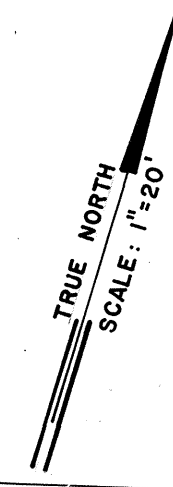


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-072-1(35)	1993	165	340

NH-



E. HALEMAUMALI ST.

BEGIN PROJECT
STA. 177+20

MATCH LINE
STA. 182+00

OUT # FLUG AT
16" x 12" TEE
1-12" FLUG
1-CONC. BLK
W/STRUTS

STA. 177+30 ± #0"
(9' 16" LT.)
CONN. TO 16" PVO
1-REMOVE 16" CAP & CONC. BLK
TEMP. FOR TESTING S/N 478-63906-1
1-16" CAP W/4 C.O. M/N 80030285
1-CONC. BLK
MATERIAL FOR CONN.
1-16" SLEEVE
10' 16" PVO PIPE,
DR 18

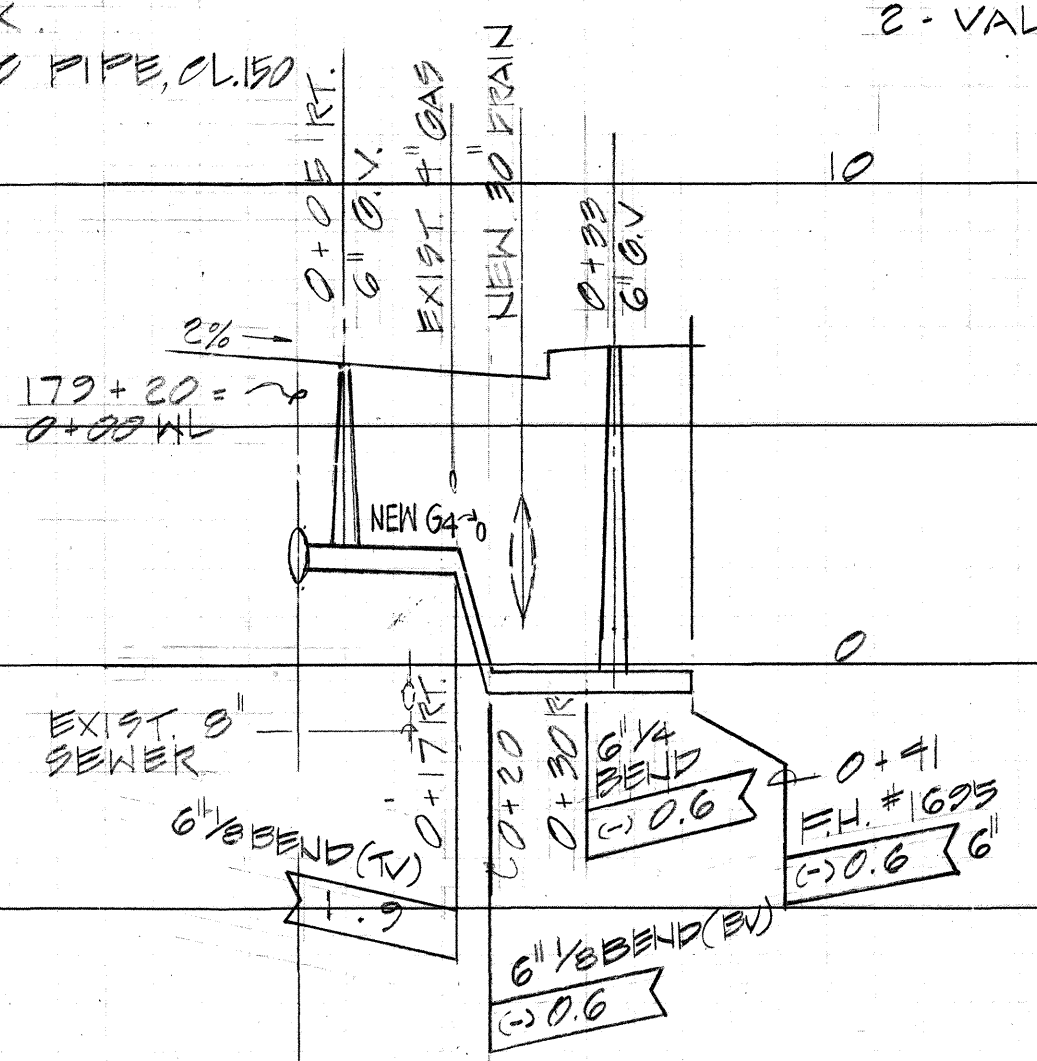
STA. 177+60 #0"
INSTALL TYPE "B" LAT.
1-TYPE "X" METER BOX
1-RELOCATE WATER
METER
1-1" GATE VALVE
1-VALVE BOX
STA. 178+93 #0"
INSTALL TYPE "B" LAT.
1-TYPE "X" METER BOX
1-RELOCATE WATER METER
1-1" GATE VALVE
1-VALVE BOX

STA. 179+20 #0"
(9' 16" LT.)
INSTALL F.H. #1625
1-16" x 6" TEE 1-6" 1/4 BEND
2-6" GATE VALVE, CL. 150
2-VALVE BOX
1-RELOCATE F.H. HT. = 7.5'
5-CONC. BLK
41 LF 6" PVO PIPE, CL. 150
2-6" 1/8 BEND

STA. 179+63 #0"
INSTALL TYPE "C" 1" LAT.
2-TYPE "X" METER BOX
2-RELOCATE WTR. METER
2-1" GATE VALVE
2-VALVE BOX

STA. 180+85 #0"
INSTALL TYPE "B" LAT.
1-TYPE "X" METER BOX
1-RELOCATE WTR. METER
1-1" GATE VALVE
1-VALVE BOX

STA. 181+38 #0"
INSTALL TYPE "B" LATERAL
1-TYPE "X" METER BOX
1-RELOCATE WTR. METER
1-1" GATE VALVE
1-VALVE BOX



APPROX. FINISH GRADE ALONG
16" WATER MAIN

0.006%

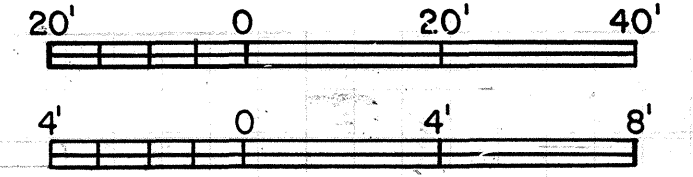
16" PVO WATER MAIN (DR=18)

16" x 6" TEE
1.6

3/4" ARV
1.6

SCALES: (HORIZ.) 1"=20'

(VERT.) 1"=4'



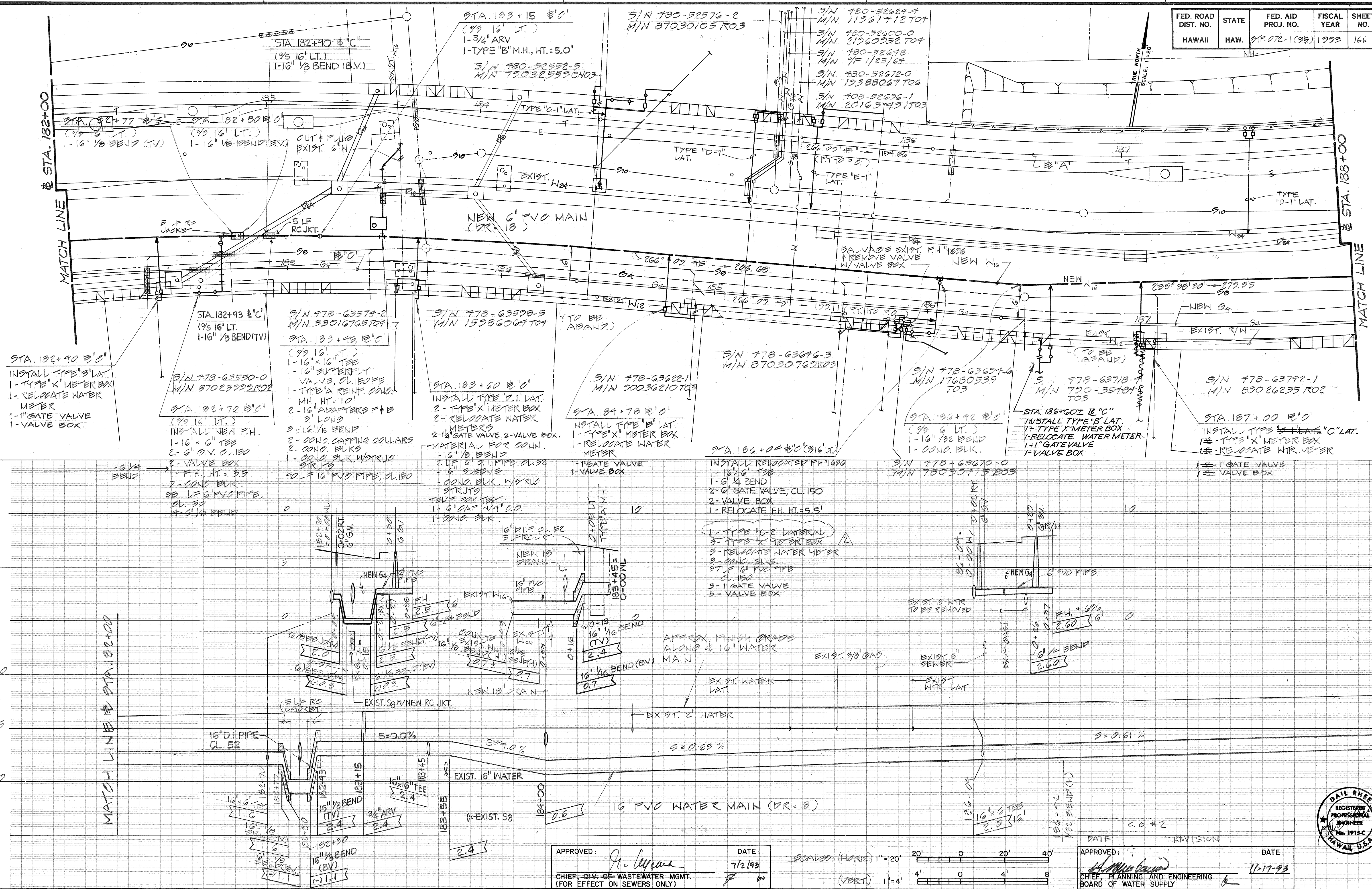
APPROVED: *[Signature]* DATE: 7/2/93
CHIEF, DIV. OF WASTEWATER MGMT.
(FOR EFFECT ON SEWERS ONLY)

APPROVED: *[Signature]* DATE: 11-12-93
CHIEF, PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY



SHEET NO. W-1 OF 18 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	91C-072-1(98)	1993	166	340

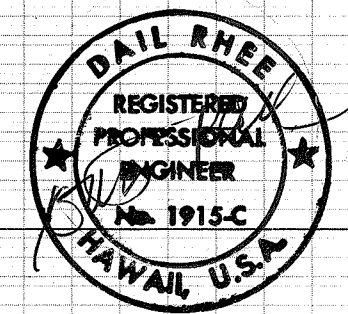


ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

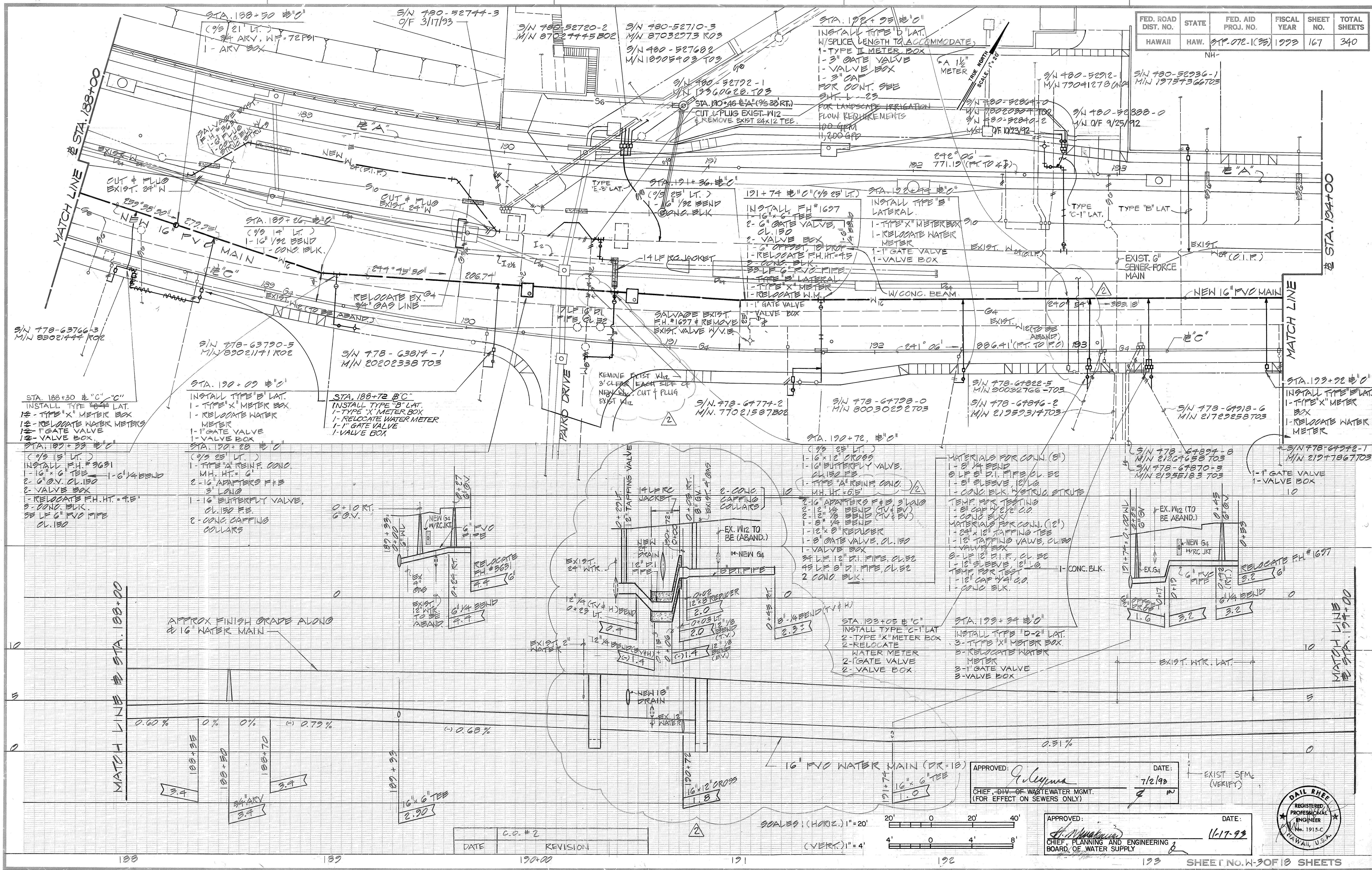
APPROVED: *[Signature]* DATE: 7/2/93
 CHIEF, DIV. OF WASTEWATER MGMT.
 (FOR EFFECT ON SEWERS ONLY)

SCALES: (HORIZ) 1" = 20'
 (VERT) 1" = 4'

DATE: 11-17-93
 REVISION: C.O.#2
 APPROVED: *[Signature]*
 CHIEF, PLANNING AND ENGINEERING
 BOARD OF WATER SUPPLY



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	91P-072-1(35)	1993	167	340



"AS-BUILT"

C.O. 167

SHEET NO. W-30 OF 18 SHEETS

APPROVED: H. Mwakawa DATE: 11-17-93
CHIEF, PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY 2

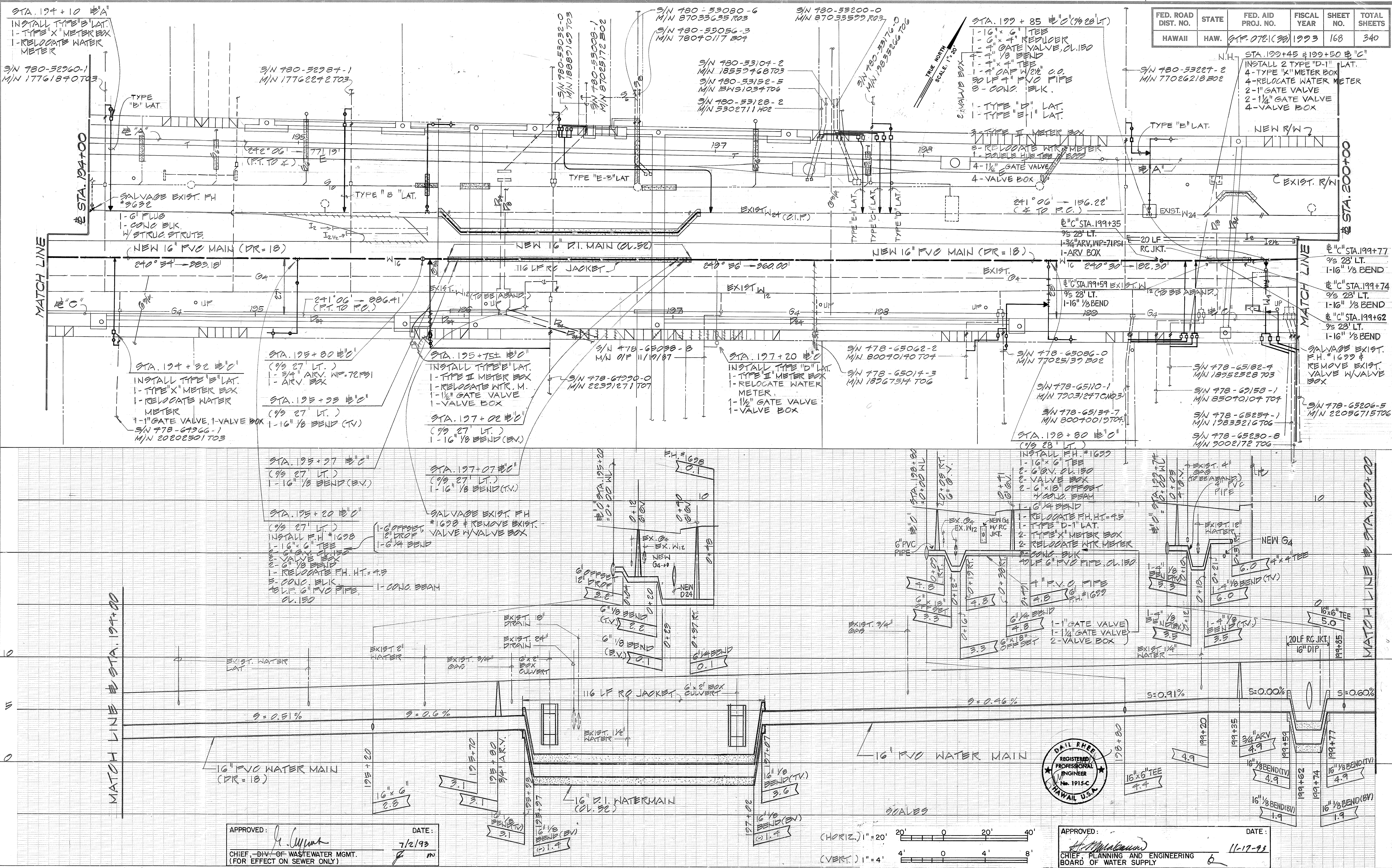
APPROVED: <i>G. Lippman</i>	DATE: 7/2/93
CHIEF, DIV. OF WASTEWATER MGMT. (FOR EFFECT ON SEWERS ONLY)	<i>[Signature]</i> <i>m</i>

SCALES: (HORIZ.) 1" = 20'

	C.O. #2
DATE	REVISION
	190+00

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	072(138)	1993	168	340

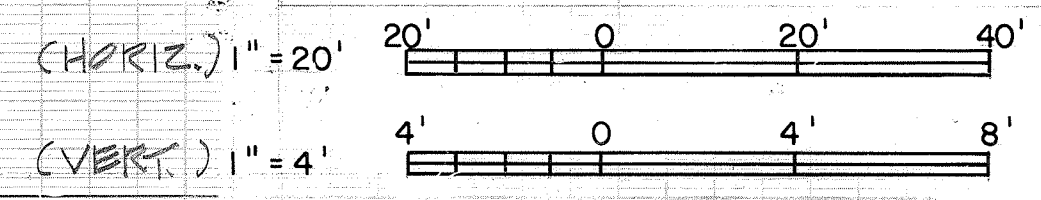


DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
NO.	_____

APPROVED: *[Signature]* DATE: 7/2/93
 CHIEF, DIV. OF WASTEWATER MGMT.
 (FOR EFFECT ON SEWER ONLY)



APPROVED: *[Signature]* DATE: 11-17-93
 CHIEF, PLANNING AND ENGINEERING
 BOARD OF WATER SUPPLY



"AS-BUILT"

ORIGINAL PLAN
DESIGNED BY
NOTED BY
CHECKED BY

DATE
QUANTITIES BY
DATE

APPROVED: *[Signature]*
CHIEF, DIV. OF WASTEWATER MGMT.
(FOR EFFECT ON SEWERS ONLY)

DATE:
7/2/93

APPROVED: *[Signature]*
CHIEF, PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY

DATE:
4-17-93

SHEET No. N-6 OF 13 SHEETS 212

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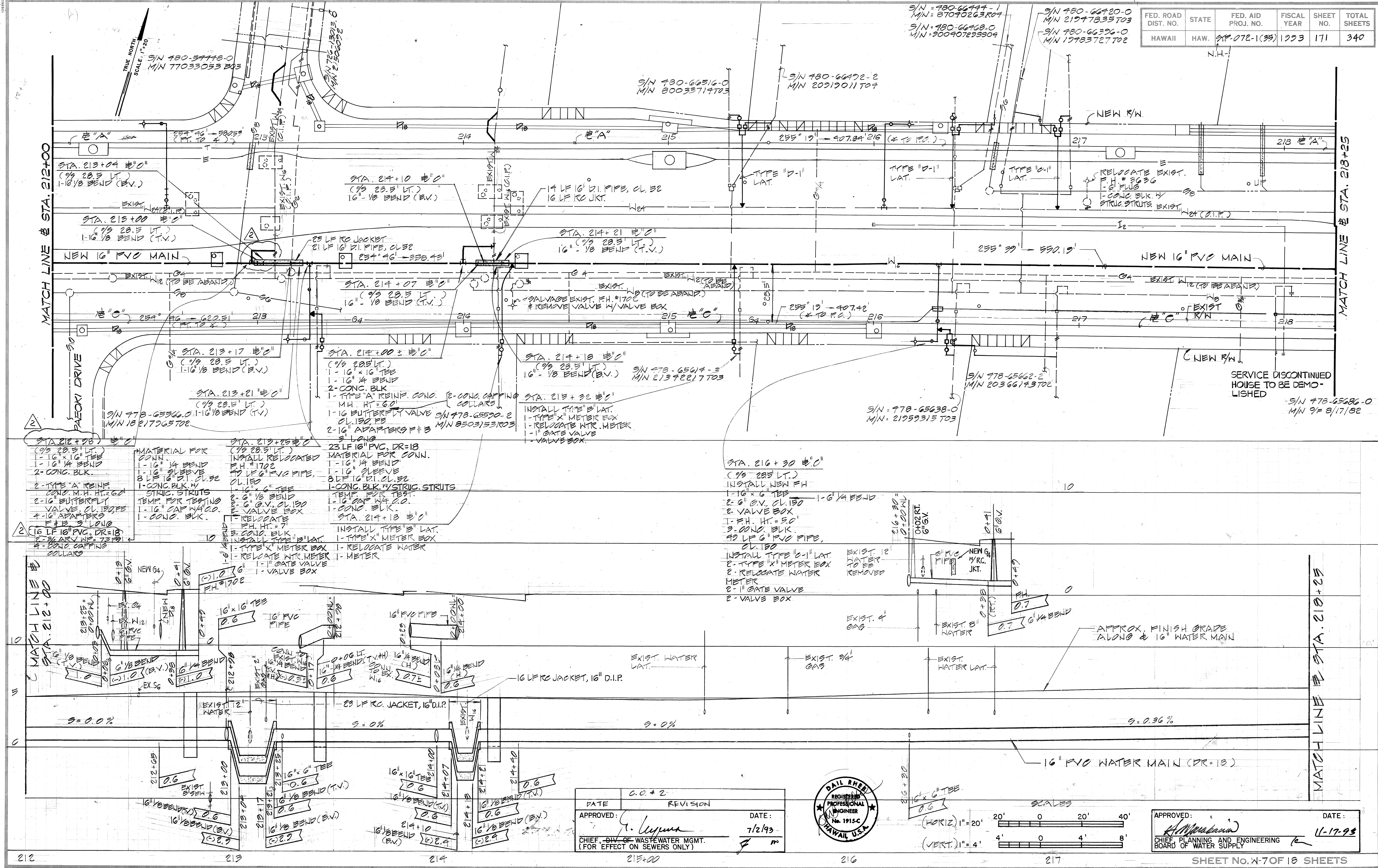
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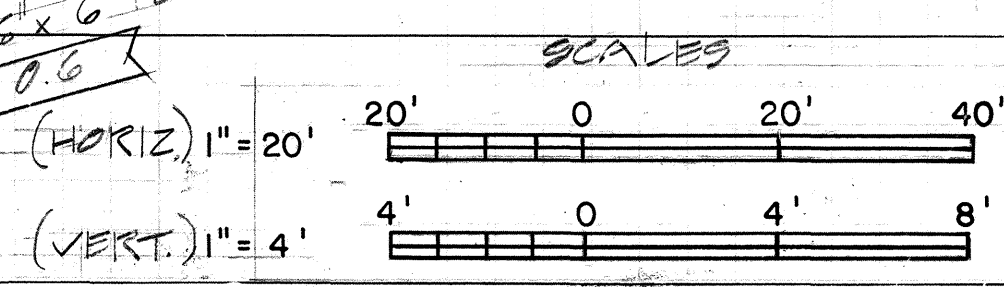
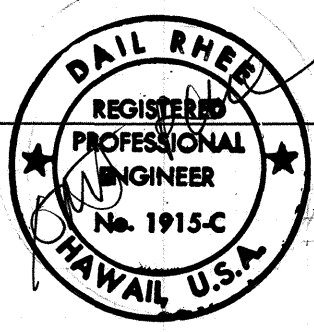
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	072-1(35)	1993	171	340



DATE	7/2/93
DESIGNED BY	G. L. L.
CHECKED BY	G. L. L.
NOTED BY	G. L. L.
QUANTITIES BY	G. L. L.
NO.	1

DATE	REVISION
7/2/93	1

APPROVED: *G. L. L.* DATE: 7/2/93
CHIEF, DIV. OF WASTEWATER MGMT.
(FOR EFFECT ON SEWERS ONLY)

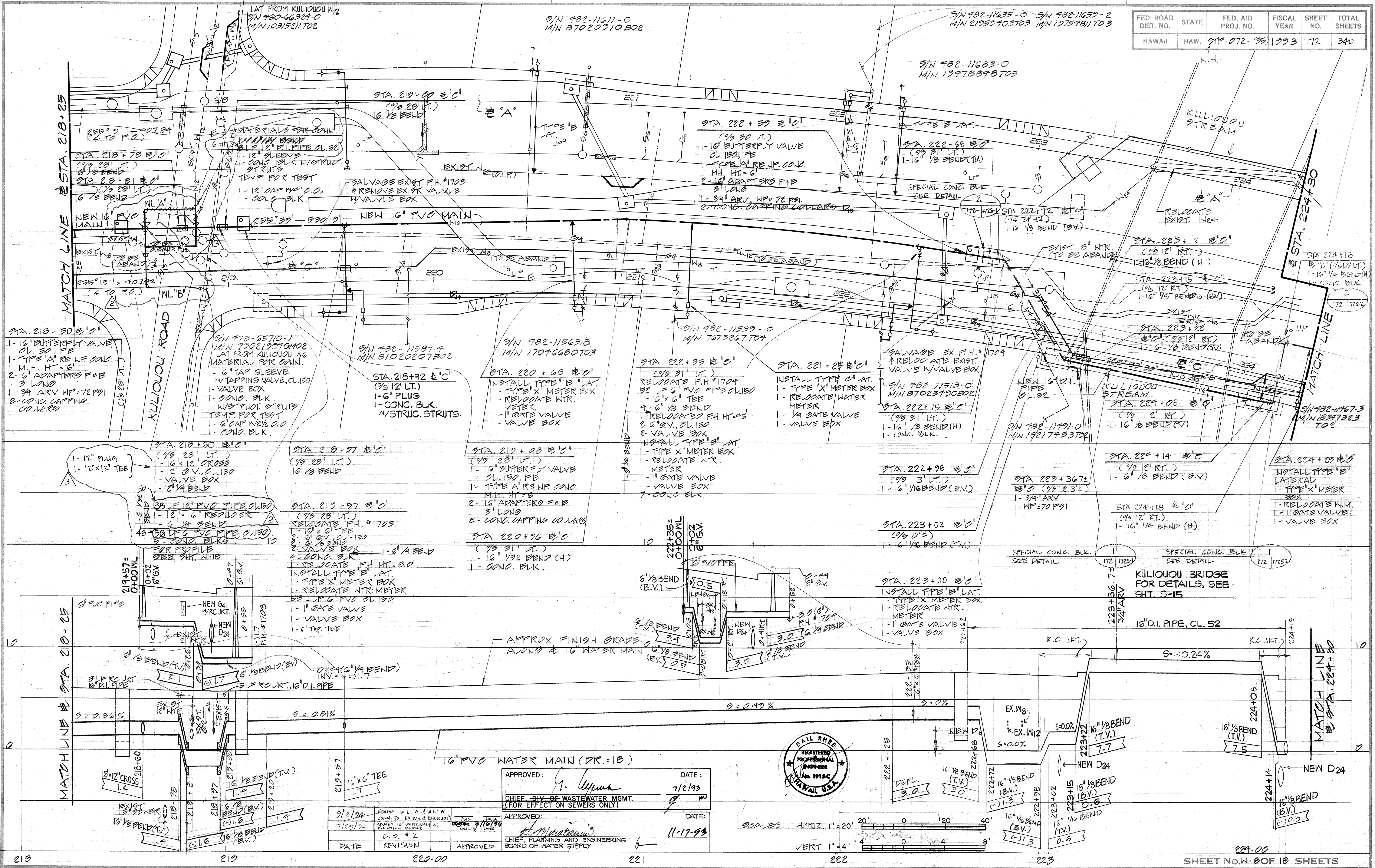


APPROVED: <i>G. L. L.</i>	DATE: 11-17-93
CHIEF, PLANNING AND ENGINEERING BOARD OF WATER SUPPLY	

SHEET No. W-7 OF 18 SHEETS

C.O. 171

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	21P-072-1(35)	1993	172	340

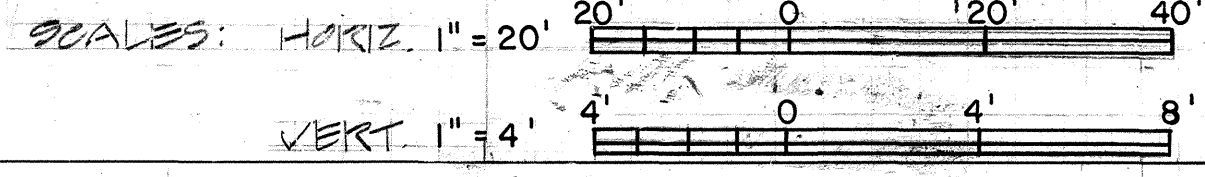


DATE	
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	
QUANTITIES BY	
NO.	

APPROVED: *G. Lyons* DATE: 7/2/93
 CHIEF, DIV. OF WASTEWATER MGMT.
 (FOR EFFECT ON SEWERS ONLY)

APPROVED: *H. M. [Signature]* DATE: 11-17-93
 CHIEF, PLANNING AND ENGINEERING
 BOARD OF WATER SUPPLY

9/8/94 REVISE W.L. "A" (W.L. "B" CONT. TO EX. W.L. "C" KULIOUOU)
 7/29/94 ADJUST 16" WATER MAIN AT KULIOUOU BRIDGE
 C.O. # 2
 DATE REVISION APPROVED



224+00

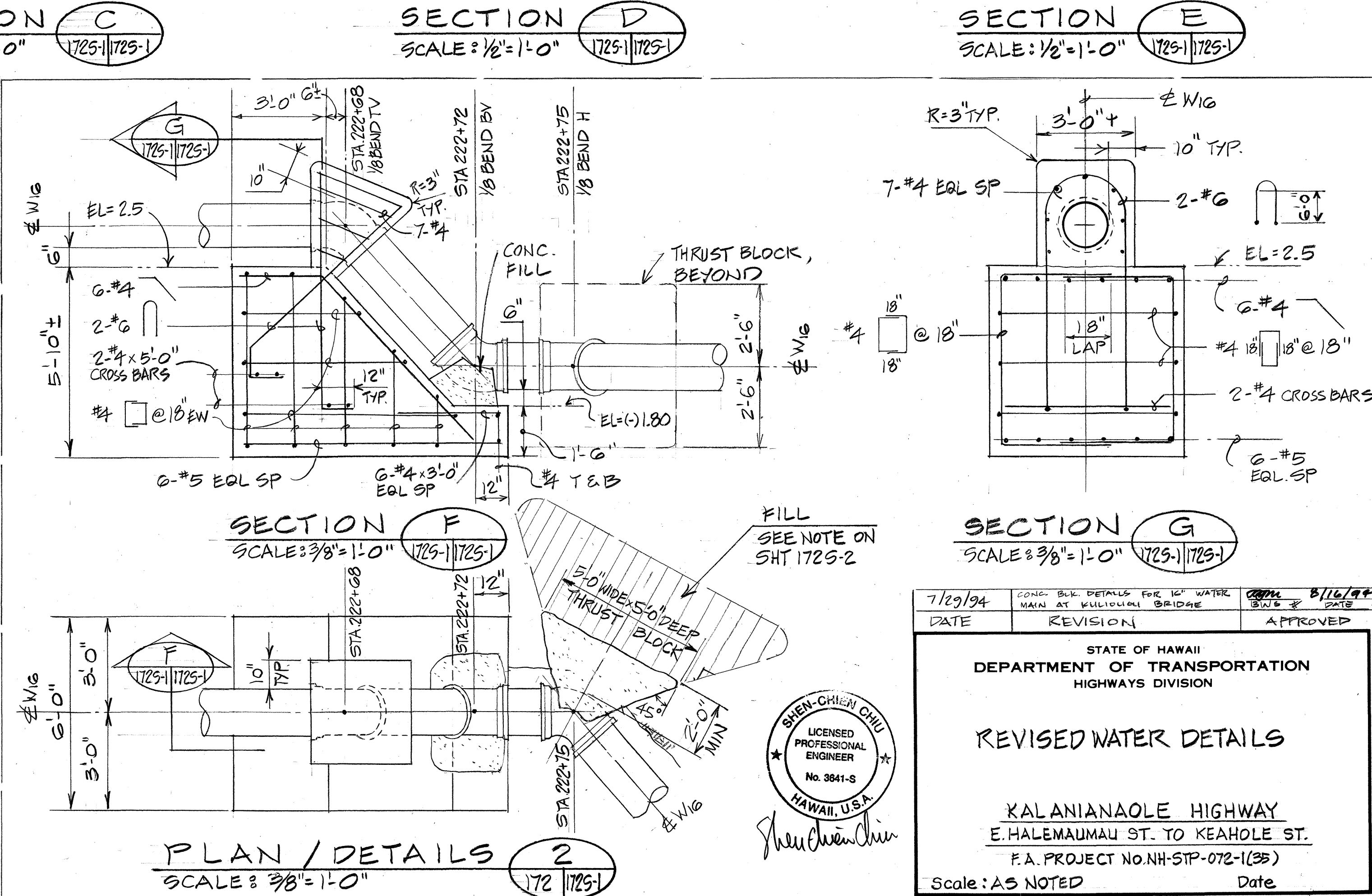
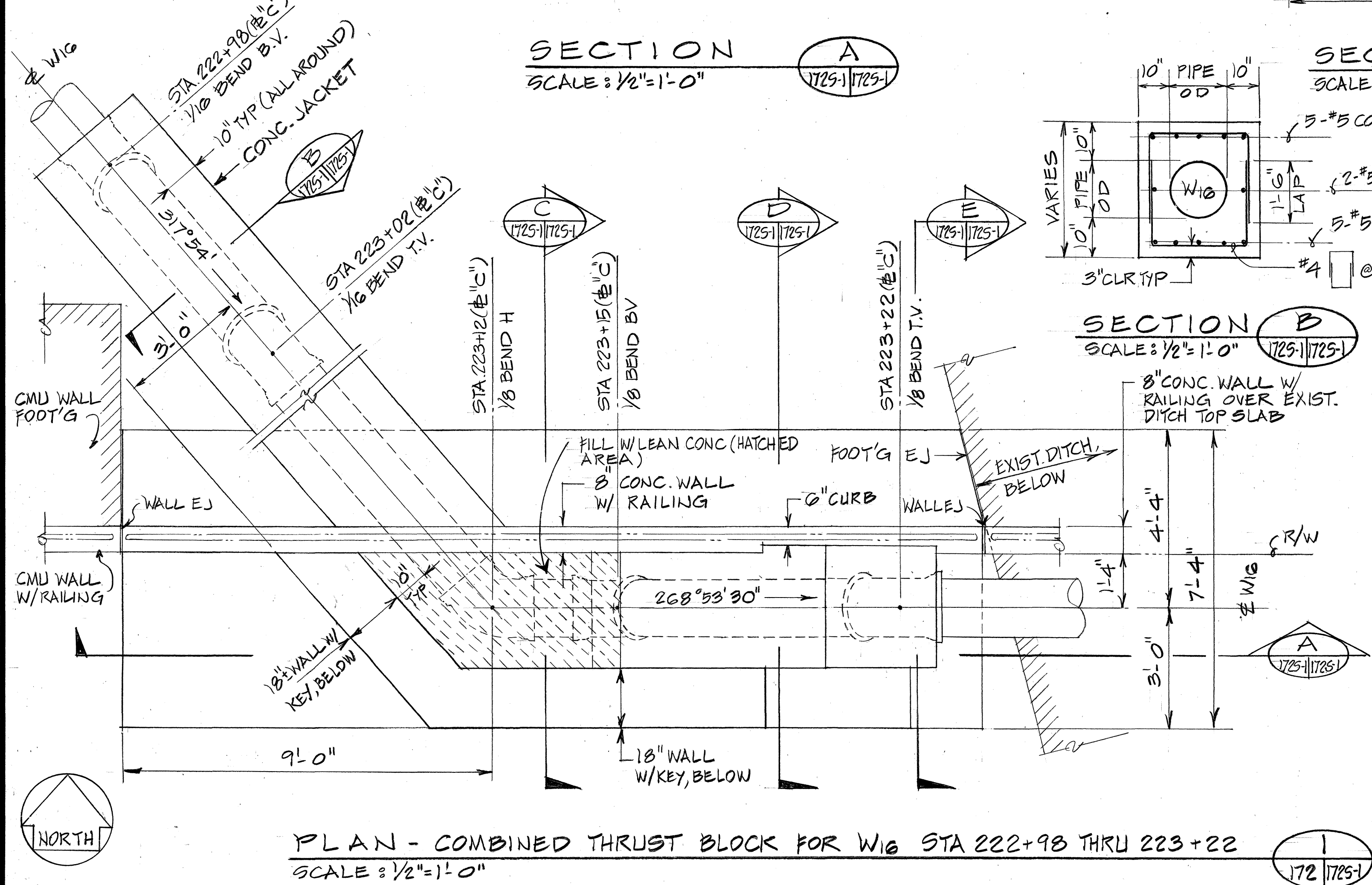
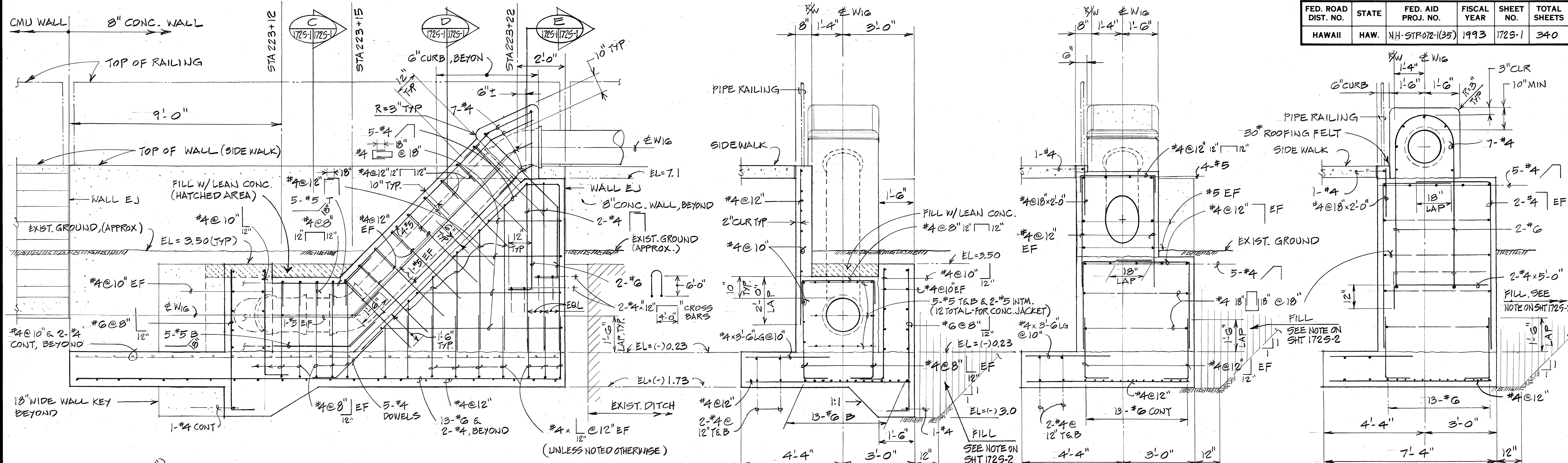
SHEET No. 18 OF 18 SHEETS

C.O. 172

Sht. 819 Containing

11/1/94

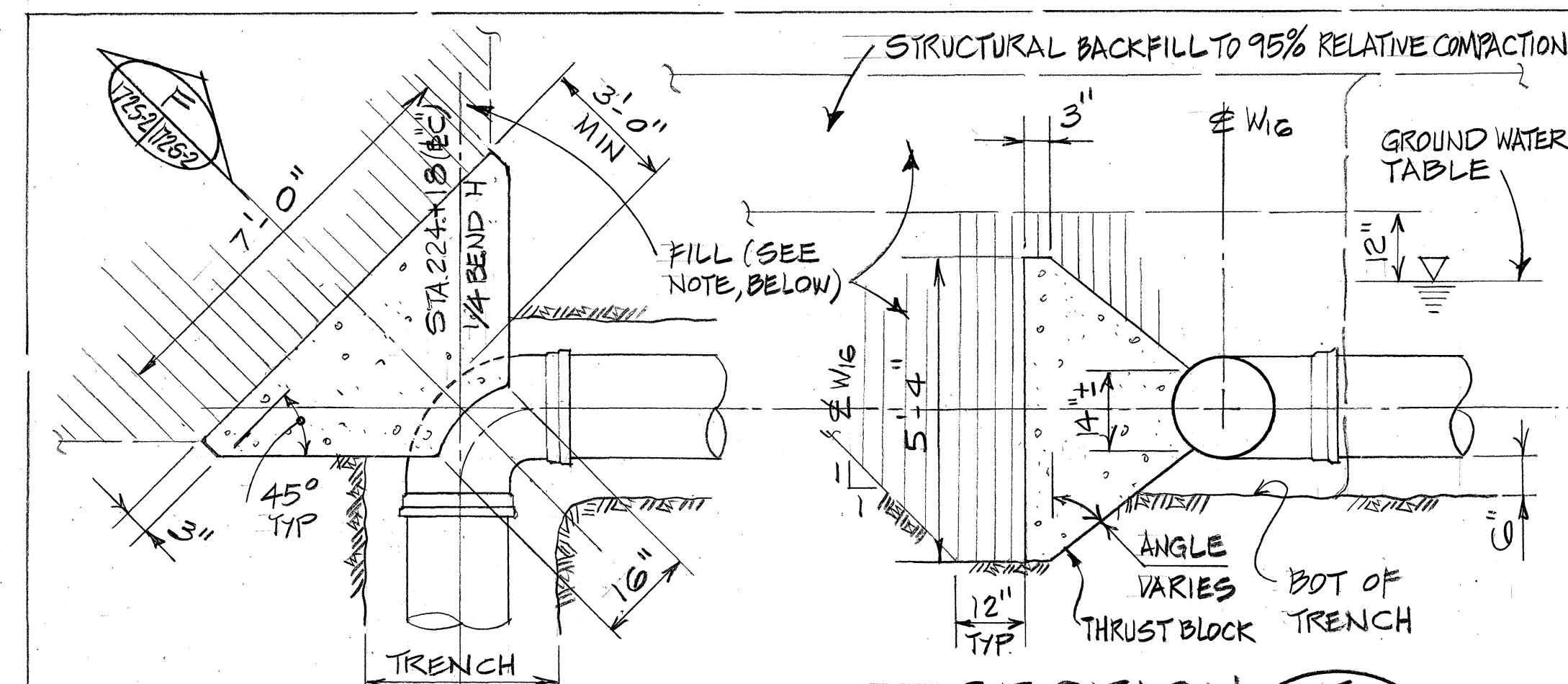
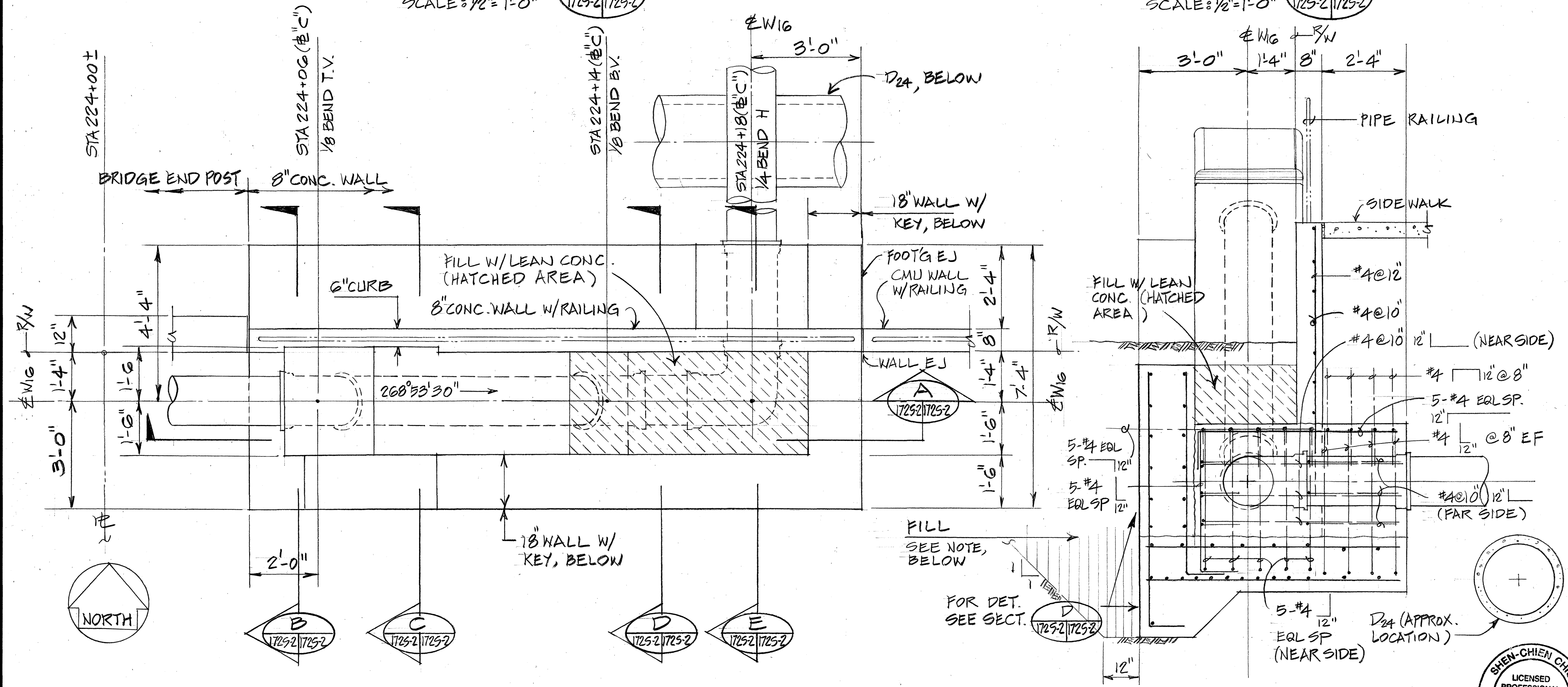
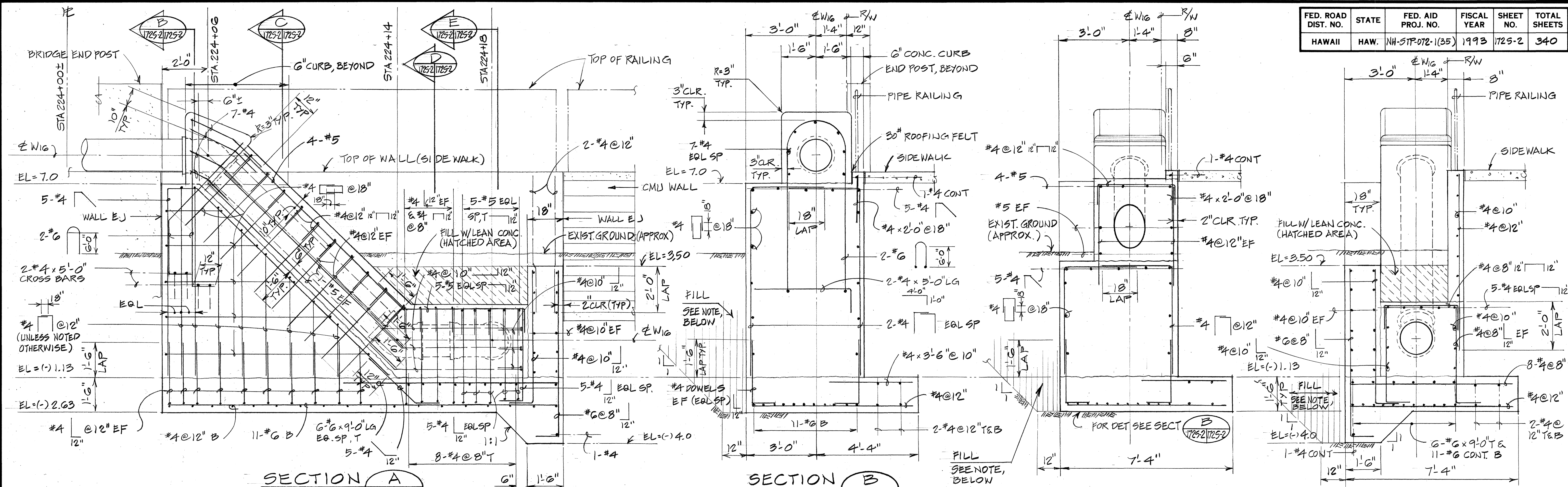
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-STP-072-1(35)	1993	1725-1	340



7/29/94	CONC. BULK DETAILS FOR 12" WATER MAIN AT KULUWAI BRIDGE	8/11/94
DATE	REVISION	DATE
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION REVISED WATER DETAILS KALANIANA'OLE HIGHWAY E. HALEMAUMAU ST. TO KEAHOLE ST. F.A. PROJECT NO. NH-STP-072-1(35) Scale: AS NOTED SHEET NO. OF SHEETS C.O. 1725-1		

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-SIP-072-1(35)	1993	1725-2	340



PLAN/DETAILS 2
NOT TO SCALE

FILL NOTES:

- BACKFILL THE EXCAVATION IN FRONT OF THRUST BLOCKS WITH 3/4" FINE TO EL+2.0, OR ONE FOOT ABOVE GROUND WATER TABLE, WHICHEVER IS HIGHER. PLACE THE FILL IN 12-INCH LOOSE LIFTS, COMPACTED UNTIL FIRM AND UNYIELDING WITH BOTTOM OF EXCAVATOR BUCKET.
- FILL THE REMAINING EXCAVATION WITH SELECT STRUCTURAL BACKFILL AND COMPACTED TO 95% RELATIVE COMPACTION.

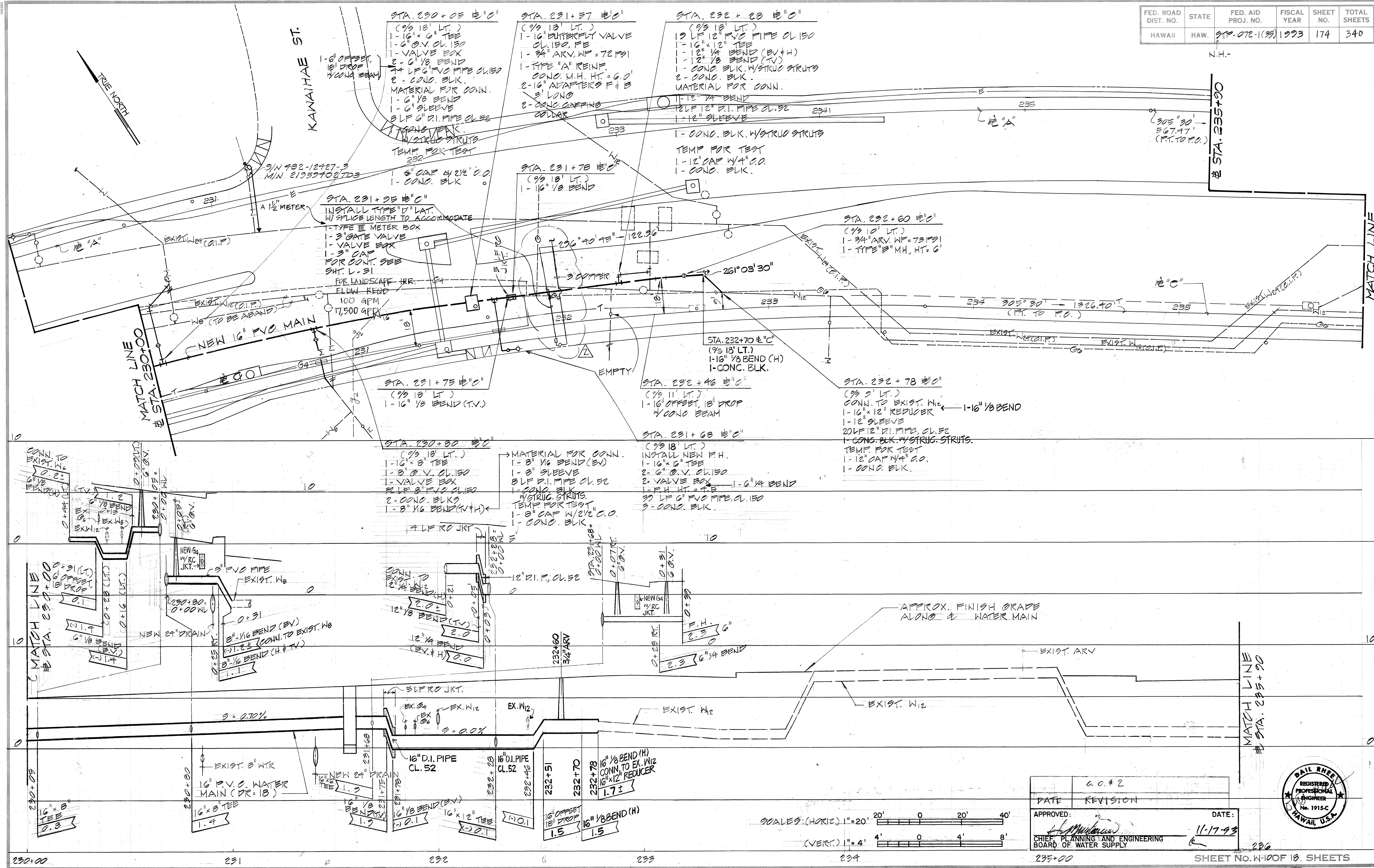
REVISOR WATER DETAILS

KALANIANA'OLE HIGHWAY
E. HALEMAU ST. TO KEAHOE ST.
F.A. PROJECT NO. NH-SIP-072-1(35)
Scale: AS NOTED Date: 8/16/94

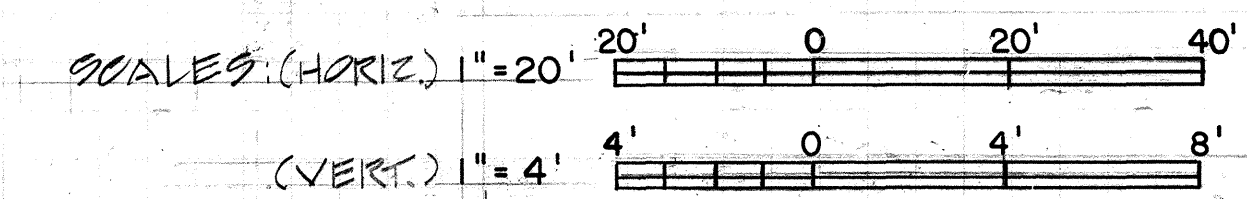
SHEET NO. OF SHEETS

DATE	1/17/94
DESIGNED BY	SHEN-CHEN CHIU
CHECKED BY	SHEN-CHEN CHIU
NOTED BY	SHEN-CHEN CHIU
NO.	1725-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-072-1(95)	1993	174	340



DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	



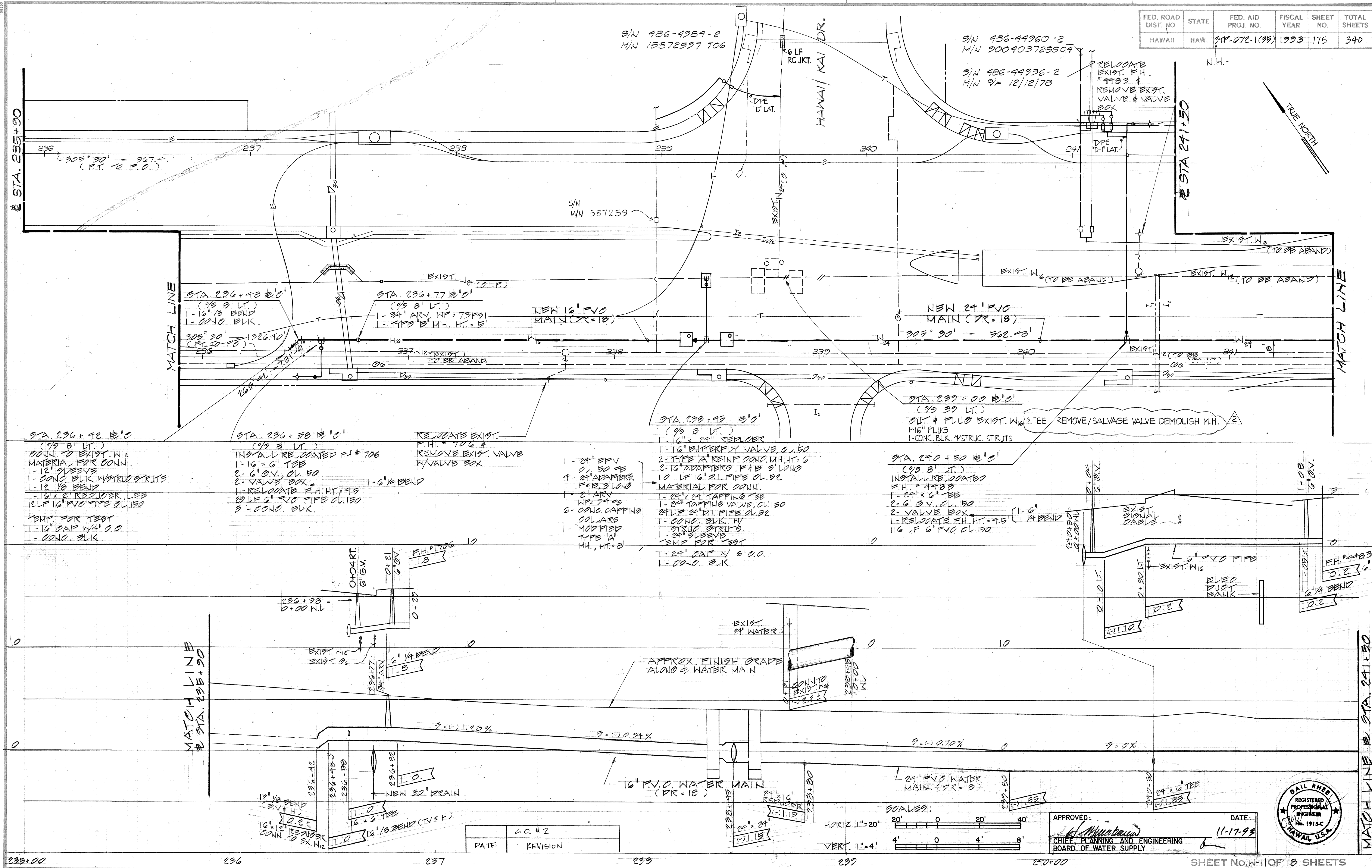
DATE	11-17-93
REVISION	
APPROVED:	
CHIEF, PLANNING AND ENGINEERING BOARD OF WATER SUPPLY	



SHEET NO. K-100F 18. SHEETS

C.O. 174

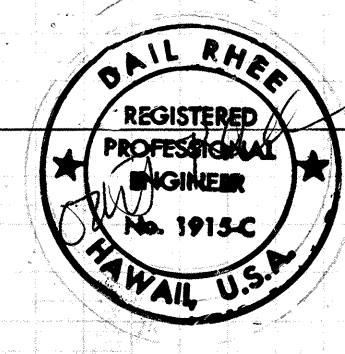
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	91P-072-1(35)	1993	175	340



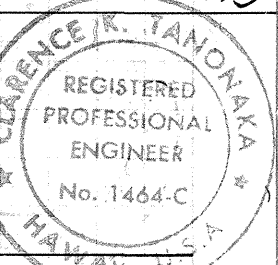
DATE	11-17-93
DESIGNED BY	W. J. MURPHY
CHECKED BY	W. J. MURPHY
IN CHARGE	W. J. MURPHY
DATE	11-17-93

DATE	REVISION
11-17-93	1.0

APPROVED: *[Signature]* DATE: 11-17-93
 CHIEF, PLANNING AND ENGINEERING
 BOARD OF WATER SUPPLY



N.H.-

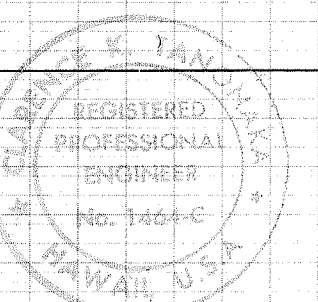
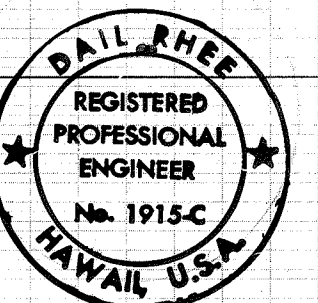


PorEn, Inc.
ARK ENGINEERING

N.H.-



-
- Hand-drawn profile view of a sewer line. The diagram shows a 24-inch P.V.C. pipe with a slope of $S = 0.17\%$ and a 24-inch water main with a slope of $S = 1.33\%$. The profile includes a 24-inch water main with a slope of $S = 1.17\%$ and a 24-inch water main with a slope of $S = 1.17\%$. The diagram is labeled with stationing: STA. 252+50, 253+00, 253+45, and 253+50. It also includes labels for "MATCH LINE", "APPROX FINISH GRADE", "24\" P.V.C. WATER", "24\" WATER MAIN", and "END 24\" WATER".



$1'' = 20'$

$1'' = 4'$

DATE: 11-17-93

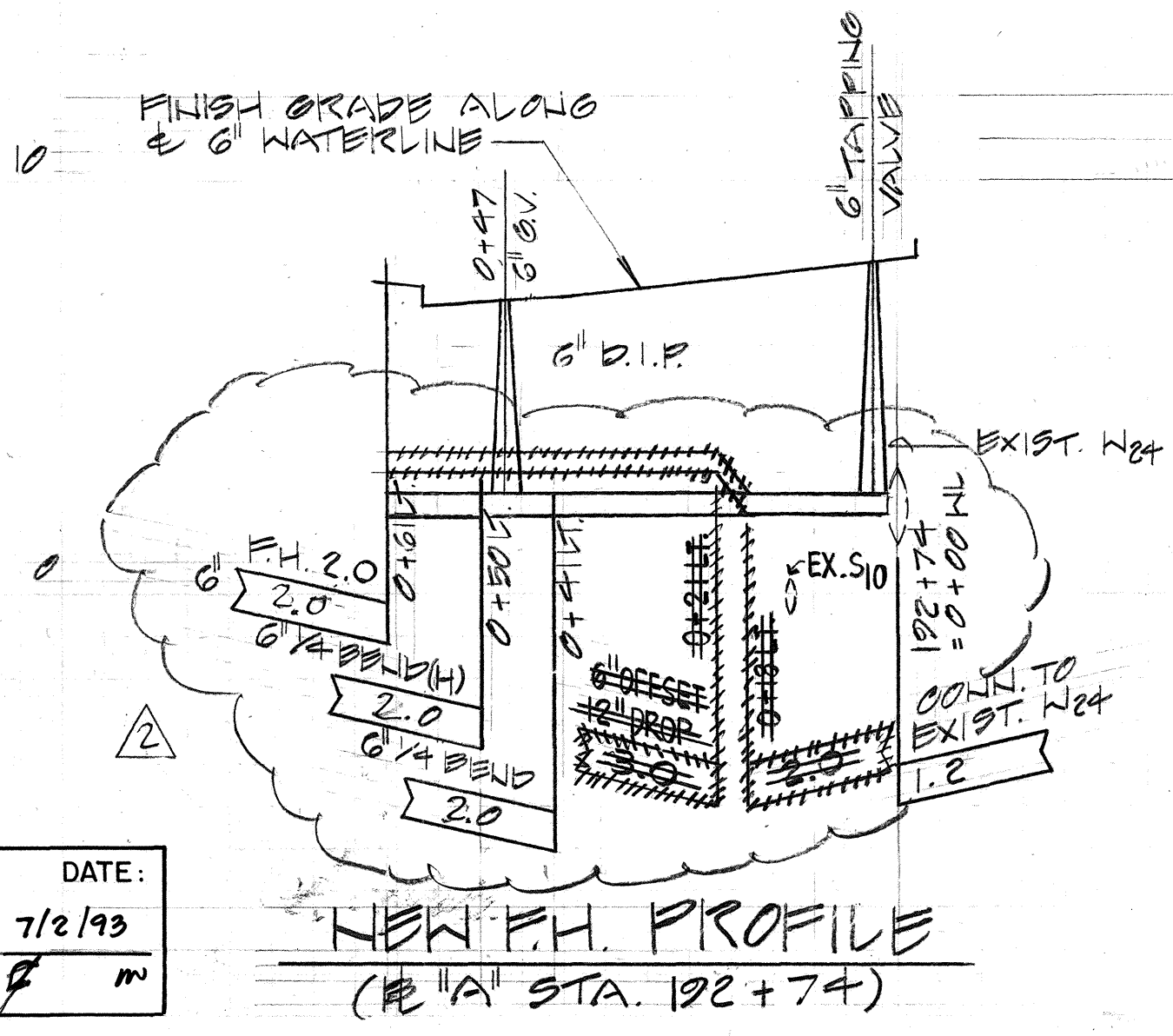
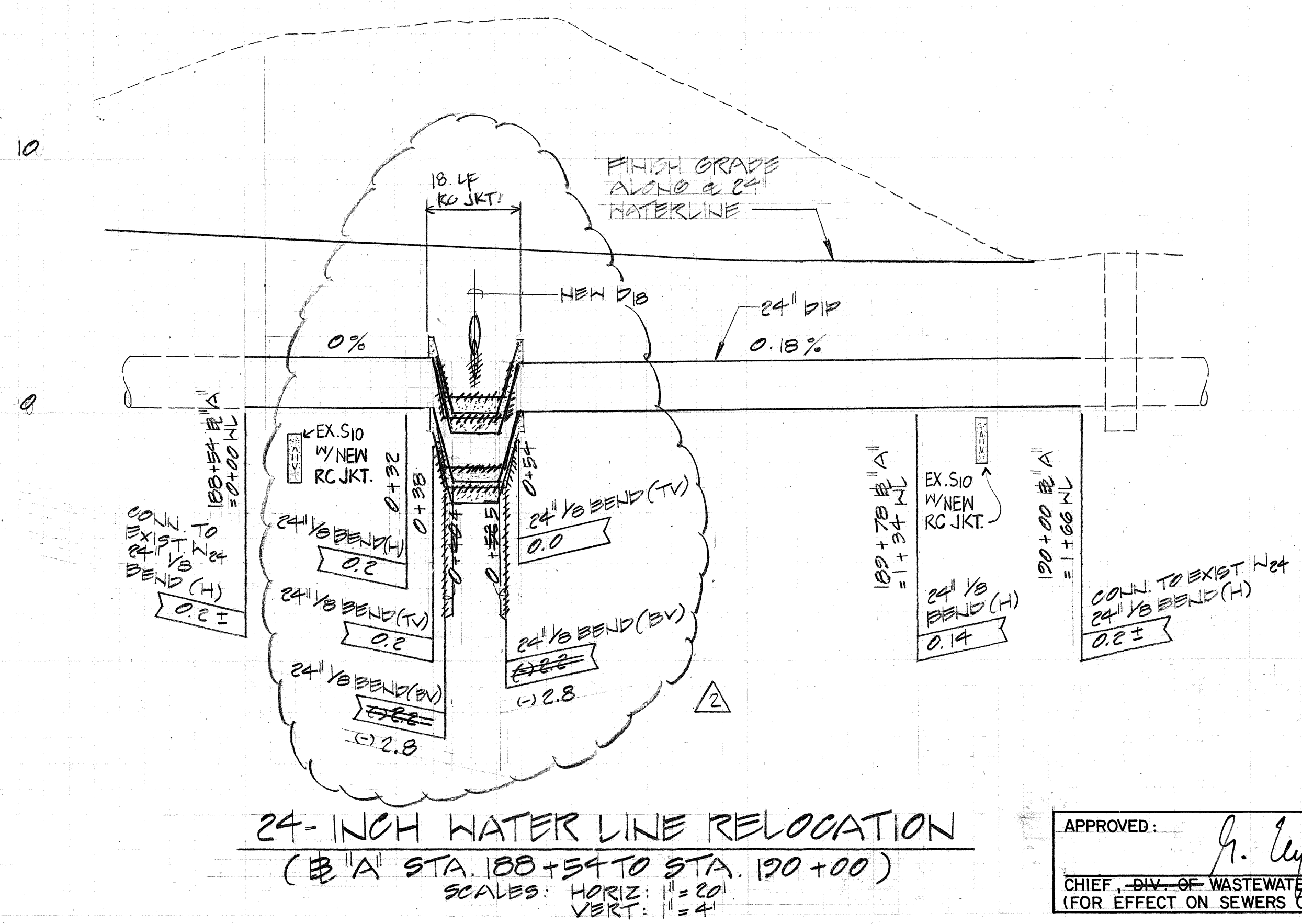
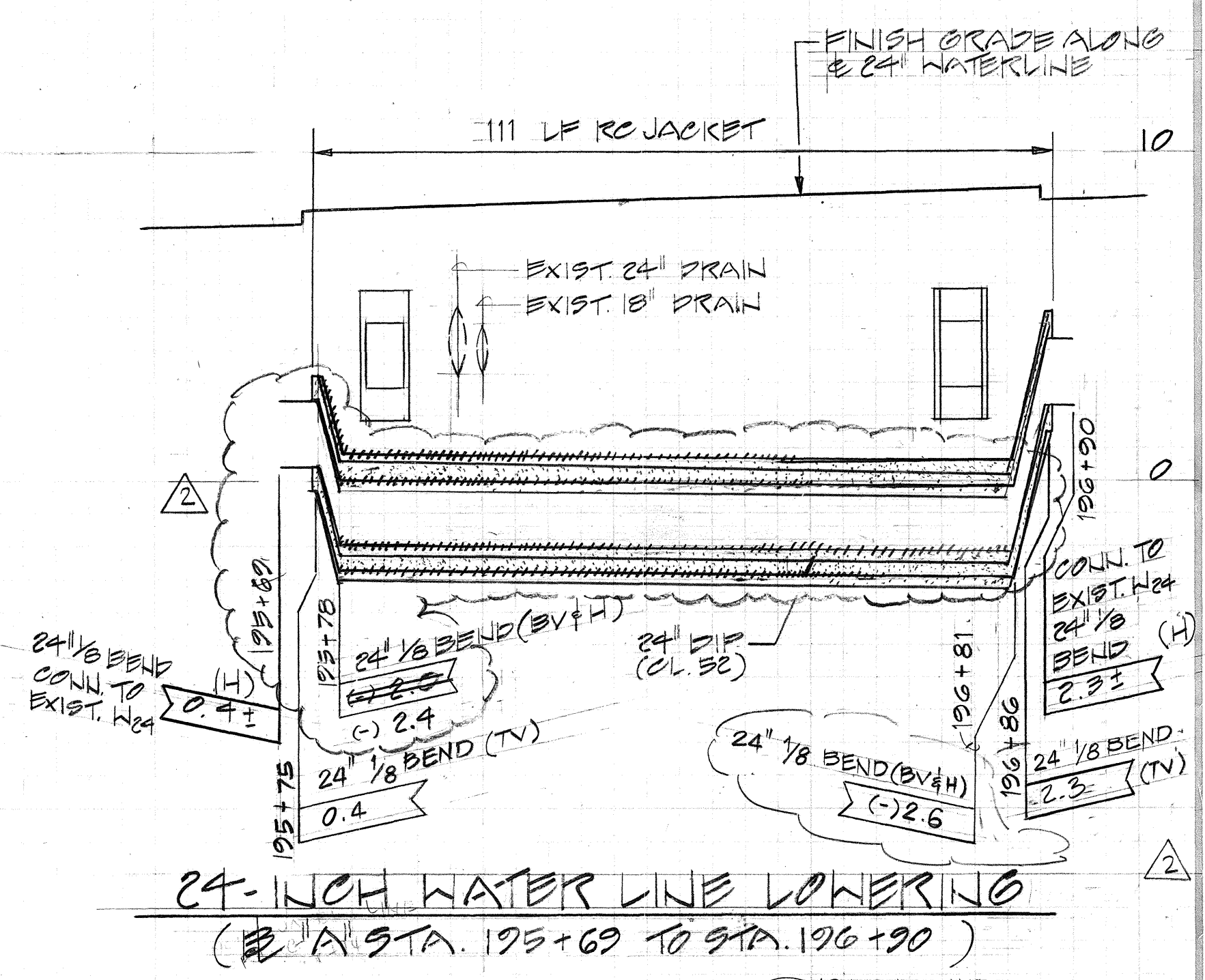
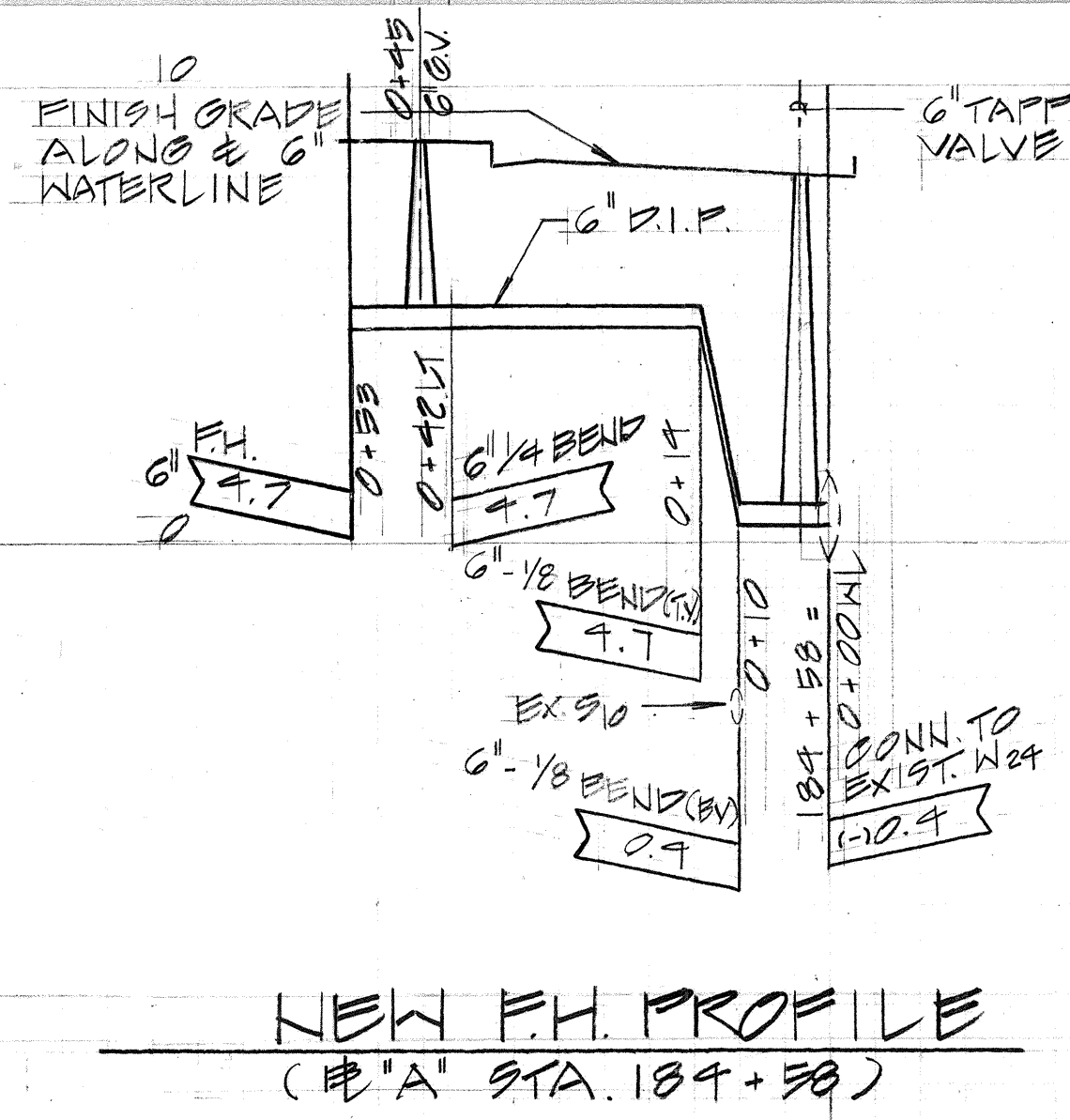
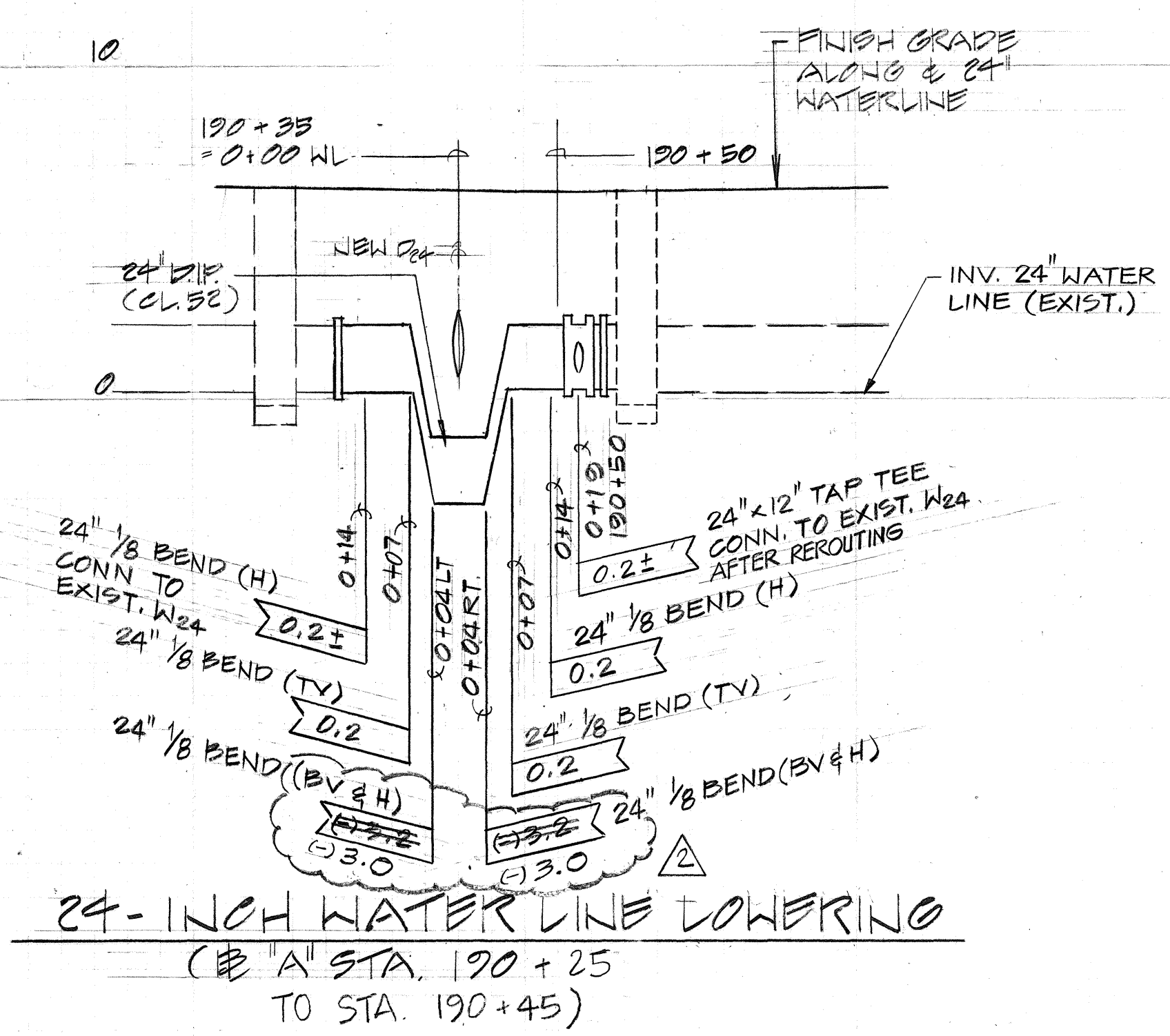
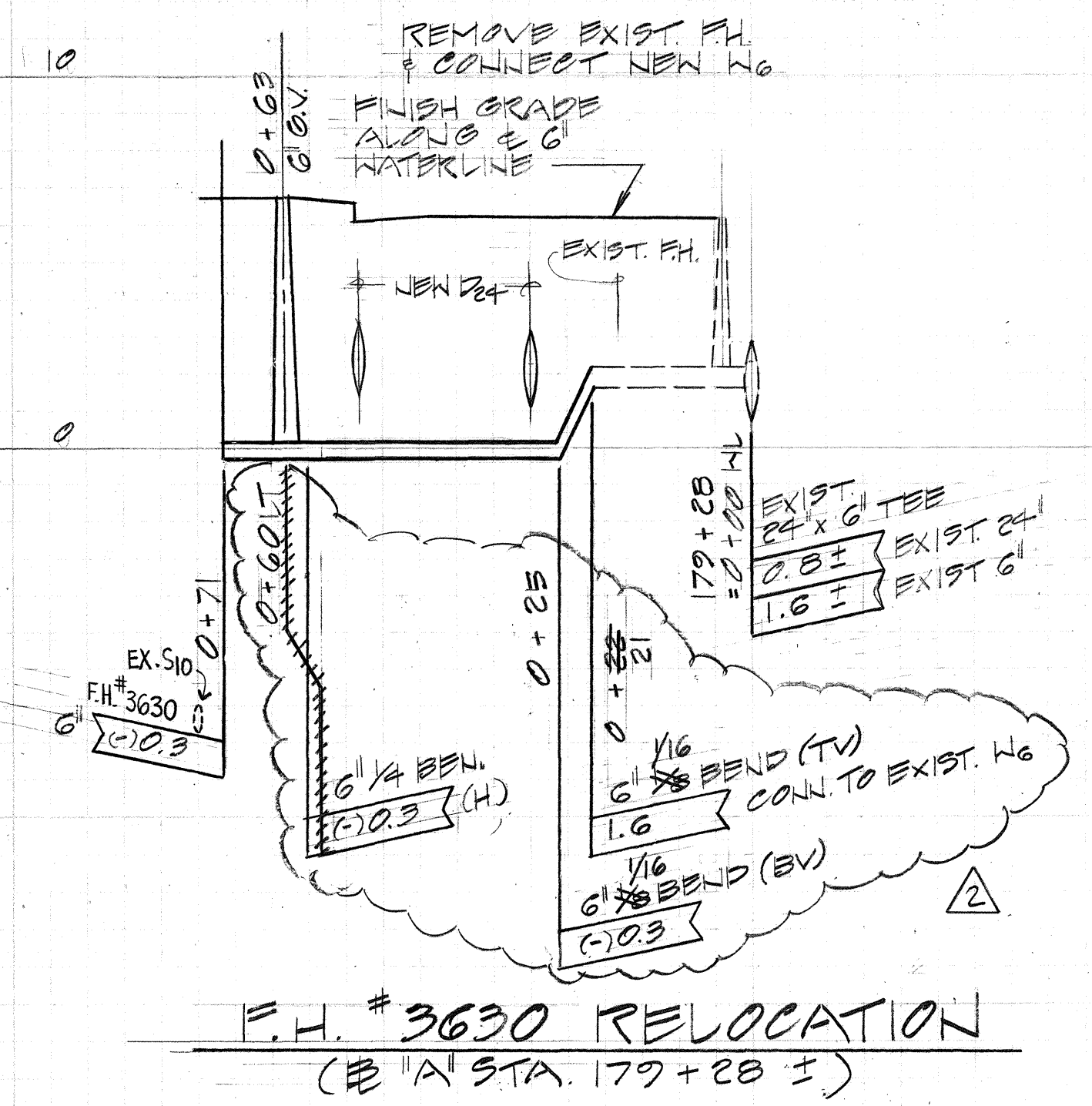
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Parin, Inc.
d/b/a PARK ENGINEERING

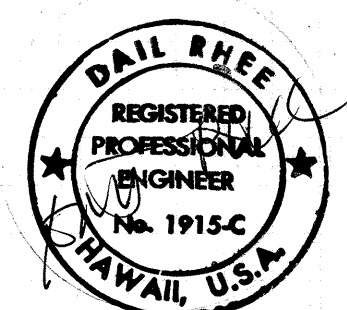
"AS-BUILT"

78

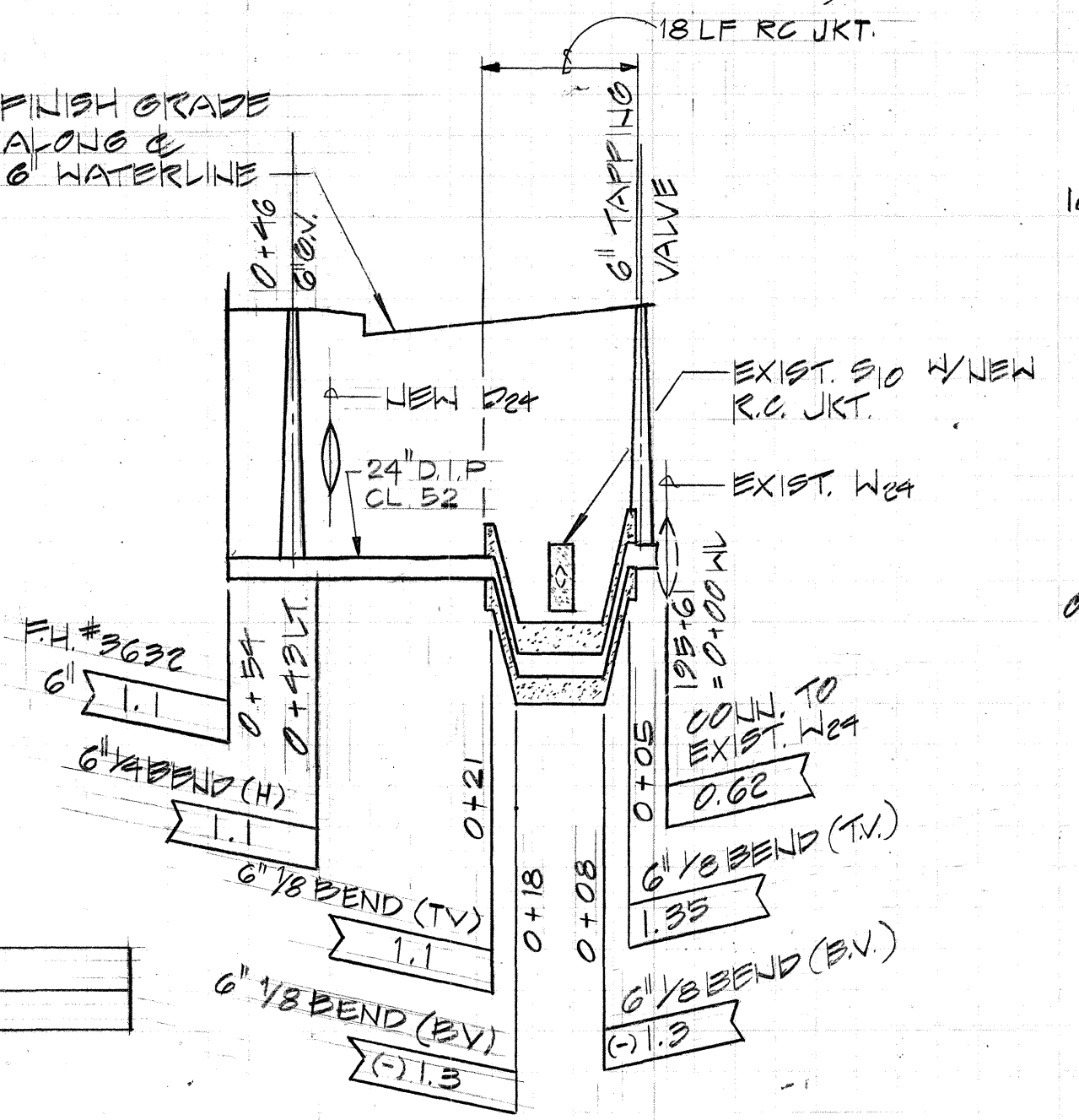
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-072-1(35)	1993	179	340



DATE	REVISION
	C.O.#2



F.H. #3632 RELOCATION
(# "A" STA. 195+61)



SCALES: HORIZ: 1" = 20'
VERT: 1" = 4'

APPROVED: *[Signature]* DATE: 11-17-93
CHIEF, PLANNING AND ENGINEERING BOARD OF WATER SUPPLY

APPROVED: *[Signature]* DATE: 7/2/93
CHIEF, DIV. OF WASTEWATER MGMT. (FOR EFFECT ON SEWERS ONLY)

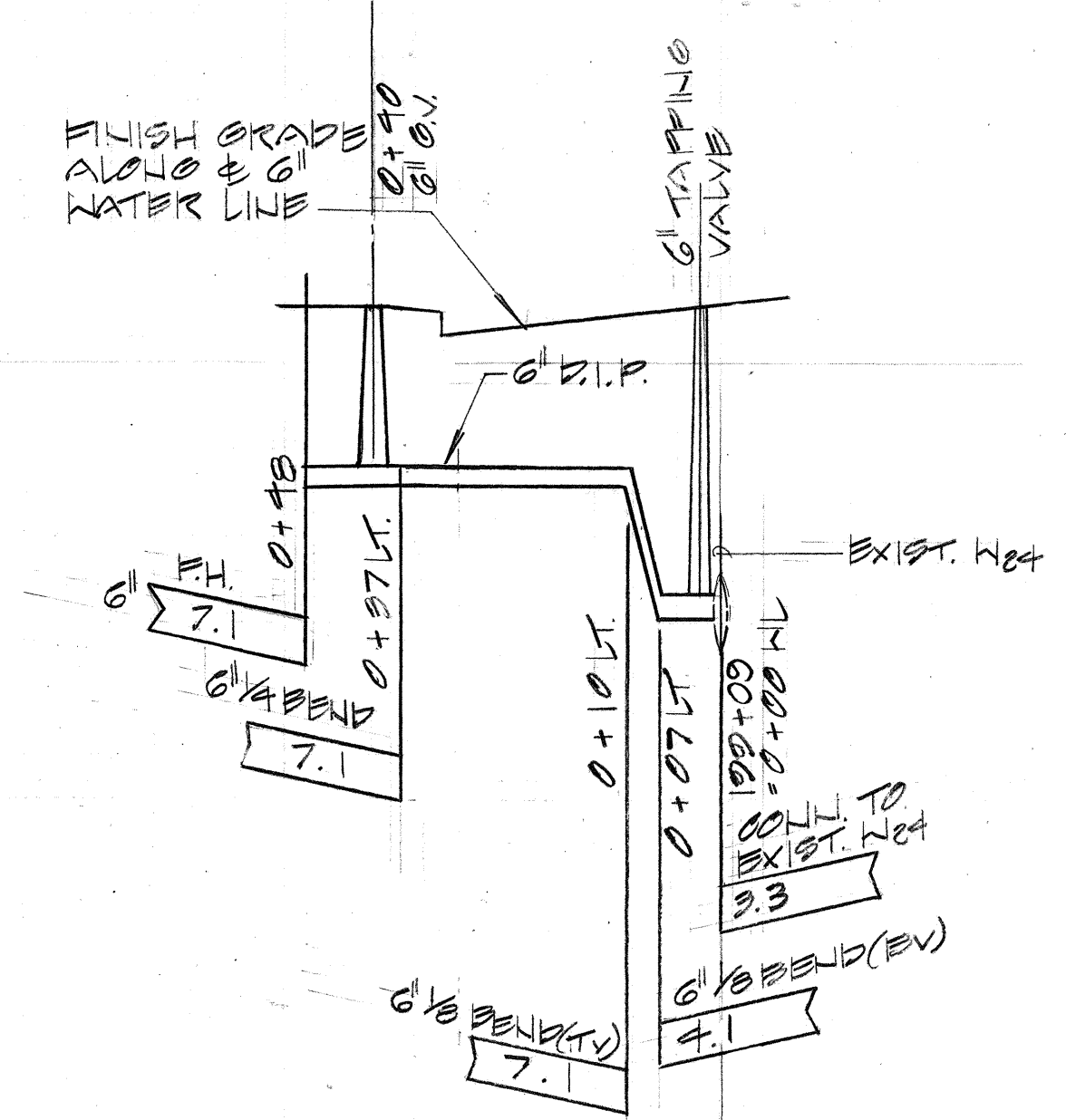
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER PROFILES

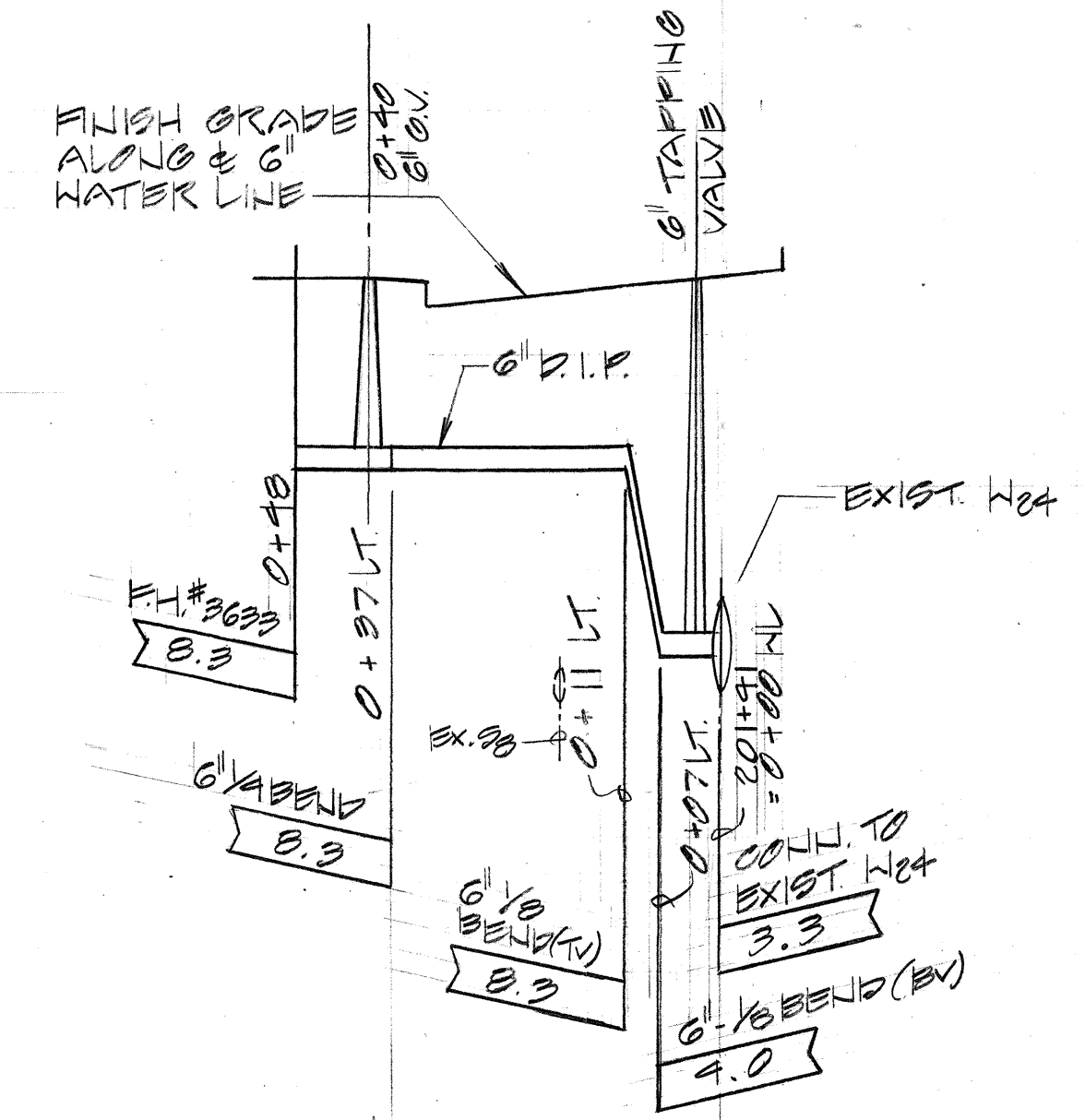
KALANIANA'OLE HIGHWAY
E. HALEMAUMAU ST. TO KEA HOLE ST.
F.A. PROJECT NO. STP-072-1(35)
Scale: NH Date: 10/1/92

SHEET NO. 15 OF 18 SHEETS

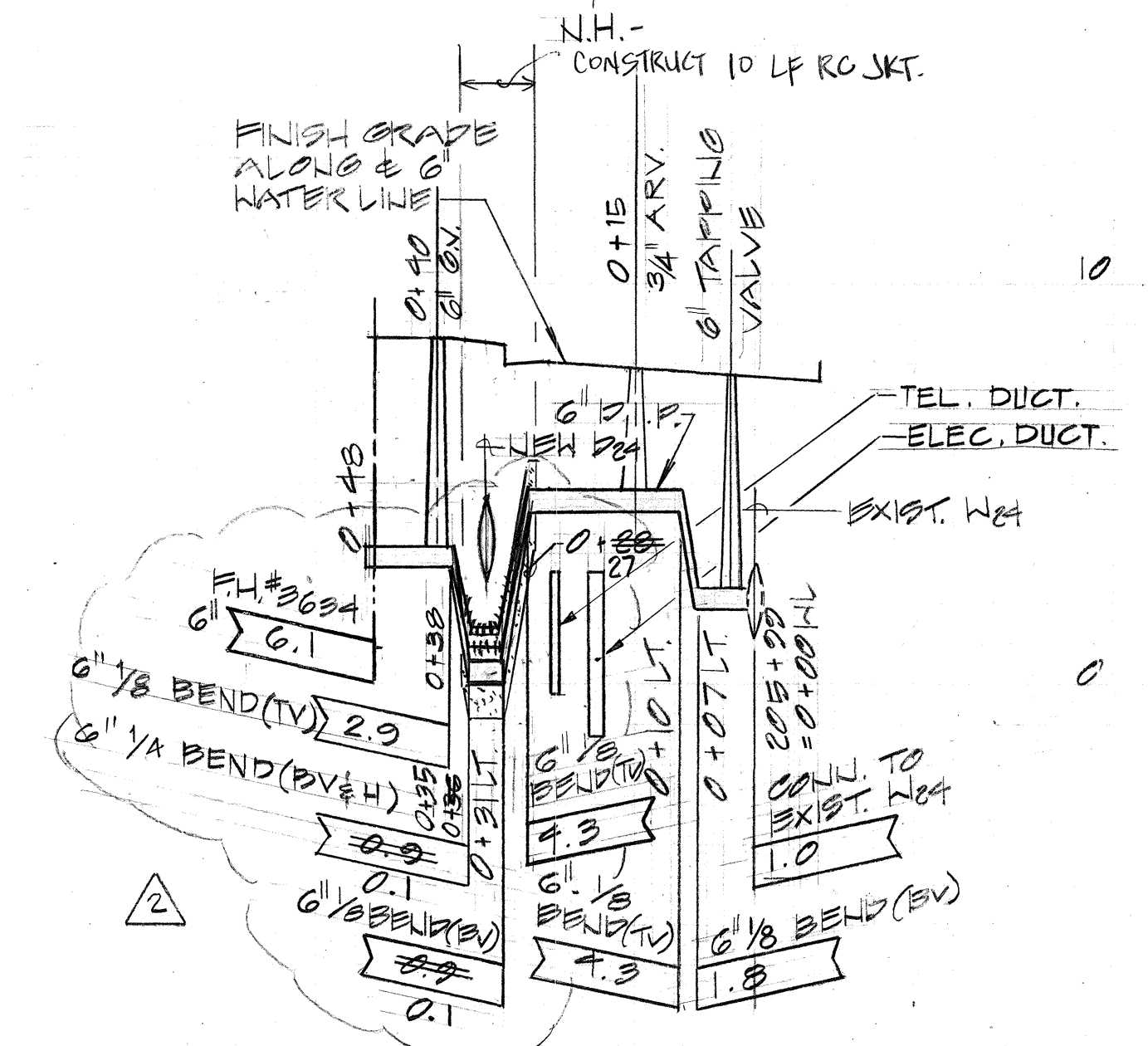
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-072-1(35)	1993	180	340



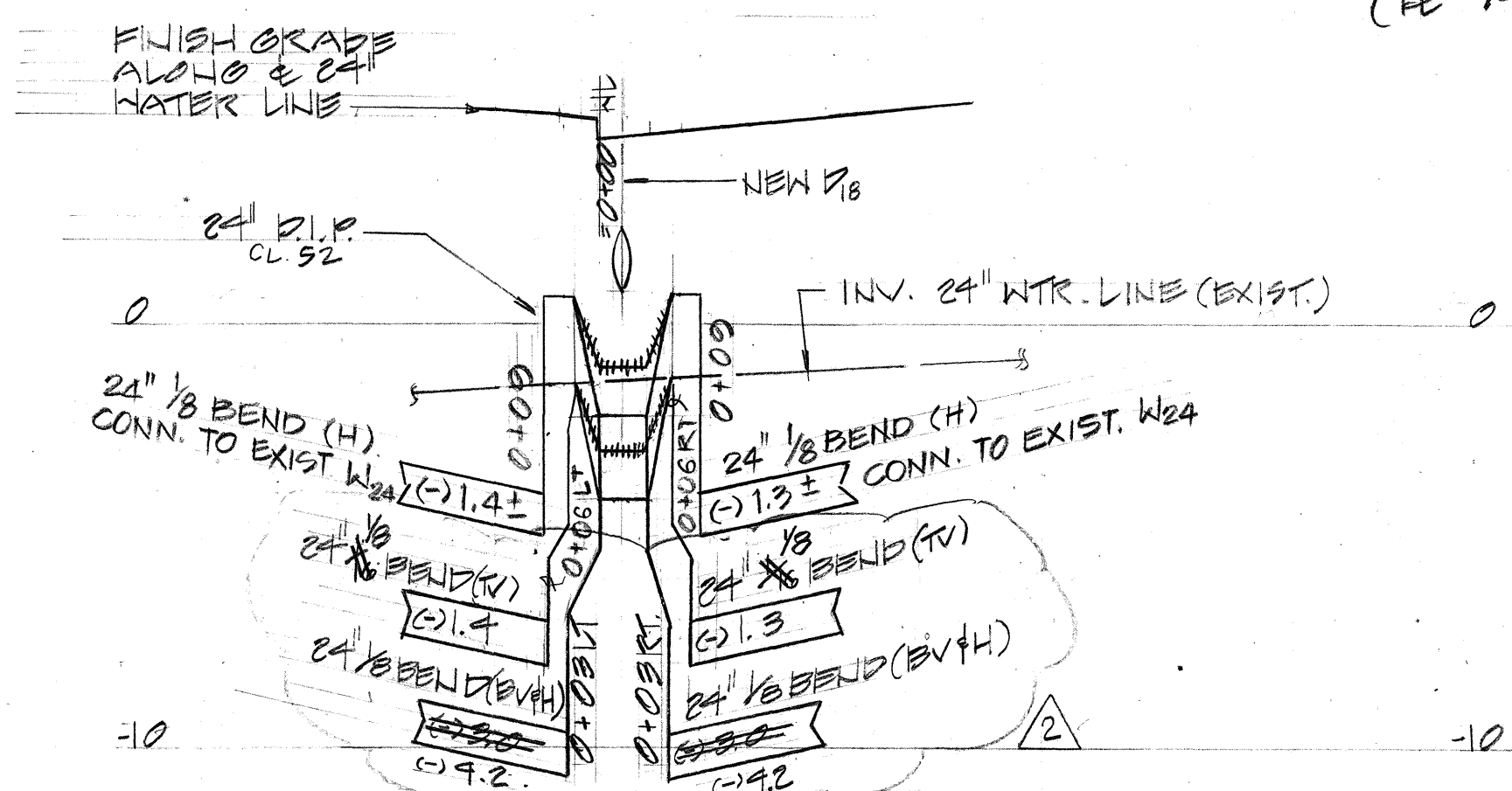
NEW F.H. PROFILE
(# "A" STA. 199+09)



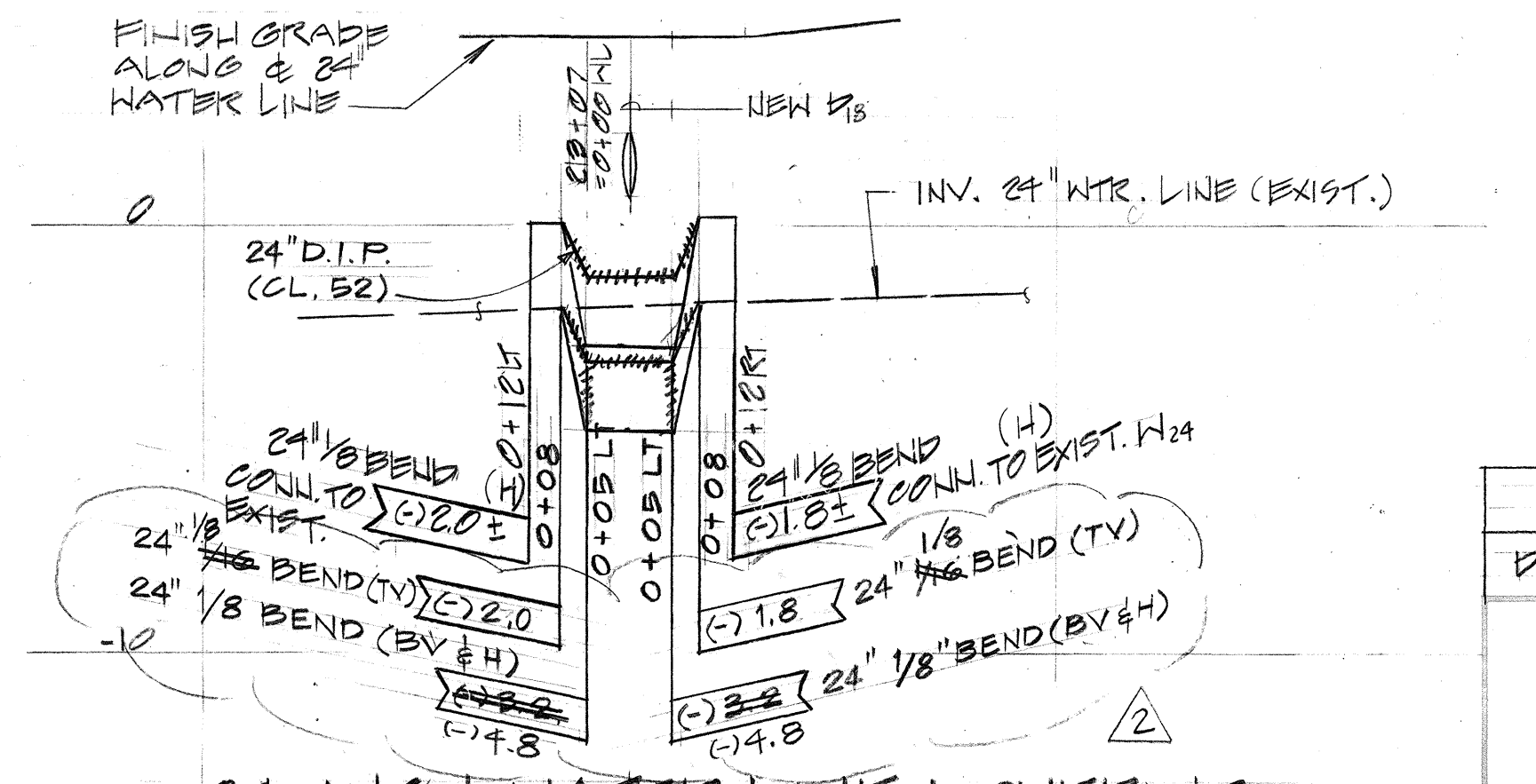
F.H. #3633 RELOCATION
(# "A" STA. 201+41)



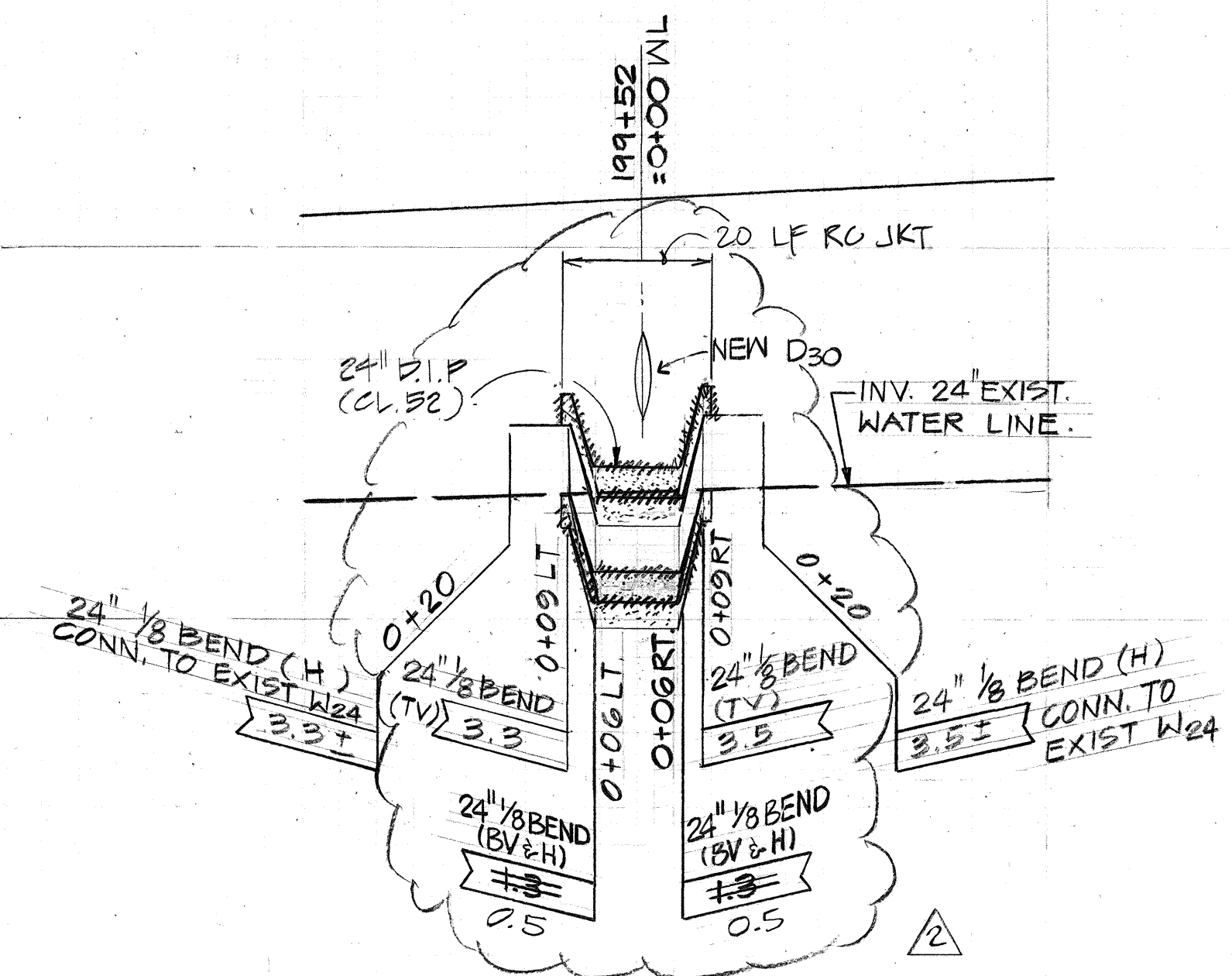
F.H. #3634 RELOCATION
(# "A" STA. 205+99)



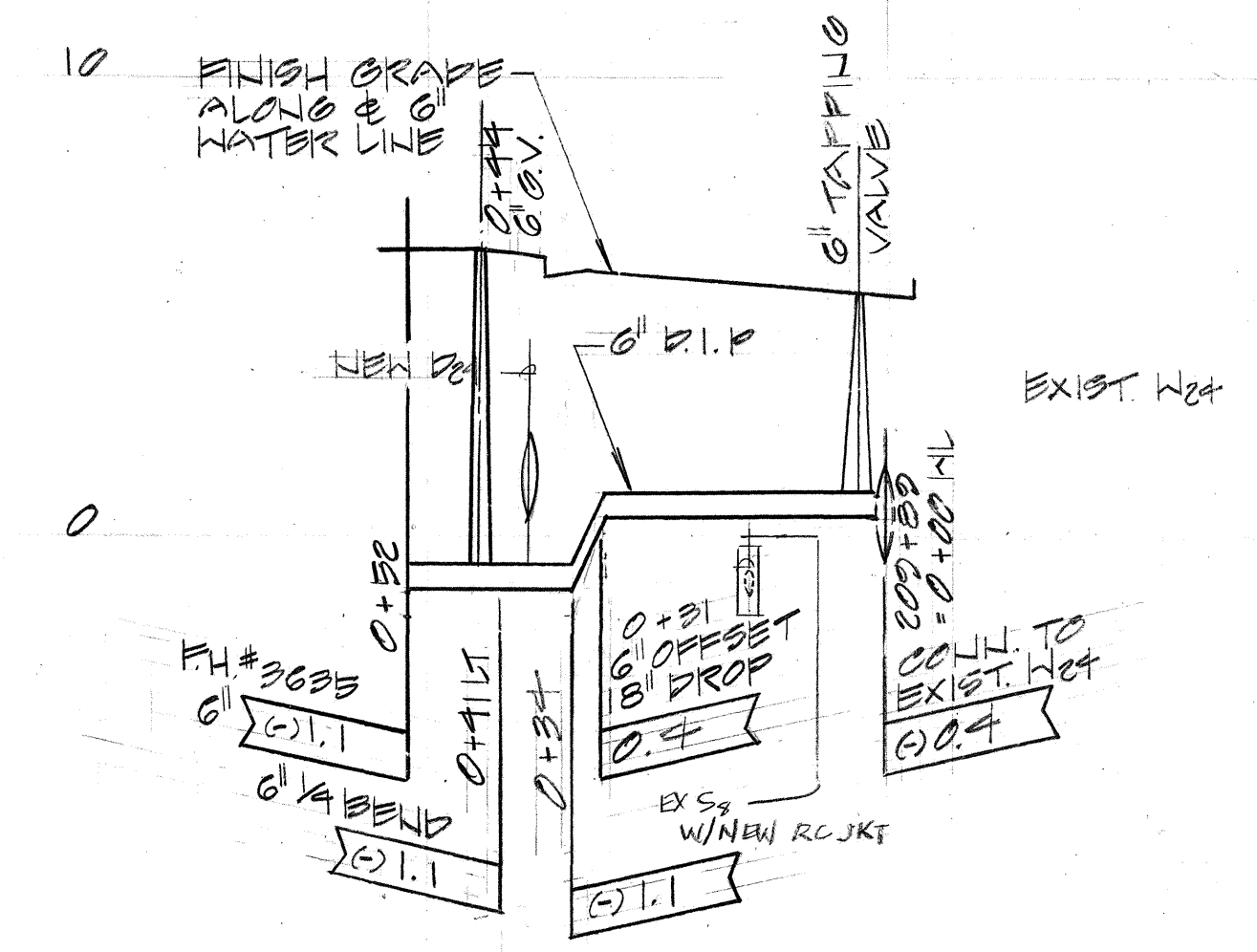
24-INCH WATER LINE LOWERING
(# "A" STA. 214+12 ±)



24-INCH WATER LINE LOWERING
(# "A" STA. 213+07 ±)



24-INCH WATER LINE RELOCATION
(# "A" STA. 199+52 ±)



F.H. #3635 RELOCATION
(# "A" STA. 209+89)

SCALES: HORIZ. 1" = 20'
VERT. 1" = 4'

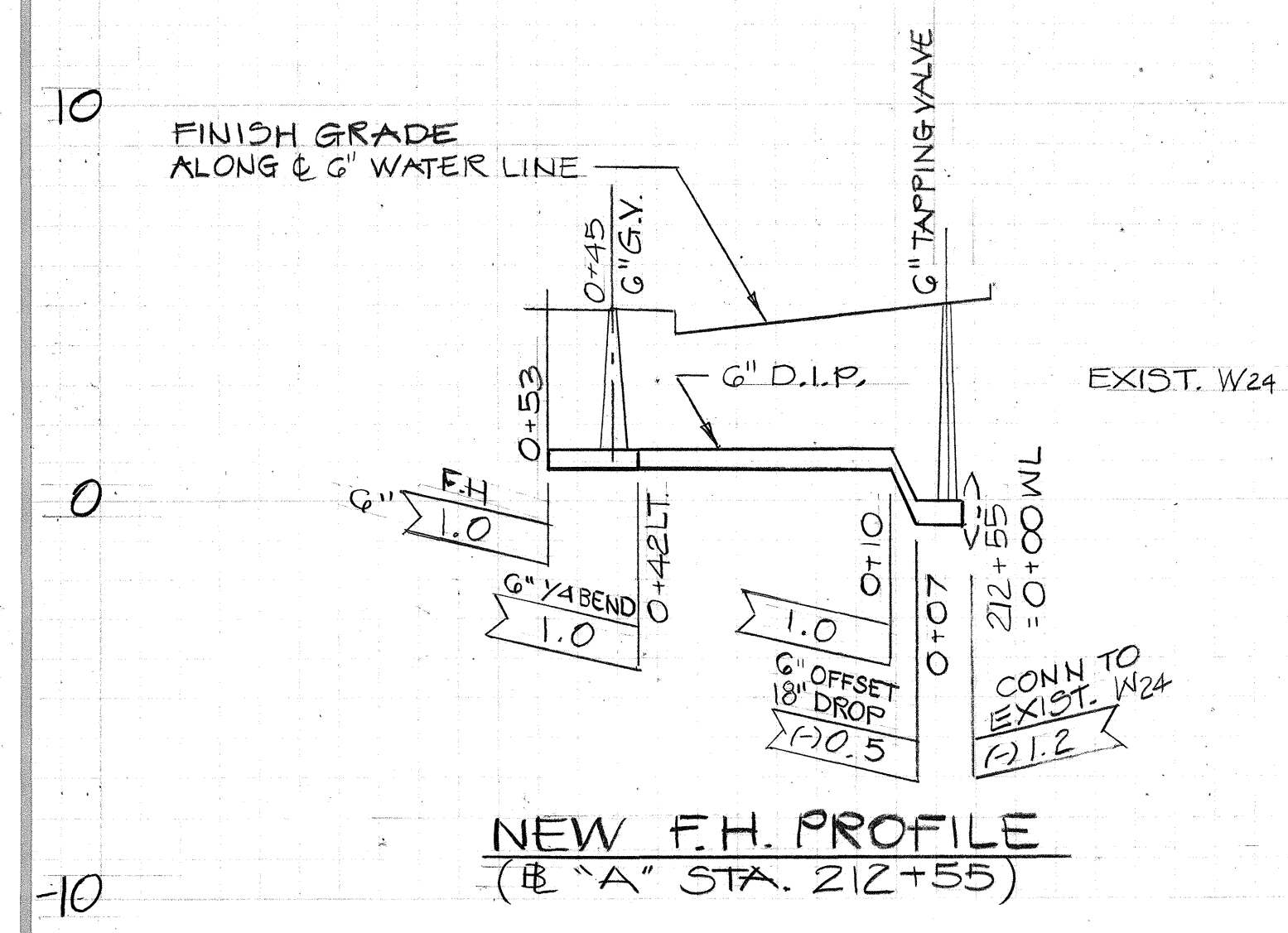
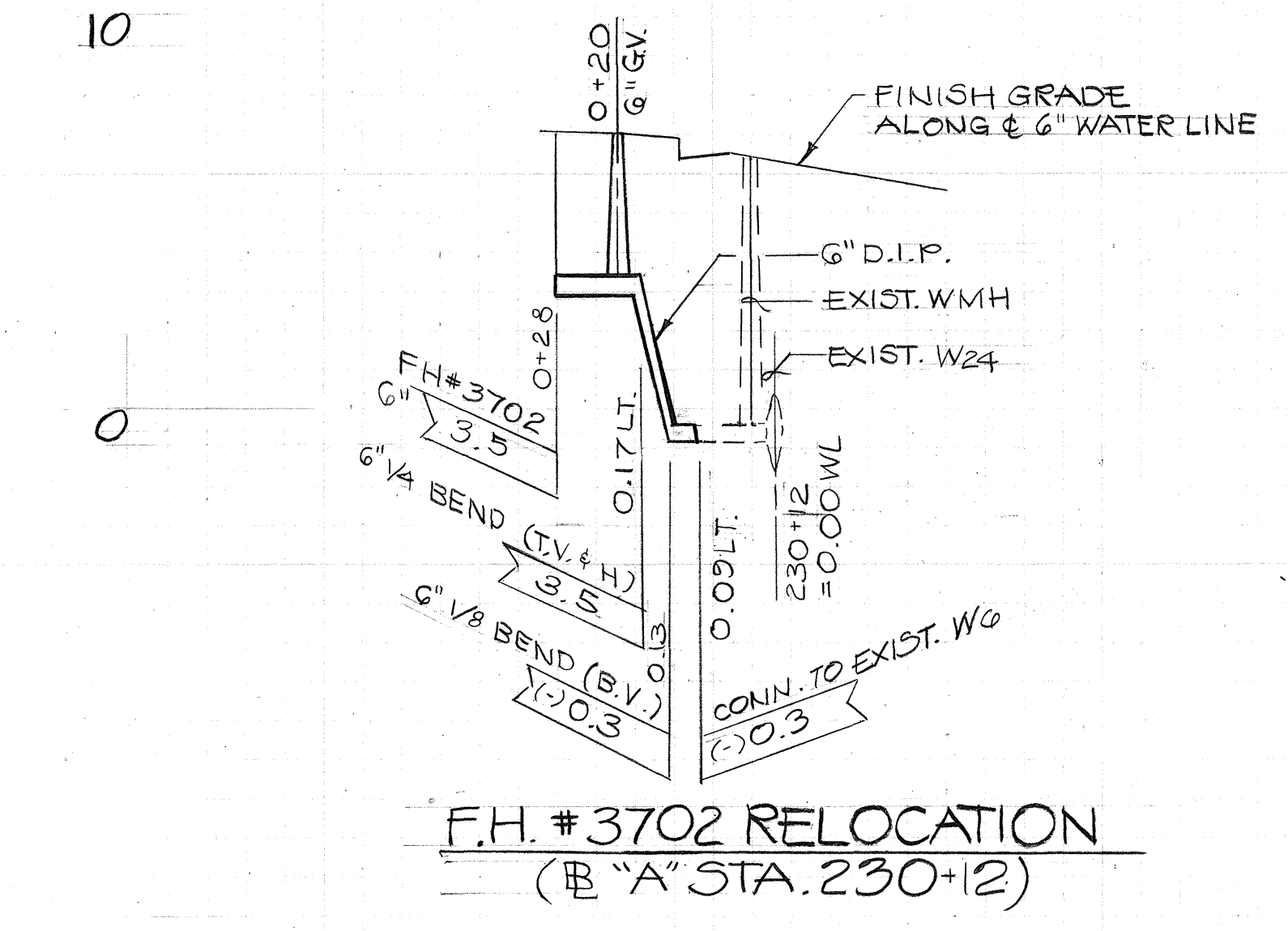
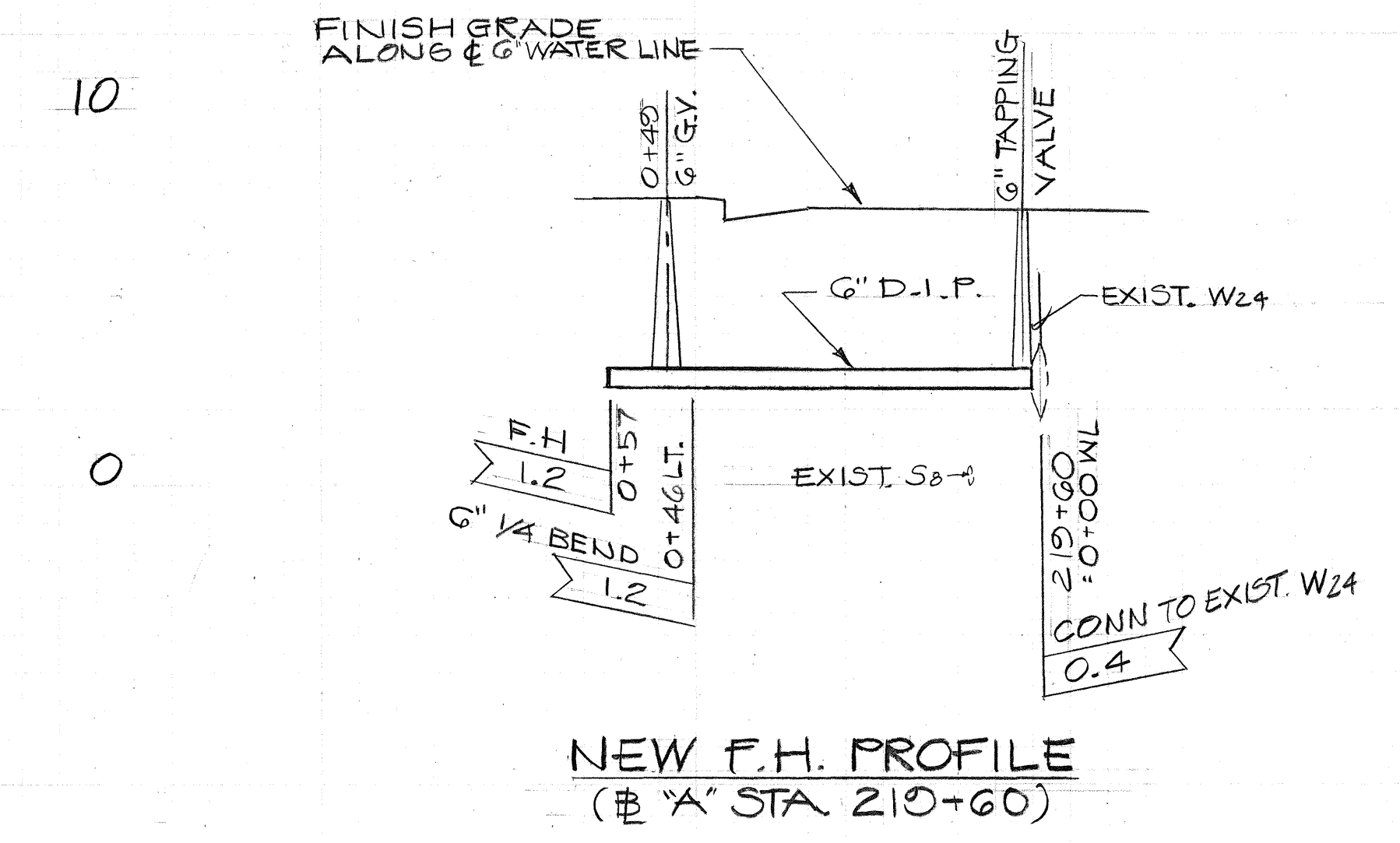
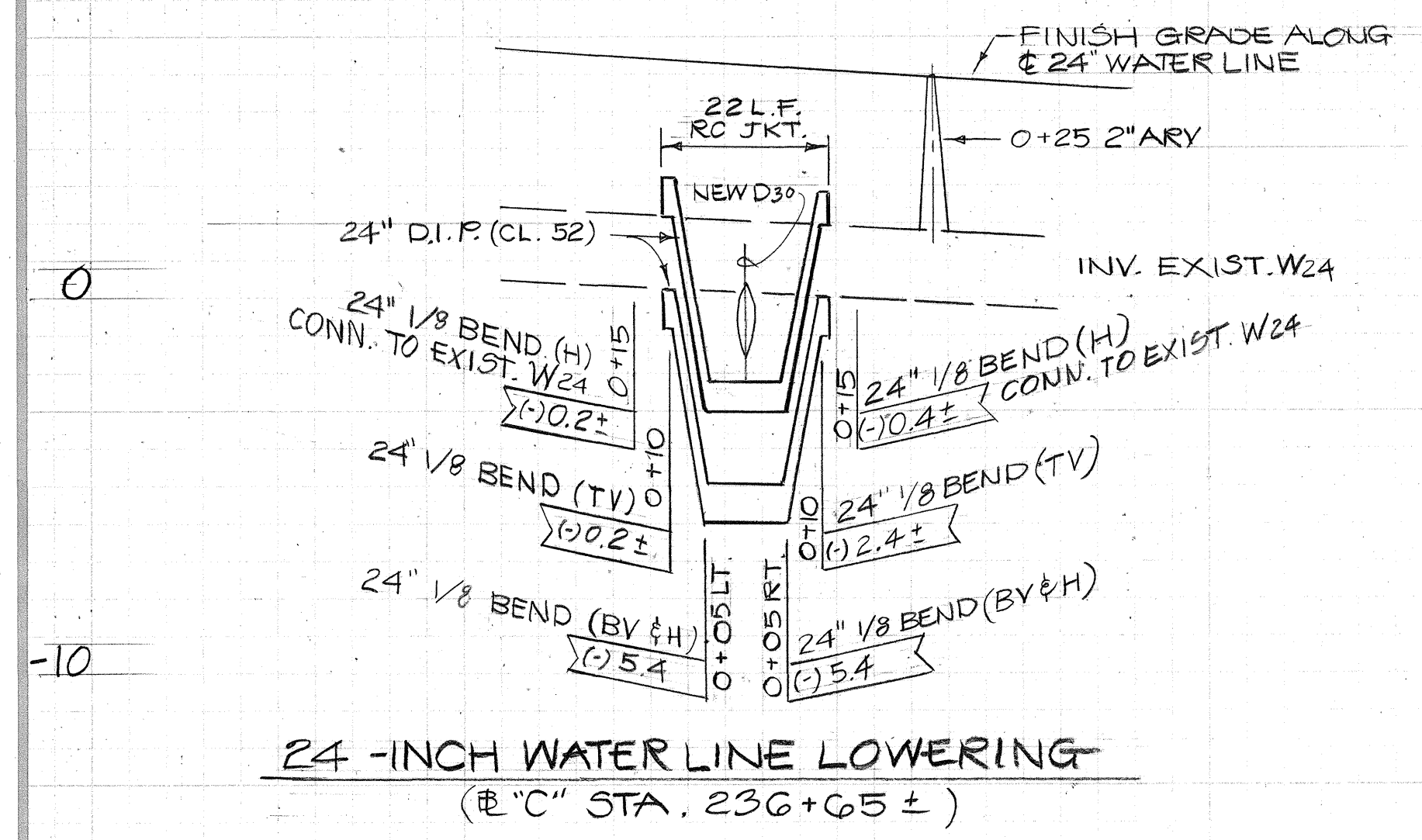
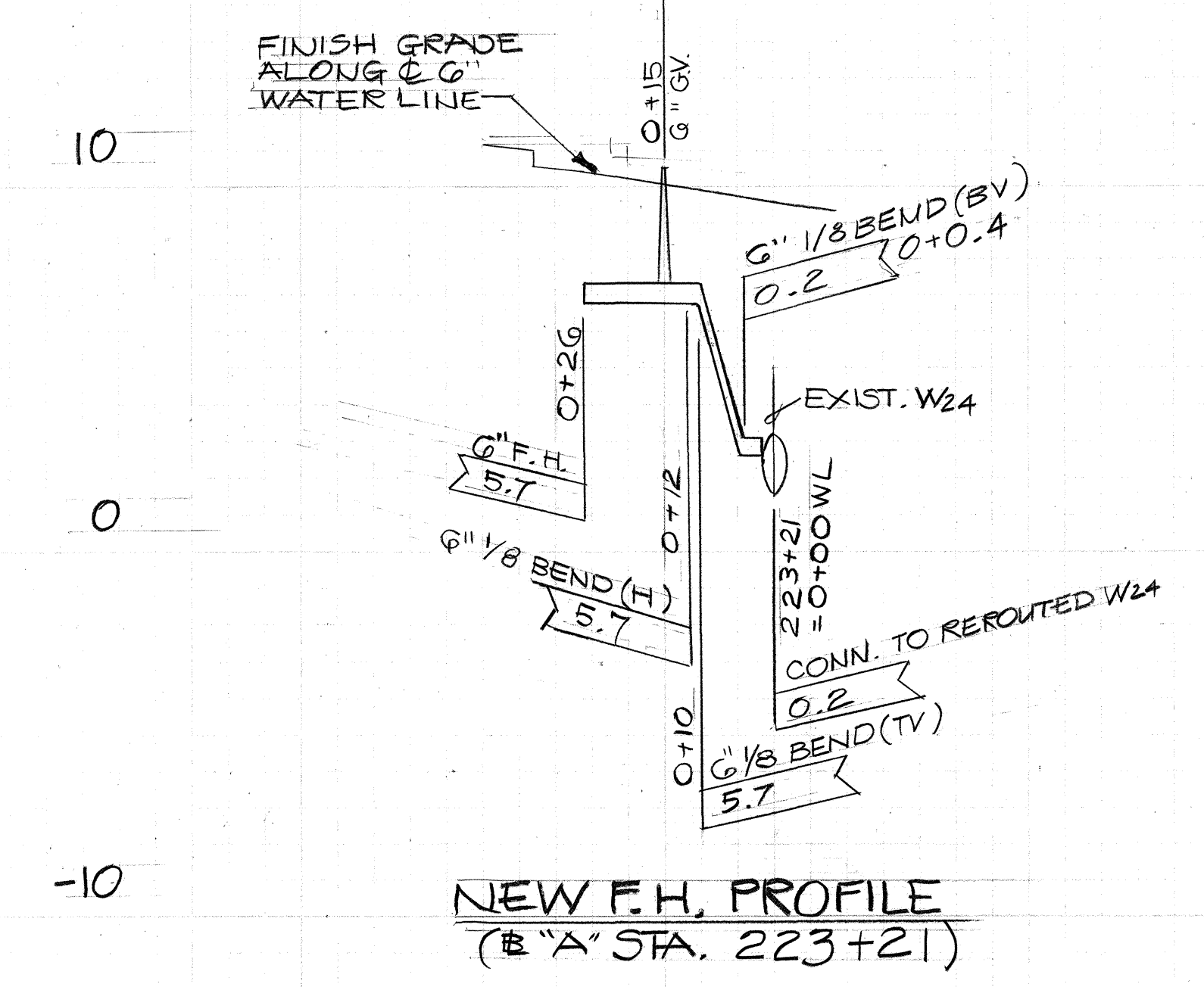
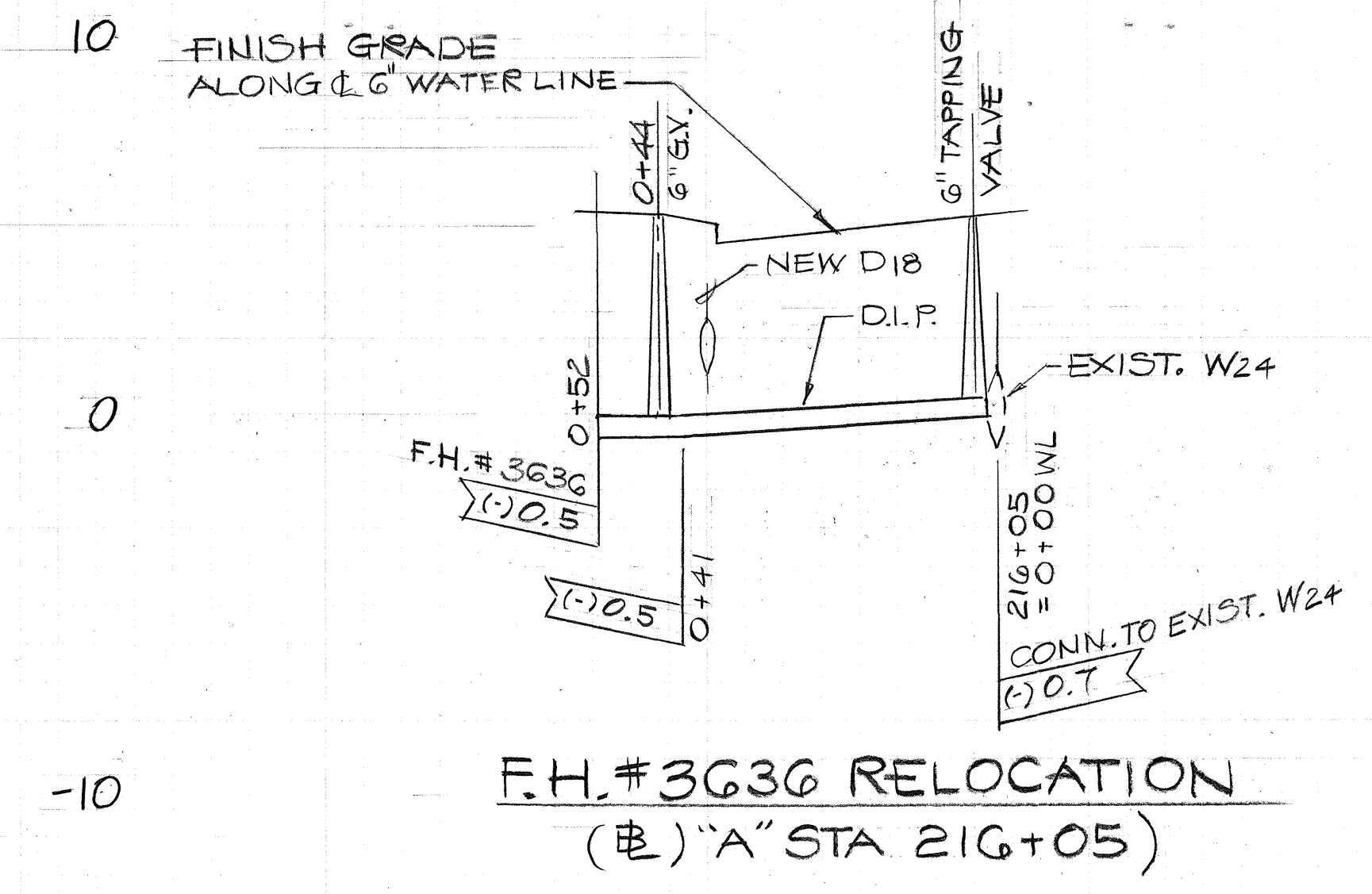
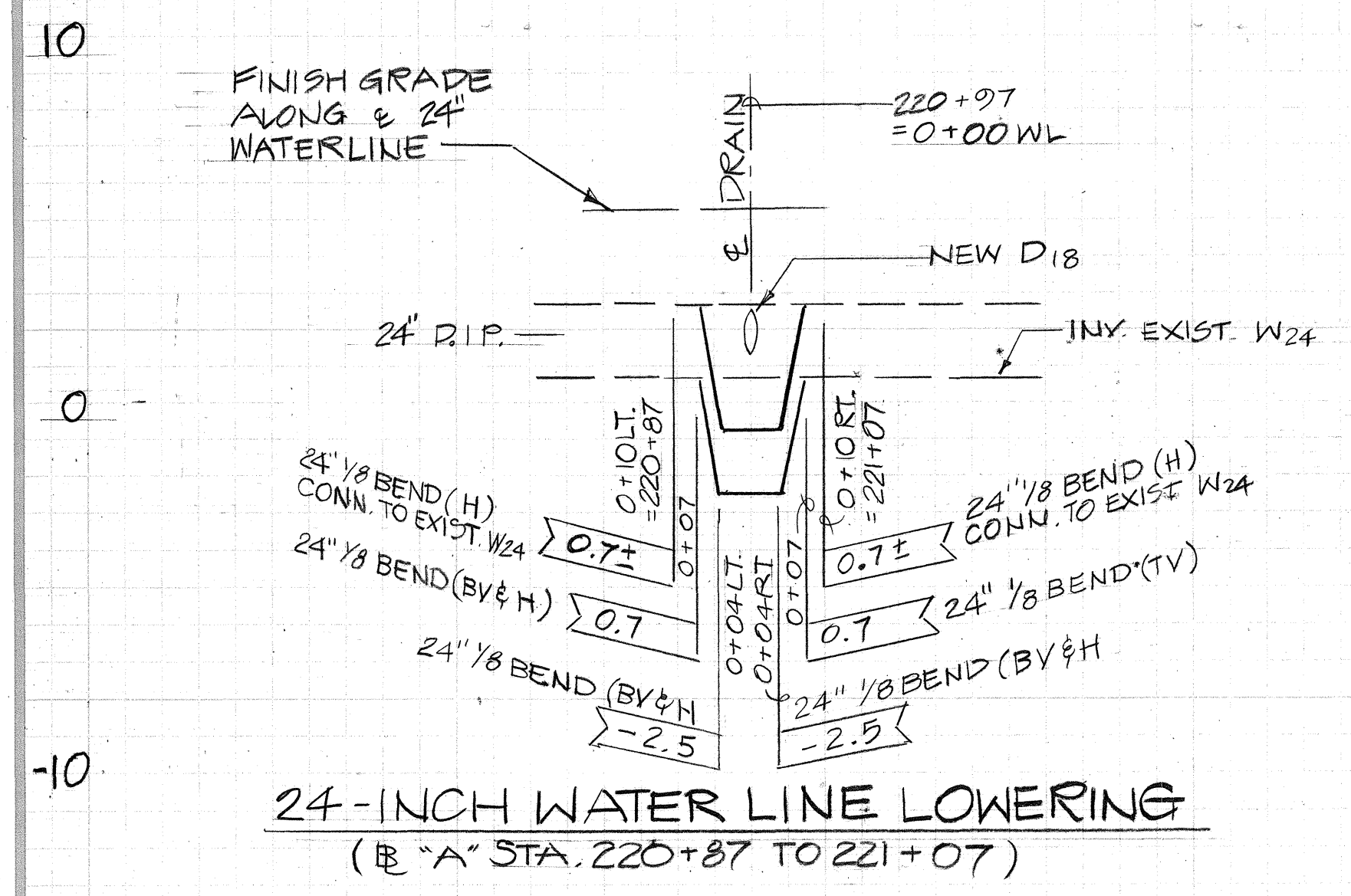
APPROVED: *[Signature]* DATE: 11-17-93
CHIEF, PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY

APPROVED: *[Signature]* DATE: 7/2/93
CHIEF, DIV. OF WASTEWATER MGMT.
(FOR "EFFECT ON SEWERS" ONLY)



DATE	C.O. # 2
REVISION	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
WATER PROFILES	
KALANIANA'OLE HIGHWAY E. HALEMAUMAU ST. TO KEAHOE ST.	
F.A. PROJECT NO. STP-072-1(35)	
Scale:	NH- Date: 10/1/92
SHEET NO. 16 OF 18 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-STP-072-1(35)	1973	181	340



NOTE: FOR REVISED DETAIL OF 24" WATER LINE AT KULIQUON BRIDGE SEE SHT 154S-1

APPROVED: <i>J. Uyama</i>	DATE: 7/2/73
CHIEF, WASTEWATER MGMT. (FOR EFFECT ON SEWERS ONLY)	
APPROVED: <i>A. Moulton</i>	DATE: 11-11-73
CHIEF, PLANNING AND ENGINEERING BOARD OF WATER SUPPLY	

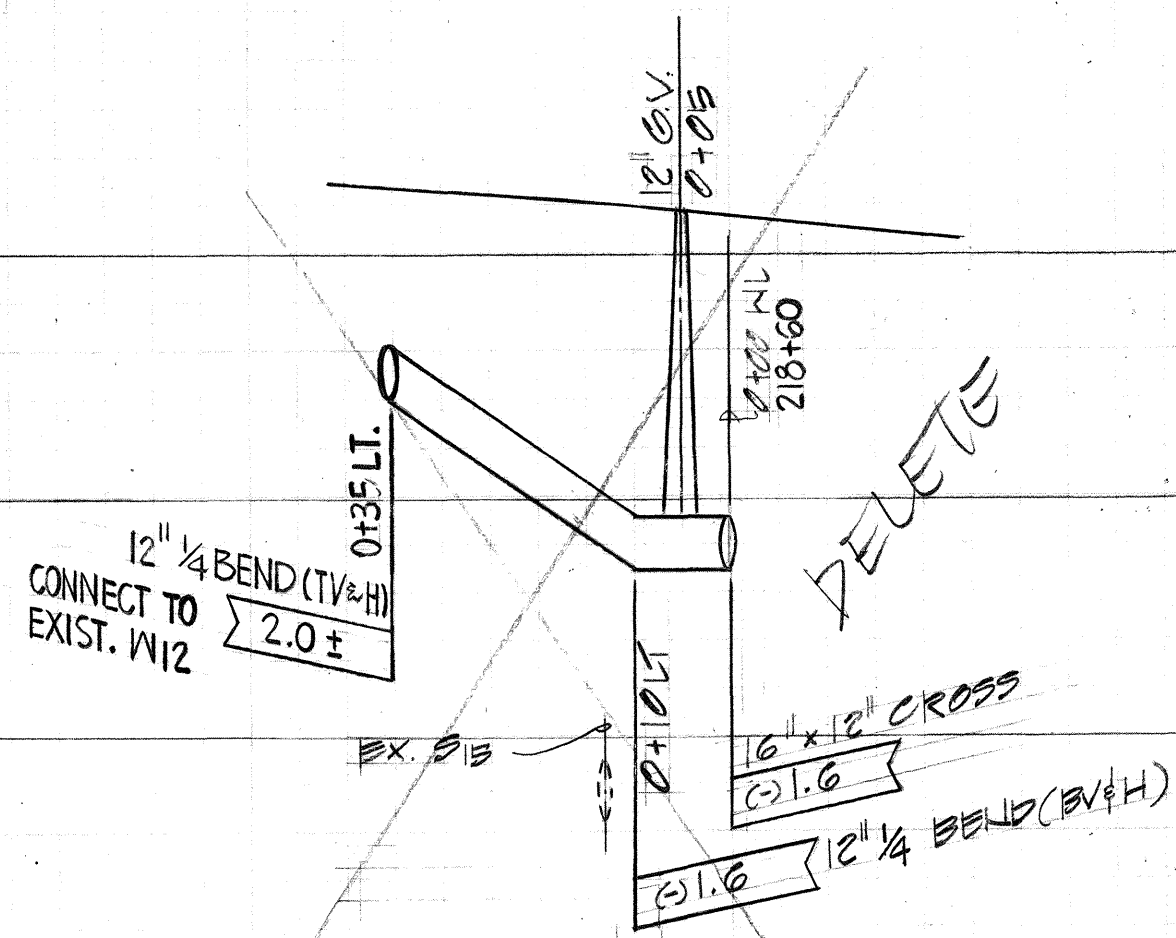
C.O.#3: REVISE F.H. PROFILE AT B 'A' STA. 223+21
C.O.#2: REVISE 24" WATER LINE LOWERING AT B 'A' STA. 220+87 TO 221+07 AND B 'C' STA. 236+65 ±.
REVISE F.H. PROFILE AT B 'A' STA. 219+60
RELOCATION OF F.H.#3702 AT B 'A' STA. 230+12

DATE	REVISION

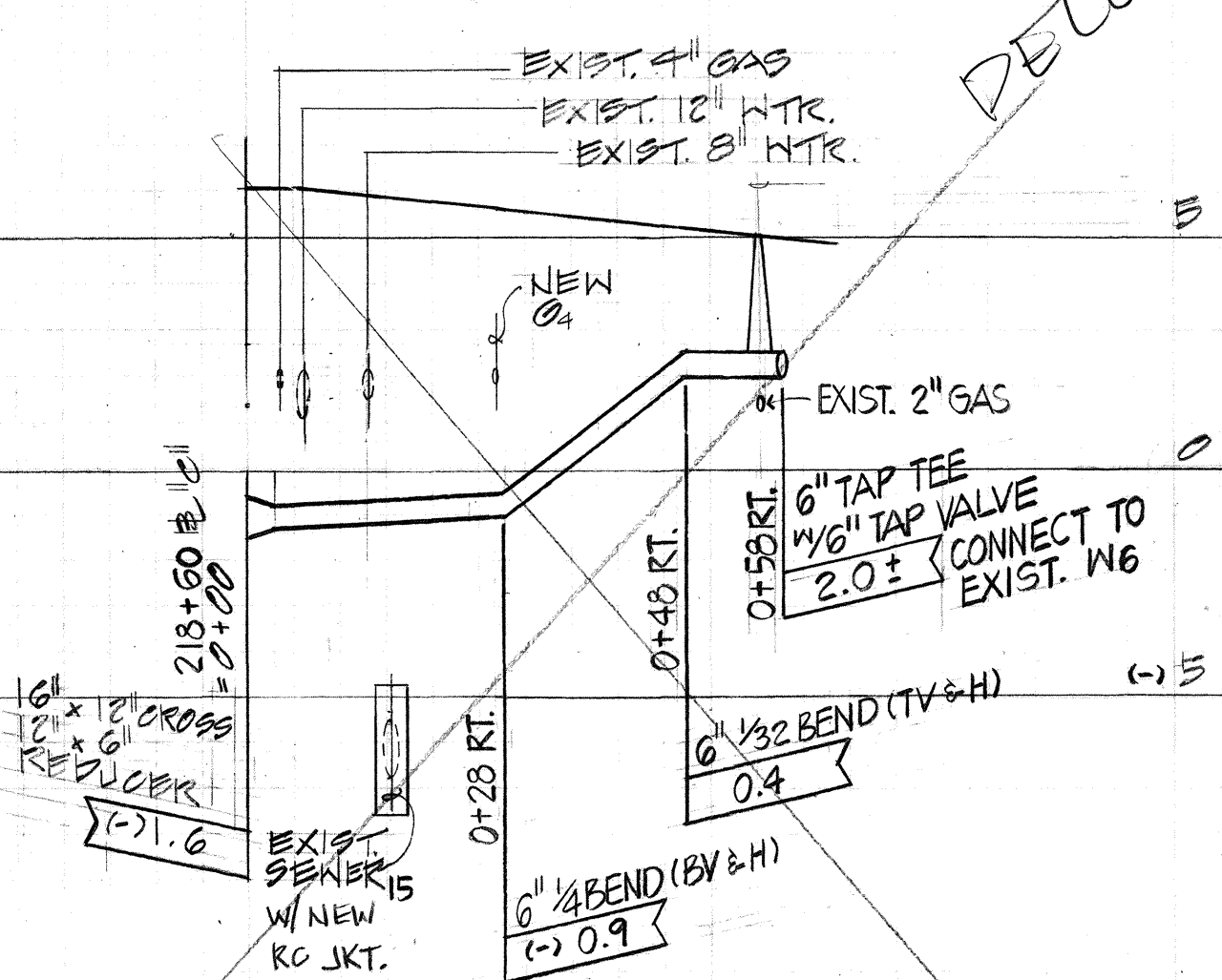
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER PROFILES
KALANIANA'OLE HIGHWAY
E. HALEMAUMAU ST. TO KEAHOLE ST.
F.A. PROJECT NO. NH-STP-072-1(35)
SCALE: DATE:
SHEET NO. OF SHEETS

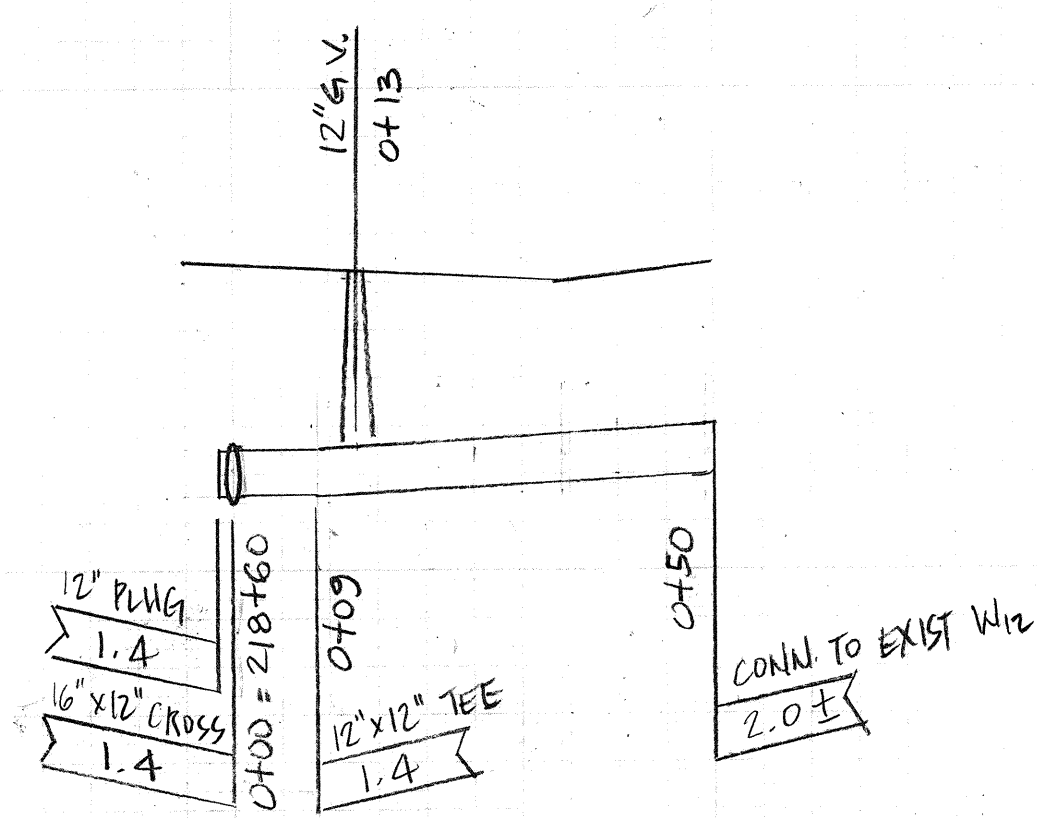
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-072-1(35)	1993	182	340



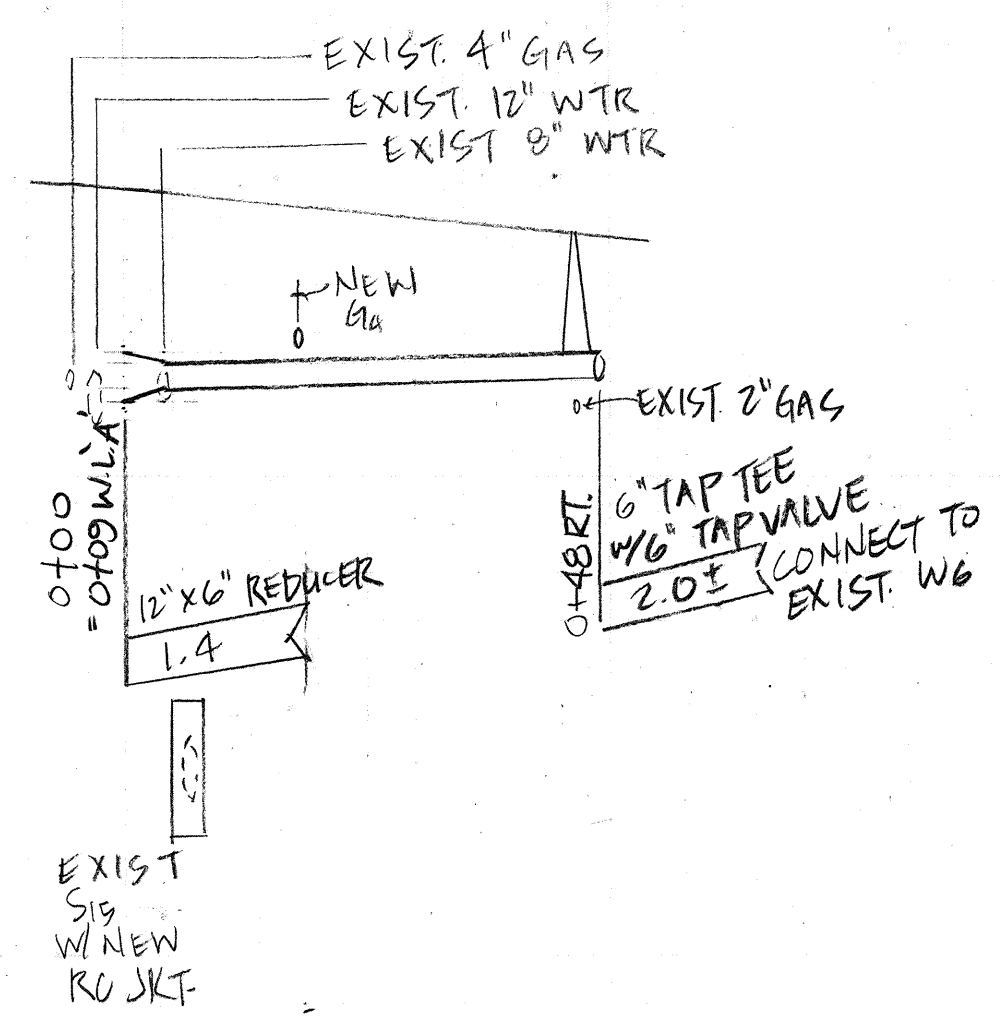
PROFILE - 12" W.L. - "A"
(@ "C" STA. 218+70) SEE BELOW



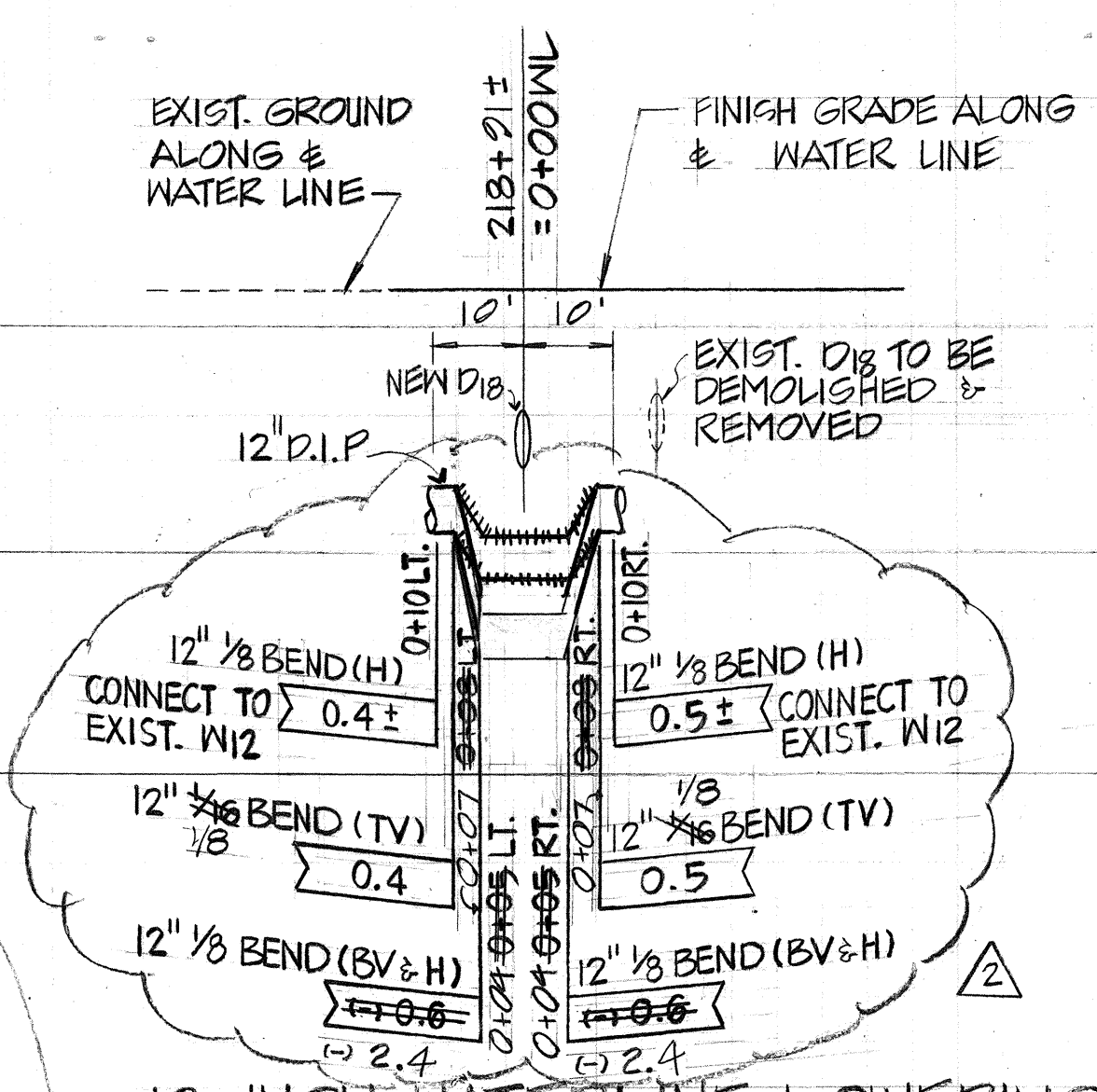
PROFILE - 6" W.L. - "B"
SEE BELOW



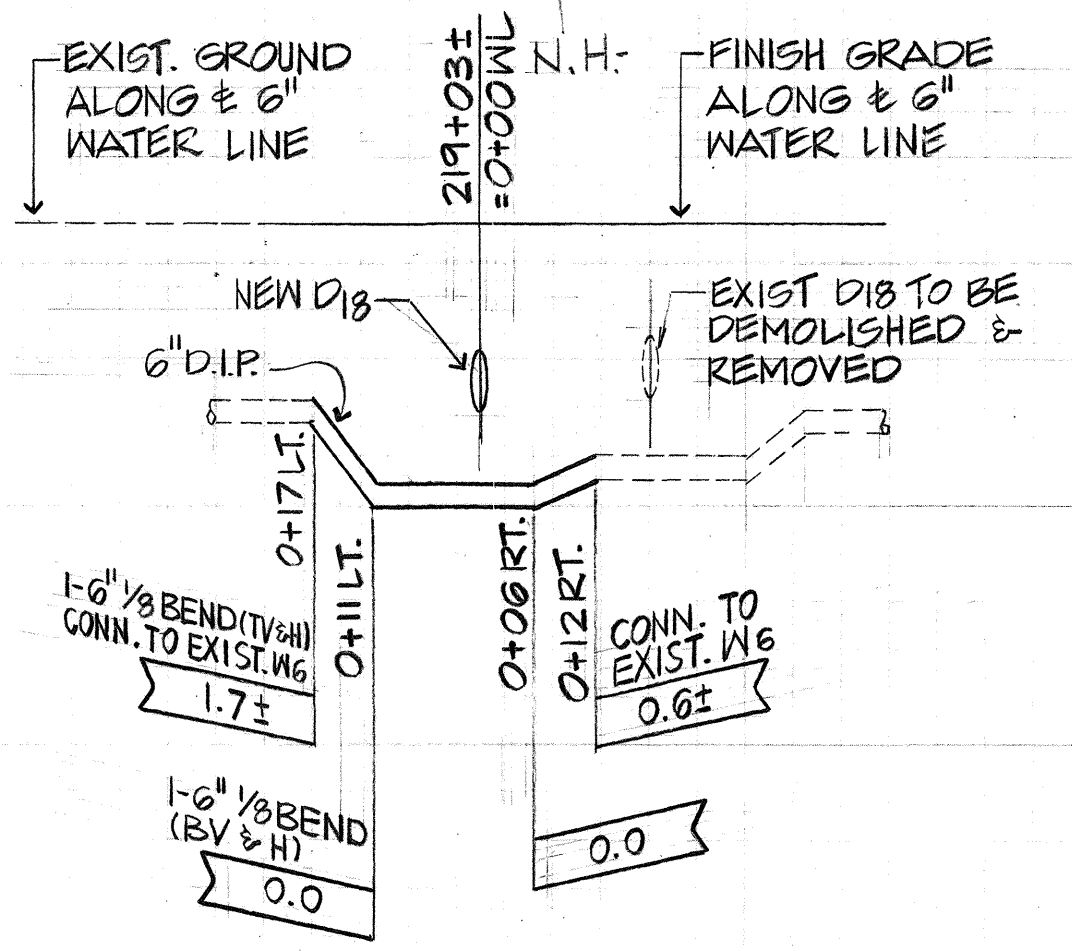
PROFILE - 12" W.L. - "A"
(@ "C" STA. 218+60)



PROFILE - 6" W.L. - "B"



12-INCH WATERLINE LOWERING
(@ "A" STA. 218+91 ±)



6-INCH WATERLINE LOWERING
(@ "A" STA. 219+03 ±)

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

APPROVED: *[Signature]* DATE: 7/2/93
CHIEF, DIV. OF WATERWATER MGMT.
(FOR EFFECT ON SEWERS ONLY)

APPROVED: *[Signature]* DATE: 11-17-93
CHIEF, PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY

SCALES: HORIZ. 1" = 20'
VERT. 1" = 4'



9/8/94	REVISION W.L. 'A' & 'B' PROFILE	BWS	DATE
	a.o. #2		
DATE	REVISION	APPROVED	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER PROFILES

KALANIANA'OLE HIGHWAY
E. HALEMAUMAU ST. TO KEAHOE ST.
F.A. PROJECT NO. STP-072-1(35)

Scale: NH Date: 10/1/92
SHEET No. 18 OF 18 SHEETS