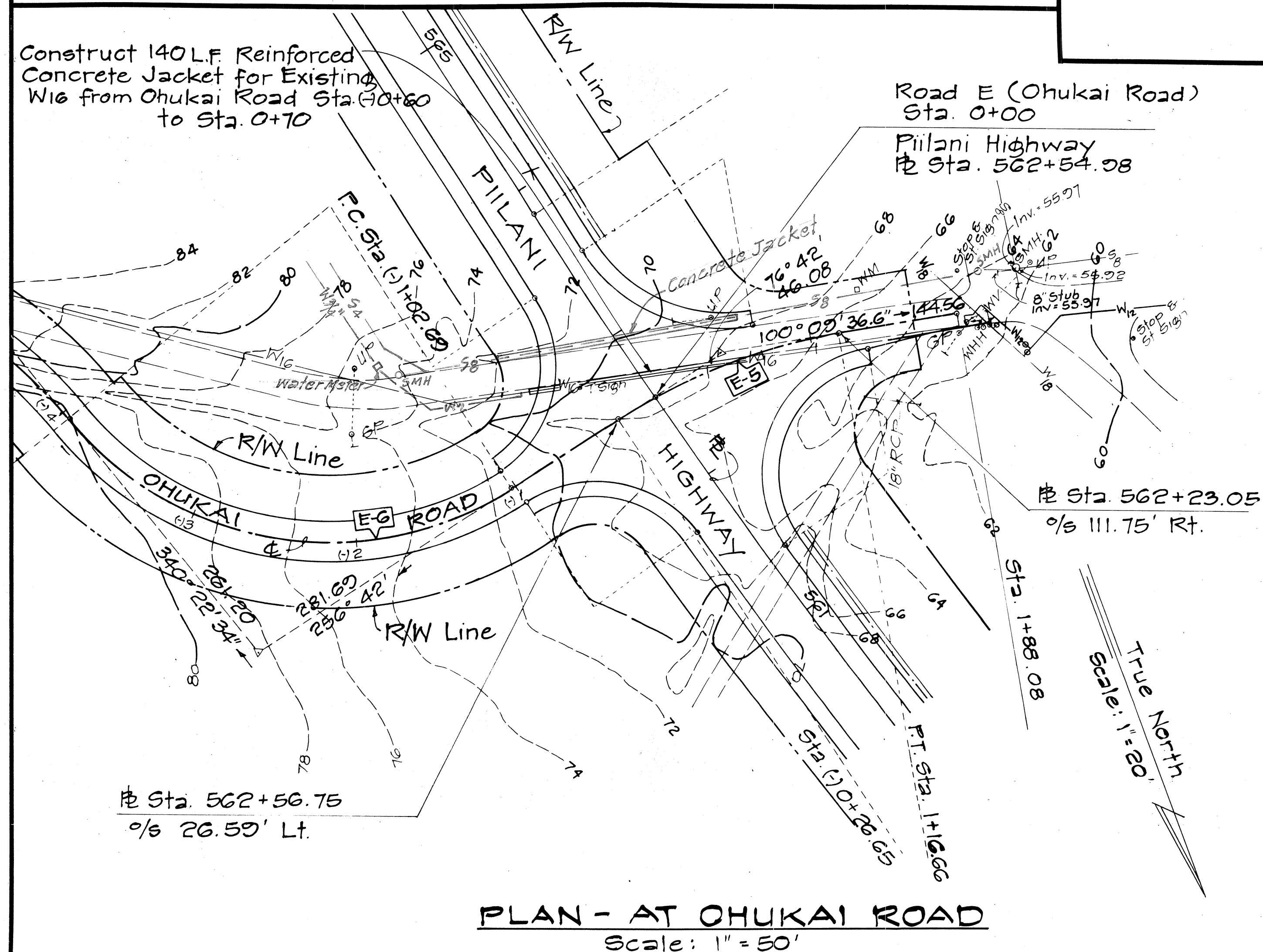
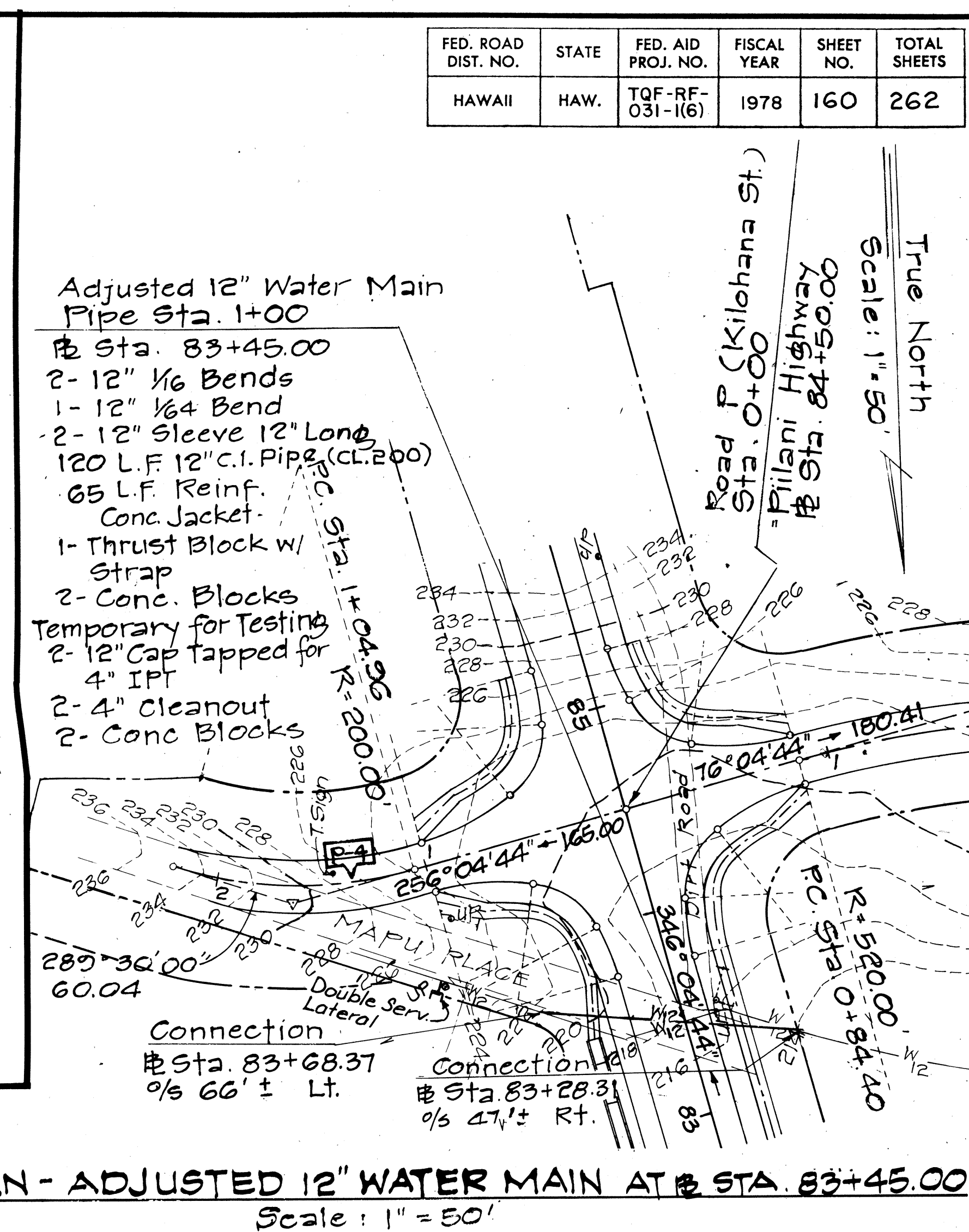
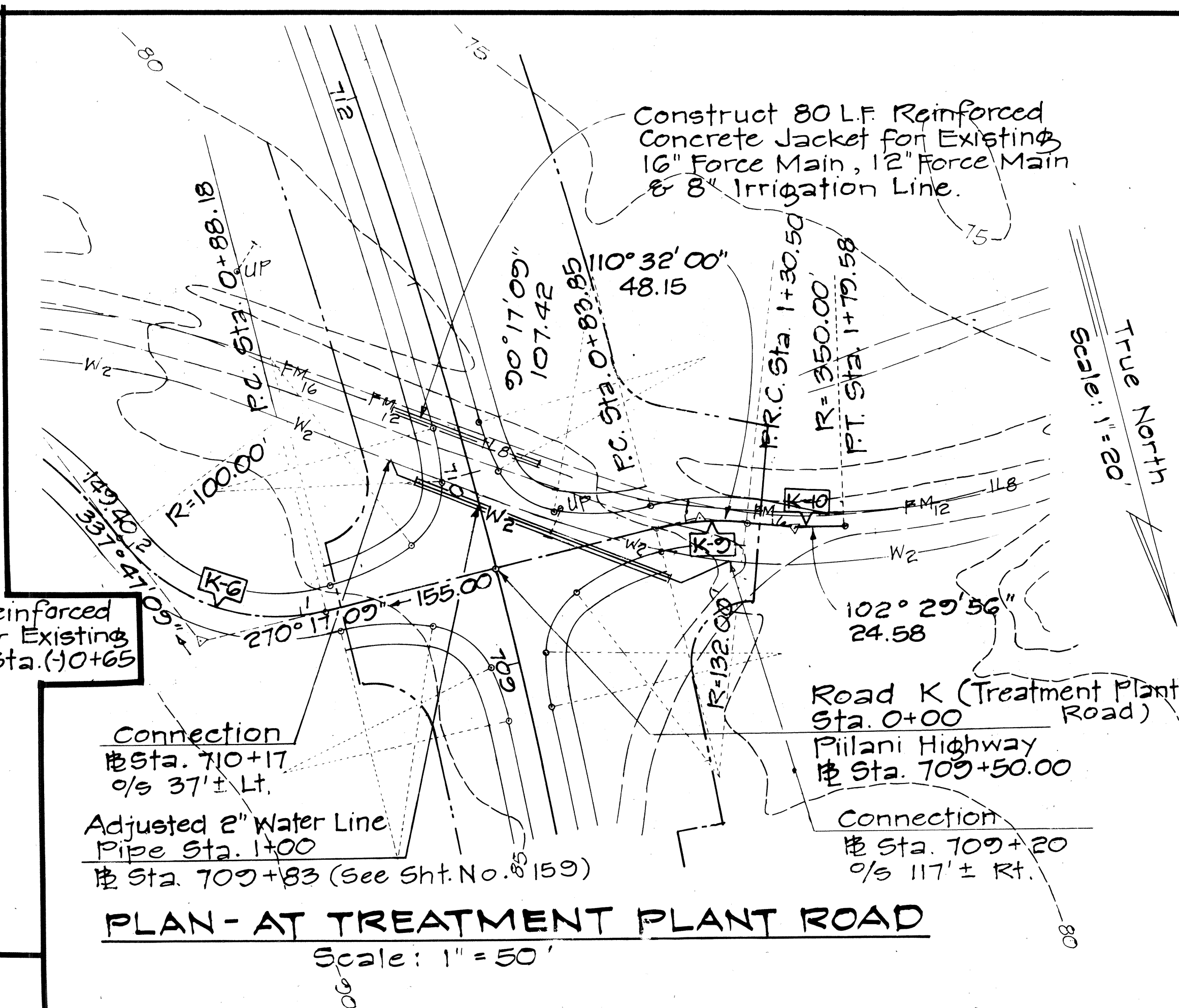
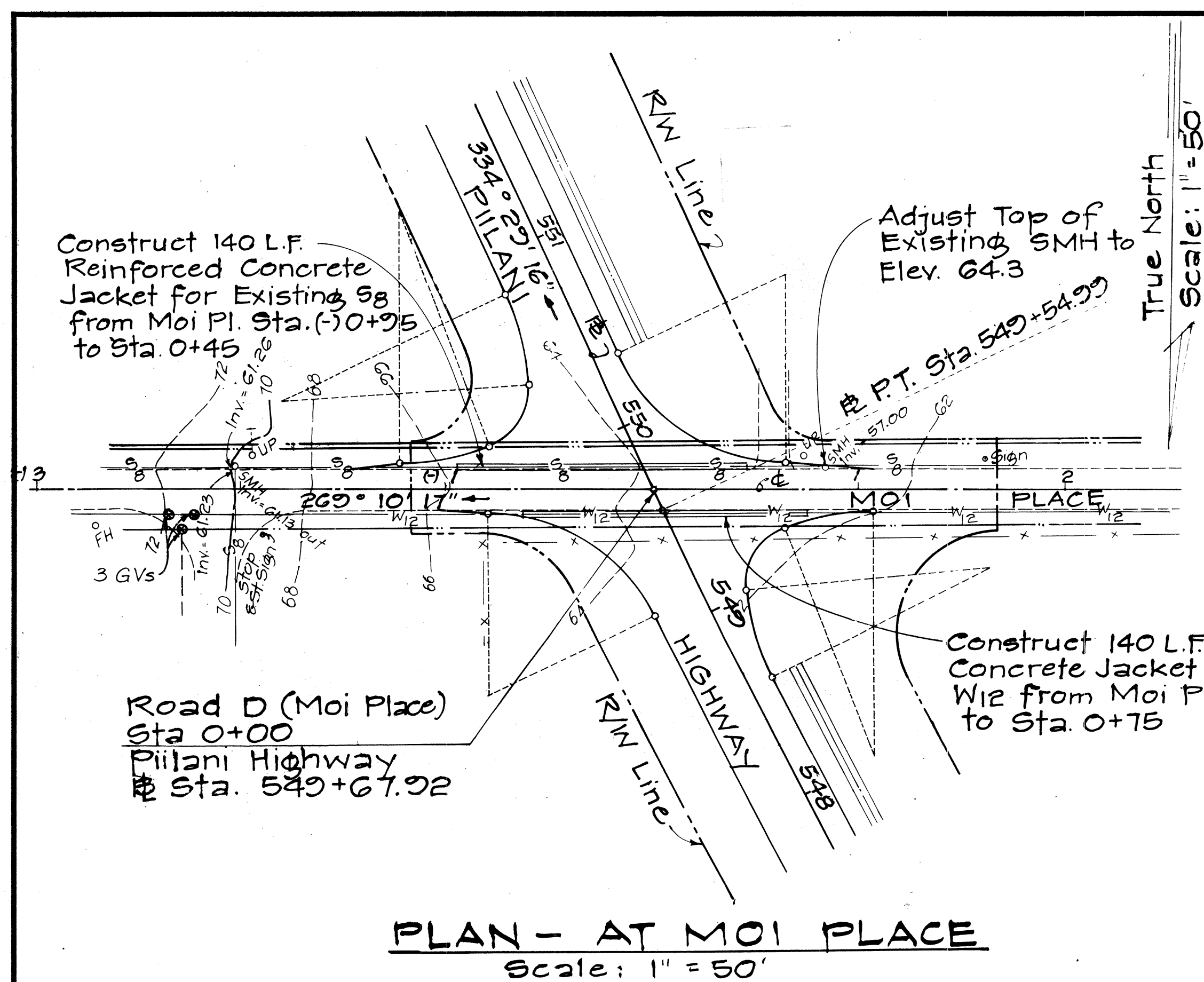
PIILANI HIGHWAY
VICINITY OF MOKULELE HIGHWAY TO
VICINITY OF KILOHANA STREET
F.A. PROJECT NO. F-RF-031-1(6)

SCALE: AS SHOWN DATE: SEPT. 1978

SHEET No. 2 OF 3 SHEETS

AIDD. 159

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQF-RF- 031-1(6)	1978	160	262



NOTE

See Sht. ADD 104 and Sht. ADD 105
and Sht. ADD 106 S-1 for additional
water and sewer line installations.

APPROVED:

P. Amodeo 4-2-79
DIRECTOR, DEPT. OF WATER SUPPLY, DATE ✓
COUNTY OF MAUI

10-10-78	Revised Water Lines at Moi Place, Ohukai Road and Kilohana Street
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DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

WATER AND SEWER UTILITIES PLAN

PIILANI HIGHWAY
VICINITY OF MOKULELE HIGHWAY TO
VICINITY OF KILOHANA STREET
F.A. PROJECT NO. F-RF-031-1(6)

SHEET No. 3 OF 3 SHEETS

ADD. 160



DENIS T. SHIU
REGISTERED
PROFESSIONAL
ENGINEER
No. 2447
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Denis T. Shiu

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