

## CURVE DATA

~~$$\begin{aligned}\Delta &= 11^{\circ}37'00'' \\ A/2 &= 5^{\circ}48'30'' \\ R &= 800.00' \\ T &= 81.38 \\ C &= 161.92 \\ LC &= 162.20\end{aligned}$$~~

TRUE NORTH

SCALE: 1" = 40'

New GOLF 3 Each

Extend existing

24" RCP Lines—

## DATA

$$\begin{aligned}\Delta &= 18^{\circ} 14' 30'' \\ 4\frac{1}{2} &= 9^{\circ} 07' 15'' \\ R &= 2600.00 \\ T &= 417.42 \\ C &= 824.29 \\ LC &= 827.78\end{aligned}$$

End existing  
24" RCP'S  
(See Sht. 13 for Inverts)

NOTE:  
WHERE DRAIN PIPES  
ARE LABELED STORM  
DRAIN, TYPE OF PIPE  
IS OPTIONAL I.E.

- 1)- REINFORCED CONCRETE PIPE
- 2)- CORRUGATED METAL PIPE OR
- 3)- STEEL SPIRAL RIB METAL PIPE.
- 4)- ALUMINUM SPIRAL RIB PIPE.

A) UNLESS NOTED OTHERWISE ON PLANS, ALL RCP SHALL BE CL. III.

B) 24" CMP = 0.138 INCH  
36" CMP = 0.138 INCH

425  
425  
424  
423

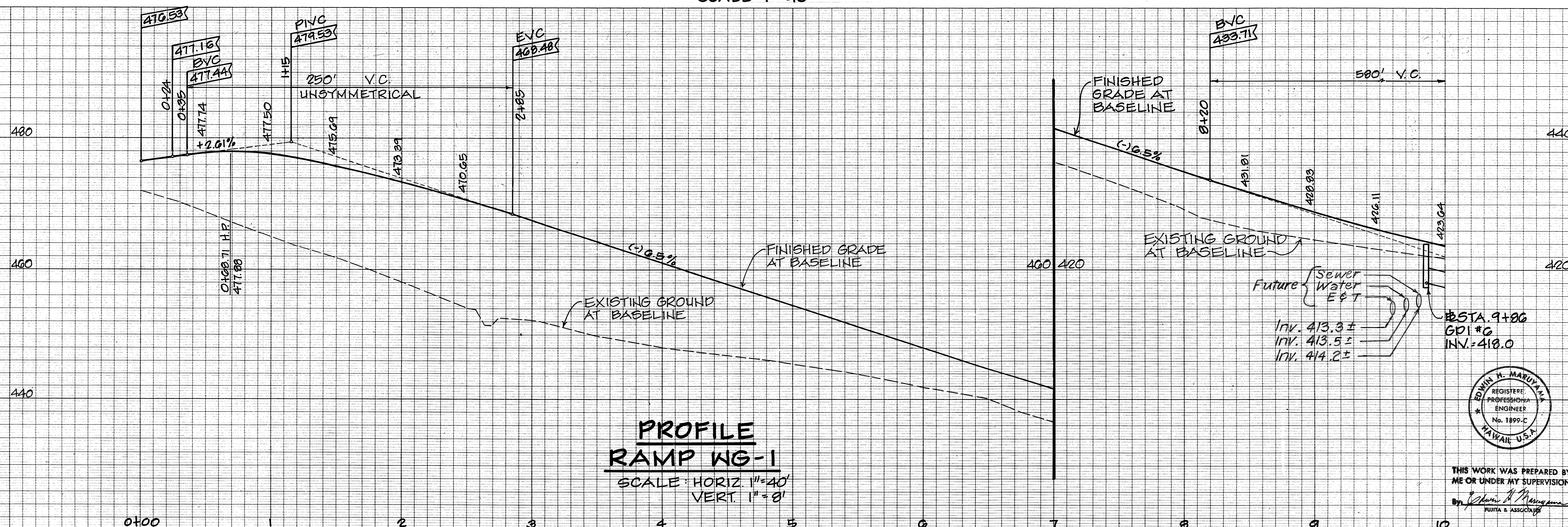
Locate 3 existing  
24" RCP Lines 7.5'o.c.  
(400 L.f. each) (CCO #6)

# Sta. 10+00 ±  
Install BCT at  
Guardrail End (CCO#31446)  
(5-93 also)

[illegible]

PLAN - RAMP WG-1

SCALE: 1" = 40'



PROFILE  
RAMP WG-1

SCALE: HORIZ.  $1'' = 40'$   
VERT.  $1'' = 8'$

**SHEET No. 1 OF 31 SHEETS**

## "AS-BUILT"

OCTOBER 1987

7

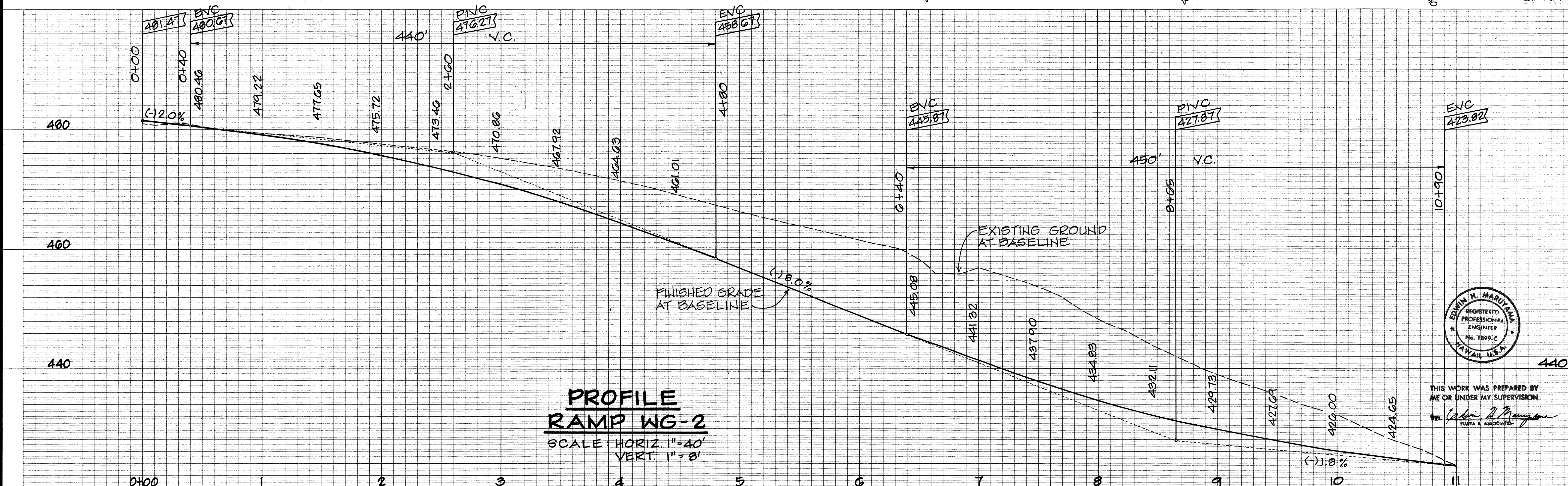
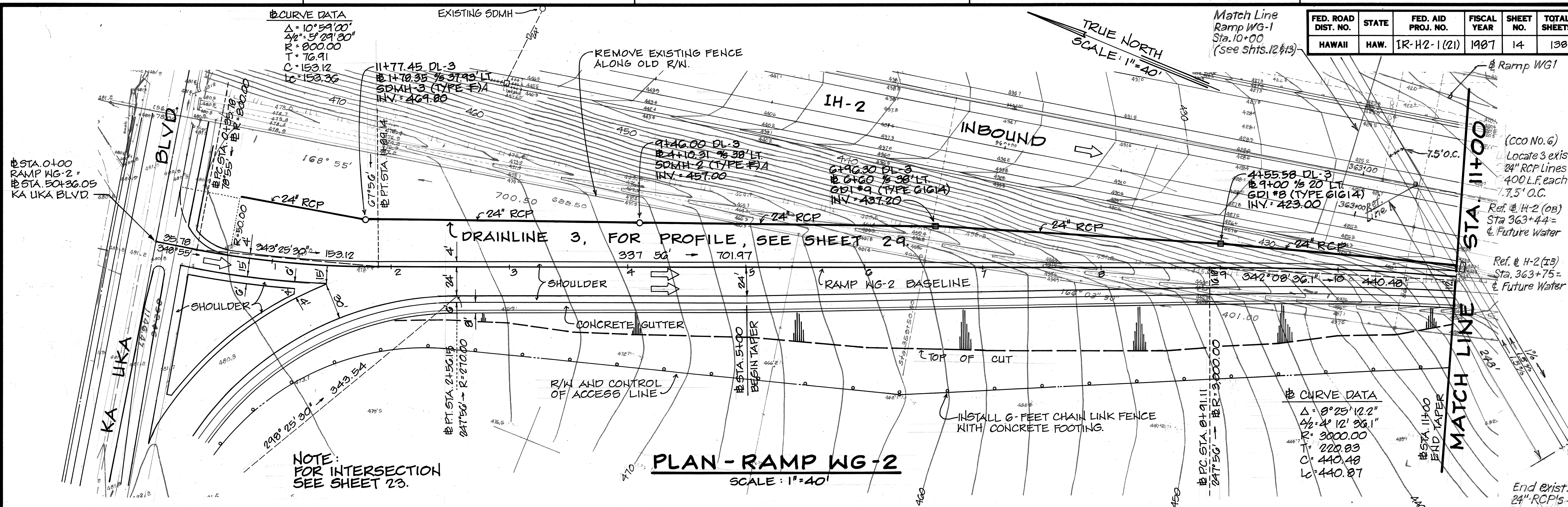
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| ORIGINAL<br>PLAN | SURVEY PLOTTED BY _____ DATE _____ |
| NOTE BOOK        | DRAWN BY _____ *                   |
|                  | TRACED BY _____ *                  |
|                  | DESIGNED BY _____ *                |
|                  | QUANTITIES BY _____ *              |
| No. _____        | CHECKED BY _____                   |







| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEET |
|------------------------|-------|-----------------------|----------------|--------------|----------------|
| HAWAII                 | HAW.  | IR-H2-1(21)           | 1987           | 14           | 138            |



**SHEET No. 3 OF 31 SHEETS**

OCTOBER 1987

|   |
|---|
| 4 |
|---|

## "AS-BUILT"



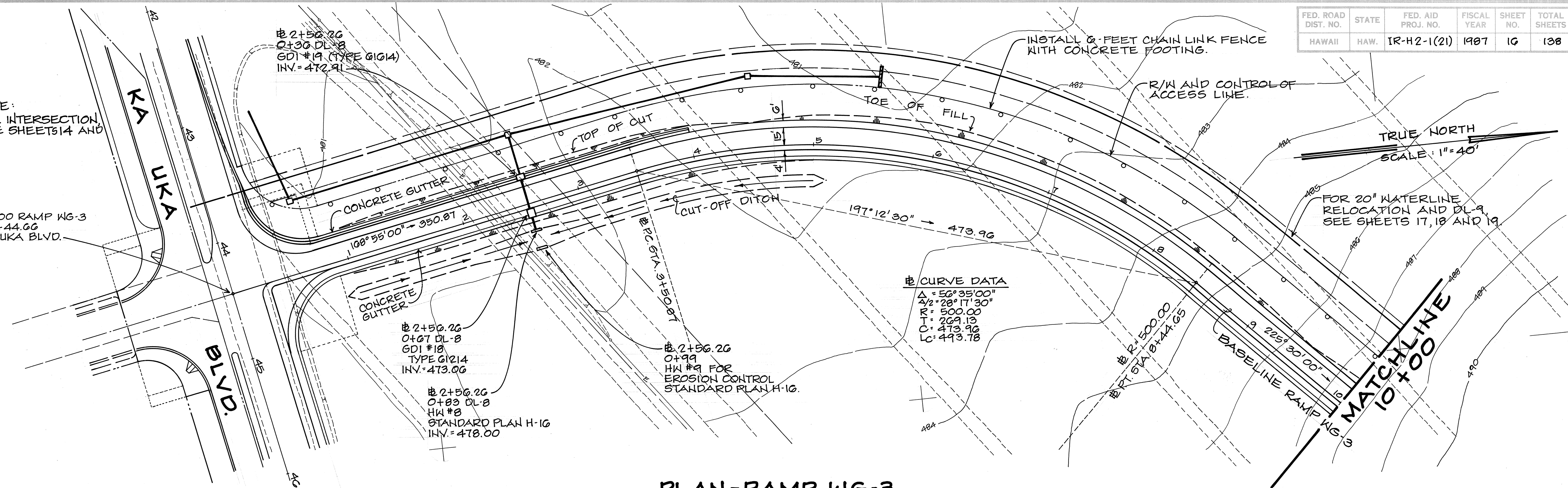




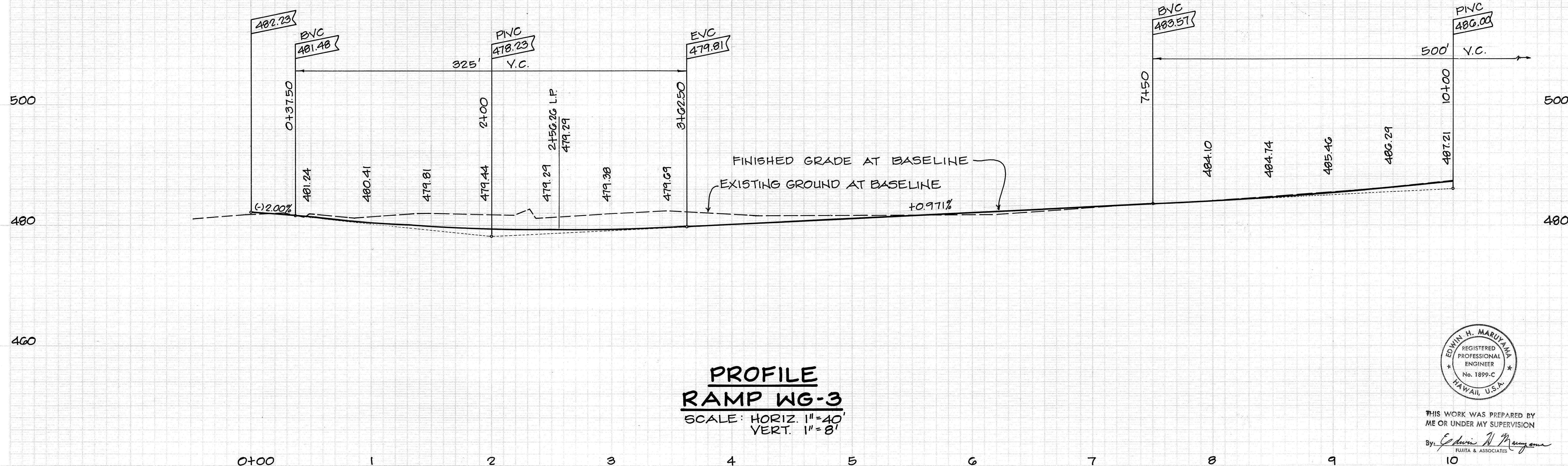
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 16        | 138          |

NOTE:  
FOR INTERSECTION,  
SEE SHEETS 14 AND  
23.

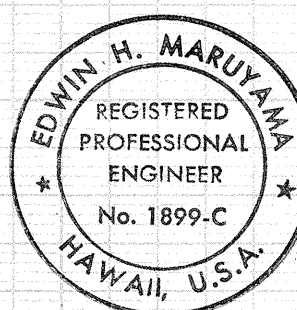
0+00 RAMP WG-3  
= 44+44.66  
KA UKA BLVD.



**PLAN-RAMP WG-3**  
SCALE: 1"=40'



**PROFILE  
RAMP WG-3**  
SCALE: HORIZ. 1"=40'  
VERT. 1"=8'



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

By: *Edwin H. Maruyama*  
FUJITA & ASSOCIATES

SHEET No. 5 OF 31 SHEETS

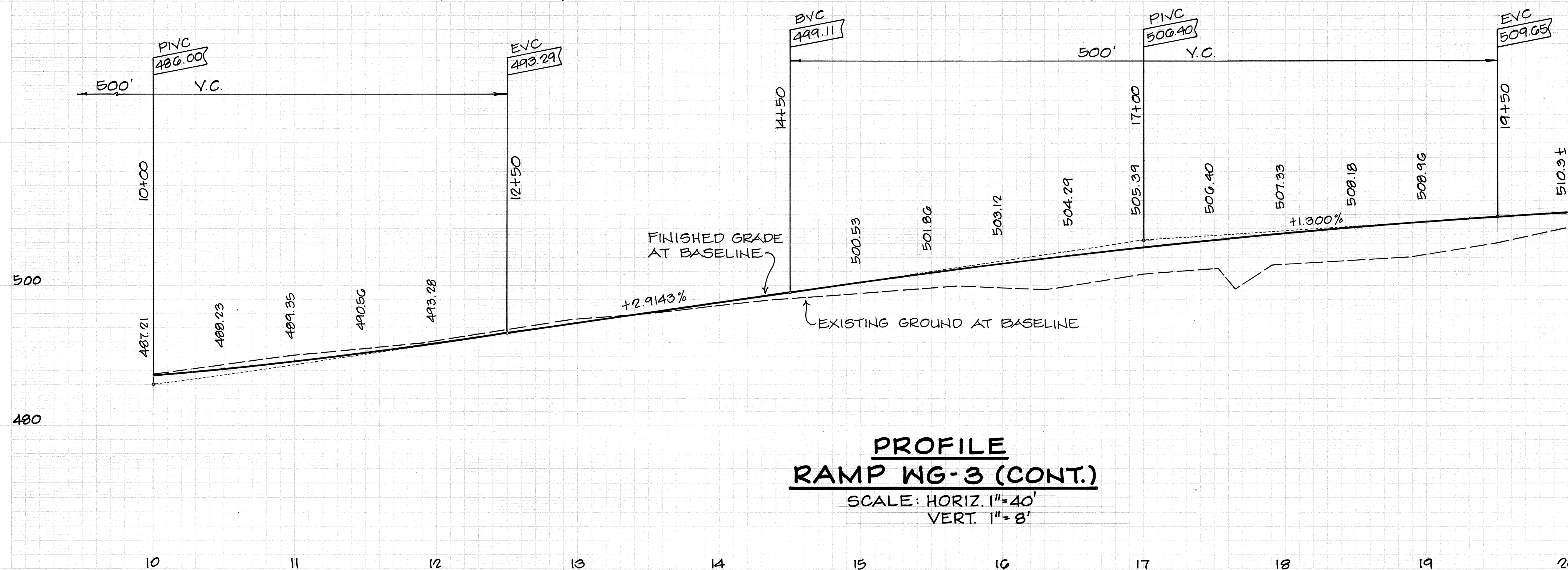
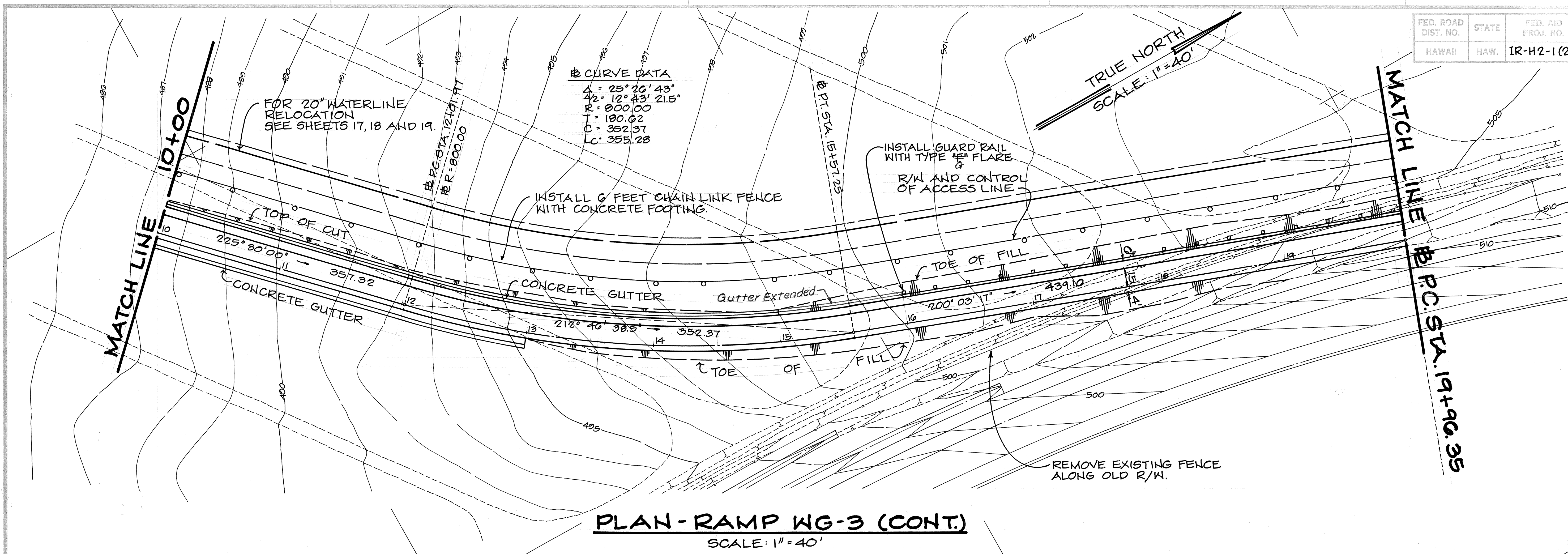
OCTOBER 1987

16

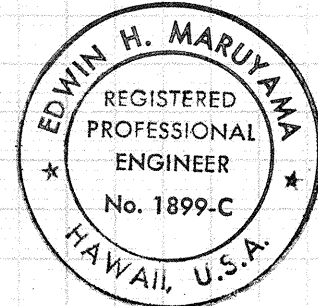
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK     | DRAWN BY          |      |
|               | DESIGNED BY       |      |
|               | QUANTITIES BY     |      |
|               | CHECKED BY        |      |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 17        | 138          |



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| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
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| QUANTITIES BY     |      |
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SHEET No. 6 OF 31 SHEETS

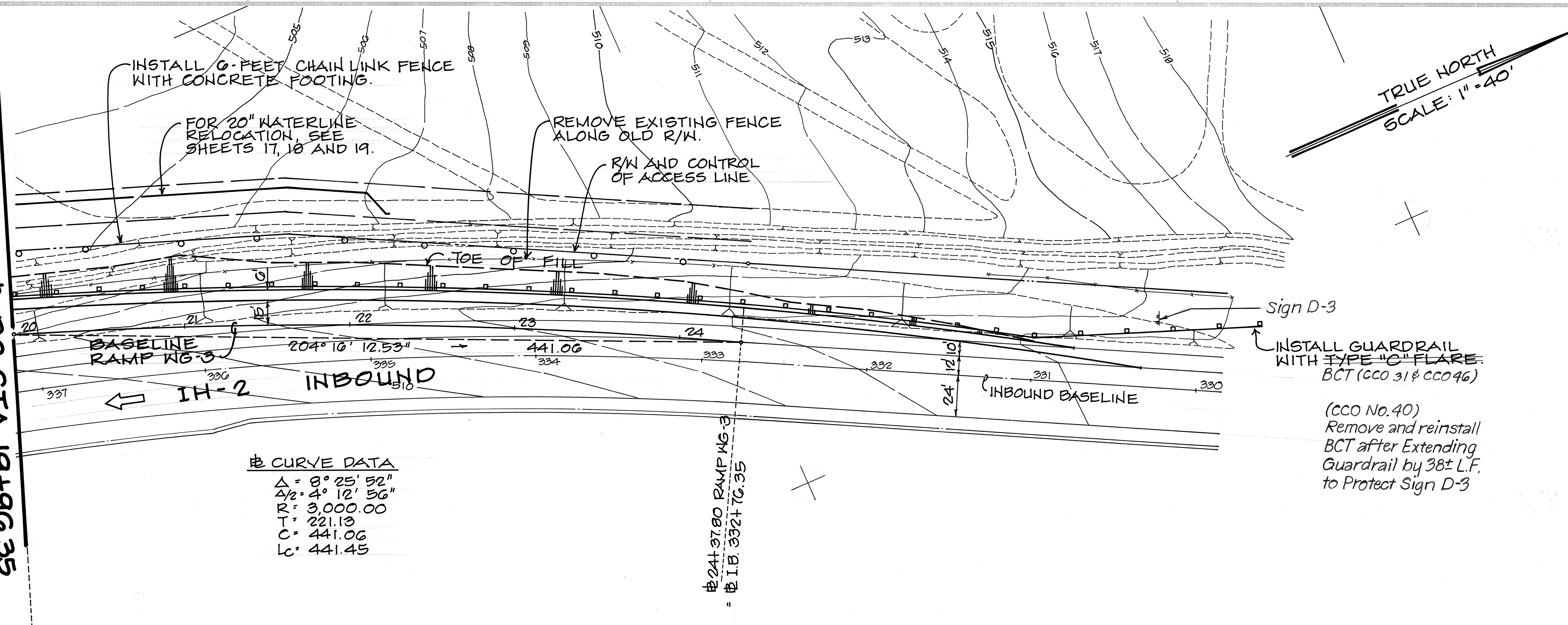
OCTOBER 1987 17

"AS-BUILT"



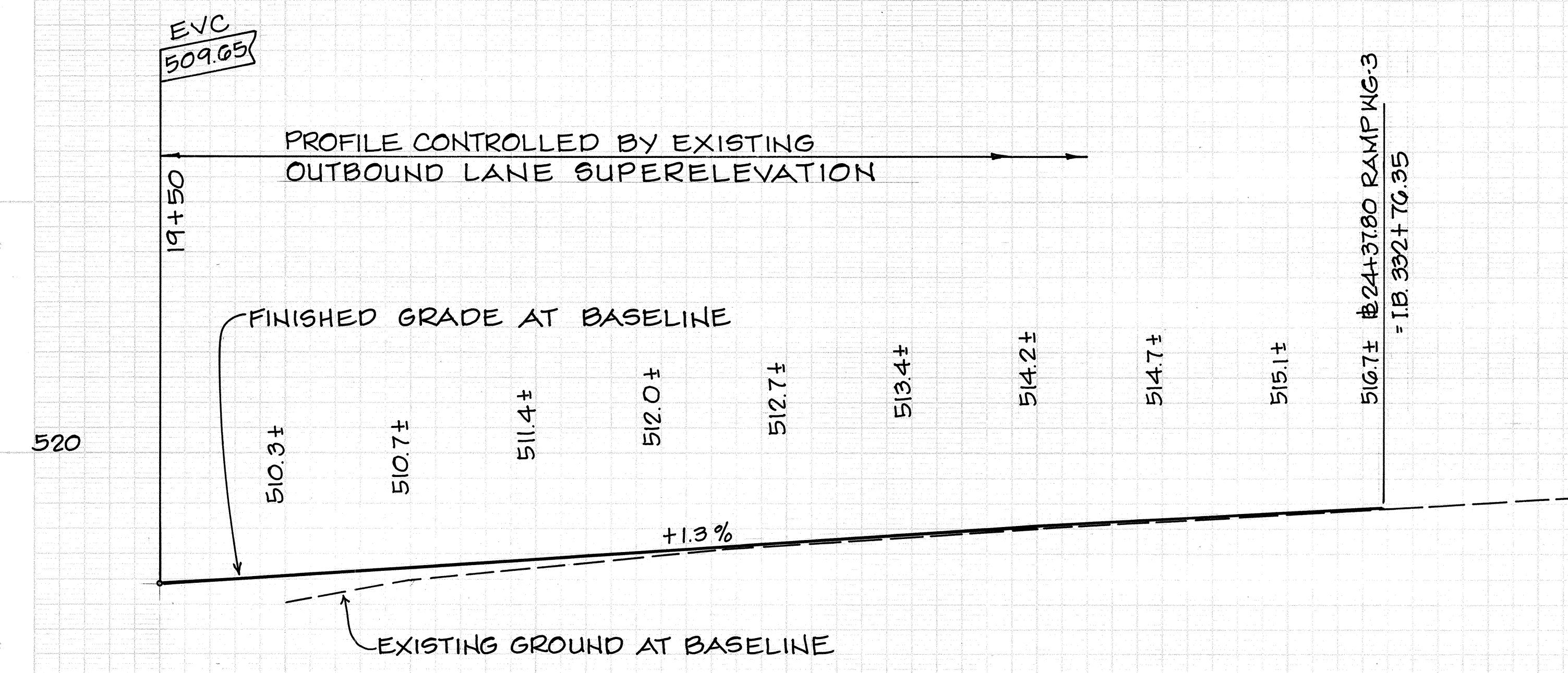
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 18        | 138          |

MATCH LINE @ P.C. STA. 19+96.35



### PLAN-RAMP WG-3 (CONT.)

SCALE: 1" = 40'

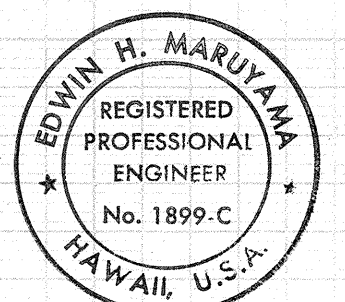


### PROFILE RAMP WG-3 (CONT.)

SCALE: HORIZ. 1" = 40'  
VERT. 1" = 8'

20 21 22 23 24 25

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



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By: *Edwin H. Maruyama*  
Fujita & Associates

SHEET No. 7 OF 31 SHEETS

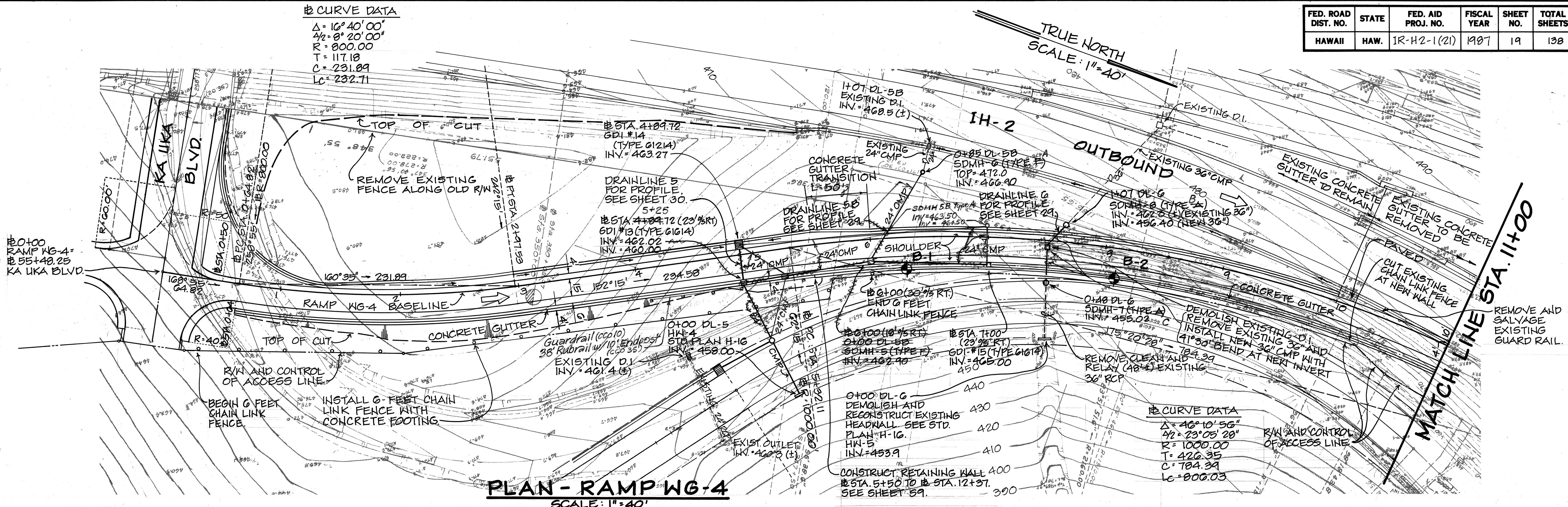
"AS-BUILT"

OCTOBER 1987 18

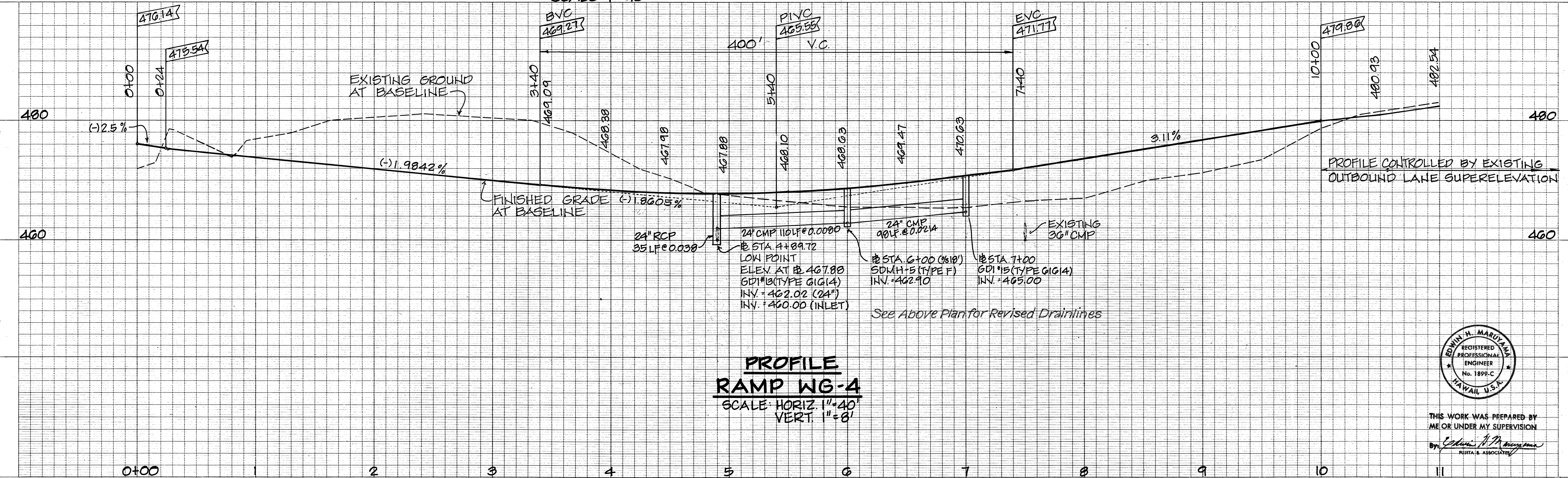


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 19        | 138          |

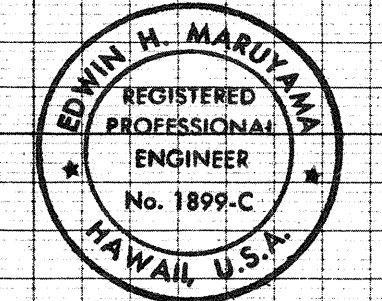
**Curve Data**  
 $\Delta = 16^\circ 40' 00''$   
 $\frac{1}{2} \Delta = 8^\circ 20' 00''$   
 $R = 800.00$   
 $T = 117.18$   
 $C = 231.89$   
 $LC = 232.71$



**PLAN - RAMP WG-4**  
 SCALE: 1" = 40'



**PROFILE RAMP WG-4**  
 SCALE: HORIZ. 1" = 40'  
 VERT. 1" = 8'



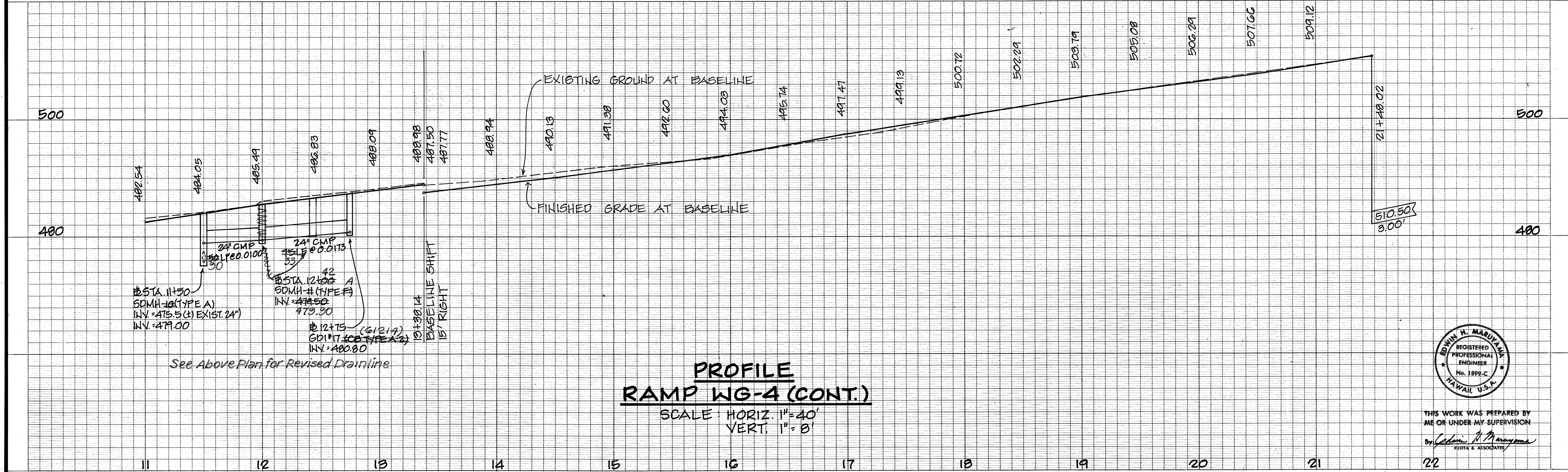
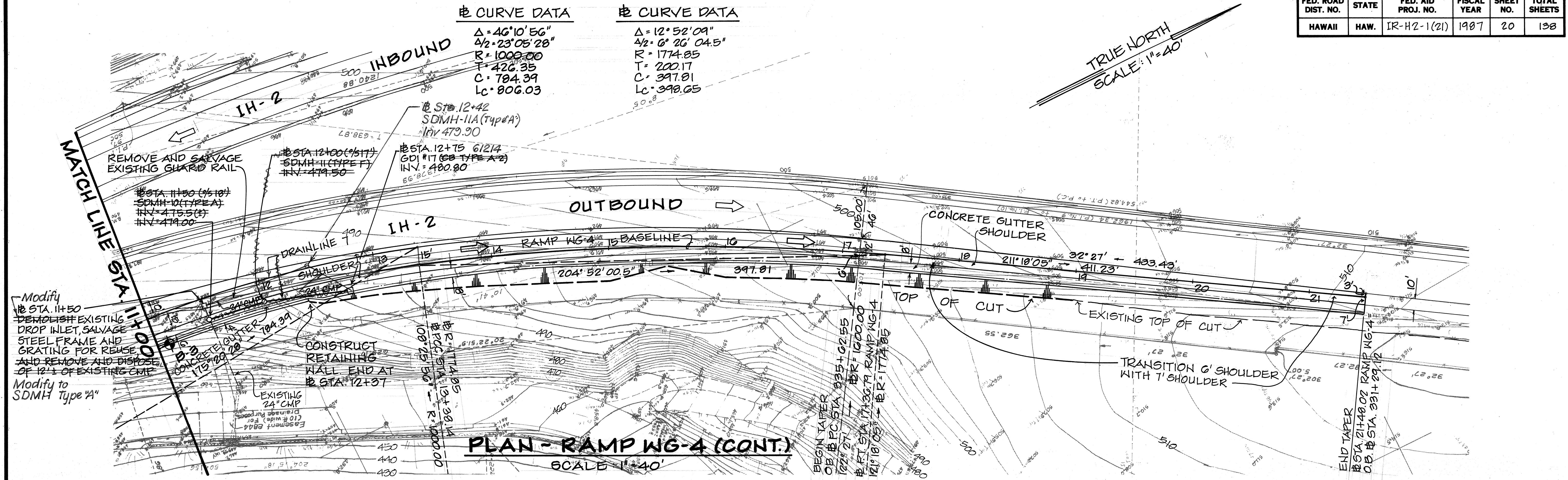
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 By: *Edwin H. Maruyama*  
 RUTHA & ASSOCIATES

"AS-BUILT"

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



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 20        | 138          |



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|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY      |      |
| DESIGNED BY   |      |
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By: *Edwin H. Maruyama*  
Fujita & Associates



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 21        | 138          |

GRADING NOTES

- ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 23, GRADING, SOIL EROSION AND SEDIMENT CONTROL, OF THE REVISED ORDINANCES OF HONOLULU, 1978, AS AMENDED (ORDINANCE NO. 81-13).
- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS AS DIRECTED BY THE ENGINEER. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
- THE UNDERGROUND PIPES, CABLES OR PIPELINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA, WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED, SHALL BE PLANTED.
- FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
- THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR THE GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE ENGINEER.
- THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE COMMENCEMENT OF THE GRADING WORK.
- TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 54, WATER QUALITY STANDARDS, AND CHAPTER 55, WATER POLLUTION CONTROL, OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH.
- TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR A GRADING PERMIT.

TRAFFIC NOTES

- A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE ANY WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM WITH THE "HAWAII ADMINISTRATION RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS, PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS."
- WORK ON ANY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
- DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.

WATER 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 1985, AS AMENDED, OF THE HAWAII HIGHWAYS DIVISION, DEPARTMENT OF TRANSPORTATION AND THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEMS STANDARDS", VOLUME 1, DATED 1985, AND THE "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION", VOLUME 2, DATED 1985, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS ETC., AND DRAINAGE AND OTHER FEATURES OF IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- TEST PRESSURE SHALL BE ONE OF THE FOLLOWING:  
A: PREVAILING LINE PRESSURE, JOINTS LEFT EXPOSED FOR 24 HOURS TO CHECK FOR LEAKS PRIOR TO BACKFILL FOR LATERALS AND FIRE HYDRANTS.  
B: TEST PRESSURE SHALL BE 150 PSI FOR THE 20-INCH MAIN AND F.H. AT STA. 29+42.
- THE CONTRACTOR SHALL NOTIFY THE BOARD OF WATER SUPPLY IN WRITING ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINE TEES AND BENDS WHEREVER THERE IS POSSIBILITY OF WATER LINE MOVEMENT DUE TO REMOVAL OF OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURE HE DEEMS NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHODS.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS 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 PAY FOR ALL DAMAGES TO EXISTING UTILITIES.
- PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEMS STANDARDS, DATED 1985.

~~MAXIMUM DOWN TIME FOR CONNECTIONS SHALL BE 8 HOURS AFTER WORKING HOURS.~~

TRAFFIC NOTES (CONTINUED)

- AS REQUIRED BY THE DEPARTMENT OF TRANSPORTATION SERVICES, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
- WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- THE CONTRACTOR SHALL REFERENCE, TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION SERVICES, ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION SERVICES AT 523-4029 ONE (1) WEEK PRIOR TO ANY WORK TO BE DONE ON SIGNS, POSTS AND PAVEMENT MARKINGS.
- NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN STREET RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY DEPARTMENT OF TRANSPORTATION SERVICES.

CONSTRUCTION NOTES

- ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPT 1986 AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE REVISED ORDINANCES OF HONOLULU, 1978, AS AMENDED.
- BENCH MARKS SHALL BE ESTABLISHED ON NEW STREET MONUMENTS AND DATA SUBMITTED TO THE DIVISION OF ENGINEERING, CITY & COUNTY OF HONOLULU.

SEWER NOTES

- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION SECTION, DIVISION OF WASTEWATER MANAGEMENT AT 523-4345 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT FOUR (4) SETS OF APPROVED CONSTRUCTION PLANS SEVEN DAYS (7) PRIOR TO COMMENCEMENT OF SEWER WORK.
- CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED IN AREAS OF UNSTABLE SOIL.
- BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.

STREET LIGHTS

STREET LIGHTS SHALL BE INSTALLED IN ACCORDANCE WITH ORDINANCE NO. 1638, BILL NO. 19 (1958) AMENDED BY ORDINANCE 1770, 2875, 3035 AND 3357.

STREET SIGNS

STREET SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE DEPARTMENT OF TRANSPORTATION SERVICES. THE EXACT LOCATION SHALL BE DETERMINED BY THE DIRECTOR. IN LIEU OF THE STANDARD EMBOSSED SIGNS, REFLECTORIZED STREET NAME SIGNS WITH SIGN BRACKETS IDENTICAL TO THAT PRESENTLY USED BY THE DEPARTMENT OF TRANSPORTATION SERVICES MAY BE USED.

DRAINAGE DESIGN CRITERIA

REFERENCE: GENTRY-WAPIO DRAINAGE SYSTEM MASTER PLAN, PREPARED BY WILLIAM HEE AND ASSOCIATES, INC., DECEMBER 1976.

1 - HOUR RAINFALL TM 50 = 3.4  
TM 10 = 2.6  
RUNOFF COEFFICIENT C = 0.85 LIGHT INDUSTRIAL AREA  
N = 0.013 (PIPES)  
N = 0.015 (CONCRETE)

HYDRAULIC DATA FOR PIPES

A = AREA (ACRES)  
Q = QUANTITY OF DISCHARGE (CFS)  
S = SLOPE (FT./FT.)  
L = LENGTH OF PIPE OR STRUCTURE (FEET)  
VA = ACTUAL VELOCITY (FPS)  
DA = ACTUAL DEPTH OF FLOW (FEET)

APPROVED

DATE

*Russell L. Smith Jr.* 11/12/86  
DIRECTOR AND CHIEF ENGINEER, D.P.W.  
CITY AND COUNTY OF HONOLULU

REAPPROVED:  
*Doni Callahan* 12-14-87  
DIRECTOR AND CHIEF ENGINEER, D.P.W.  
CITY AND COUNTY OF HONOLULU  
*M. Fukunaga* 12/14/87  
CHIEF, DIVISION OF ENGINEERING

COMMUNICATION LINE NOTES

- THE LOCATION AND DEPTH OF THE EXISTING COMMUNICATION LINE ARE APPROXIMATE ONLY AND ARE SHOWN INSOFAR AS IT IS POSSIBLE TO DO SO. THE CONTRACTOR SHALL MAKE AN INDEPENDENT CHECK TO ASCERTAIN THE EXACT LOCATION OF THE LINE.
- WHERE THE INSTALLATION OF THE UTILITY LINES IS ADJACENT TO OR IS TO CROSS OVER OR UNDER THE COMMUNICATION LINE, THE CONTRACTOR SHALL EXPOSE THE LINE PRIOR TO TRENCHING FOR THE UTILITIES. EXCAVATION AROUND THE COMMUNICATION LINE SHALL BE BY HAND. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH HAWAIIAN TELEPHONE COMPANY.
- IN THE EVENT OF A CONFLICT WITH THE INSTALLATION OF THE UTILITY LINES, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

FUEL LINE NOTES

- THE LOCATIONS AND INVERTS OF THE TWO EXISTING 10 - INCH FUEL LINES ARE APPROXIMATE ONLY AND ARE SHOWN INSOFAR AS IT IS POSSIBLE TO DO SO. THE CONTRACTOR SHALL MAKE AN INDEPENDENT CHECK TO ASCERTAIN THE EXACT LOCATION OF THE LINES.
- WHERE THE INSTALLATION OF THE UTILITY LINES IS ADJACENT TO OR IS TO CROSS OVER OR UNDER THE FUEL LINES, THE CONTRACTOR SHALL EXPOSE THE LINES PRIOR TO TRENCHING FOR THE UTILITIES. EXCAVATION AROUND THE FUEL LINES SHALL BE BY HAND. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL NOTIFY AND COORDINATE HIS WORK WITH THE SHOP SUPERINTENDENT FOR THE DEPARTMENT OF THE AIR FORCE AT 449-1327.
- WHERE THE UTILITY LINES ARE TO CROSS THE EXISTING FUEL LINES, A MINIMUM CLEARANCE OF ONE (1) FOOT WILL BE REQUIRED. IN THE EVENT OF A CONFLICT THE ENGINEER WILL BE NOTIFIED IMMEDIATELY.

APPROVED:

DATE

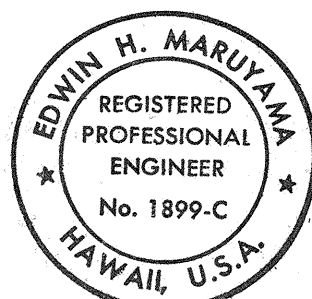
*William Z. H. Long* 11/12/86  
CHIEF, DIVISION OF ENGINEERING, D.P.W.

*G. Lyons* 5/14/86  
CHIEF, DIVISION OF WASTEWATER MANAGEMENT

*Ray T. Kaula* 6/4/87  
DIRECTOR, DEPARTMENT OF TRANSPORTATION SERVICES

*John A. Mullaney* 10/6/86  
CHIEF, PLANNING AND ENGINEERING, B.W.S.

REAPPROVED:  
*G. Lyons* 12/2/87  
CHIEF, DIVISION OF WASTEWATER MANAGEMENT  
*John A. Mullaney* 11/24/87  
CHIEF, PLANNING AND ENGINEERING, B.W.S.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

By *John A. Mullaney*  
FUKITA & ASSOCIATES

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

CONSTRUCTION NOTES  
FOR KA UKA BOULEVARD

INTERSTATE ROUTE H-2

WAPIO INTERCHANGE

FAI PROJ. NO. 1R-H2-1(21)

AUGUST 1986

SHEET No. 10 OF 31 SHEETS

OCTOBER 1987

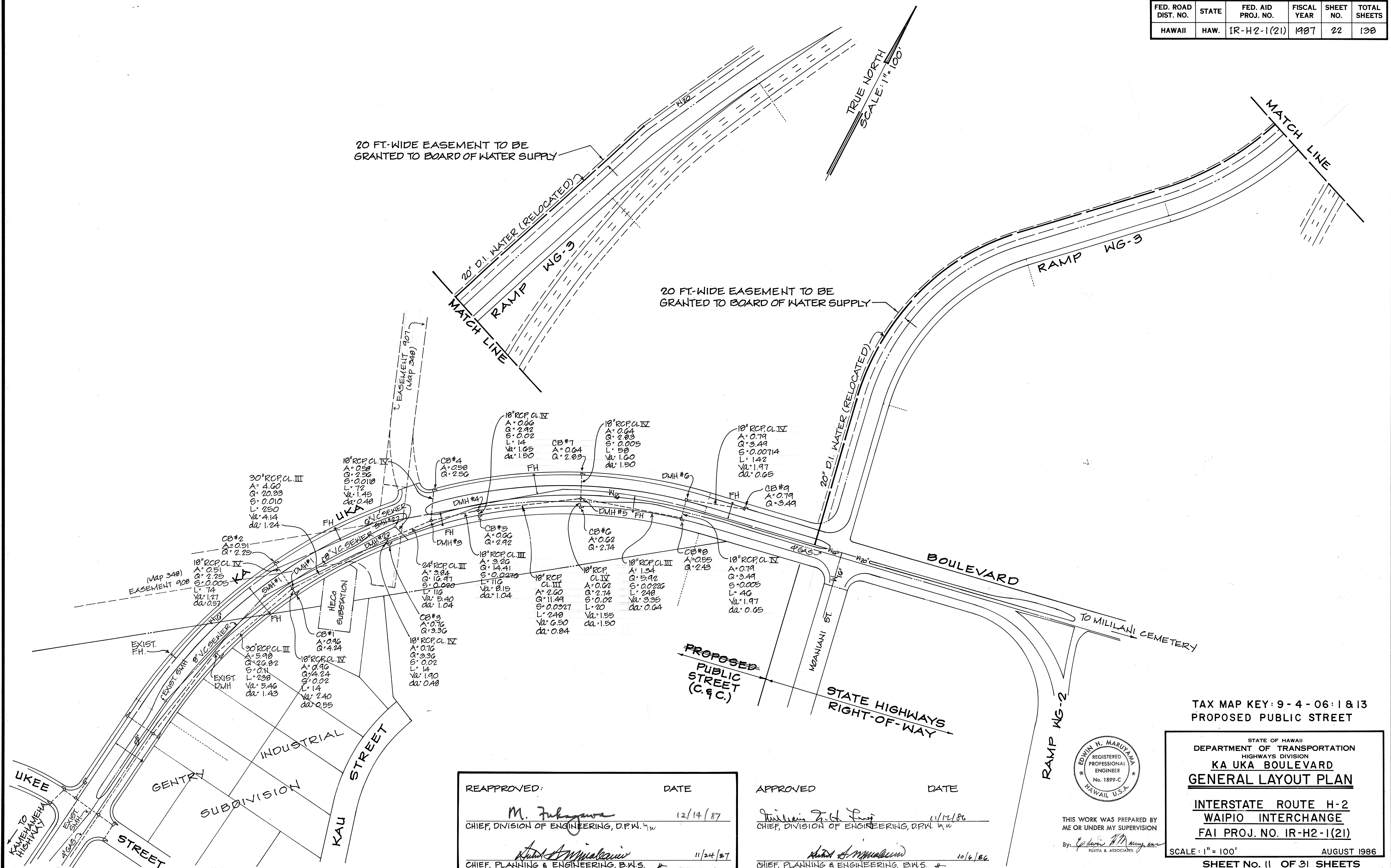
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|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| NOTED BY          |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| NO.               |      |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 22        | 138          |

|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY      |      |
| DESIGNED BY   |      |
| QUANTITIES BY |      |
| CHECKED BY    |      |



REAPPROVED: M. Fukunaga DATE 12/14/87  
CHIEF, DIVISION OF ENGINEERING, D.P.W. W

David A. Munn DATE 11/24/87  
CHIEF, PLANNING & ENGINEERING, B.W.S. W

APPROVED: William T. C. King DATE 11/17/86  
CHIEF, DIVISION OF ENGINEERING, D.P.W. W

David A. Munn DATE 10/6/86  
CHIEF, PLANNING & ENGINEERING, B.W.S. W



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
By: Edwin H. Maruyama  
MUTTA & ASSOCIATES

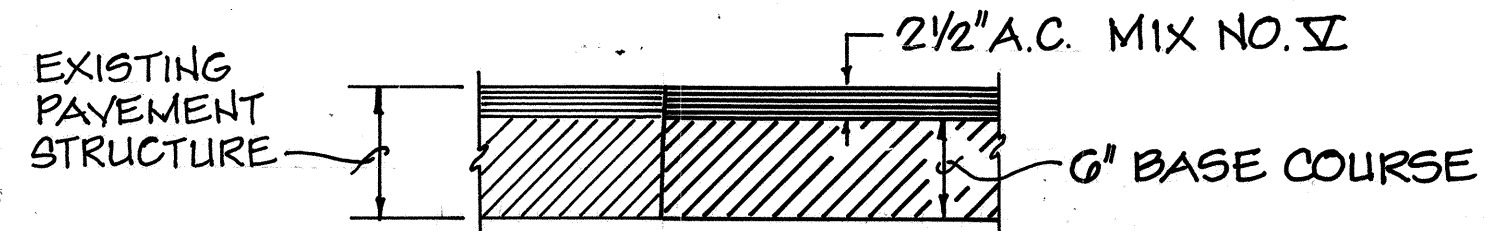
TAX MAP KEY: 9-4-06:1 & 13  
PROPOSED PUBLIC STREET

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**KA UKA BOULEVARD  
GENERAL LAYOUT PLAN**

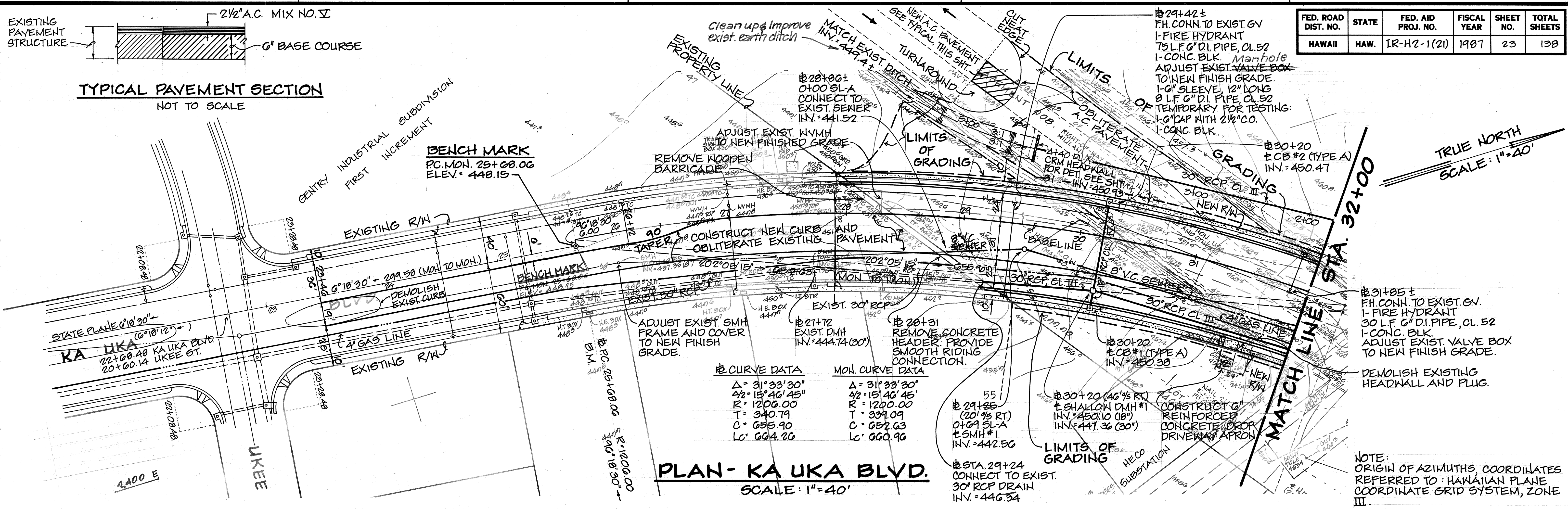
INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. 1R-H2-1(21)

SCALE: 1" = 100'  
AUGUST 1986  
SHEET No. 11 OF 31 SHEETS

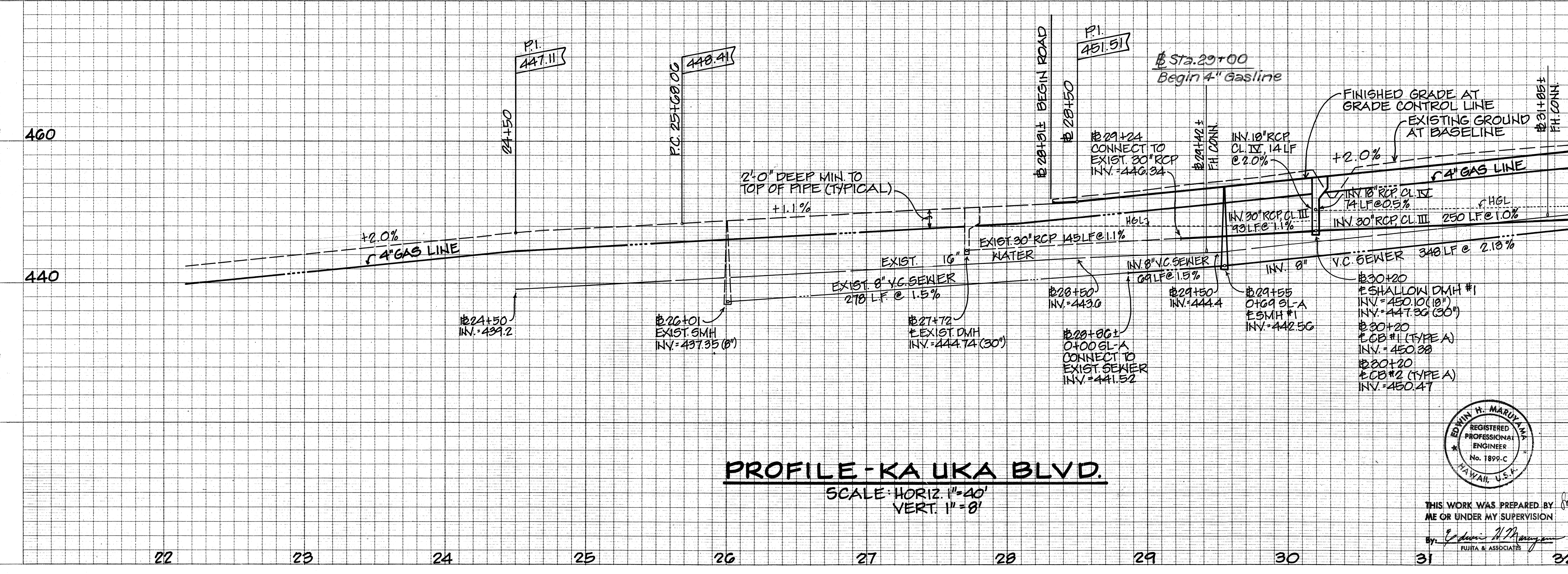




TYPICAL PAVEMENT SECTION  
NOT TO SCALE



PLAN - KA UKA BLVD.  
SCALE: 1"=40'



PROFILE - KA UKA BLVD.  
SCALE: HORIZ. 1"=40'  
VERT. 1"=8'

|                                        |          |
|----------------------------------------|----------|
| REAPPROVED:                            | DATE     |
| M. Fukunaga                            | 12/14/87 |
| CHIEF, DIVISION OF ENGINEERING, D.P.W. |          |
| G. Ayana                               | 12/14/87 |
| CHIEF, DIV. OF WASTEWATER MANAGEMENT   |          |
| K. A. M. M. M. M.                      | 11/24/87 |
| CHIEF, PLANNING & ENGINEERING, B.W.S.  |          |

APPROVED: *[Signature]* 1/21/87  
GASCO, INC. DATE

TAX MAP KEY: 9-4-00-1 & 13  
PROPOSED PUBLIC STREET

APPROVED: *[Signature]* 11/24/87  
CHIEF, DIVISION OF ENGINEERING, D.P.W.

*[Signature]* 5/14/86  
CHIEF, DIV. OF WASTEWATER MANAGEMENT

*[Signature]* 6/14/87  
DIRECTOR, DEPT. OF TRANSPORTATION SERVICES

*[Signature]* 10/6/87  
CHIEF, PLANNING & ENGINEERING, B.W.S.



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION  
By *[Signature]*  
Fujita & Associates



Security Gates Relocated from old alignment to New Easement Road

PROVIDE SMOOTH RIDING CONNECTION FOR EASEMENT ROAD PROFILE, SEE SHEET 30.

NOTE: PAVEMENT SECTION FOR EASEMENT ROAD (E 0+53.07 TO E 2+24.15) SEE SHEET 11 "TYPICAL PAVEMENT SECTION"

Sta. 0+65 DL-A  
E SDMH NO. 7A (TYPE F)  
INV. = 452.22

Sta. 1+05 DL-A  
E SDMH #7 (TYPE F)  
INV. = 451.60

Sta. 32+50 ± 32+85  
Install 42" LF of 6" Thick 42" Wide Reinforced Conc. Slabs cover over Fuel Line placed at 23 1/4" Depth (Subgrade)

Sta. 0+00 DL-A  
INV. = 454.0  
Inlet A  
SEE DETAIL, SHEET 31.

Sta. 34+27 ± (30' RT)  
F.H. CONN. TO EXIST. G.V.  
1-FIRE HYDRANT  
28 LF 6" D.I. PIPE, CL. 52  
1-CONCRETE BLOCK ADJUST EXISTING VALVE BOX TO NEW FINISH GRADE

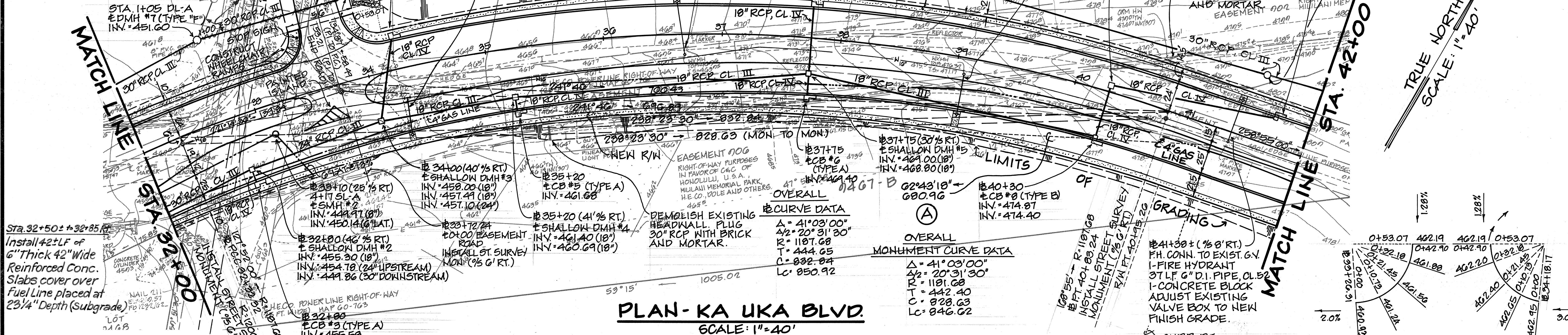
Sta. 36+69 ± (75' RT)  
F.H. CONN. TO EXIST. G.V.  
1-FIRE HYDRANT  
42 LF 6" D.I. PIPE, CL. 52  
1-CONCRETE BLOCK ADJUST EXISTING VALVE BOX TO NEW FINISH GRADE

Sta. 39+07 ± (75' RT)  
F.H. CONN. TO EXIST. G.V.  
1-FIRE HYDRANT  
34 LF 6" D.I. PIPE, CL. 52  
1-CONCRETE BLOCK ADJUST EXISTING VALVE BOX TO NEW FINISH GRADE

Sta. 40+30  
E SHALLOW DMH #6  
INV. = 475.10

Sta. 41+70  
E CB #9 (TYPE B)  
INV. = 476.10

Sta. 41+50  
4+70 DL-9  
SDMH #8 (TYPE F)  
INV. = 468.65

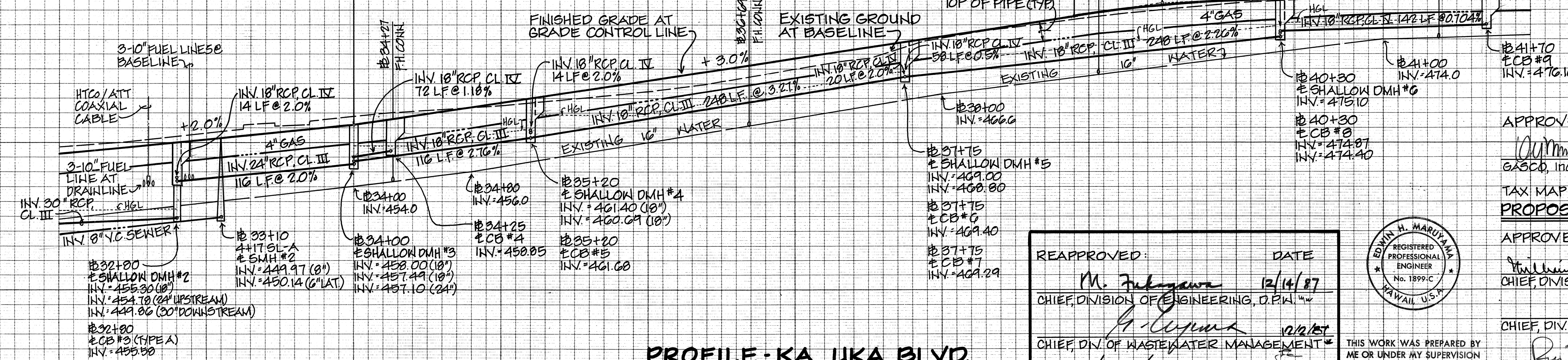


PLAN - KA UKA BLVD.  
SCALE: 1"=40'

| CURB DATA |             |
|-----------|-------------|
| Δ         | 32° 23' 24" |
| 4/2       | 16° 11' 42" |
| R         | 1221.76     |
| T         | 354.84      |
| C         | 681.52      |
| Lc        | 690.68      |

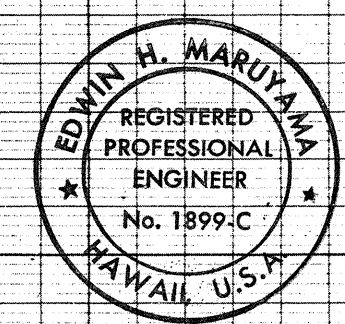
| BASELINE      |                  | MONUMENT      |                  | EASEMENT RD   |                  |
|---------------|------------------|---------------|------------------|---------------|------------------|
| Sta. 32+32.32 | To Sta. 33+72.24 | Sta. 33+72.24 | To Sta. 34+03.24 | Sta. 34+03.24 | To Sta. 34+58.49 |
| Δ             | 0° 45' 00"       | Δ             | 34° 18' 00"      | Δ             | 24° 58' 30"      |
| 4/2           | 3° 22' 30"       | 4/2           | 17° 09' 00"      | 4/2           | 12° 29' 19"      |
| R             | 1187.68          | R             | 1181.68          | R             | 380.00           |
| T             | 70.04            | T             | 366.51           | T             | 84.16            |
| C             | 139.84           | C             | 700.43           | C             | 164.35           |
| Lc            | 139.92           | Lc            | 711.00           | Lc            | 165.66           |

| CURB RETURN DATA |             |
|------------------|-------------|
| Δ                | 87° 47' 04" |
| 4/2              | 43° 53' 32" |
| R                | 28.00       |
| T                | 26.94       |
| C                | 38.83       |
| Lc               | 42.90       |



PROFILE - KA UKA BLVD.  
SCALE: HORIZ. 1"=40'  
VERT. 1"=8'

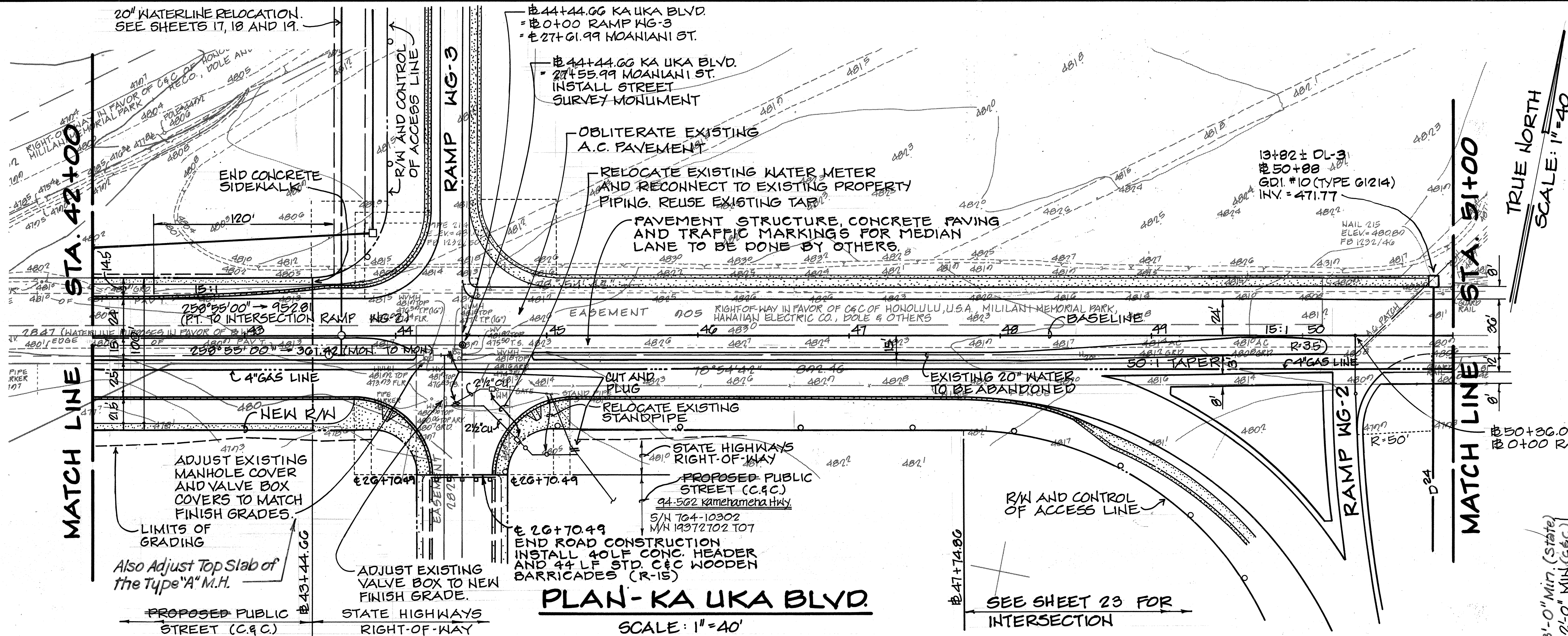
|                                        |          |
|----------------------------------------|----------|
| REAPPROVED:                            | DATE     |
| M. Fukuyama                            | 12/14/87 |
| CHIEF, DIVISION OF ENGINEERING, D.P.W. |          |
| G. Uyama                               | 10/2/87  |
| CHIEF, DIV. OF WASTEWATER MANAGEMENT   |          |
| K. H. M. M. M. M.                      | 11/24/87 |
| CHIEF, PLANNING & ENGINEERING, B.W.S.  |          |



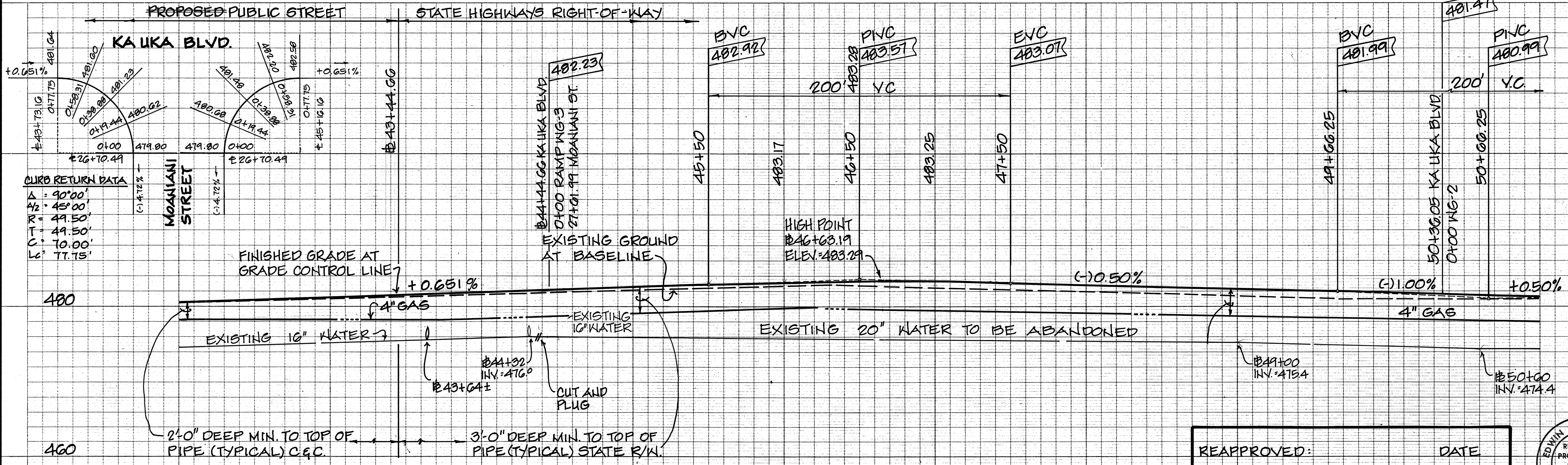
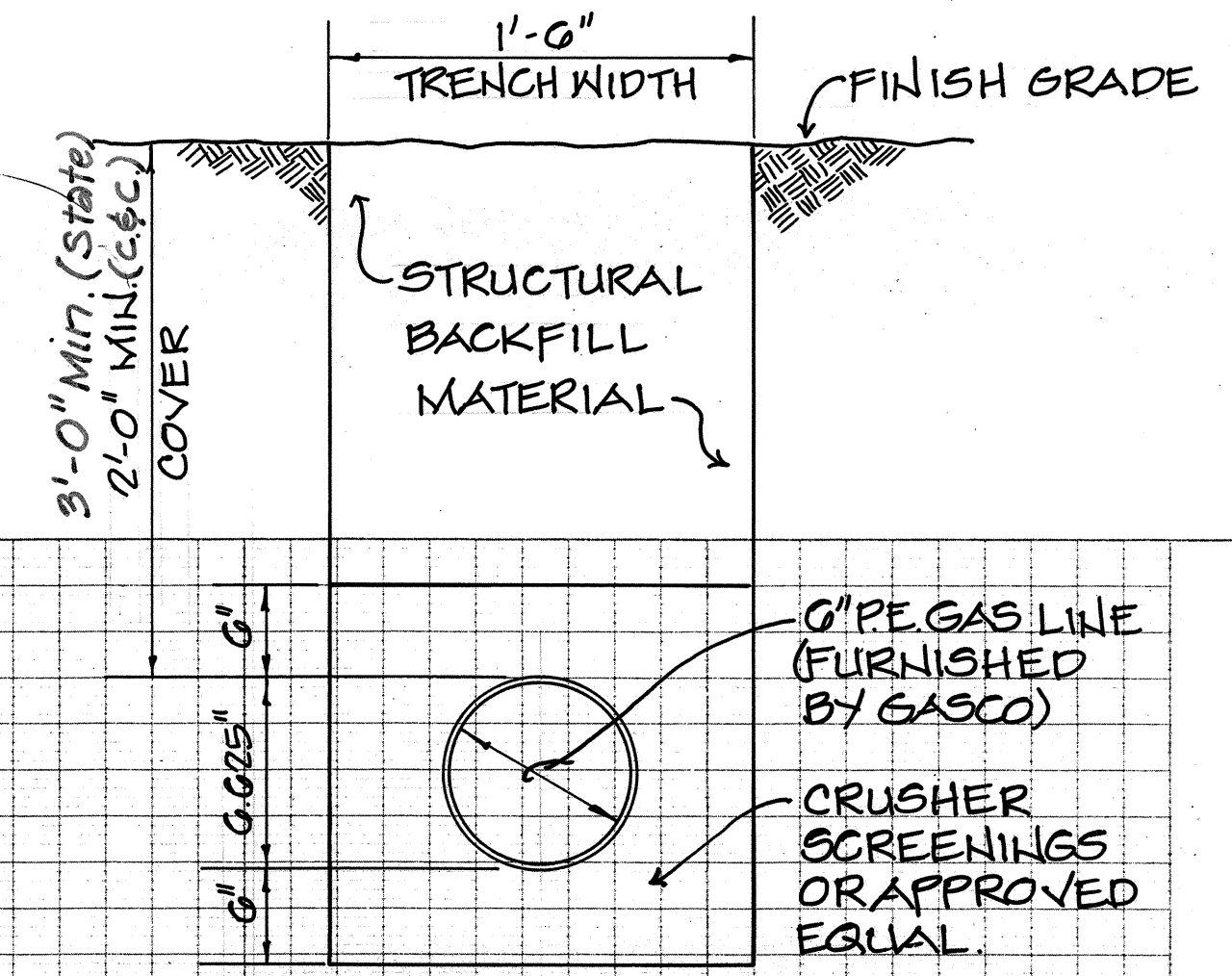
APPROVED: *[Signature]* DATE: 10/21/87  
GASCO, Inc.  
TAX MAP KEY: 9-4-06: 1 & 13  
PROPOSED PUBLIC STREET  
APPROVED: *[Signature]* DATE: 6/1/88  
G. Uyama  
CHIEF, DIV. OF WASTEWATER MANAGEMENT  
APPROVED: *[Signature]* DATE: 6/4/87  
R. T. Camacho  
DIRECTOR, DEPT. OF TRANSPORTATION SERVICES  
APPROVED: *[Signature]* DATE: 10/6/86  
K. H. M. M. M. M.  
CHIEF, PLANNING & ENGINEERING, B.W.S.



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 25        | 138          |



**SHEET NOTE:**  
FOR LAYOUT OF KA UKA BOULEVARD FROM RAMP WG-3 TO RAMP WG-2, SEE SHEET 23.



**TRENCH DETAIL FOR GAS LINE**  
NOT TO SCALE

APPROVED: *[Signature]* 10/22/87  
GASCO, INC. DATE

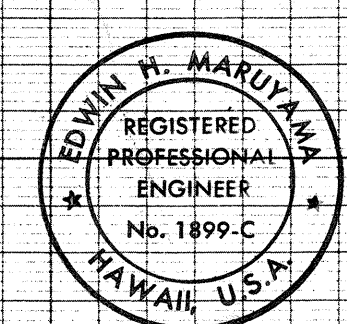
TAX MAP KEY: 9-4-06: 1 & 13  
**PROPOSED PUBLIC STREET**

APPROVED: *[Signature]* 11/1/87  
CHIEF, DIVISION OF ENGINEERING, D.P.W. DATE

*[Signature]* 6/4/87  
DIRECTOR, DEPT. OF TRANSPORTATION SERVICES, (FOR CONSTRUCTION WITHIN CITY R.O.W. ONLY)

*[Signature]* 10/6/86  
CHIEF, PLANNING & ENGINEERING, B.W.S.

REAPPROVED: *[Signature]* 12/14/87  
CHIEF, DIVISION OF ENGINEERING, D.P.W.  
*[Signature]* 11/24/87  
CHIEF, PLANNING & ENGINEERING, B.W.S.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
*[Signature]*  
DATE & ASSOCIATE

| DATE    | REVISION                   |
|---------|----------------------------|
| 8/10/88 | CLARIFY LOCATION OF G01-10 |

SHEET NO. 14 OF 31 SHEETS

OCTOBER 1987

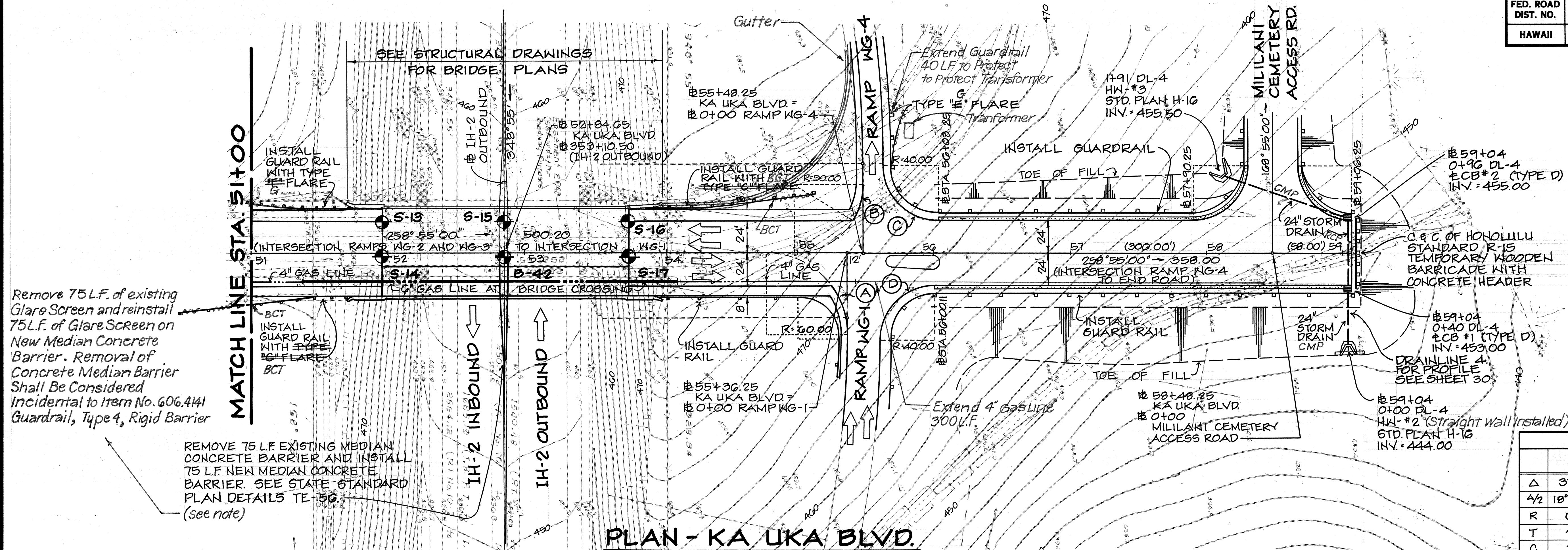
25R

"AS-BUILT"

|                   |  |
|-------------------|--|
| DATE              |  |
| SURVEY PLOTTED BY |  |
| DRAWN BY          |  |
| DESIGNED BY       |  |
| CHECKED BY        |  |
| NO.               |  |



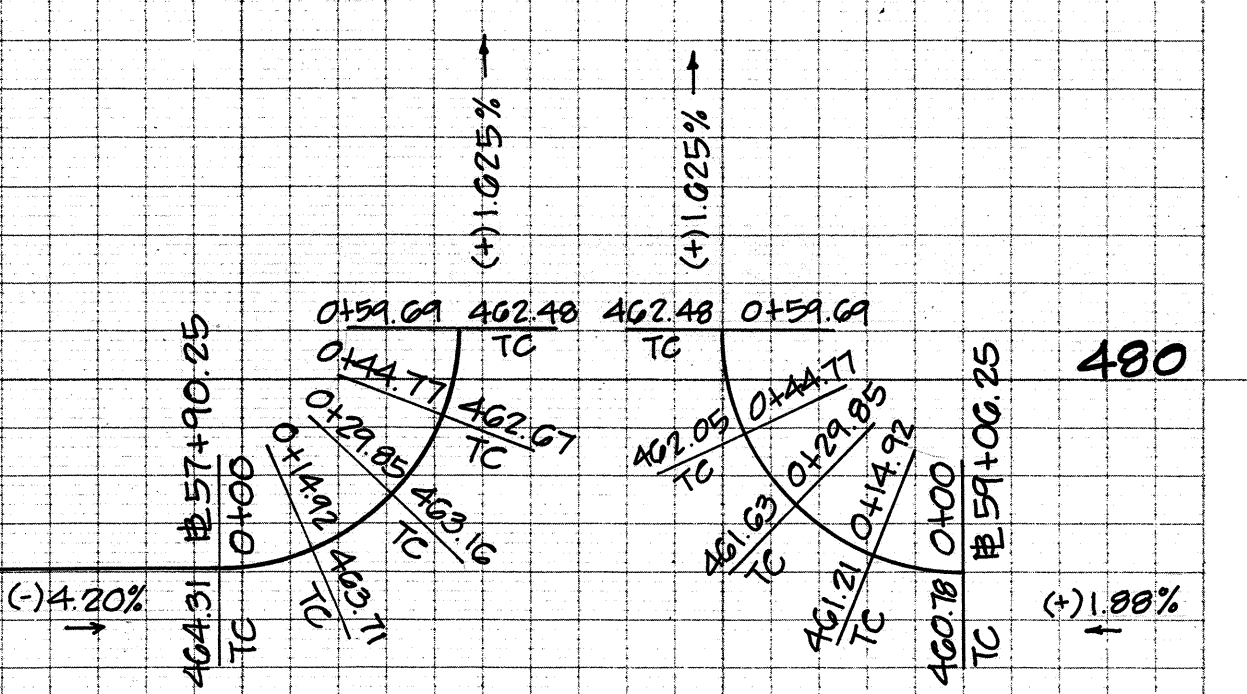
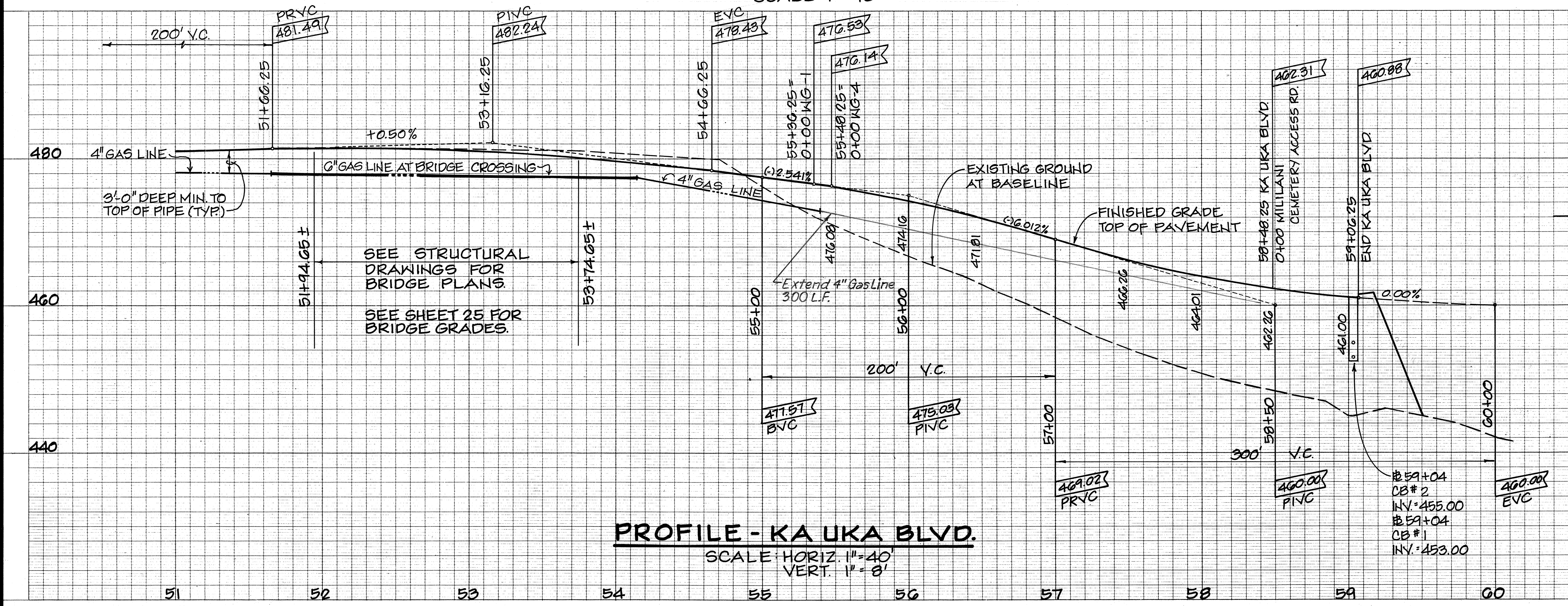
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 26        | 138          |



TRUE NORTH  
SCALE: 1"=40'

CURVE DATA

|     | (A)         | (B)       | (C)       | (D)         |
|-----|-------------|-----------|-----------|-------------|
| Δ   | 37°45'15"   | 31°19'56" | 90°00'00" | 88°58'39"   |
| A/2 | 18°52'37.5" | 15°39'58" | 45°00'00" | 44°29'19.5" |
| R   | 60.00'      | 50.00'    | 40.00'    | 40.00'      |
| T   | 20.52'      | 14.02'    | 40.00'    | 39.29'      |
| C   | 38.82'      | 27.00'    | 56.57'    | 56.06'      |
| LC  | 39.54'      | 27.34'    | 62.83'    | 62.12'      |

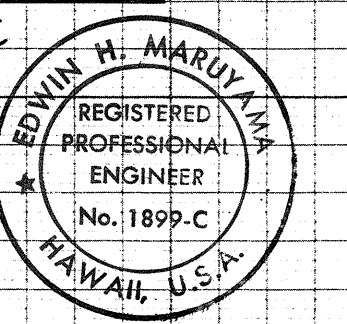


CURB RETURN DATA

|     |           |
|-----|-----------|
| Δ   | 90°00'00" |
| A/2 | 45°00'00" |
| R   | 38.00'    |
| T   | 38.00'    |
| C   | 53.74'    |
| LC  | 59.69'    |

APPROVED:

Charles A. [Signature]  
DATE 10/23/87



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

By: [Signature]  
TUTTA & ASSOCIATES

SHEET No. 15 OF 31 SHEETS

"AS-BUILT"

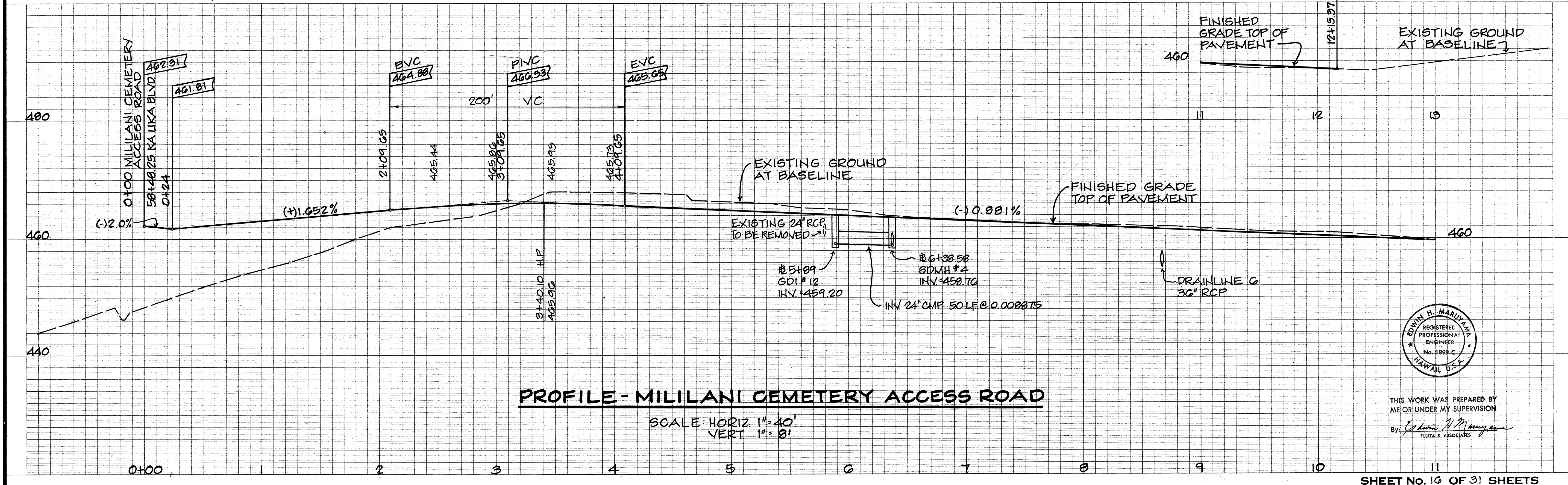
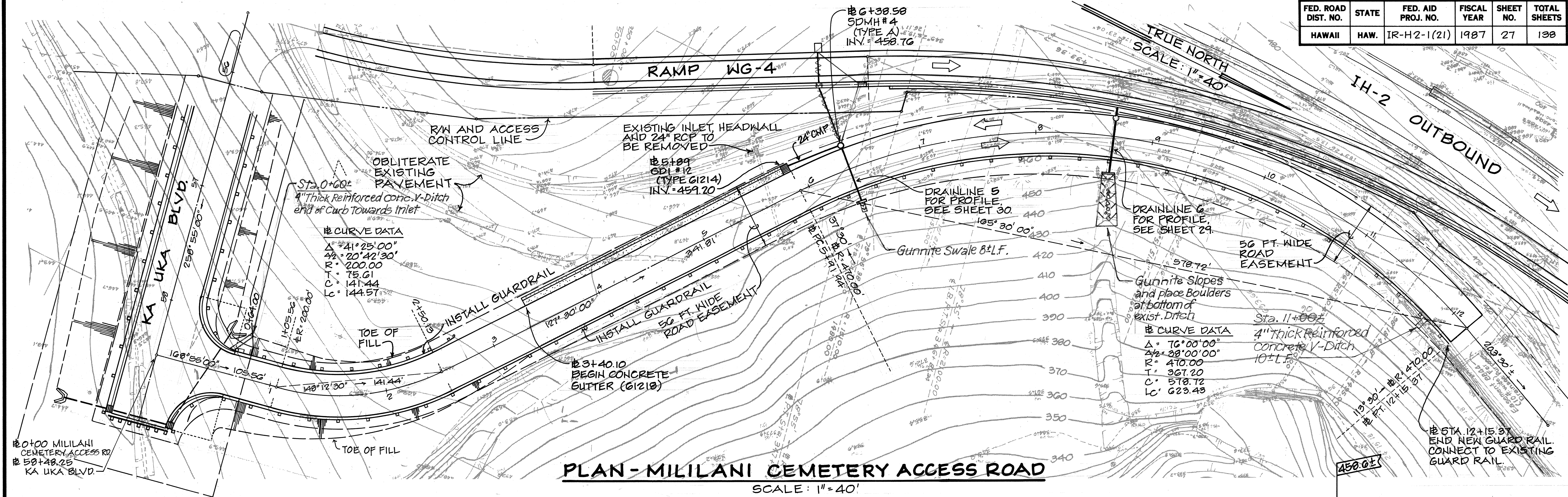
OCTOBER 1987

26

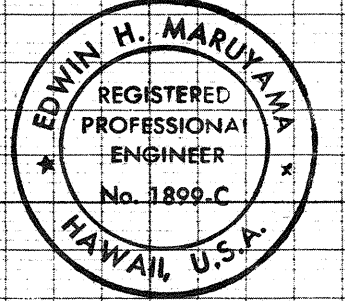
|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY      |      |
| DESIGNED BY   |      |
| QUANTITIES BY |      |
| CHECKED BY    |      |
| NO.           |      |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 27        | 138          |



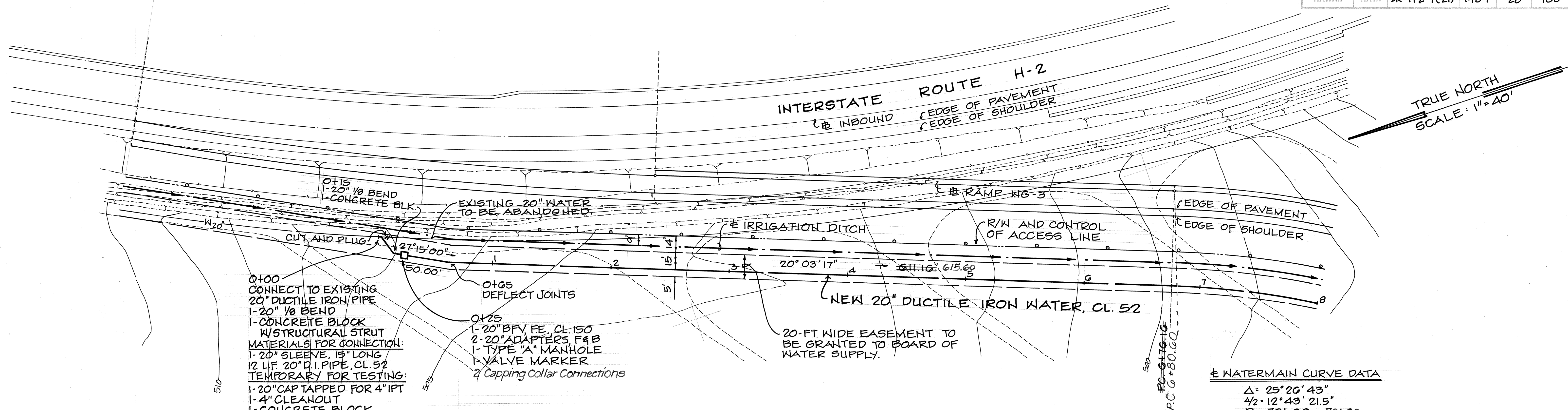
|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY      |      |
| DESIGNED BY   |      |
| CHECKED BY    |      |
| NO.           |      |



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
By: *Edwin H. Marum*  
FUTAL & ASSOCIATES



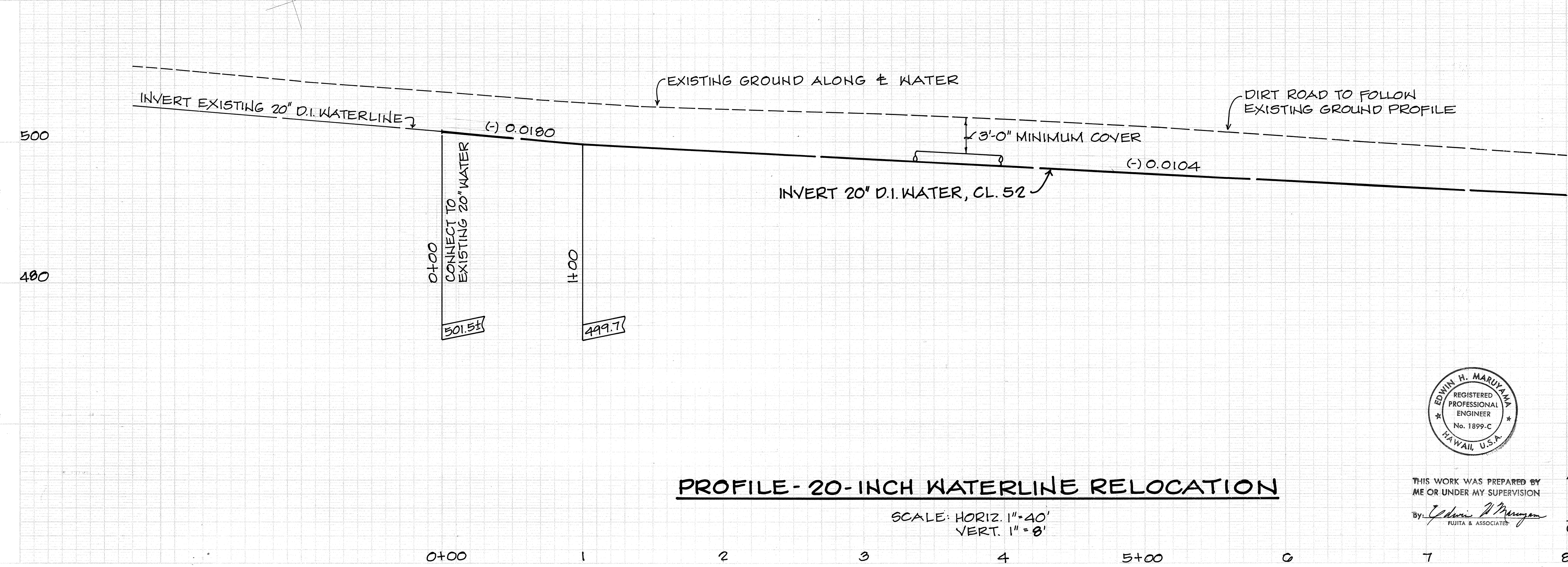
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 28        | 138          |



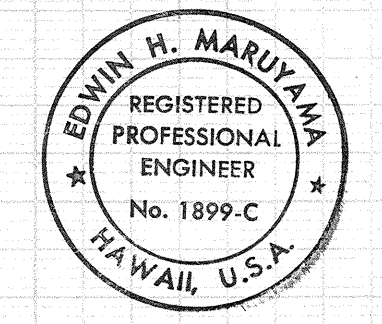
± WATERMAIN CURVE DATA

|     |               |
|-----|---------------|
| Δ   | 25°20'43"     |
| Δ/2 | 12°40'21.5"   |
| R   | 731.00 721.00 |
| T   | 165.04 162.78 |
| C   | 321.98 317.57 |
| Lc  | 324.64 320.20 |

**PLAN- 20-INCH WATERLINE RELOCATION**  
 SCALE: 1" = 40'



**PROFILE- 20-INCH WATERLINE RELOCATION**  
 SCALE: HORIZ. 1" = 40'  
 VERT. 1" = 8'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 By: *Edwin H. Maruyama*  
 FUJITA & ASSOCIATES

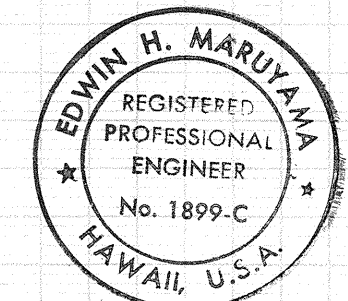
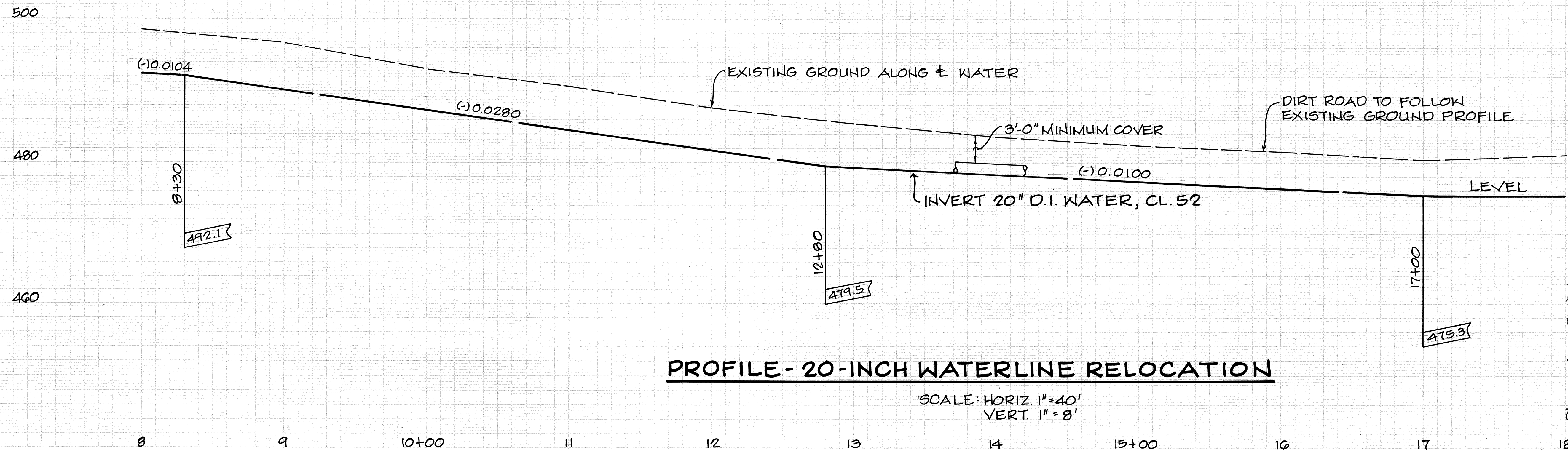
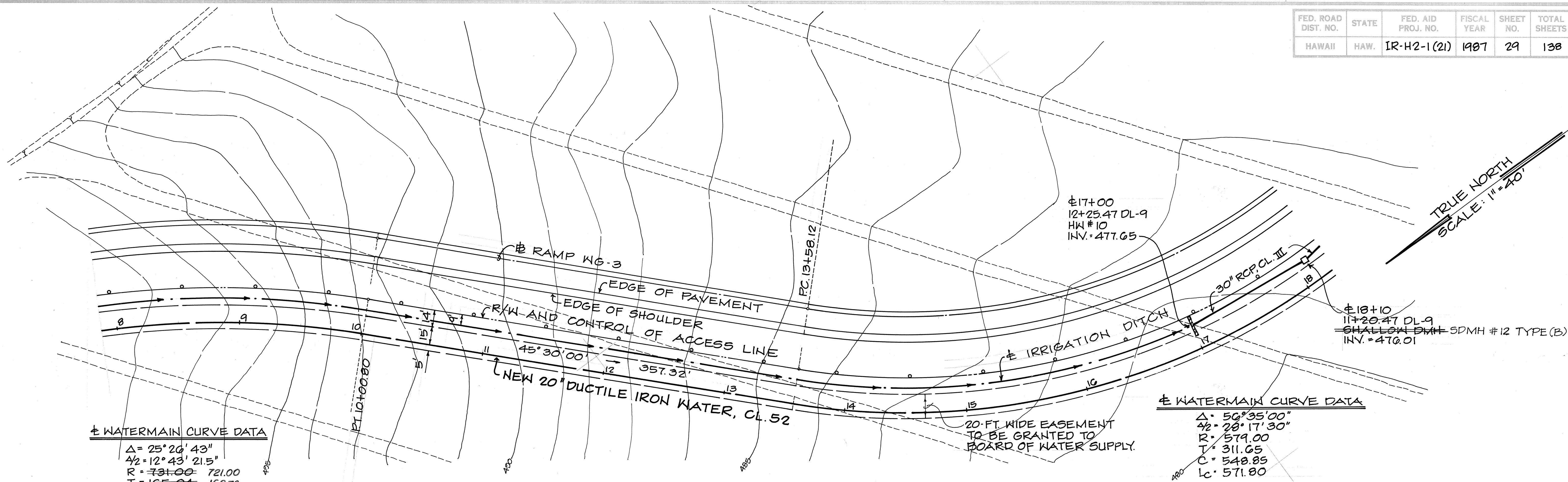
APPROVED:  
*Robert H. Mwakani* 11/24/87  
 CHIEF, PLANNING & ENGINEERING, BWS # DATE

"AS-BUILT"

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED 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.  | IR-H2-1(21)        | 1987        | 29        | 138          |



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 By: *Edwin H. Maruyama*  
 FUJITA & ASSOCIATES

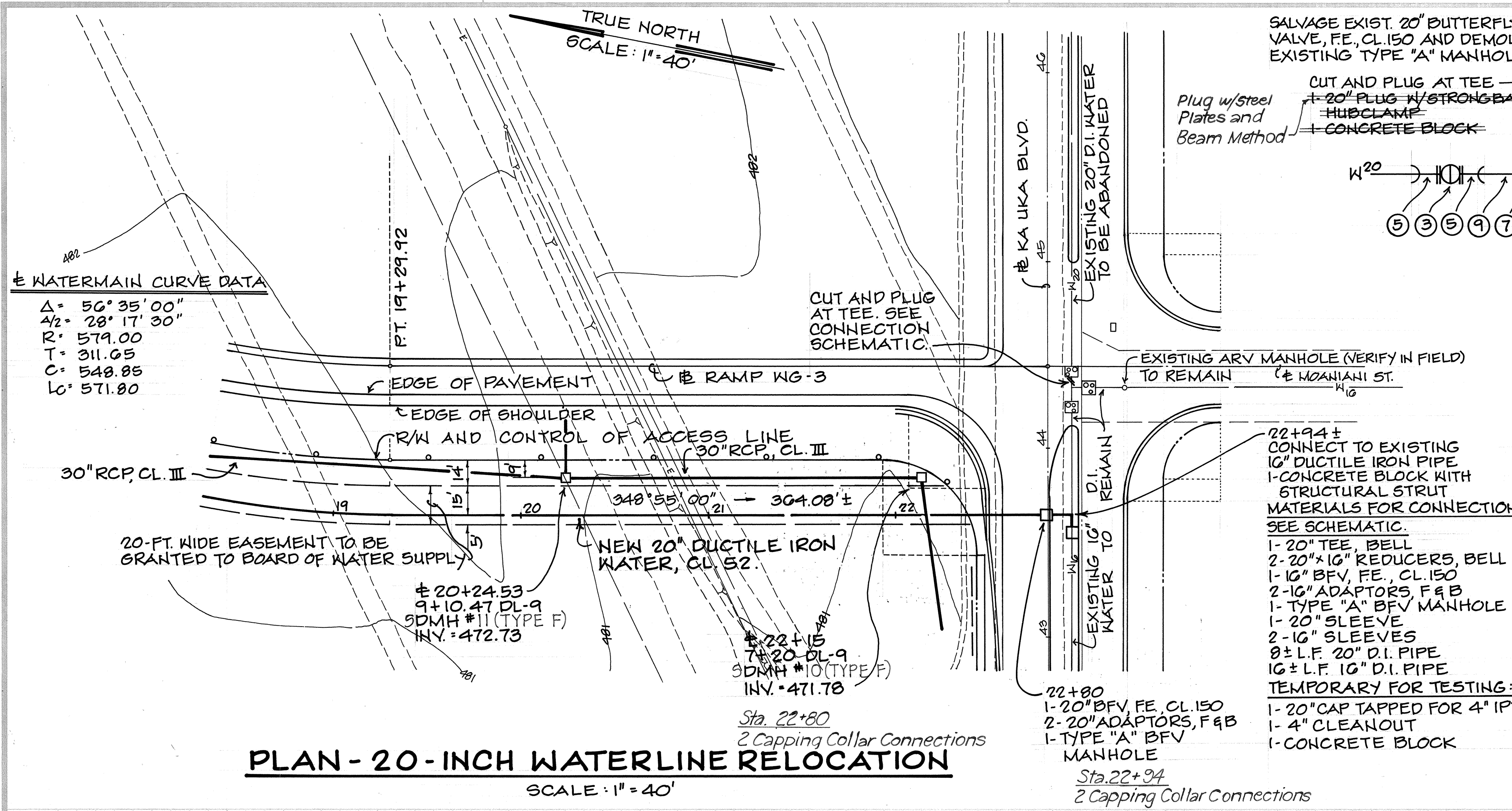
APPROVED:  
*Richard H. M... 11/24/87*  
 CHIEF, PLANNING & ENGINEERING, BWS & DATE

"AS-BUILT"

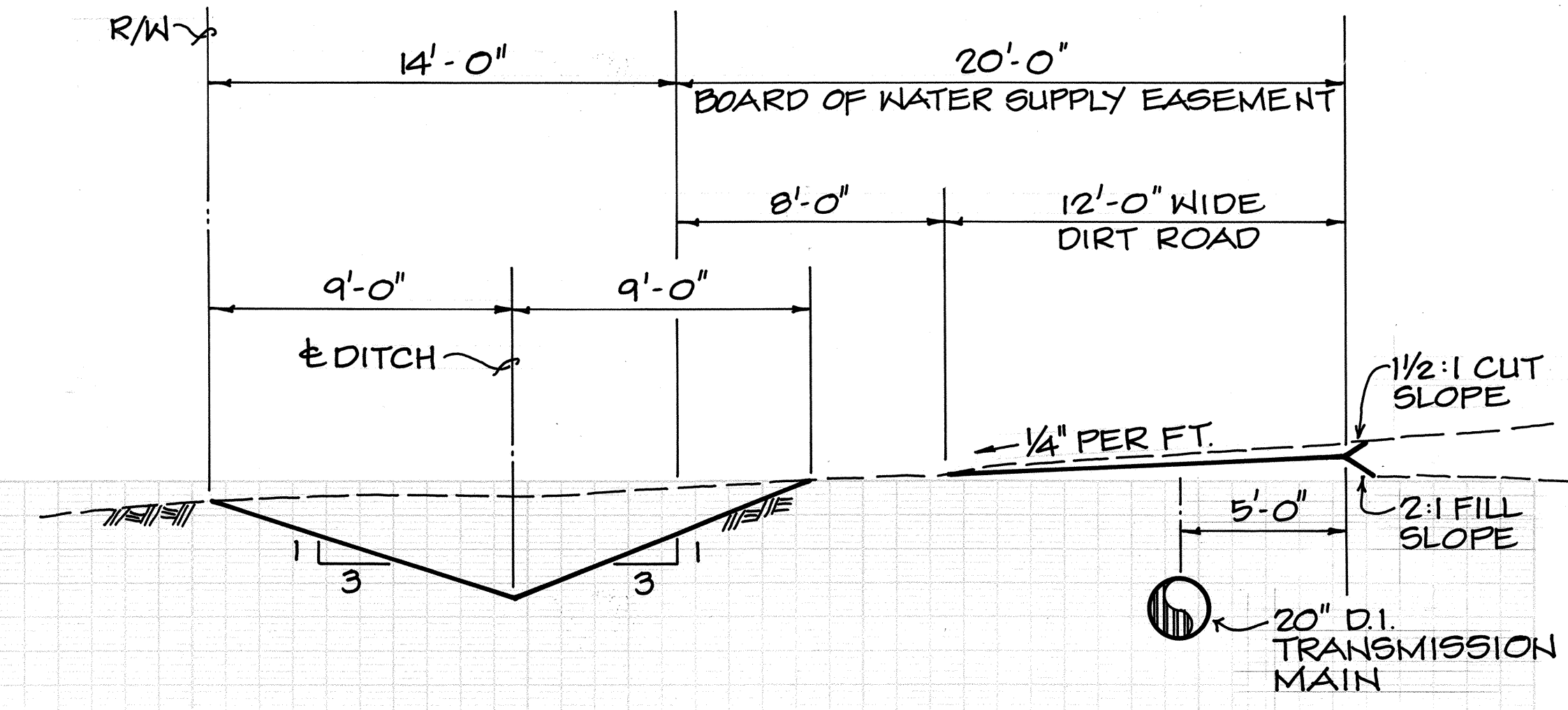
|               |                   |      |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK     | DRAWN BY          |      |
|               | DESIGNED BY       |      |
|               | QUANTITIES BY     |      |
|               | CHECKED BY        |      |



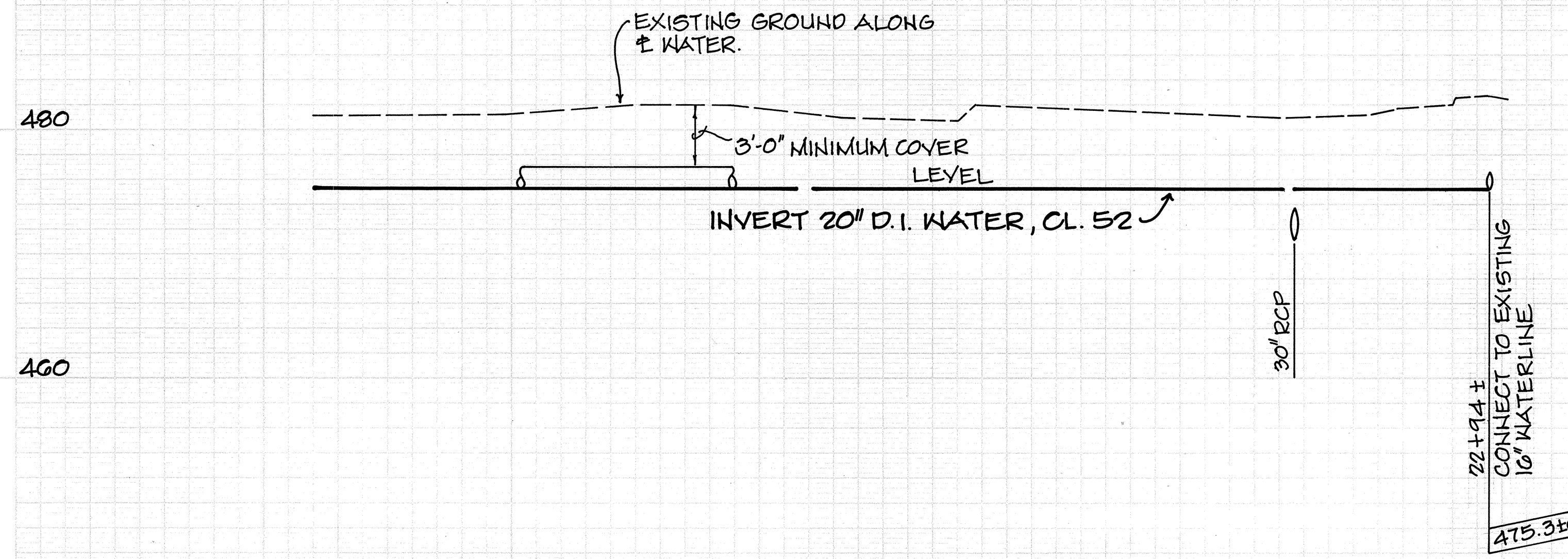
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 30        | 138          |



**CONNECTION SCHEMATIC**  
AT 22+94 ±  
NO SCALE



**TYPICAL SECTION - ACCESS ROAD**  
SCALE: 1/4" = 1'-0"



**PROFILE - 20-INCH WATERLINE RELOCATION**  
SCALE: HORIZ. 1" = 40'  
VERT. 1" = 8'



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION  
By: *Edwin H. Maruyama*  
Fujita & Associates

APPROVED:  
*Edwin H. Maruyama*  
CHIEF, PLANNING & ENGINEERING, BWS # DATE 11/24/87

SHEET No. 19 OF 31 SHEETS

"AS-BUILT"

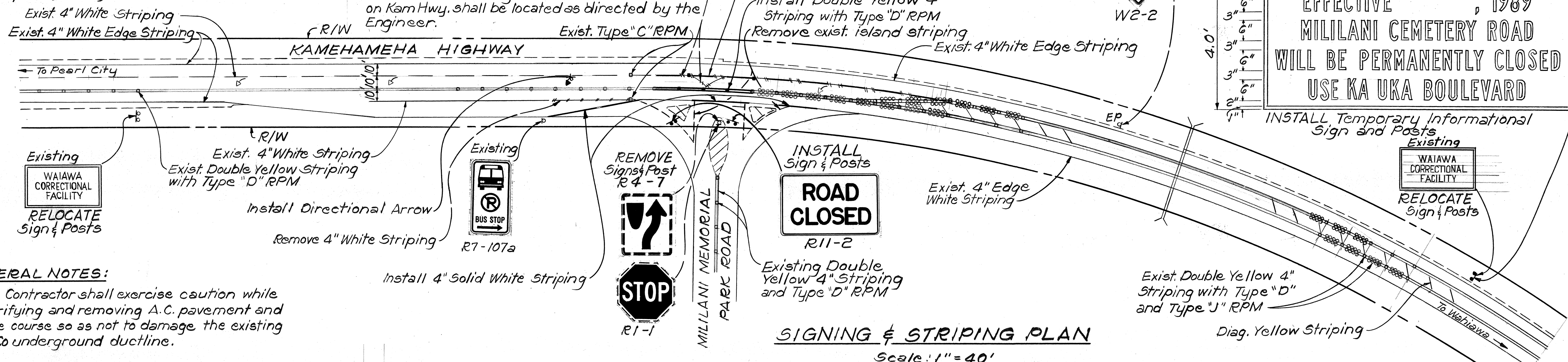
OCTOBER 1987 30



# NOTES FOR TEMPORARY SIGN:

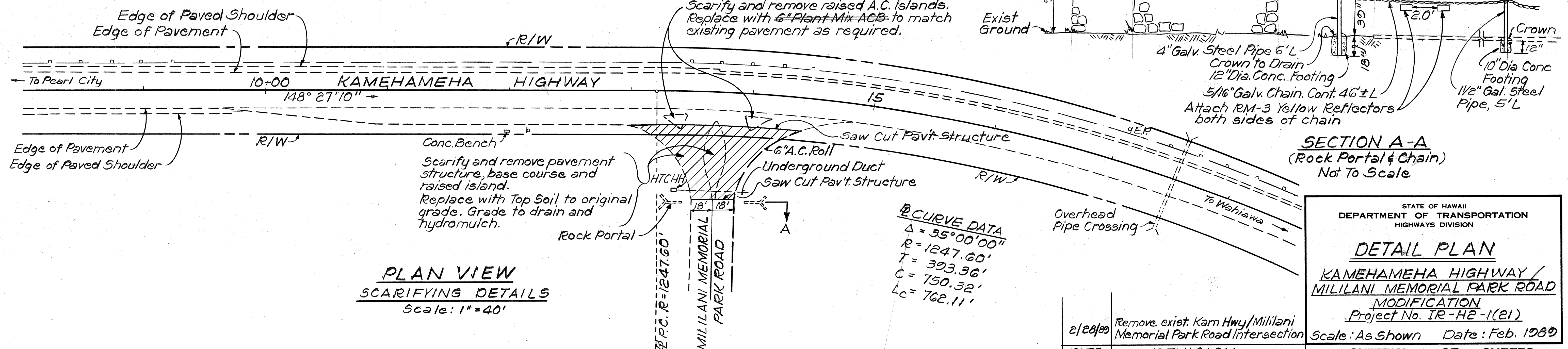
1. The temporary informational signs shall be single-sided, non-illuminated, 8'-0" x 4'-0" x 1/2" exterior plywood.
2. The background color shall be white. The lettering shall be Highway Series B, black, all capitals, 6" size.
3. The Contractor shall complete the date to be displayed on the signs after coordination with the Engineer.
4. The quantity of "Temporary Informational Signs" shall be two. The temporary informational sign (to be installed facing Wahiawa bound traffic on Kam Hwy. shall be located as directed by the Engineer.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 603051    | 138          |



## GENERAL NOTES:

1. The Contractor shall exercise caution while scarifying and removing A.C. pavement and base course so as not to damage the existing HTCo underground ductline.
2. The existing "WAIAWA CORRECTIONAL FACILITY" signs and posts shall be relocated to the Ka Uka Blvd./Kam Hwy. Intersection. The specific locations shall be as determined by the Engineer.
3. The installation of chain and posts across Mililani Memorial Park Road shall be symmetrical about the Mililani Memorial Park Road.
4. The quantity of RM-3 yellow reflector (on 5/16" chain) shall be eight.
5. The existing W2-2, R4-7 and R1-1 signs shall be removed and delivered to the State Project Field Office.



SECTION A-A  
(Rock Portal & Chain)  
Not To Scale

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## DETAIL PLAN

KAMEHAMEHA HIGHWAY/  
MILILANI MEMORIAL PARK ROAD

## MODIFICATION

Project No. IR-H2-1(21)

Scale: As Shown Date: Feb. 1989

SHEET No. 12a OF 31 SHEETS

"AS-BUILT"

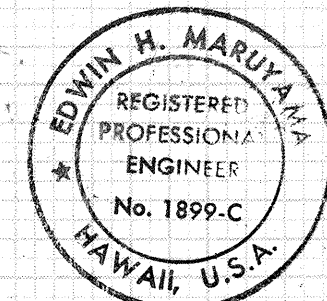
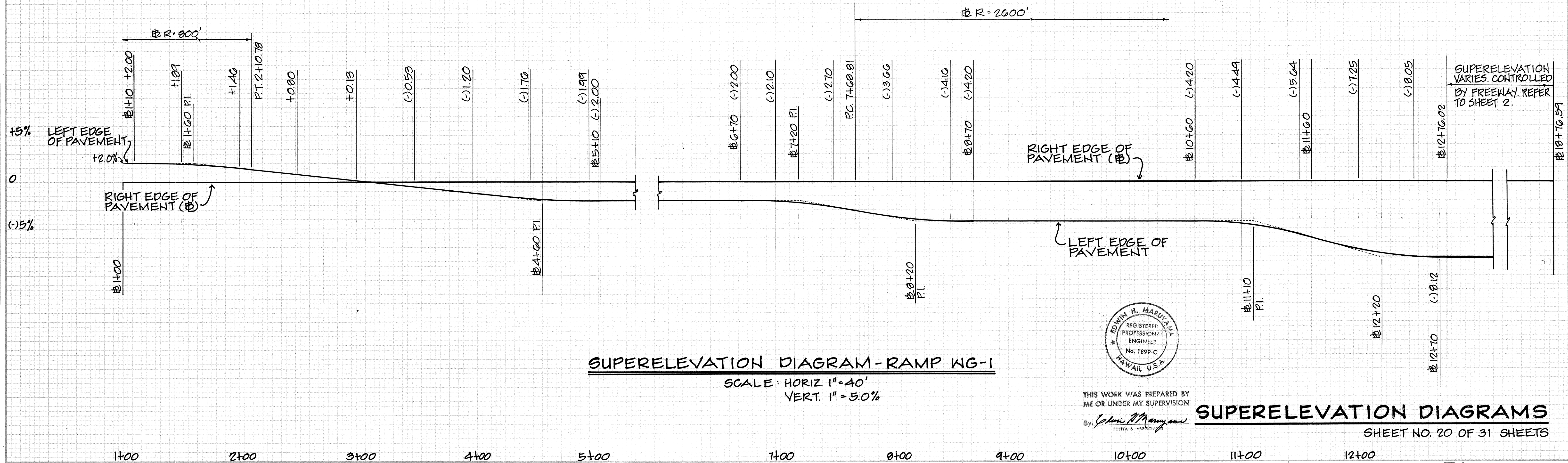
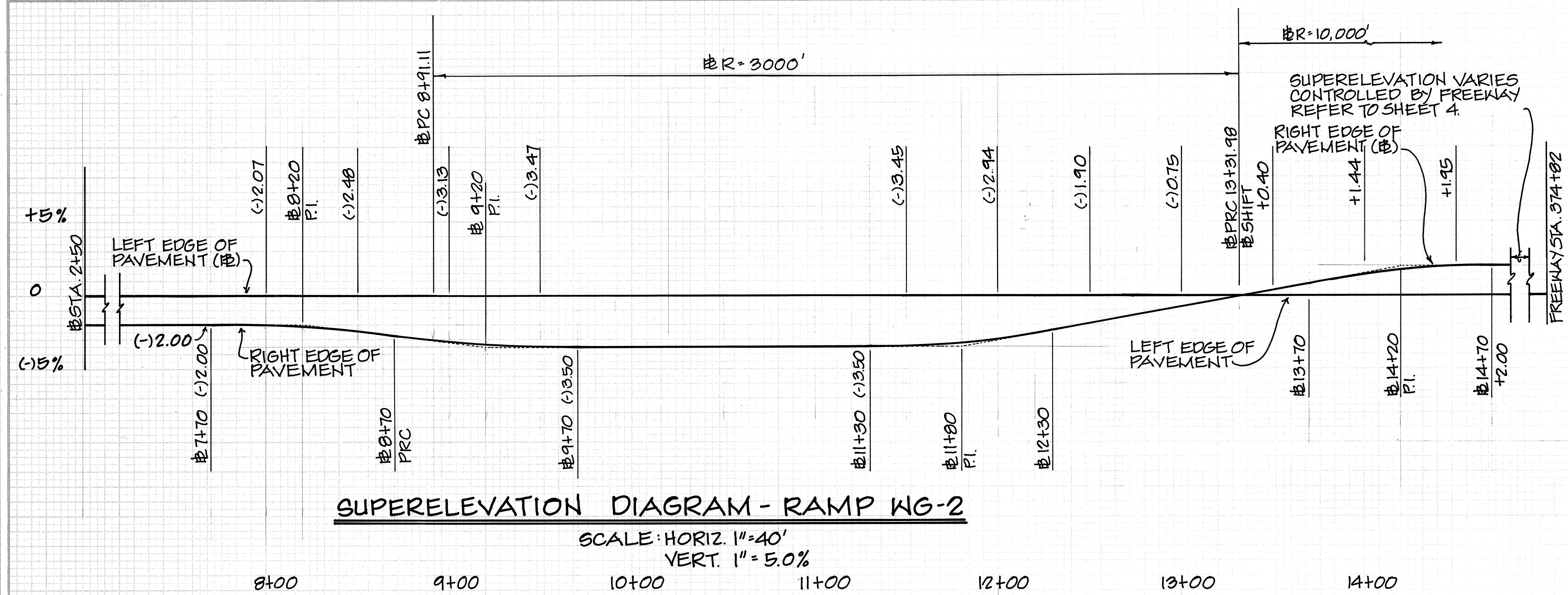
C.O. 30 S-1



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 31        | 138          |

| FINAL SURVEY | DATE | BY |
|--------------|------|----|
| SURVEYED     |      |    |
| PLOTTED      |      |    |
| NOTE BOOK    |      |    |
| NO.          |      |    |

| ORIGINAL SURVEY | DATE | BY |
|-----------------|------|----|
| SURVEYED        |      |    |
| PLOTTED         |      |    |
| NOTE BOOK       |      |    |
| NO.             |      |    |



THIS WORK WAS PREPARED BY  
 ME OR UNDER MY SUPERVISION  
 By *Edwin H. Maruyama*  
 ENGINEER & ASSOCIATE

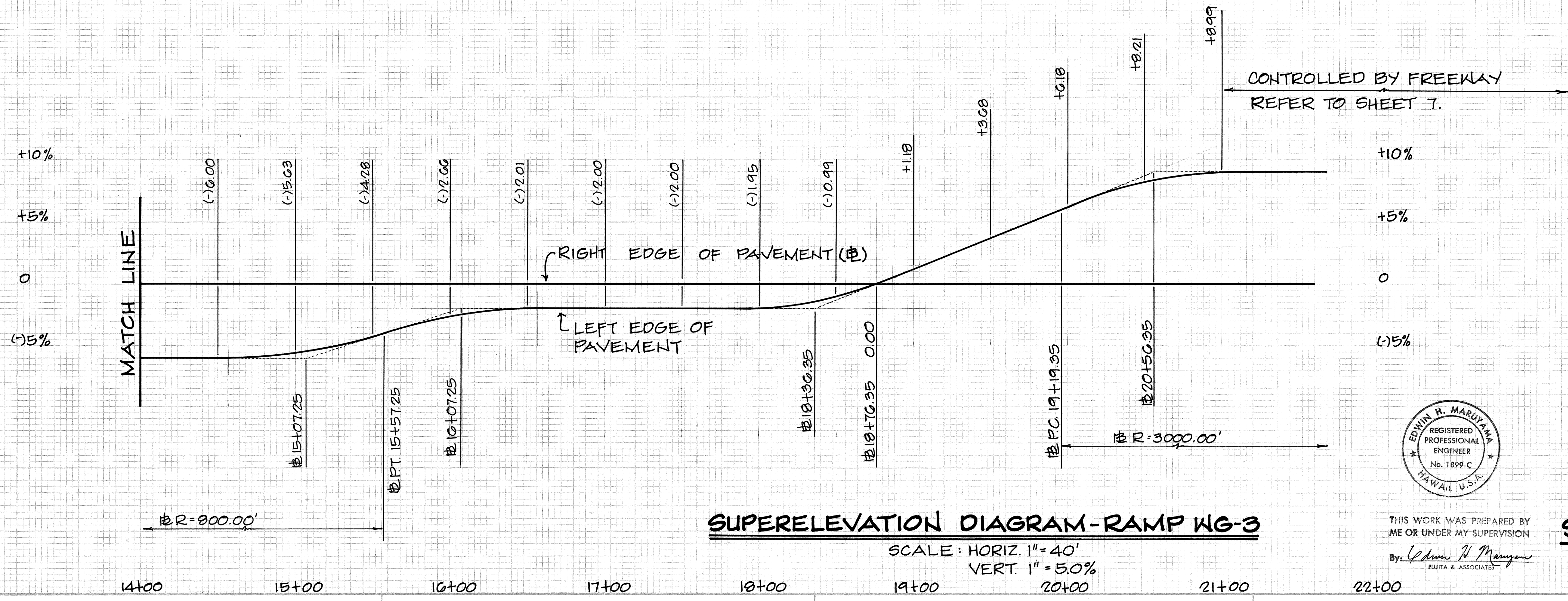
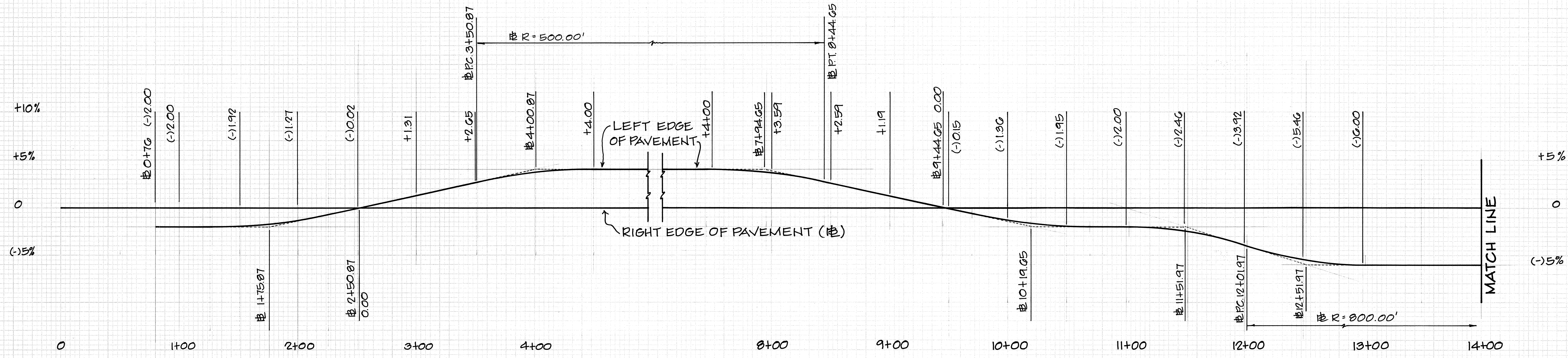
**SUPERELEVATION DIAGRAMS**  
 SHEET NO. 20 OF 31 SHEETS



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 32        | 138          |

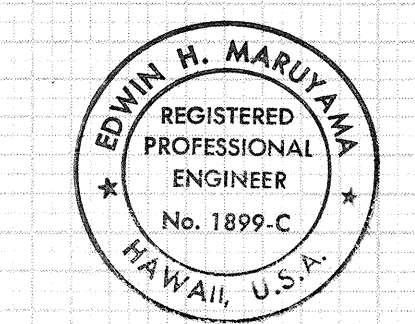
|              |      |
|--------------|------|
| FINAL SURVEY | DATE |
| SURVEY       | BY   |
| NOTE BOOK    |      |
| NO.          |      |

|                 |      |
|-----------------|------|
| ORIGINAL SURVEY | DATE |
| SURVEY          | BY   |
| NOTE BOOK       |      |
| NO.             |      |



# **SUPERELEVATION DIAGRAM-RAMP WG-3**

SCALE: HORIZ. 1" = 40'  
VERT. 1" = 5.0%



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By: *Edwin H. Maruyama*  
FUJITA & ASSOCIATES

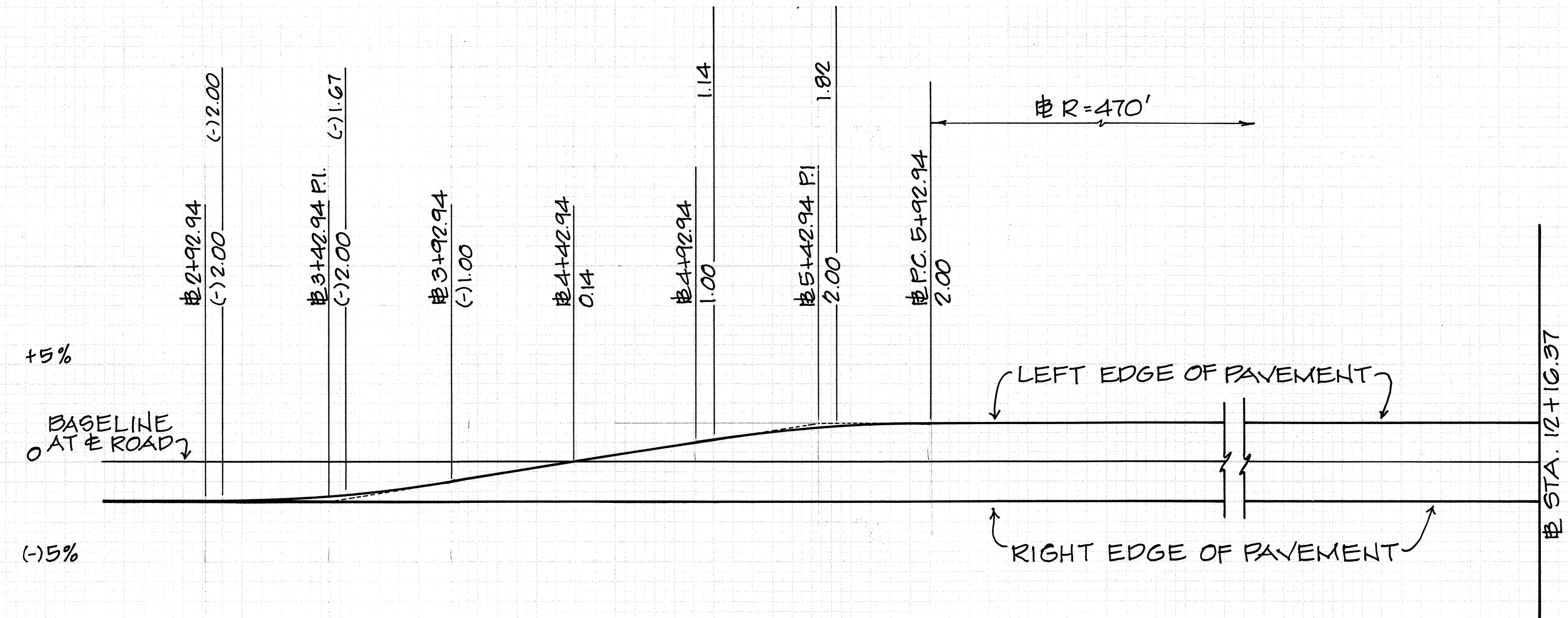
# **SUPERELEVATION DIAGRAM**

SHEET NO. 21 OF 31 SHEETS



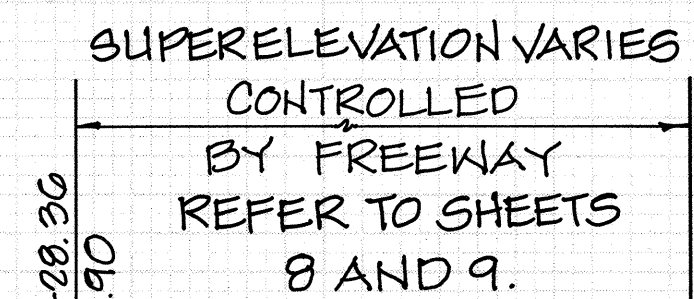
|              |                     |          |            |
|--------------|---------------------|----------|------------|
| FINAL SURVEY | SURVEYED _____      | BY _____ | DATE _____ |
| NOTE BOOK    | PLOTTED _____       |          |            |
|              | TEMPLATE _____      |          |            |
|              | AREAS _____         |          |            |
| NO _____     | AREAS CHECKED _____ |          |            |

|          |               |    |      |
|----------|---------------|----|------|
| ORIGINAL |               |    |      |
| SURVEY   | SURVEYED      | BY | DATE |
|          | PLOTTED       |    |      |
|          | TEMPLATE      |    |      |
|          | AREAS         |    |      |
| NO.      | AREAS CHECKED |    |      |



SUPERELEVATION DIAGRAM  
MILILANI CEMETERY ACCESS ROAD

SCALE: HORIZ. 1" = 40'  
VERT. 1" = 5.0%



By: Edwin A. Mangano  
FUJITA & ASSOCIATES

## SUPERELEVATION DIAGRAMS

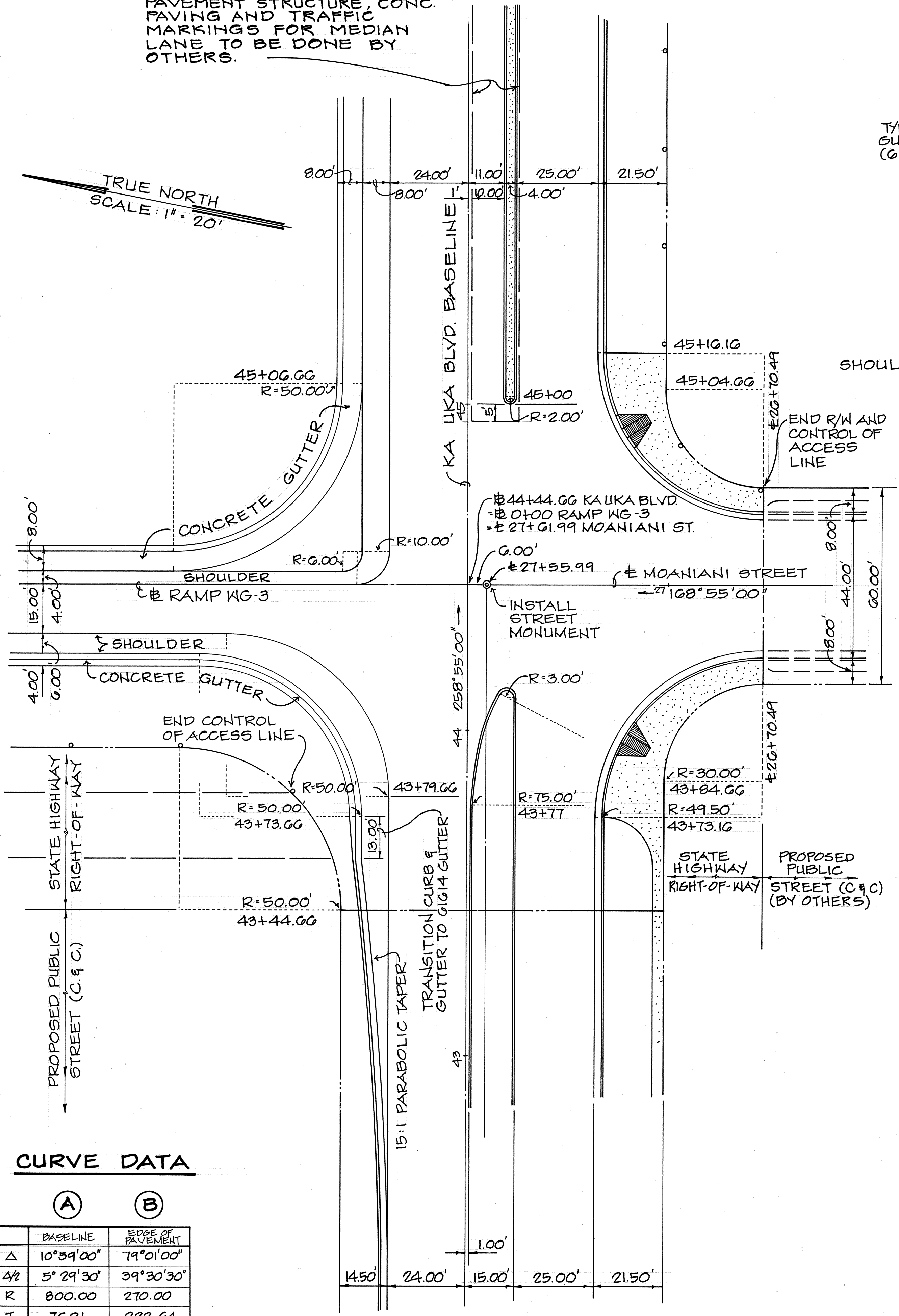
OCTOBER 1987



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 34        | 138          |

PAVEMENT STRUCTURE, CONC. FAVING AND TRAFFIC MARKINGS FOR MEDIAN LANE TO BE DONE BY OTHERS.

TRUE NORTH  
SCALE: 1" = 20'



### CURVE DATA

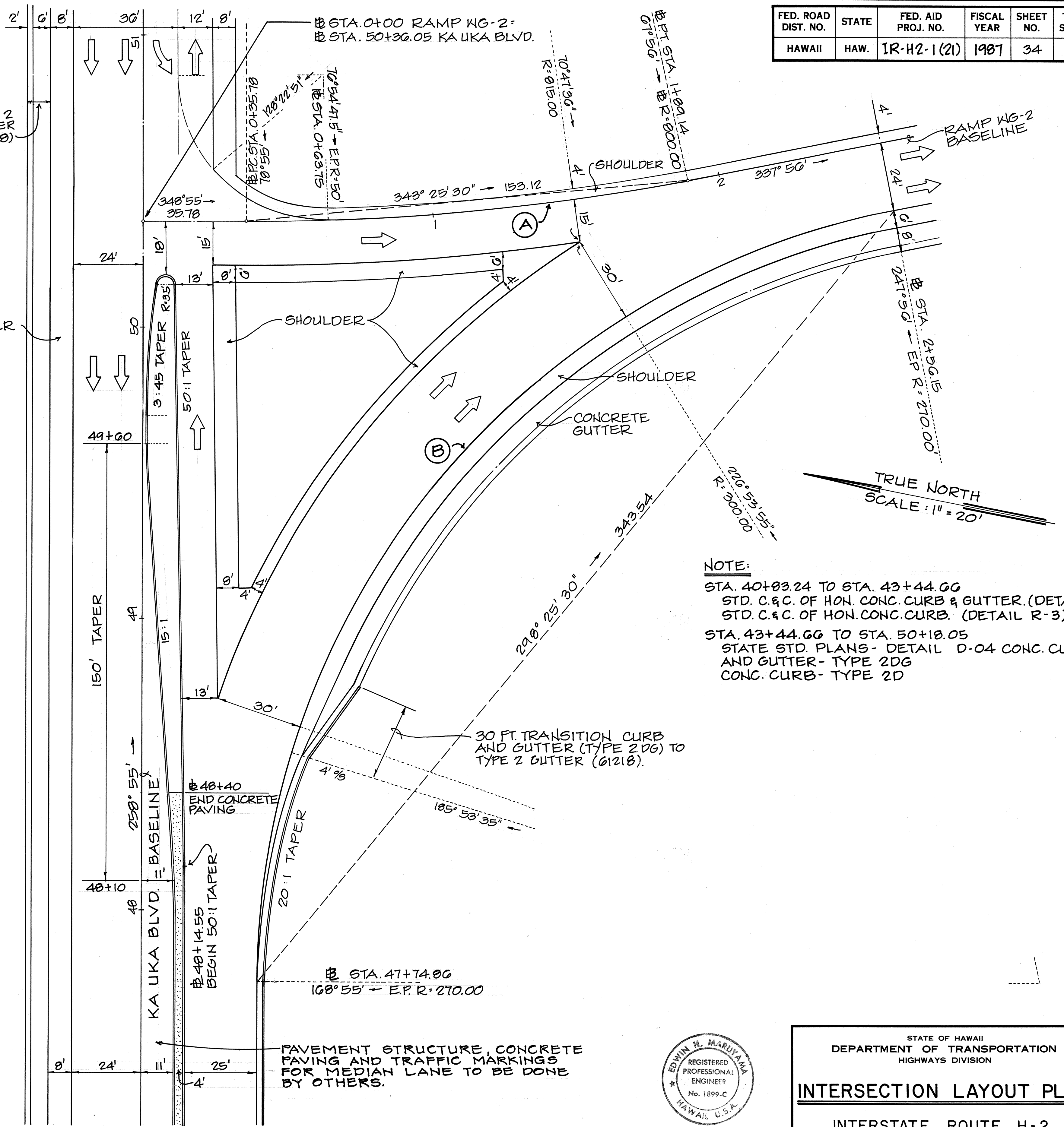
|     | A         | B         |
|-----|-----------|-----------|
| Δ   | 10°59'00" | 79°01'00" |
| 4/2 | 5°29'30"  | 39°30'30" |
| R   | 800.00    | 270.00    |
| T   | 76.91     | 222.64    |
| C   | 153.12    | 343.54    |
| L   | 153.30    | 372.36    |

TYPE 2 GUTTER (G1218)

SHOULDER

END R/W AND CONTROL OF ACCESS LINE

STATE HIGHWAY RIGHT-OF-WAY STREET (C & C) (BY OTHERS)

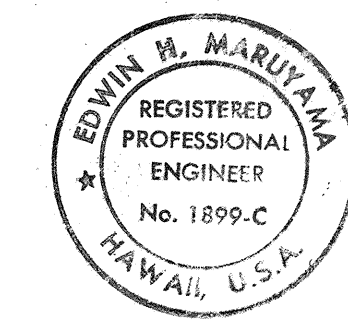


TRUE NORTH  
SCALE: 1" = 20'

NOTE:  
STA. 40+03.24 TO STA. 43+44.66  
STD. C & C OF HON. CONC. CURB & GUTTER (DETAIL R-4)  
STD. C & C OF HON. CONC. CURB (DETAIL R-3)  
STA. 43+44.66 TO STA. 50+18.05  
STATE STD. PLANS - DETAIL D-04 CONC. CURB AND GUTTER - TYPE 2DG  
CONC. CURB - TYPE 2D

30 FT. TRANSITION CURB AND GUTTER (TYPE 2DG) TO TYPE 2 GUTTER (G1218).

PAVEMENT STRUCTURE, CONCRETE FAVING AND TRAFFIC MARKINGS FOR MEDIAN LANE TO BE DONE BY OTHERS.



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FUTATA & ASSOCIATES

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

INTERSECTION LAYOUT PLAN

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(21)

SCALE: 1" = 20' AUGUST 1986

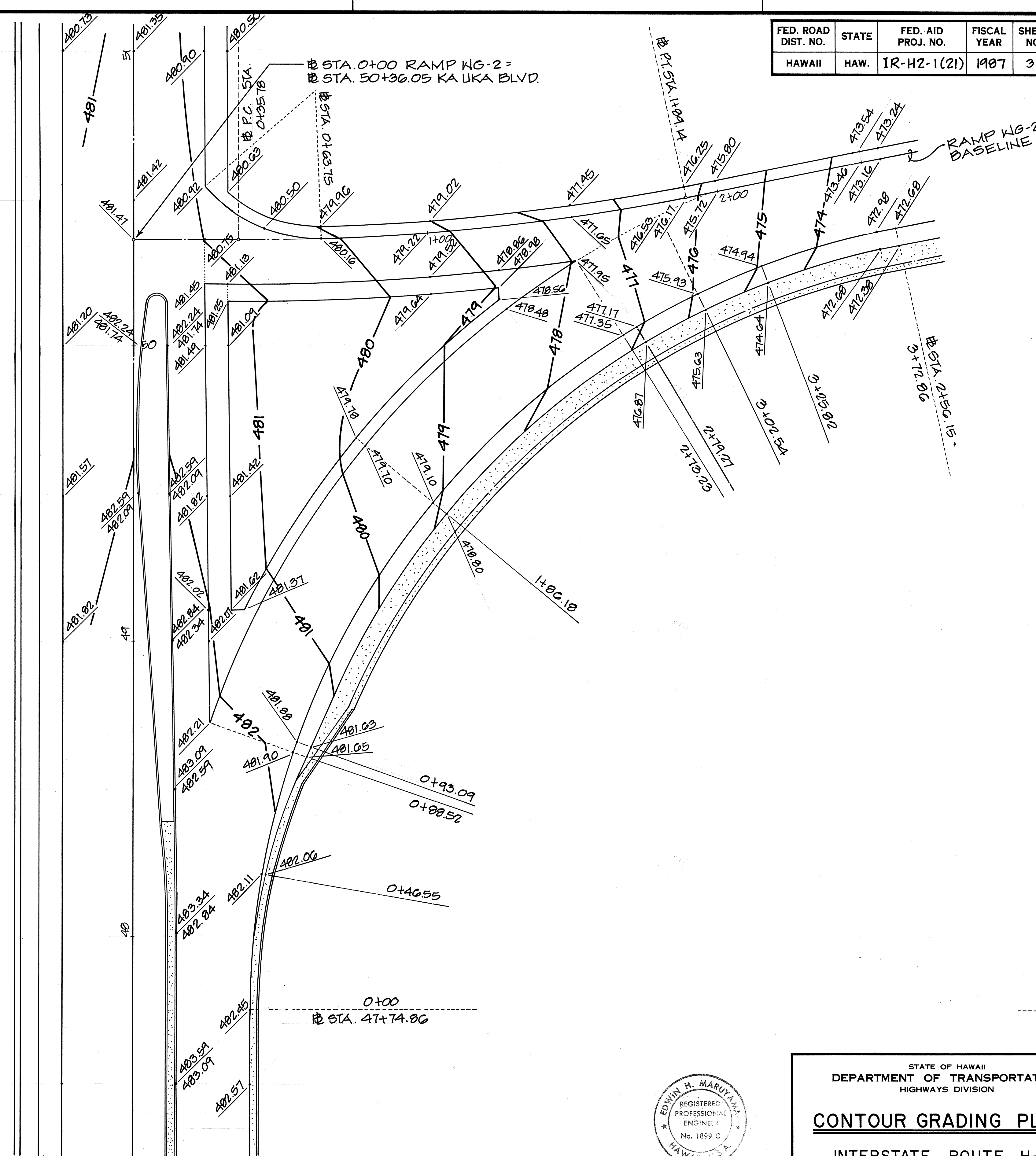
SHEET No. 23 OF 31 SHEETS



| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | IR-H2-1(21)           | 1907           | 35           | 138             |

— RAMP WG-2  
BASELINE

TRUE NORTH  
SCALE: 1" = 20'



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FULTA & ASSOCIATES

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## CONTOUR GRADING PLAN

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(2I)

SCALE: 1" = 20' AUGUST 1986

**SHEET No. 24 OF 31 SHEETS**

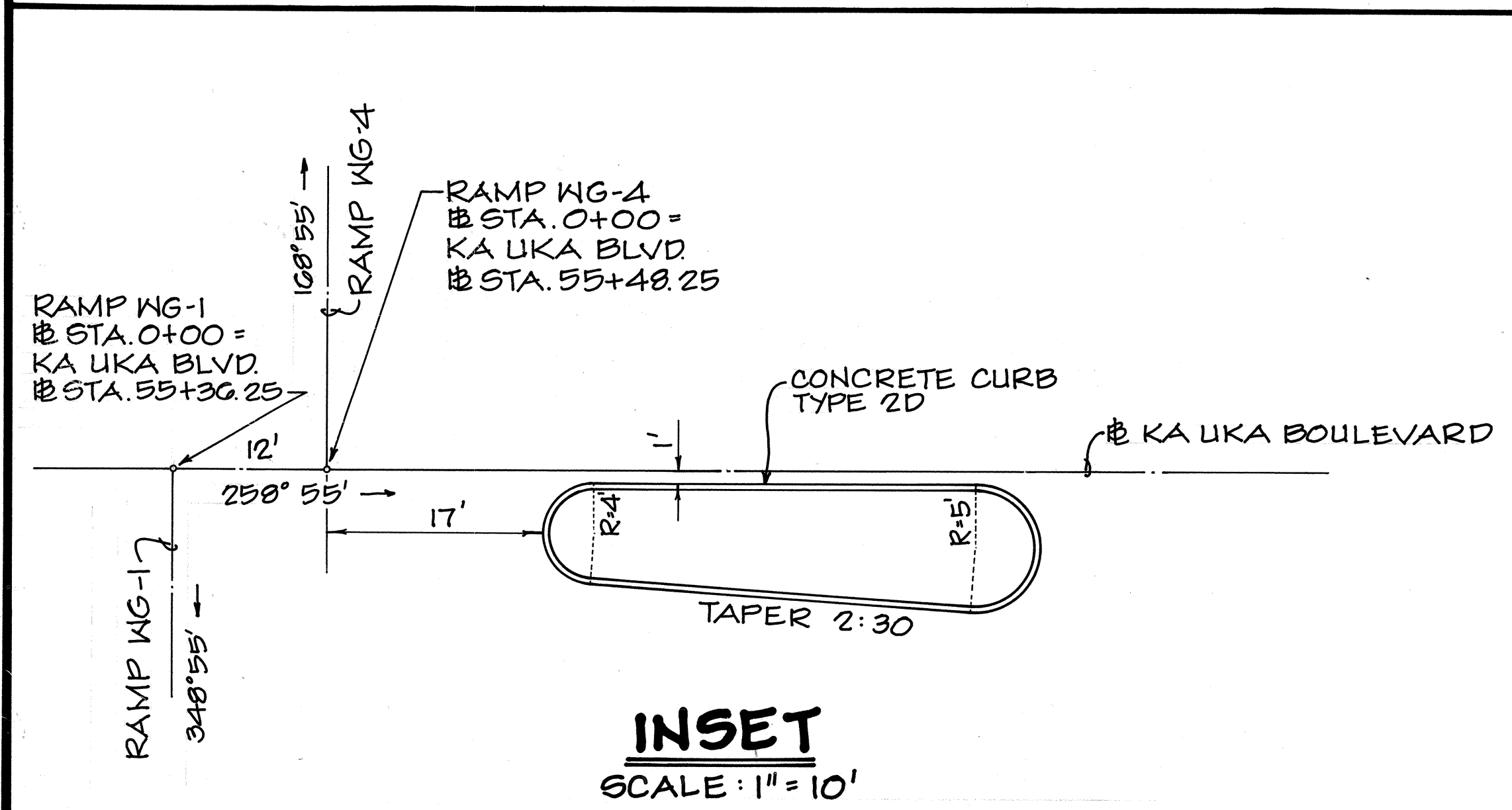
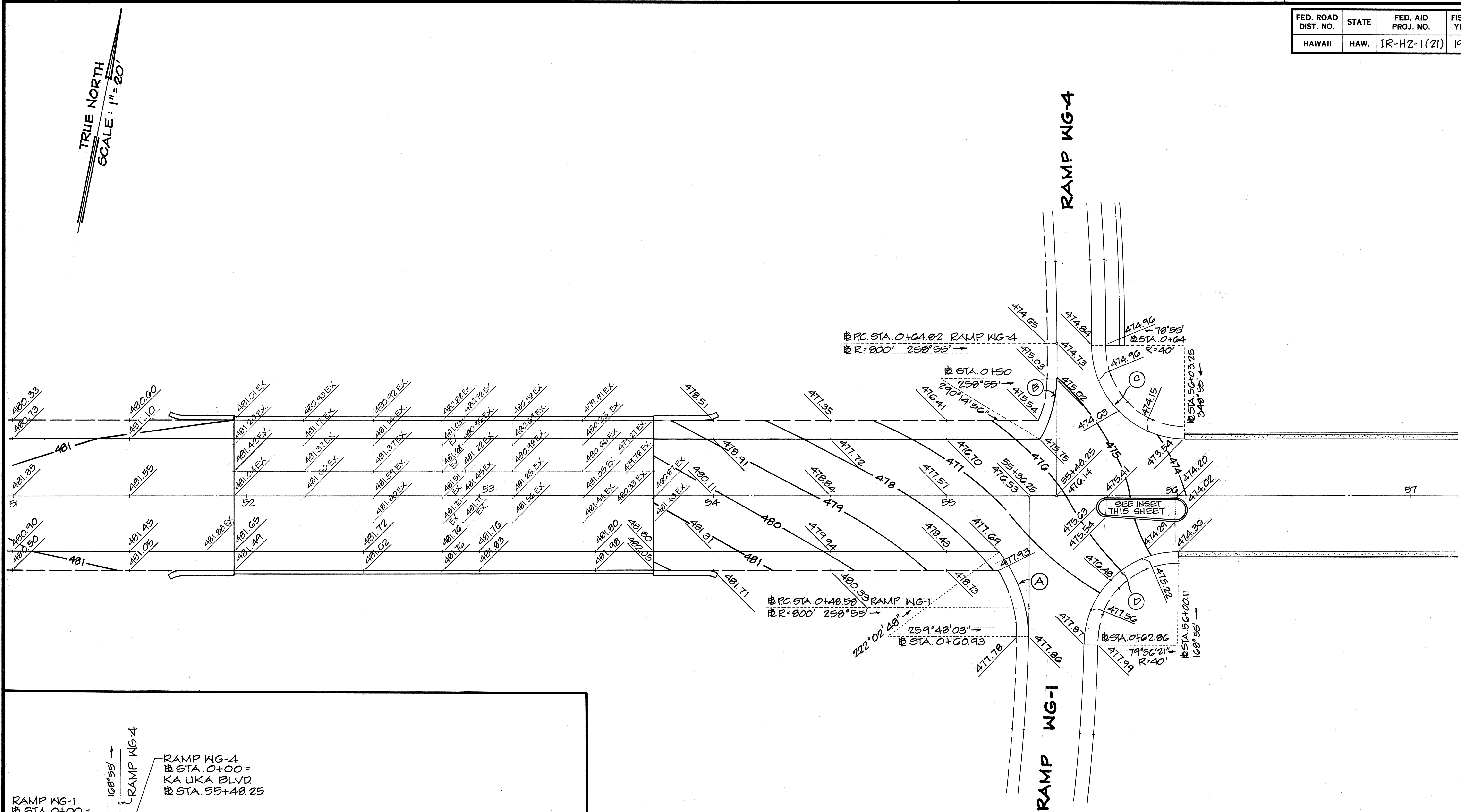
OCTOBER 1987

35

|                  |                         |            |
|------------------|-------------------------|------------|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY _____ | DATE _____ |
|                  | DRAWN BY _____          | "          |
|                  | DESIGNED BY _____       | "          |
| NOTE BOOK        | QUANTITY BY _____       | "          |
|                  | QUANTITIES BY _____     | "          |
| No. _____        | CHECKED BY _____        | "          |

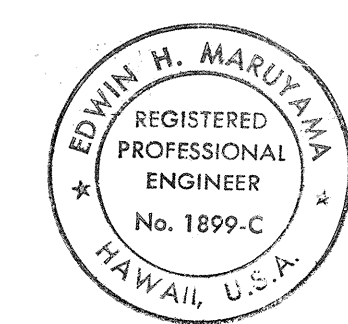


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 30        | 138          |



**CURVE DATA**

|            | A           | B         | C         | D           |
|------------|-------------|-----------|-----------|-------------|
| $\Delta$   | 37°45'15"   | 31°19'56" | 90°00'00" | 88°58'39"   |
| $\Delta/2$ | 18°52'37.5" | 15°39'58" | 45°00'00" | 44°29'19.5" |
| R          | 60.00'      | 50.00'    | 40.00'    | 40.00'      |
| T          | 20.52'      | 14.02'    | 40.00'    | 39.29'      |
| C          | 38.82'      | 27.00'    | 56.57'    | 56.06'      |
| LC         | 39.54'      | 27.34'    | 62.83'    | 62.12'      |



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CONTOUR GRADING PLAN**

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(21)

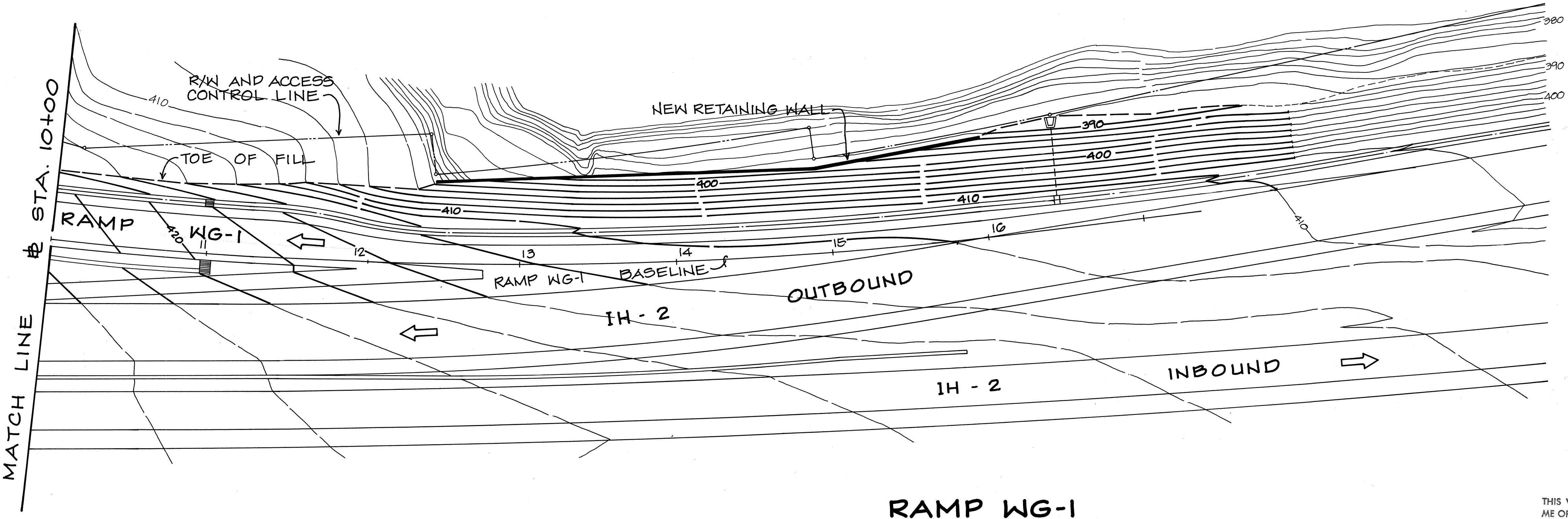
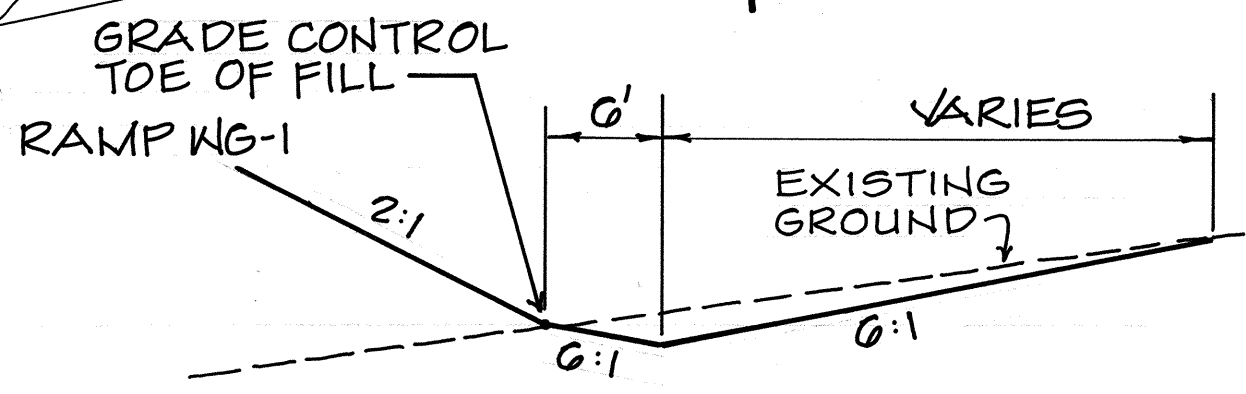
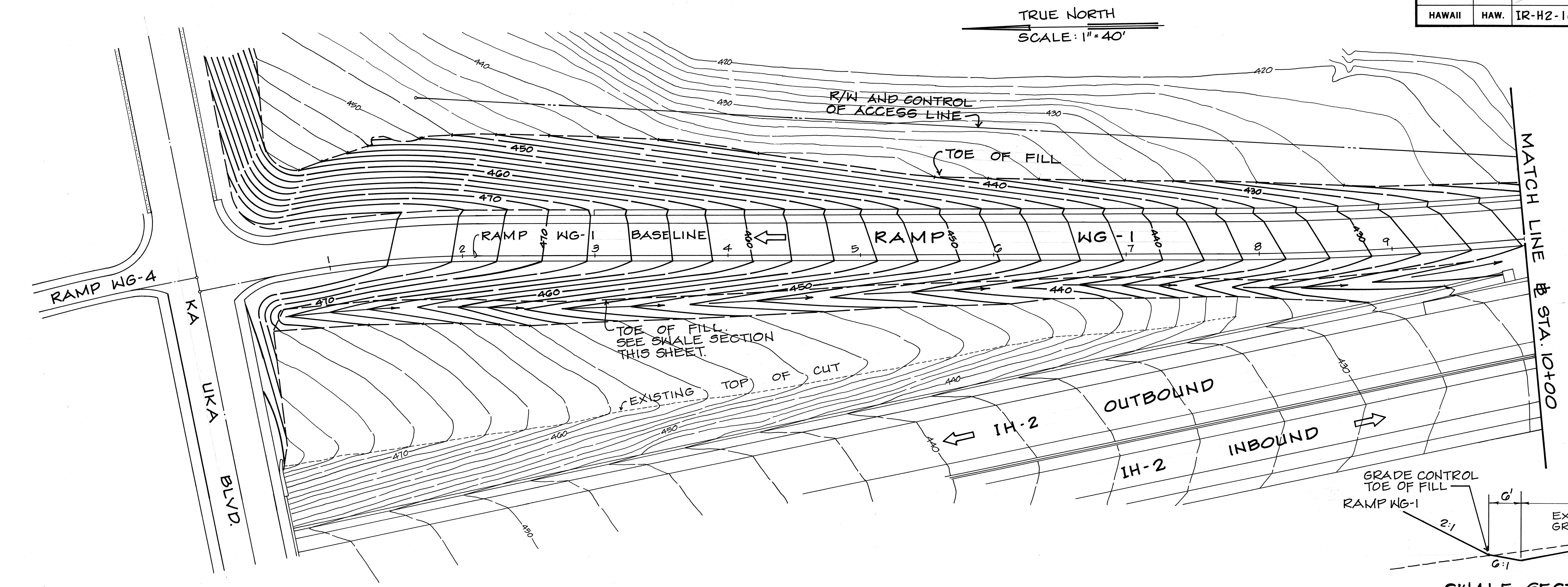
SCALE: AS SHOWN      AUGUST 1986

SHEET No. 25 OF 31 SHEETS

|               |                   |      |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| DESIGNED BY   |                   |      |
| NOTED BY      |                   |      |
| CHECKED BY    |                   |      |
| NO.           |                   |      |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 37        | 138          |



STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CONTOUR GRADING PLAN

INTERSTATE ROUTE H-2

WAIPIO INTERCHANGE

FAI PROJ. NO. IR-H2-1(21)

SCALE: 1" = 40'

JUNE 1987

EDWIN H. MARUYAMA

REGISTERED PROFESSIONAL ENGINEER

No. 1899-C

HAWAII, U.S.A.

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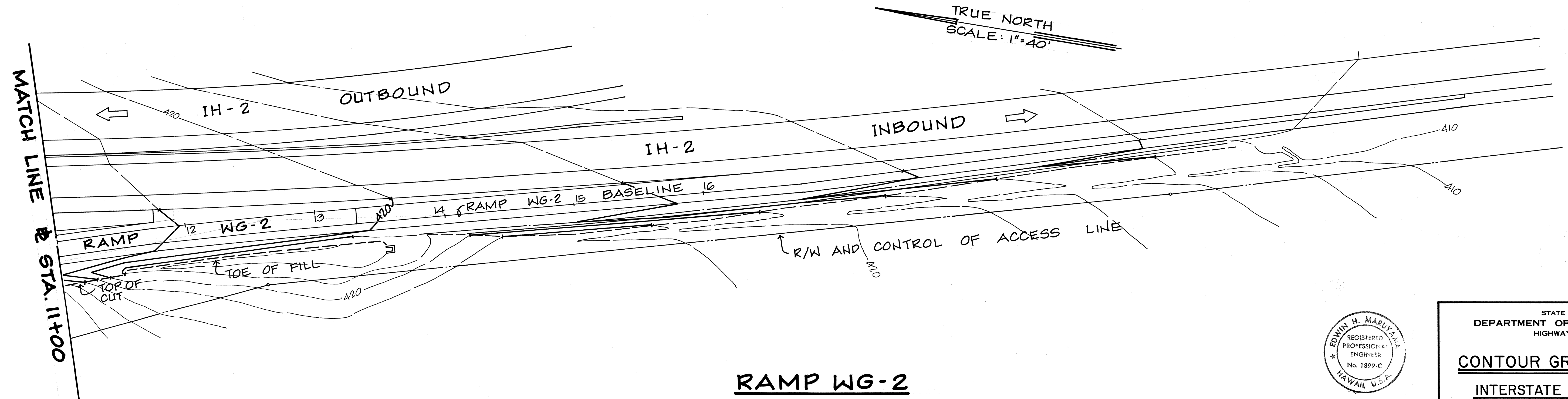
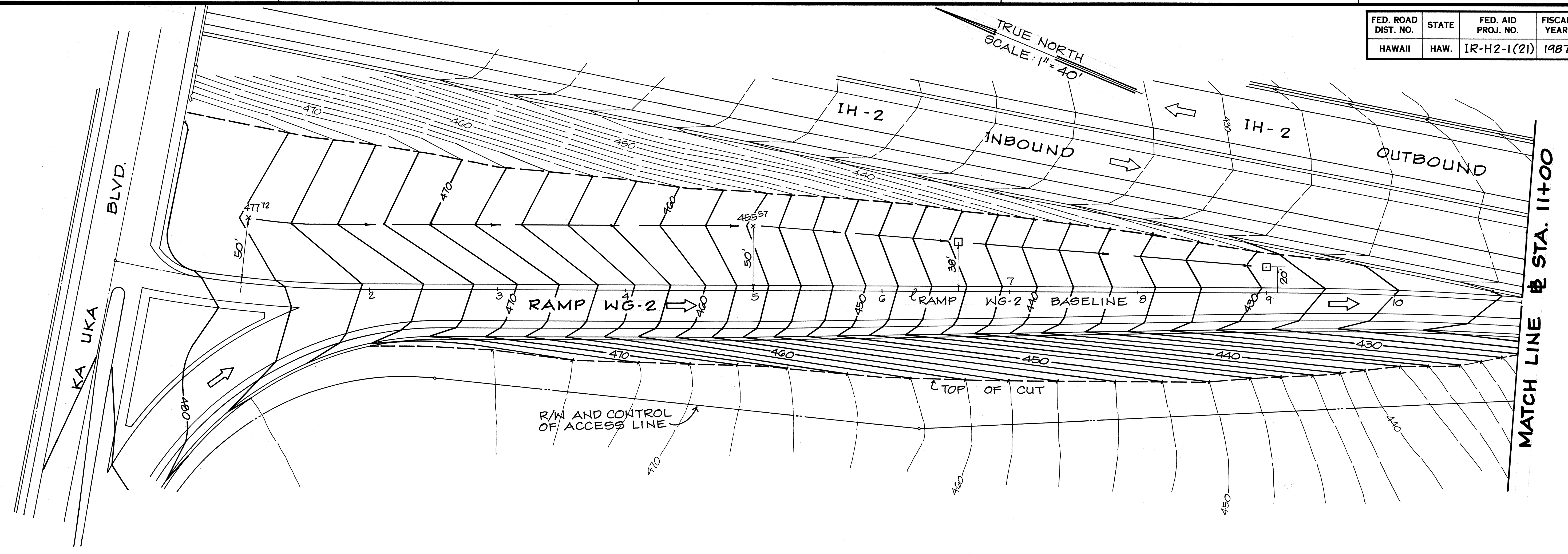
By: *Edwin H. Maruyama*

FUJITA & ASSOCIATES

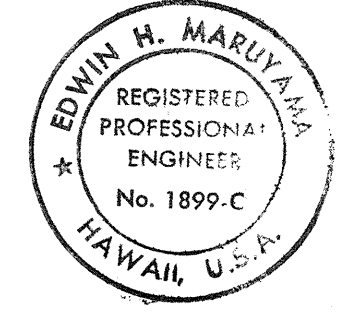
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|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK     | DRAWN BY          |      |
|               | DESIGNED BY       |      |
|               | CHECKED BY        |      |
|               | NO. 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



| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | IR-H2-1(21)           | 1987           | 38           | 138             |



**RAMP WG-2**



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CONTOUR GRADING PLAN**

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(21)

SCALE: 1" = 40'

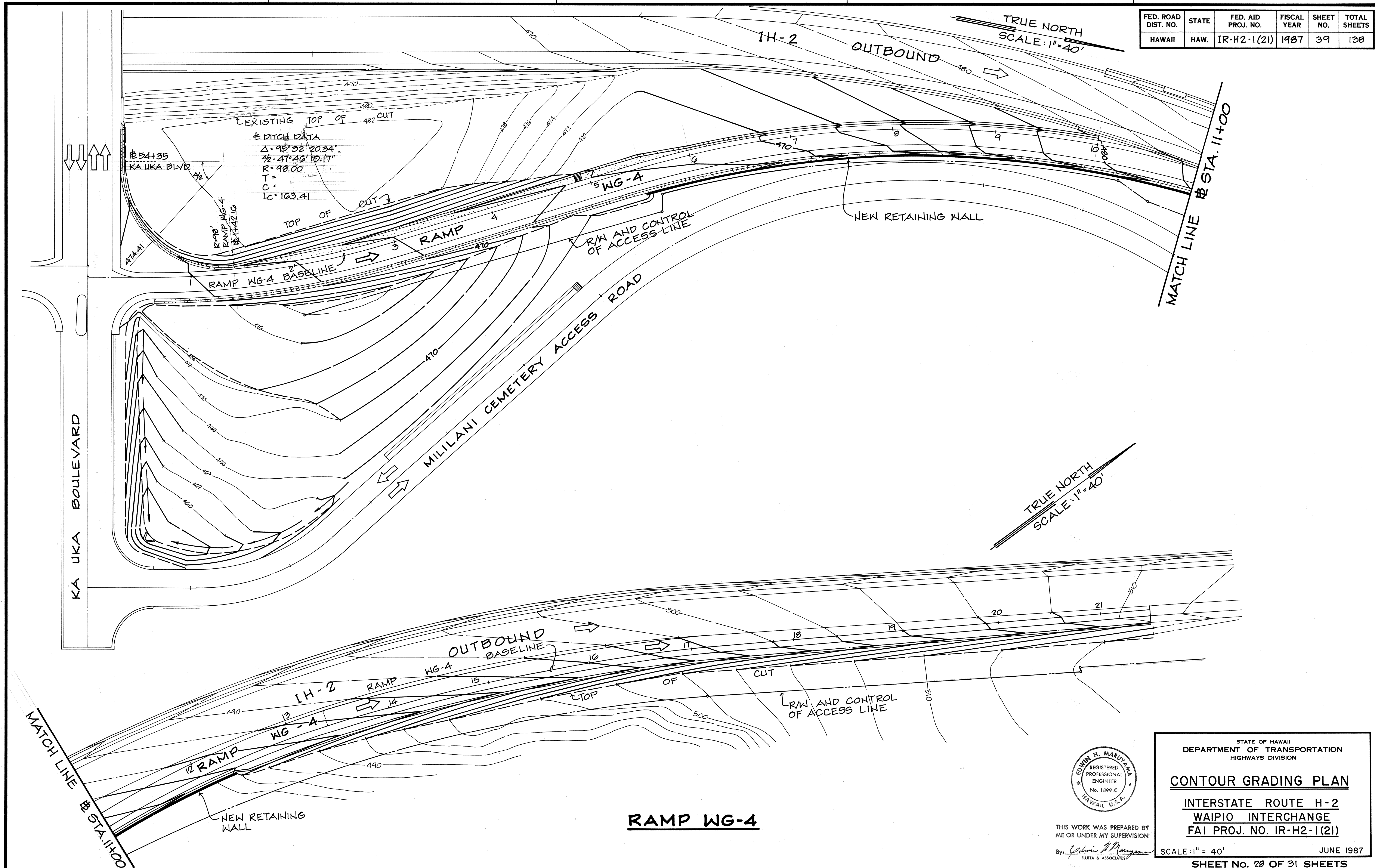
JUNE 1987

SHEET NO. 27 OF 31 SHEETS

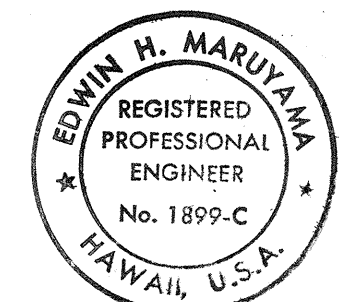
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|-------------------|-------|
| DATE              | _____ |
| SURVEY PLOTTED BY | _____ |
| DRAWN BY          | _____ |
| DESIGNED BY       | _____ |
| CHECKED BY        | _____ |
| ORIGINAL PLAN     | _____ |
| NOTE BOOK         | _____ |
| NO.               | _____ |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 39        | 138          |



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



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FUJITA & ASSOCIATES

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CONTOUR GRADING PLAN**

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(21)

SCALE: 1" = 40' JUNE 1987

SHEET NO. 28 OF 31 SHEETS

**RAMP WG-4**



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 1R-H2-1(21)        | 1987        | 40        | 138          |

MATCH LINE

12+00

13+00

14+00

15+00

### DRAINLINE 3 (CONT.)

### DRAINLINE 5B

### DRAINLINE 8

410

420

430

440

450

460

470

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500

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530

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3140

3150

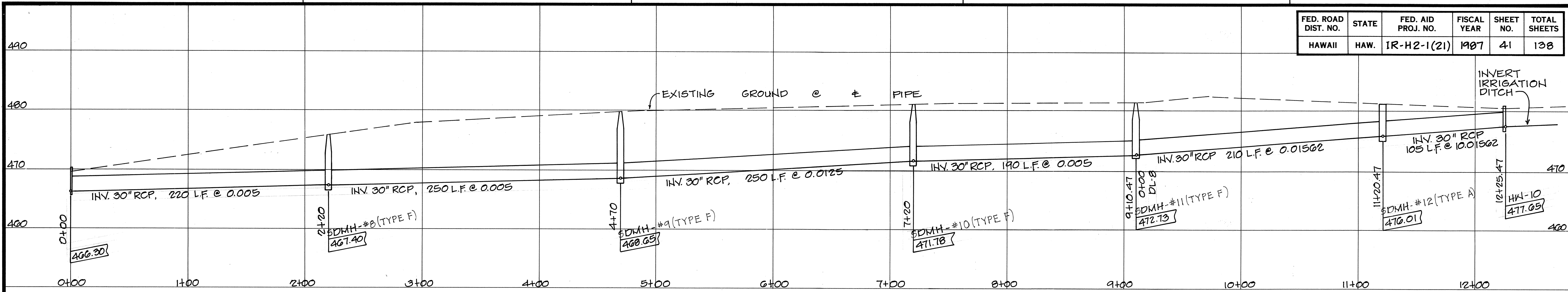
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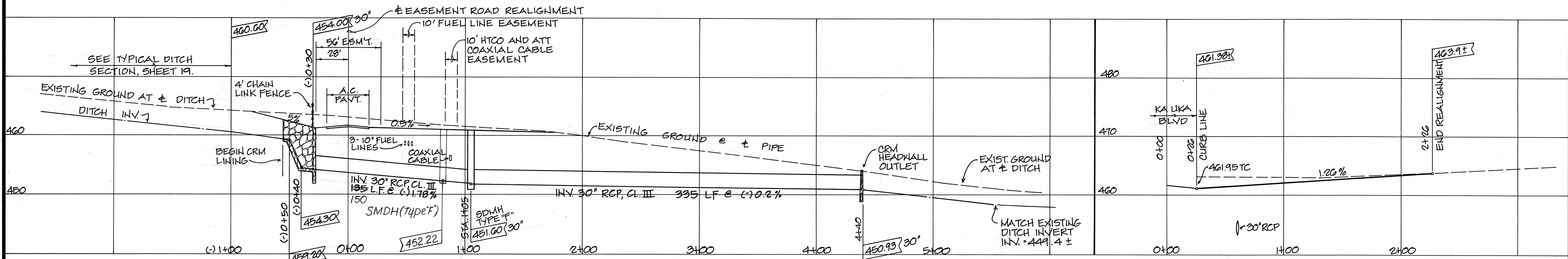
3180



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 41        | 138          |

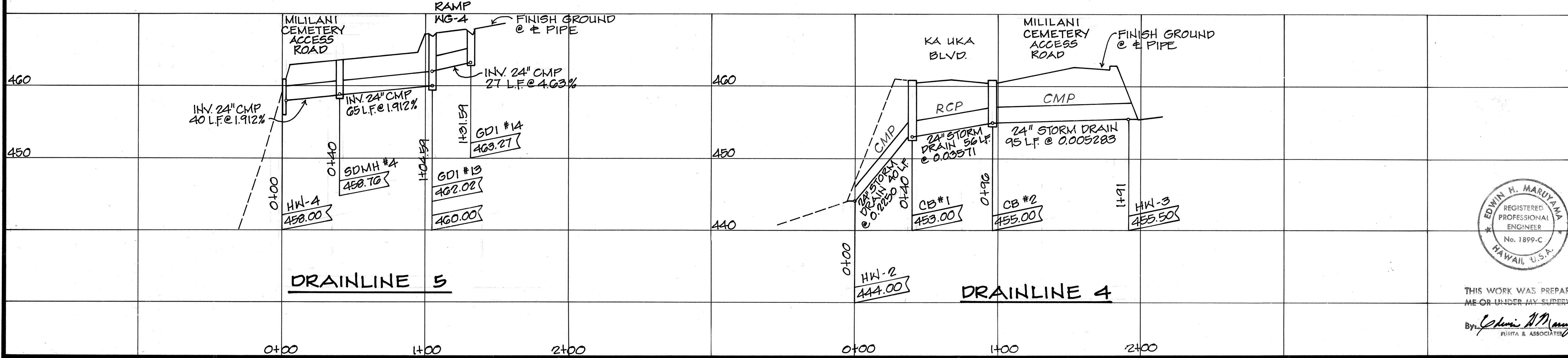


**DRAINLINE 9**



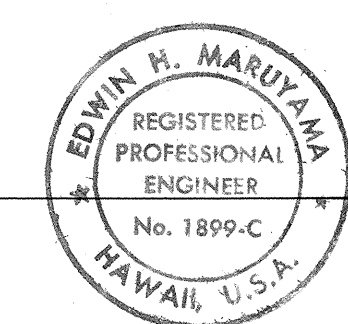
**PROFILE - DRAINLINE "A"**

**PROFILE - EASEMENT ROAD REALIGNMENT**



**DRAINLINE 5**

**DRAINLINE 4**



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PROFILES**

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(21)

SCALE: HORIZ.: 1" = 40'  
VERT.: 1" = 8'

AUGUST 1986

SHEET NO. 30 OF 31 SHEETS

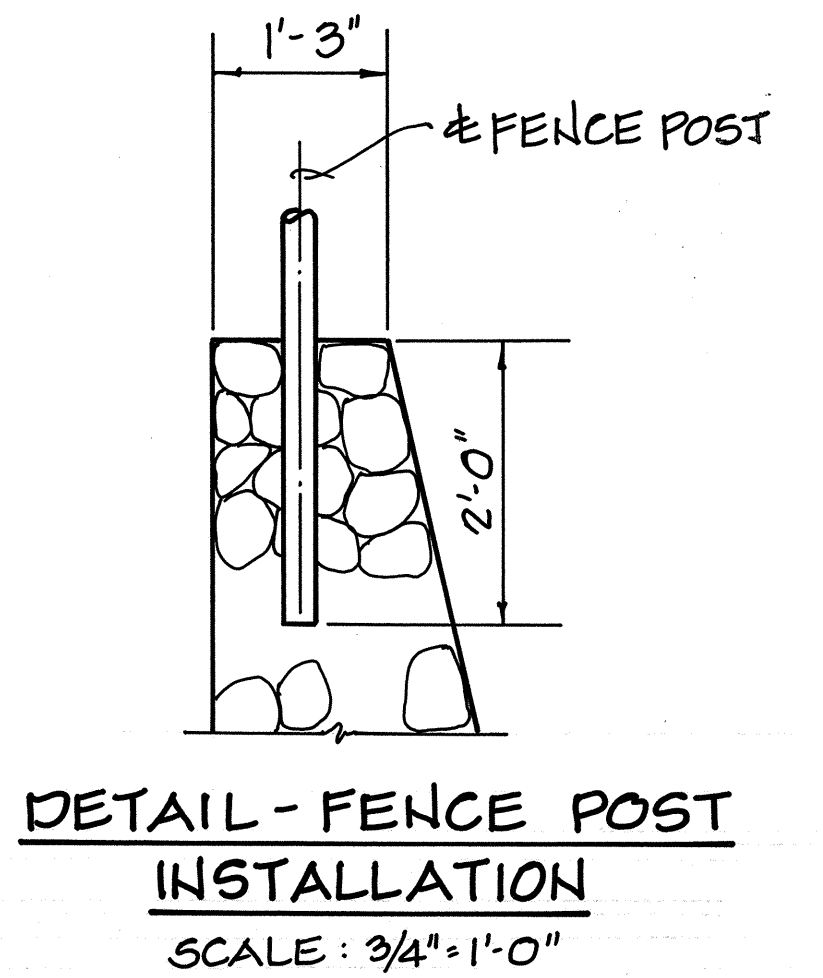
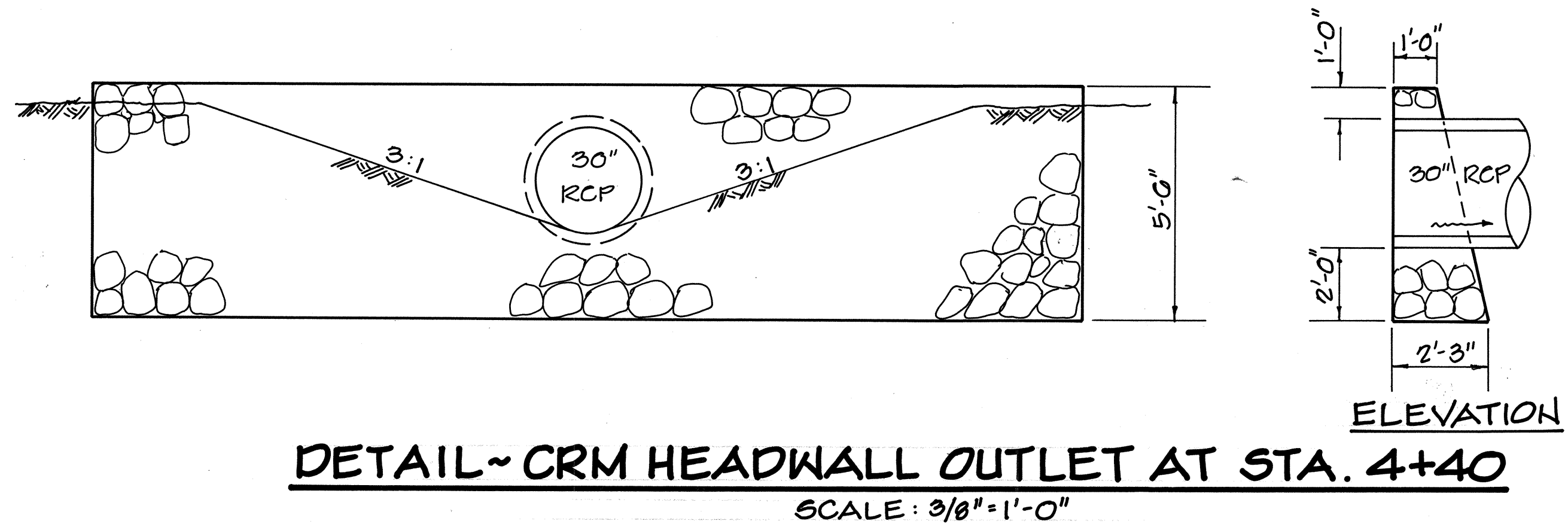
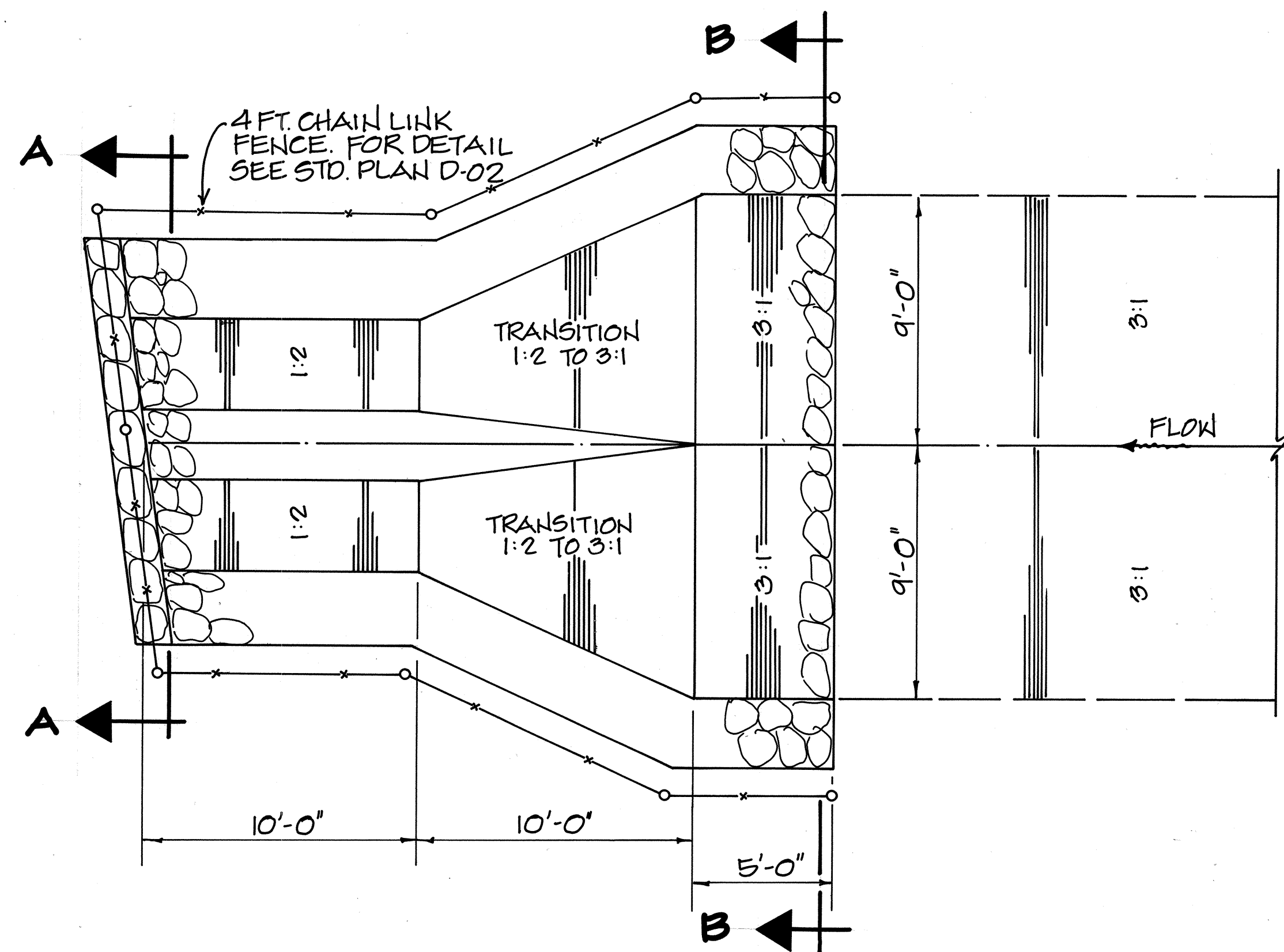
"AS-BUILT"

OCTOBER 1987

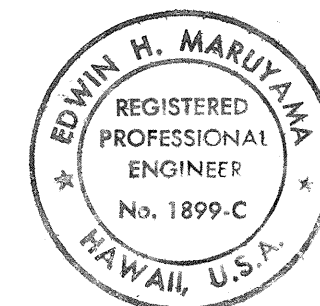
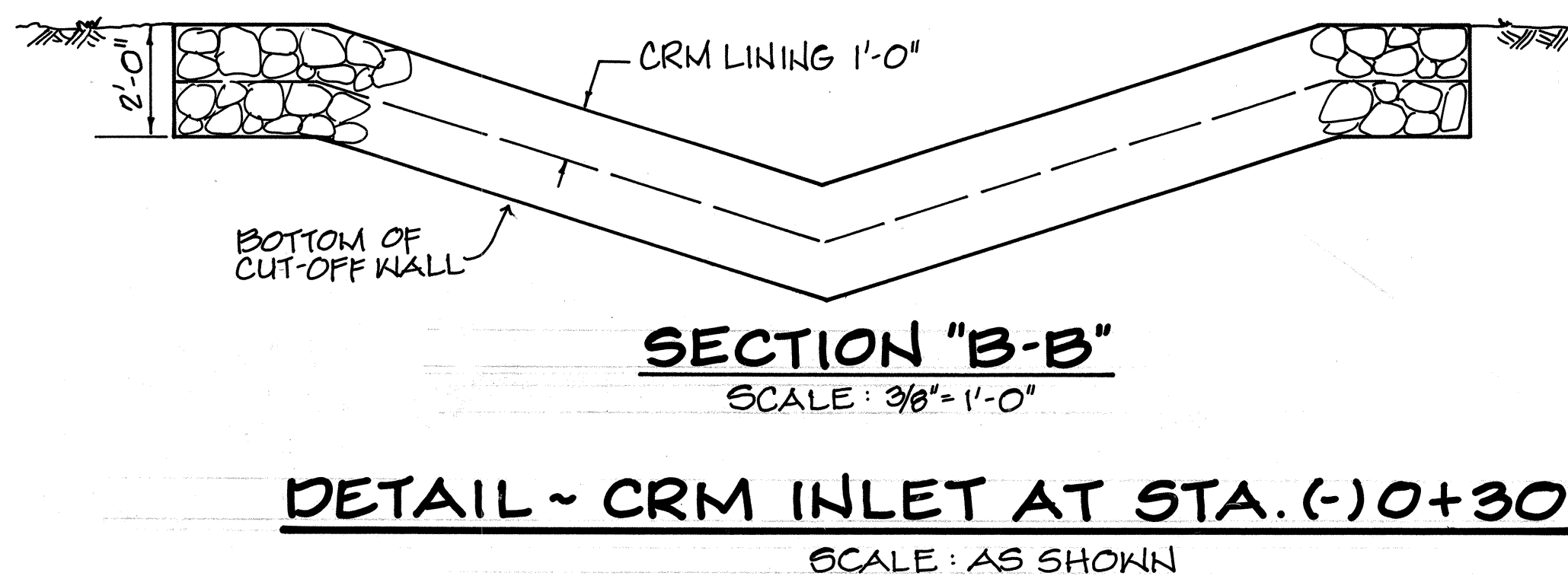
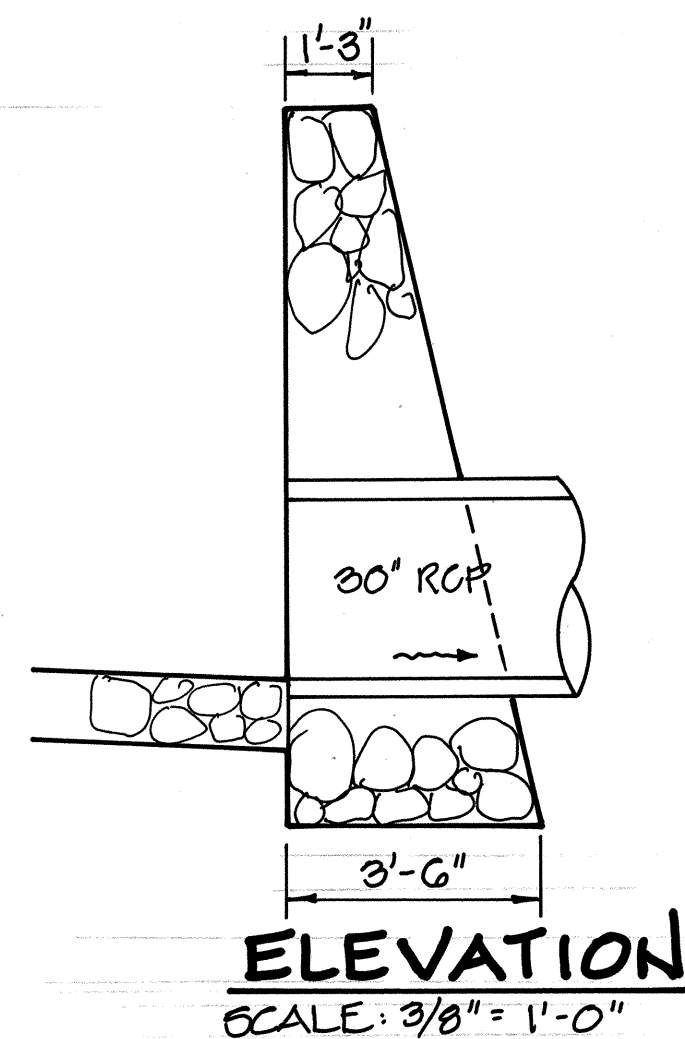
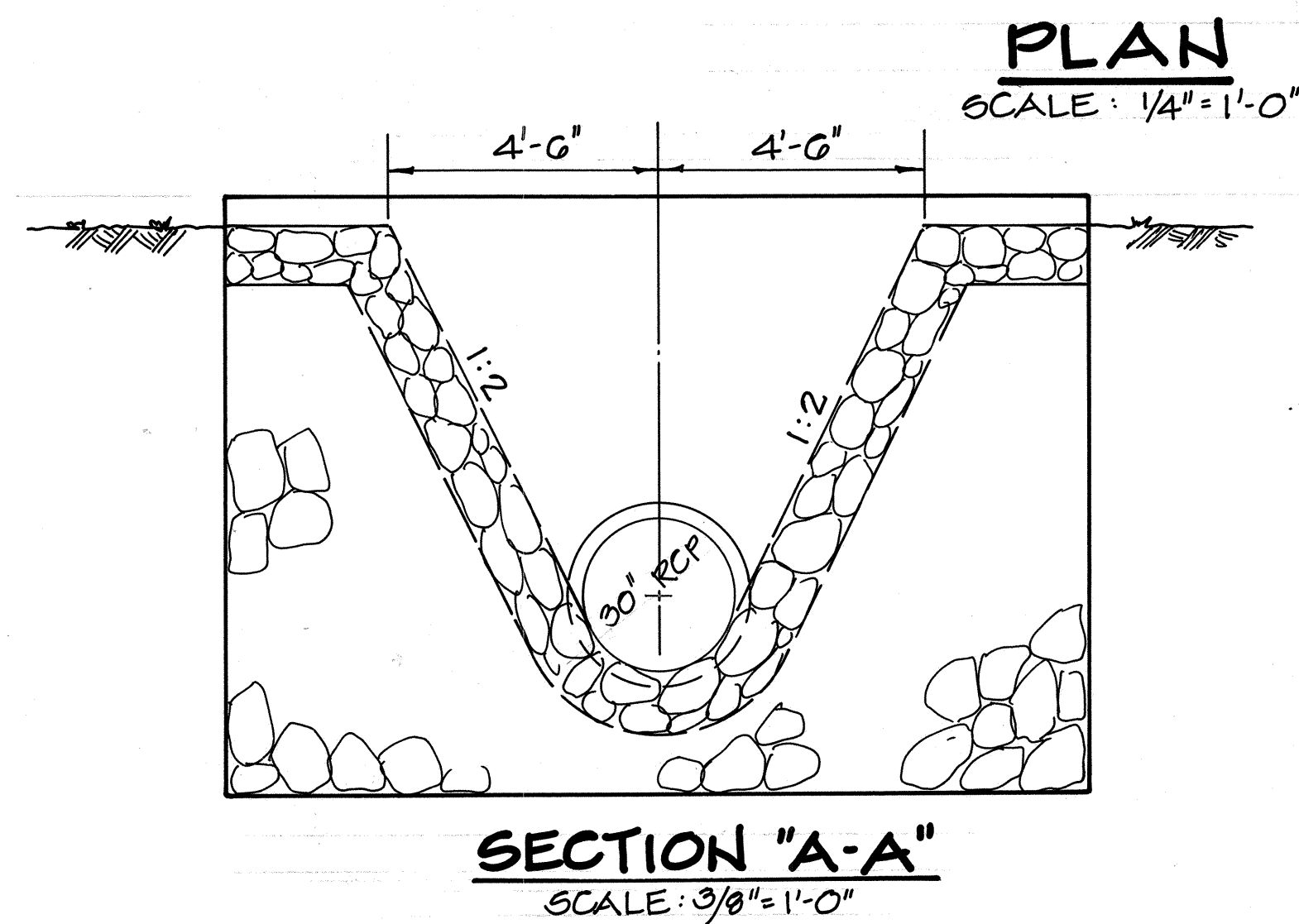
|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| NO.               |      |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | IR-H2-1(21)        | 1987        | 42        | 138          |



## DRAINLINE "A" - KA UKA BLVD.



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By: *Edwin H. Maruyama*  
FURTA & ASSOCIATES

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**

INTERSTATE ROUTE H-2  
WAIPIO INTERCHANGE  
FAI PROJ. NO. IR-H2-1(21)

SCALE: AS SHOWN AUGUST 1986

SHEET NO. 31 OF 31 SHEETS

OCTOBER 1987 **42**

|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY      |      |
| NOTED BY      |      |
| CHECKED BY    |      |
| NO.           |      |