

# PLANS FOR MAKU'U AGRICULTURAL LOTS PRESSURE TESTING AND CHLORINATION

AT MAKUU, POPOKI AND HALONA, PUNA, ISLAND OF HAWAII; HAWAII

TAX MAP KEY: 3RD DIVISION 1-5-119:051

SUBMISSION APPLICATION NUMBER = 95-3 9 AND 94-125  
DEPARTMENT OF PUBLIC WORKS FOLDER NUMBER: 15147-A AND 15148

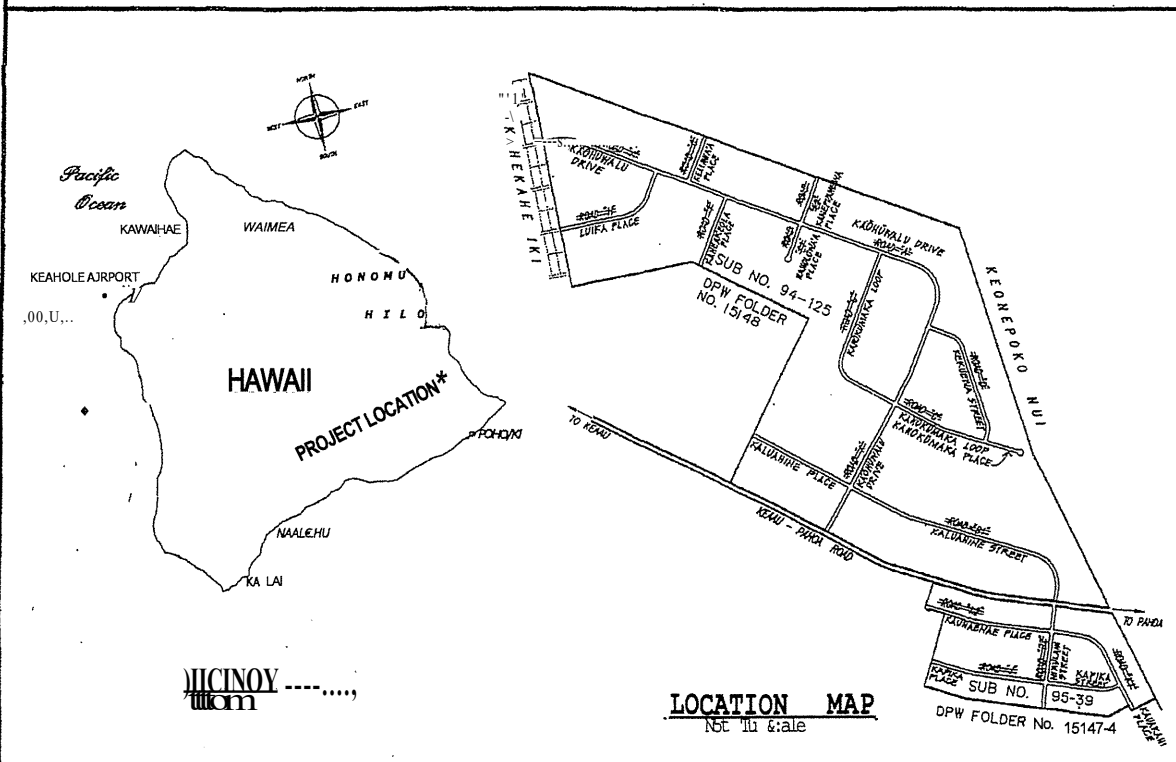
SEPTEMBER 2024

**IFB-25-HHL -008**

OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS  
ADDRESS: 91-5420 KAPOLEI PARKWAY  
KAPOLEI, HAWAII 96707



## LOCATION MAP



## SHEET INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	NOTES
3	GENERAL PLAN
40-41	NIAIUIANI smEIT
42-45	KAPIKA STREET - KAPIKA PLACE
46-47	KAUAKAHI RACE
48-50	KAUHUANA PLACE
53	PRESSURE REDUCING VALVE UNIT
54	DETAIL TRAFFIC CONTROL PLAN

## APPROVED

DIRECTOR, PLANNING DEPARTMENT	DATE
CHIEF ENGINEER, DEPT. OF PUBLIC WORKS - COUNTY OF HAWAII	DATE
<i>[Signature]</i> MANAGER, DEPARTMENT OF WATER SUPPLY (KYI, GGA)	5/31/95 DATE
DIRECTOR OF HAWAIIAN TOURISM STATE OF HAWAII	5-16-95 DATE
<i>[Signature]</i> CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION DEPARTMENT OF HEALTH STATE OF HAWAII	4-10-95 DATE
<i>[Signature]</i> CHIEF, HIGHWAYS DIVISION DEPARTMENT OF TRANSPORTATION	5-31-95 DATE

Job: 95-1802 File: TITLE.DWG Date: 05/21/95



WATER NOTES

- 1. ALL WORK SHALL CONFORM TO THE DEPARTMENT OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", VOLUMES 1 AND 2, DATED 1985, AS AMENDED.
2. THE CONTRACTOR SHALL INFORM THE D.W.S. ENGINEER 72 HOURS PRIOR TO THE BEGINNING OF A WATERLINE WORK AND TWO WEEKS PRIOR TO ANY CONNECTION, CHLORINATION, SHUT-OFF OR RELOCATION WORK.
3. ALL WORK, EQUIPMENT, AND MATERIAL FURNISHED BY THE D.W.S. SHALL BE PAID FOR BY THE CONTRACTOR.
4. ALL EXISTING WATERLINES, WATERLINE APPURTENANCES AND OTHER UTILITY LOCATIONS SHOWN ON THE PLANS ARE OBTAINED FROM LATEST RELIABLE SOURCES. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COST FOR ALL DAMAGES DURING THE CONTRACT PERIOD.
5. ALL CONNECTIONS TO EXISTING WATERLINES SHALL BE DONE BY D.W.S. CONTRACTOR SHALL PERFORM ALL EXCAVATION, BACKFILL, ROAD REPAIR, TRAFFIC CONTROL, AND PROVIDE EQUIPMENT NECESSARY TO COMPLETE THE CONNECTION.
6. WHERE WATER SHUT-OFF OF MORE THAN 3 HOURS BECOMES NECESSARY, THE CONTRACTOR, AT HIS OWN COST, SHALL PROVIDE A TEMPORARY BY-PASS LINE. THE BY-PASS SIZE SHALL BE DETERMINED BY THE D.W.S. ENGINEER. IF NECESSARY, THE D.W.S. ENGINEER MAY REQUIRE A BY-PASS LINE, REGARDLESS OF THE EXPECTED WATER SHUT-OFF PERIOD.
7. MINIMUM HORIZONTAL CLEARANCE BETWEEN WATERLINES AND OTHER UTILITIES SHALL BE 8 FEET UNLESS OTHERWISE SPECIFIED. MINIMUM VERTICAL CLEARANCE BETWEEN WATERLINE AND OTHER UTILITIES SHALL BE 12" PROVIDED CONCRETE JACKETS ARE USED, AND 18" IF NO JACKETS ARE USED.
8. ALL FITTINGS (CLASS 250), ALL GATE VALVES (CLASS 200), AND ALL BUTTERFLY VALVES (CLASS 250) WITH EPOXY COATED INTERIOR SHALL BE CAST IRON OR DUCTILE IRON WITH MECHANICAL JOINTS UNLESS OTHERWISE SPECIFIED.
9. ALL PIPELINES, 4" AND LARGER IN DIAMETER, SHALL BE DUCTILE IRON, PUSH ON JOINT CLASS 52, AND ALL PIPELINES SMALLER THAN 4" IN DIAMETER SHALL BE SOFT COPPER, TYPE K, UNLESS OTHERWISE SPECIFIED.
10. THE WATERLINE SHALL BE TESTED AT A MINIMUM OF 225 PSI, OR 1 1/2 TIMES THE STATIC PRESSURE, WHICHEVER IS GREATER, AT THE LOW POINT UNDER O.W.S. SUPERVISION JUST PRIOR TO PAVING.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CHLORINATION OF THE WATER SYSTEM AND SHALL BEAR ALL COST. THE PERSONS ENGAGED TO DO THE CHLORINATION WORK MUST BE LICENSED BY THE STATE OF HAWAII AND APPROVED BY THE DEPARTMENT OF HEALTH.
12. SOLDER AND FLUX SHALL CONTAIN NO MORE THAN 0.2% LEAD.
13. PIPE CUSHION FOR COPPER PIPES SHALL BE NO. 4 FINE, MANUFACTURED SAND.
14. THE DWS WILL NOT ASSUME OWNERSHIP OF NOR GRANT ANY WATER SERVICE TO THE SUBDIVISION UNTIL THE SUBDIVISION WATER SYSTEM IS DEDICATED TO THE DWS ALONG WITH ALL NECESSARY EASEMENTS AND DOCUMENTS.
15. "WATER SYSTEM STANDARDS, VOL 2", PLATE 77 - TYPE A VALVE BOX FOR CURB STOP ON MULTIPLE COPPER SERVICE SHALL BE DELETED.
16. 4'X4' REINFORCED CONCRETE SLAB FOR FIRE HYDRANTS SHALL BE REINFORCED WITH 6X6 -10/10 WELDED WIRE FABRIC.

CONSTRUCTION NOTES

- 1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COUNTY OF HAWAII, DEPARTMENT OF PUBLIC WORKS "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPT., 1984, AND "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPT. 1986.
2. THE ENGINEER RESERVES THE RIGHT TO MAKE CHANGES TO THE DRAINAGE SYSTEM AS SUCH CHANGES ARE FOUND TO BE NECESSARY AS THE LAND IS CLEARED AND EROSION CONTROL CONSTRUCTION PROGRESSES.
3. ALL CONSTRUCTION LINES, GRADES AND SURVEY MONUMENT STAKEOUTS SHALL BE MADE BY LICENSED SURVEYORS.
4. LICENSED SURVEYORS SHALL SUBMIT A LETTER TO THE DEPARTMENT OF PUBLIC WORKS CERTIFYING THAT THE MONUMENT STAKEOUT AND INSTALLATION IS CORRECT.
5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SUFFICIENTLY IN ADVANCE OF OPENING ANY OR UTILIZING EXISTING BORROW PITS OR ON SITE BORROW, SO THAT A DETERMINATION CAN BE MADE AS TO THE SUITABILITY OF THE BORROW MATERIAL TO BE INCORPORATED INTO THE ROAD CONSTRUCTION.
6. THE CONTRACTOR SHALL CONDUCT ALL TESTS AS REQUESTED BY THE ENGINEER AND SHALL BE RESPONSIBLE FOR ALL EXPENSES INCURRED IN CONDUCTING THESE TESTS.
7. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF SAME IN THE EVENT OF DAMAGES DUE TO HIS CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE RESPECTIVE UTILITY COMPANIES.
8. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE CURRENT EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND TO THE SATISFACTION OF THE ENGINEER.
9. ALL VEGETATION, INCLUDING TREES, SHALL BE REMOVED FROM WITHIN THE ENTIRE GRADED ROADWAY RIGHT-OF-WAY.

DRYWELL CONSTRUCTION NOTES

- 1. SUBDIVIDER SHALL BE INFORMED THAT IF DRYWELLS ARE INCLUDED IN THE SUBJECT SUBDIVISION IMPROVEMENTS, CHAPTER 23, UNDERGROUND INJECTION CONTROL (UIC), ADMINISTRATIVE RULES, DEPT. OF HEALTH, PROHIBIT ANY PERSON FROM OPERATING, CONSTRUCTING OR MODIFYING AN INJECTION WELL (DRYWELL) UNLESS AUTHORIZED BY A PERMIT ISSUED BY THE DIRECTOR OF HEALTH, STATE OF HAWAII. FURTHERMORE, SHOULD DEDICATION OF ROADWAYS INCLUDING DRYWELLS BE CONTEMPLATED, THE DEPT. OF PUBLIC WORKS WILL NOT APPROVE DEDICATION ROADWAYS PRIOR TO COMPLIANCE WITH CHAPTER 23, UIC, ADMINISTRATIVE RULES.

SOLID WASTE CONSTRUCTION NOTES

- 1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER HANDLING, STORAGE AND/OR DISPOSAL OF ALL WASTE GENERATED BY THIS CONSTRUCTION INCLUDING GRUBBING AND EXCESS EXCAVATED MATERIAL. ANY MATERIAL BROUGHT TO THE COUNTY LANDFILLS WILL BE SUBJECT TO THE INSTITUTED TIPPING FEE SYSTEM, WITH NO EXCEPTIONS OR EXEMPTIONS.
2. ALL WASTES GENERATED BY CONSTRUCTION, INCLUDING GRUBBING, DEMOLITION AND EXCESS EXCAVATION MATERIAL MAY BE BROUGHT TO THE WEST HAWAII OR THE HILO LANDFILL. A \$35.00 PER TON LANDFILL FEE SHALL BE INCLUDED IN THE CONTRACTORS BID SUM.
3. CONSTRUCTION, DEMOLITION AND GRUBBING MATERIAL SHALL NOT BE DEPOSITED AT ANY OF THE COUNTY TRANSFER STATIONS, BUT SHALL BE TRANSPORTED FOR DISPOSAL AT EITHER THE WEST HAWAII OR HILO LANDFILL.
4. ASBESTOS MATERIAL MUST BE SEPARATED, DOUBLE BAGGED AND LANDFILLED IN ACCORDANCE WITH REGULATIONS OF THE SOLID WASTE DIVISION, DEPARTMENT OF PUBLIC WORKS. INFORMATION MAY BE OBTAINED BY CALLING THE DMSION AT (808) 961-8339 BETWEEN 7:00 AM AND 4:30 PM MONDAY THROUGH FRIDAY.

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY

- 1. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE STATE'S HIGHWAY DISTRICT ENGINEER AT 50 MAKILA STREET, HILO, HAWAII PRIOR TO THE COMMENCEMENT OF WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY.
2. CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN STATE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE CURRENT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND THE CURRENT "STANDARD SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS" OF THE STATE HIGHWAYS DIVISION.
3. ALL LANES SHALL BE OPENED TO TRAFFIC DURING THE MORNING PEAK HOURS FROM 6:00 AM TO 8:30 AM AND DURING THE AFTERNOON PEAK HOURS FROM 3:00 PM TO 6:00 PM AND DURING OFF-WORK HOURS. ONLY ONE LANE OF TRAFFIC SHALL BE CLOSED AT ANY OTHER TIME.
4. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION AND THE CURRENT U. S. FEDERAL HIGHWAYS ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS". IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
5. THE MINIMUM PAVEMENT STRUCTURE SHALL, CONSIST OF: 2-1/2" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 2-1/2" ASPHALT CONCRETE AND 8" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE.
6. NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN HIGHWAY RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DISTRICT ENGINEER.
7. COMPACTION TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, AS FOLLOWS: A. SUBBASE: ONE COMPACTION TEST B. BASE COURSE: ONE COMPACTION TEST C. ONE COMPACTION TEST PER TRENCH
8. PRIOR TO COMMENCING TRENCH EXCAVATION WORK, THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE NEW CENTERLINE OF UTILITY TRENCH AND THAT SUCH INFORMATION SHALL BE USED IN THE VERIFICATION OF RESTORING THE ROADWAY TO ITS ORIGINAL CONDITION. A COPY OF THE PROFILE SHALL BE SUBMITTED TO THE DISTRICT ENGINEER.
9. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER THE TRENCH, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
10. NO TRENCH SHALL BE OPENED MORE THAN 500 FEET IN ADVANCE OF THE INSTALLED AND TESTED PIPE AND/OR DUCTLINE.
11. LONGITUDINAL DRAINAGE ALONG THE HIGHWAY SHALL BE MAINTAINED.
12. PAVEMENT STRIPING SHALL BE DONE BY THE CONTRACTOR.
13. APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE YEAR THEREOF FROM THE DATE OF NOTIFICATION OF APPROVAL TO THE APPLICANT. IN THE EVENT CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE YEAR PERIOD, THE APPLICANT WILL BE REQUIRED TO RESUBMIT HIS CONSTRUCTION PLANS FOR DIVISION'S REVIEW AND APPROVAL.
14. ALL REGULATORY, GUIDE AND CONSTRUCTION SIGNS AND BARRICADES SHALL BE OF HIGH INTENSITY REFLECTIVE SHEETING.
15. CONTRACTOR SHALL INFORM THE STATE PERMIT OFFICE (933-4640) AT LEAST TWO (2) DAYS PRIOR TO CLOSING ANY LANES.
16. DRIVEWAY SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
17. 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.
18. CONTRACTOR SHALL COORDINATE WITH STATE HIGHWAYS TO AVOID CONFLICTS AND DUPLICATION OF WORK WITH PROPOSED HIGHWAY WIDENING PROJECT, PROJECT NO. RS-0130 (24).
19. IF NOT OTHERWISE DONE UNDER PROJECT NO. RS-0130 (24), CONTRACTOR SHALL CLEAR VEGETATION AT INTERSECTIONS TO PROVIDE CLEAR UNOBSTRUCTED SIGHT DISTANCES MEETING STATE STANDARDS: 0.1m = 845 FT. DRIGHT= 875 FT. SUCH ADDITIONAL WORK SHALL BE PAID FOR ON A FORCE ACCOUNT BASIS.

TRAFFIC NOTES

- 1. ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS AMENDED, AND APPLICABLE SECTIONS OF PART V OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," DATED SEPTEMBER, 1984, AND THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 1985 EDITION, UNLESS OTHERWISE SPECIFIED ON THE PLANS, SPECIFICATIONS, OR THE STANDARD TRAFFIC NOTES.
2. THE CONTRACTOR SHALL INSTALL PERMANENT OR TEMPORARY PAVEMENT MARKERS, STRIPING AND MARKINGS AS REQUIRED BY SECTION 629 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 1985 EDITION.
3. THE CONTRACTOR SHALL INFORM THE TRAFFIC DIVISION AT LEAST SIX (6) WORKING DAYS PRIOR TO ANY WORK ON PAVEMENT MARKING OPERATIONS AND/OR SIGN INSTALLATIONS TO SCHEDULE A REVIEW AND APPROVAL OF THE STRIPING AND/OR SIGNING PLANS.
4. THE APPROVED STRIPING PLAN SHALL BE LAYED OUT USING THINNED-OUT PAINT OR OTHER APPROVED DEVICE. FIELD ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE ENGINEER BEFORE THE FINAL MARKINGS ARE APPLIED.
5. ALL PAVEMENT MARKINGS THAT BECOME INAPPLICABLE SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE. REMOVAL SHALL BE BY "SAND-BLASTING" OR BY OTHER METHODS APPROVED BY THE ENGINEER BEFORE THE NEW PAVEMENT MARKINGS ARE APPLIED.
6. PAVEMENT STRIPING FOR ALL CROSSWALKS, STOP LINES, AND PAVEMENT ARROWS SHALL BE WITH TYPE II PREFORMED PAVEMENT MARKING TAPE, A440 OR EQUAL.
7. PAVEMENT STRIPING OTHER THAN FOR CROSSWALKS, STOP LINES, AND PAVEMENT ARROWS SHALL BE WITH PRE-MIXED REFLECTORIZED TRAFFIC PAINTS WHICH HAVE PASSED THE STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION PREQUALIFICATION TESTS IN ACCORDANCE WITH PROJECT NO. HWY-C-01-90 OR LATER. ACCEPTABLE TRAFFIC PAINTS INCLUDES: WHITE PAINT: BAUER 628A9; PERVO 5835R; CENTERLINE 8036C1 YELLOW PAINT: BAUER 703A9; PERVO 5836R; CENTERLINE 8037C1
8. ALL PAINTED PAVEMENT STRIPING SHALL BE APPLIED IN TWO SEPARATE COATS OF 0.015 INCH NOMINAL THICKNESS EACH. SECOND COAT SHALL BE APPLIED ONLY AFTER COMPLETE DRYING OF FIRST COAT. WAIT AT LEAST TWO HOURS BETWEEN COATS.
9. REFLECTORIZED RAISED PAVEMENT MARKERS SHALL BE THE REGULAR SIZED MARKERS WITH APPROXIMATE DIMENSIONS OF 4"x4"x0.1". ALL RAISED PAVEMENT MARKERS SHALL MEET THE SPECIFICATION REQUIREMENTS FOR THE STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION'S PROJECT NO. HWY-C-05-90 OR LATER.
10. ALL TRAFFIC SIGNS AND POSTS SHALL MEET THE REQUIREMENTS OF THE COUNTY OF HAWAII STANDARD DETAIL T-1 EXCEPT THAT FLANGED CHANNEL POSTS WILL BE ACCEPTABLE. SIGNS SHALL BE ON ALUMINUM SHEETING OF 0.080 INCH MINIMUM THICKNESS. SIGN POST SHALL BE 2 INCH SQUARE TELESPAR TUBING NO. 20 F, 12 OR EQUIVALENT WITH 2 1/4 INCH SQUARE TELESPAR POST.
11. ALL TRAFFIC SIGNS SHALL BE COMPLETELY REFLECTORIZED WITH TYPE B HIGH INTENSITY REFLECTIVE SHEETING EXCEPT THAT PARKING/NO PARKING AND STREET NAME SIGNS MAY BE ENGINEER GRADE RELECTIVE SHEETING.
12. THE 2 1/4 INCH SQUARE ANCHOR POST FOR SIGNS SHALL BE DRIVEN INTO THE GROUND, A.C. PAVEMENT OR CONCRETE SIDEWALK IN ACCORDANCE WITH THE PLANS. ALL DAMAGES TO THE SURROUNDING AREA SHALL BE REPAIRED TO ITS ORIGINAL CONDITION OR BETTER. BEFORE DRIVING INTO CONCRETE, A NEAT HOLE OF APPROXIMATELY 3 INCH DIAMETER SHALL BE DRILLED THROUGH THE CONCRETE PRIOR TO THE INSTALLATION OF THE ANCHOR POST. IF DRIVING INTO THE CONCRETE OR A.C. PAVEMENT IS NOT POSSIBLE WITHOUT DAMAGE TO THE SURROUNDING CONCRETE OR A.C. PAVEMENT, A 12"x12" SQUARE SHALL BE SAW CUT AND REMOVED PRIOR TO THE INSTALLATION OF THE ANCHOR POST AND THEN PATCHED WITH HOT MIX TO MATCH THE EXISTING A.G. PAVEMENT, AND CONCRETE TO MATCH THE EXISTING CONCRETE PAVEMENT.
13. UPON COMPLETION OF THE CONSTRUCTION WORK THE CONTRACTOR SHALL RESTRIPE ALL PAVEMENT MARKINGS WITHIN THE CONSTRUCTION WORK AREA AND ADJACENT ROADWAY PAVEMENTS UP TO 300 FEET BEYOND THE CONSTRUCTION AREA. ALL SIGNS AND MARKINGS WITHIN THE CONSTRUCTION AREA AND ADJACENT AREAS THAT HAVE BEEN DAMAGED, REMOVED, OR ADVERSELY AFFECTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER BY THE CONTRACTOR.
14. INSTALL PRIVATE ROAD SIGN ON PRIVATE ROADWAY. SIGN SHALL BE ON 18" WIDE X 12" HIGH ALUMINUM PLATE WITH 4" BLACK LETTERING ON WHITE REFLECTORIZED SHEETING.
15. ALL SIGNS AND MARKINGS FOR PRIVATE ROADWAYS SHALL BE MAINTAINED BY THE PRIVATE OWNERS.

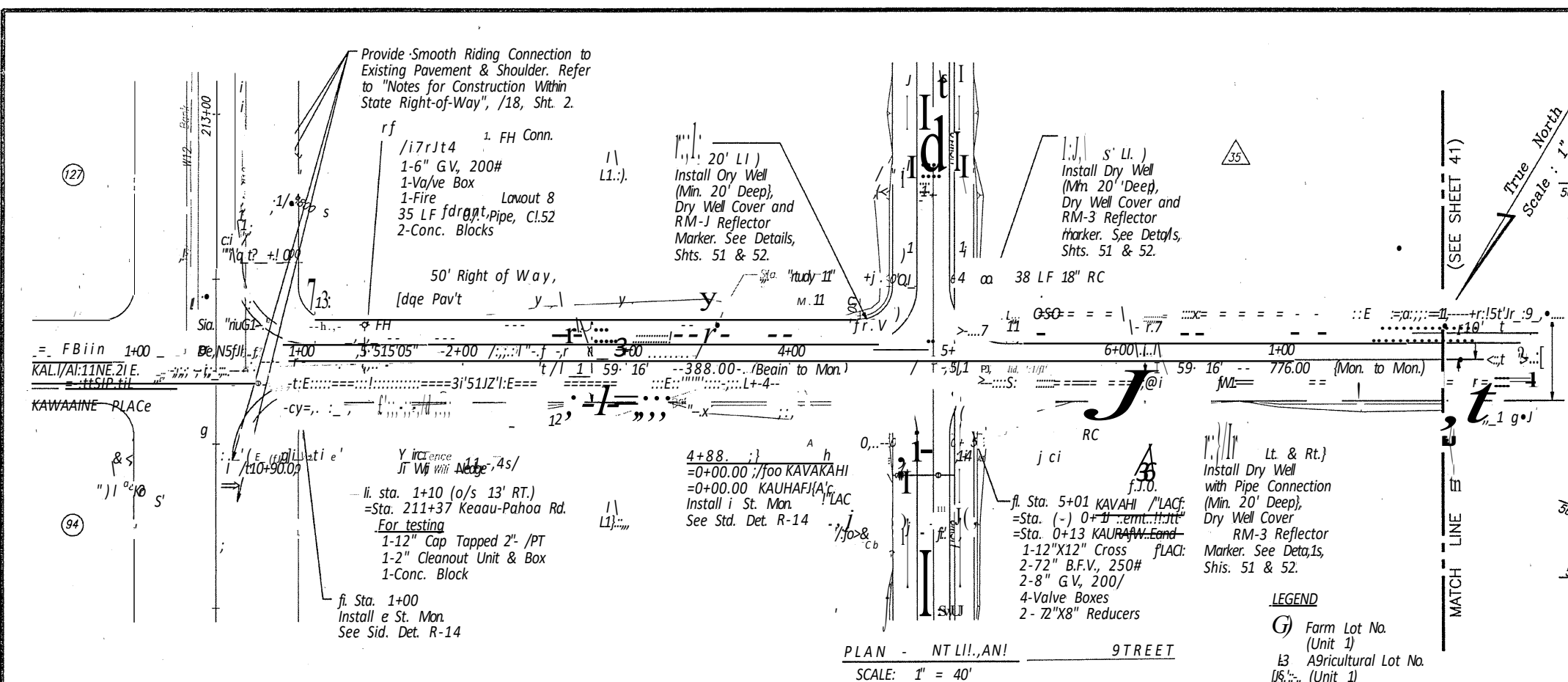
GRADING NOTES

- 1. ALL GRADING WORK SHALL CONFORM TO CHAPTER 10 OF THE HAWAII COUNTY CODE AND SHALL NOT COMMENCE UNTIL A GRADING PERMIT IS APPROVED.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
3. 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.
4. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS, AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII.
5. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDER OR PLANTED IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.
6. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
7. THE COUNTY SHALL BE INFORMED OF THE LOCATION OF THE DISPOSAL/BORROW SITE FOR THE EXCESS MATERIAL FROM THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE DISPOSAL/BORROW SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING CODE.
8. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS, AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO AND APPROVAL BY THE CHIEF ENGINEER.
9. FOR COMPACTION REQUIREMENTS REFER TO SPECIFICATIONS.
10. ALL VEGETATION SHALL BE REMOVED PRIOR TO PLACING FILL ON NATURAL GROUND SURFACE.

085-180 Z ST. NOTES.002 Disk:MAKUU(0) Plot:1=1

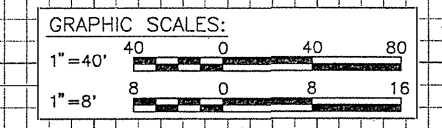
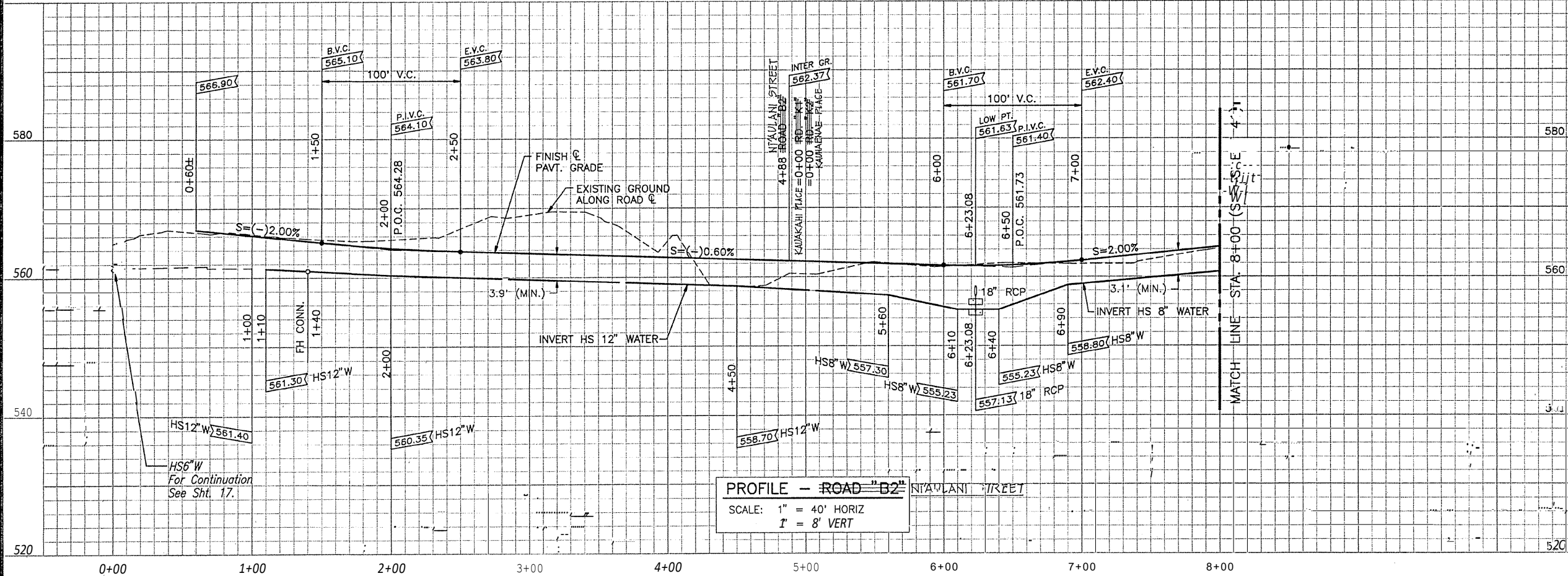
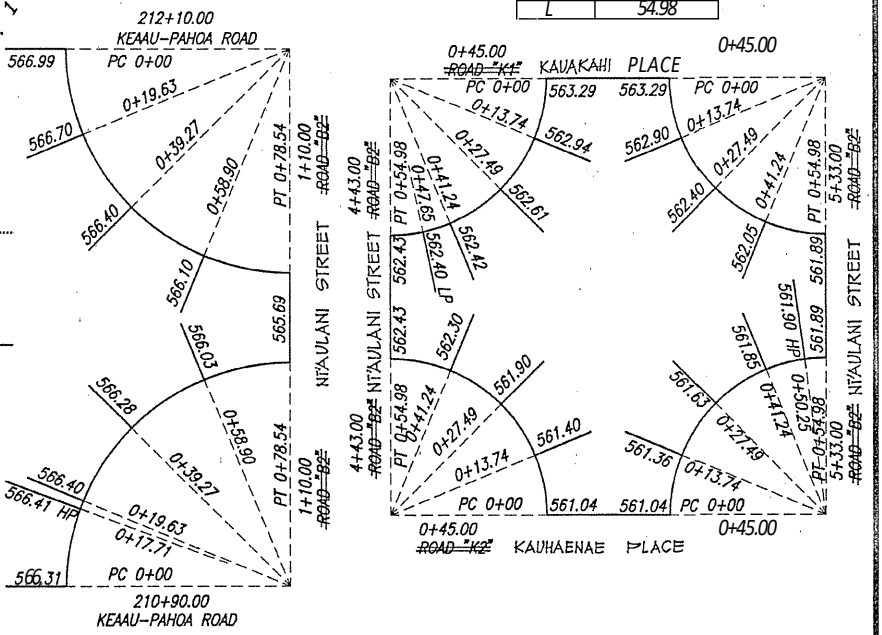
Professional Engineer stamp for Joanne M. Nakamura, No. 5796-C, Hawaii, U.S.A. Includes project details for Makuu Farm and Agricultural Lots Phase 1.

NOTES



EDGE PAVT RET. DATA	
E	91.00
F	45.00
R	50.00
T	50.00
C	10.11
L	18.54

EDGE PAVT RET. DATA	
E	91.00
F	45.00
R	35.00
T	35.00
C	49.50
L	54.98



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES.

ENGINEERS SURVEYORS HAWAII, INC.  
J. M. Nakamura  
DATE: 6/2/15

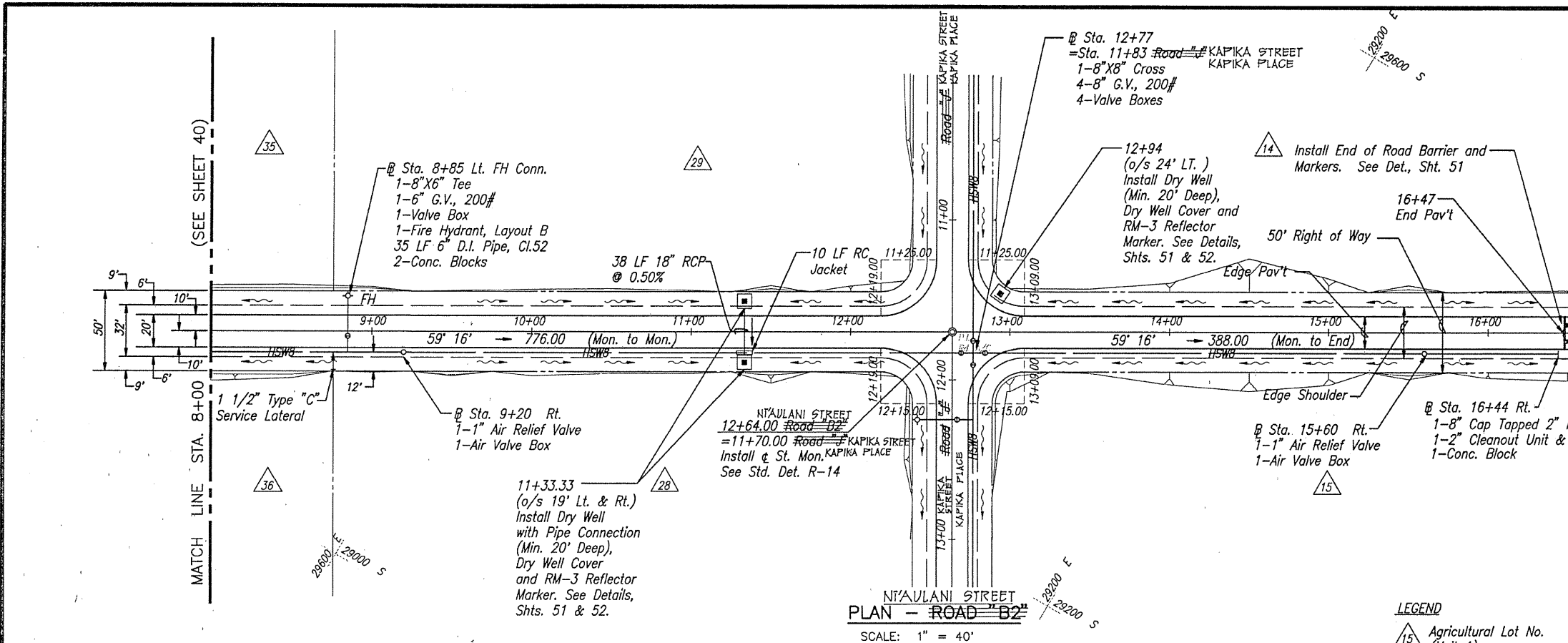
**J. M. NAKAMURA**  
LICENSED PROFESSIONAL ENGINEER  
No. 5798-C  
HAWAII, U.S.A.

**ESI** ENGINEERS SURVEYORS HAWAII, INC.  
1020 ALAHI ST., BLDG. 6, RM. 1  
HONOLULU, HAWAII 96814  
531-3116 HON. 885-4590 KAMUELA

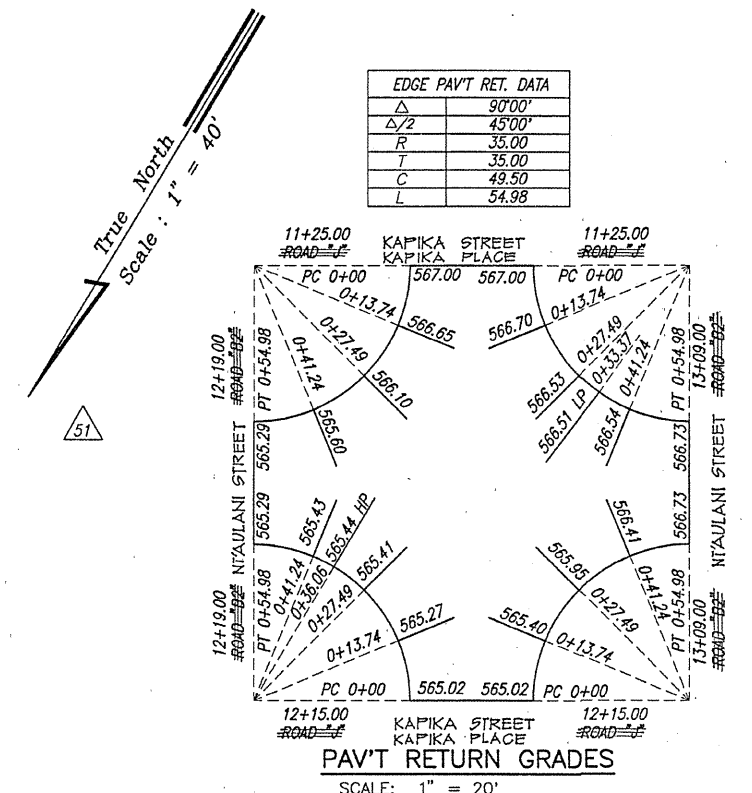
DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
PHASE 1  
AT MAKUU, POPOKI AND HALONA, PUNA,  
ISLAND OF HAWAII, HAWAII  
TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

**PLAN & PROFILE**  
NTAULANI STREET - B2  
STA. 0+00 TO STA. 8+00





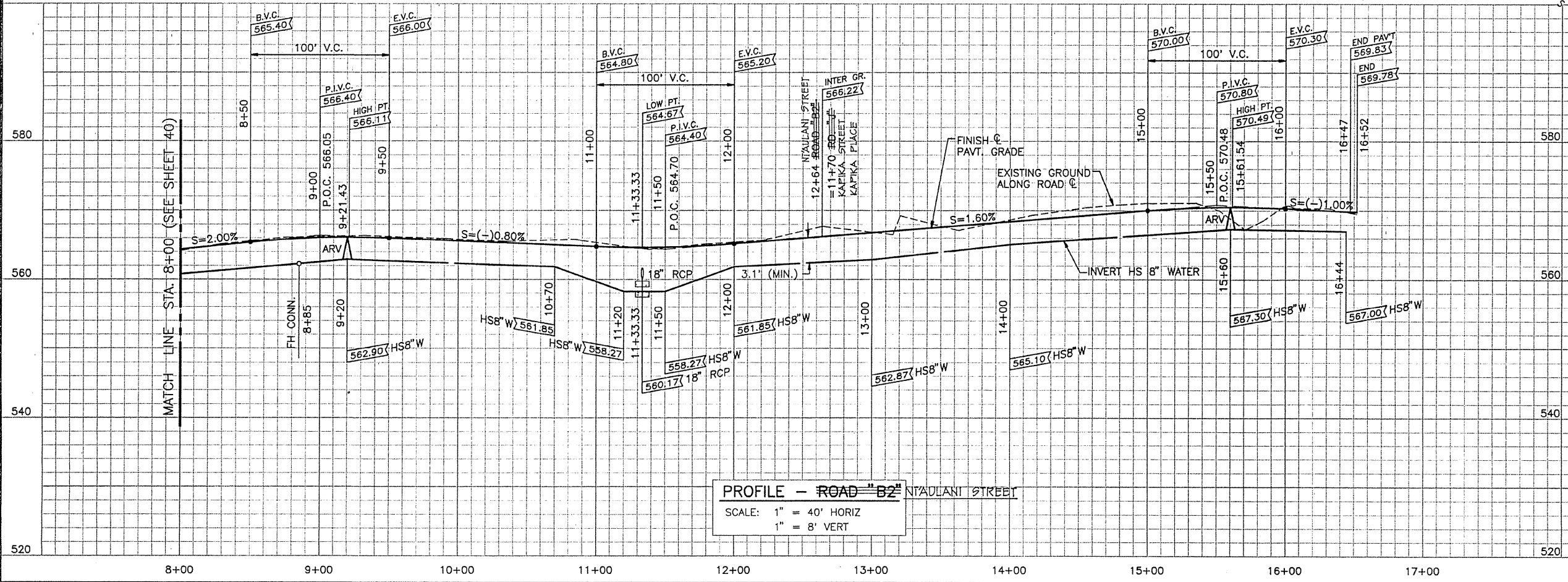
PLAN - ROAD B2  
SCALE: 1" = 40'



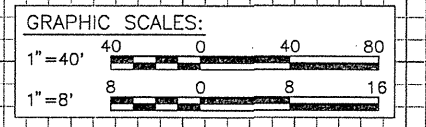
PAV'T RETURN GRADES  
SCALE: 1" = 20'

EDGE PAVT RET. DATA	
Δ	90'00"
Δ/2	45'00"
R	35.00
T	35.00
C	49.50
L	54.98

LEGEND  
△ Agricultural Lot No. (Unit 1)



PROFILE - ROAD B2  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

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ENGINEERS SURVEYORS HAWAII, INC.  
*John W. Wilson* 6/2/95  
 DATE

**ESHI** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALAHI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 885-4590 KAMUELA

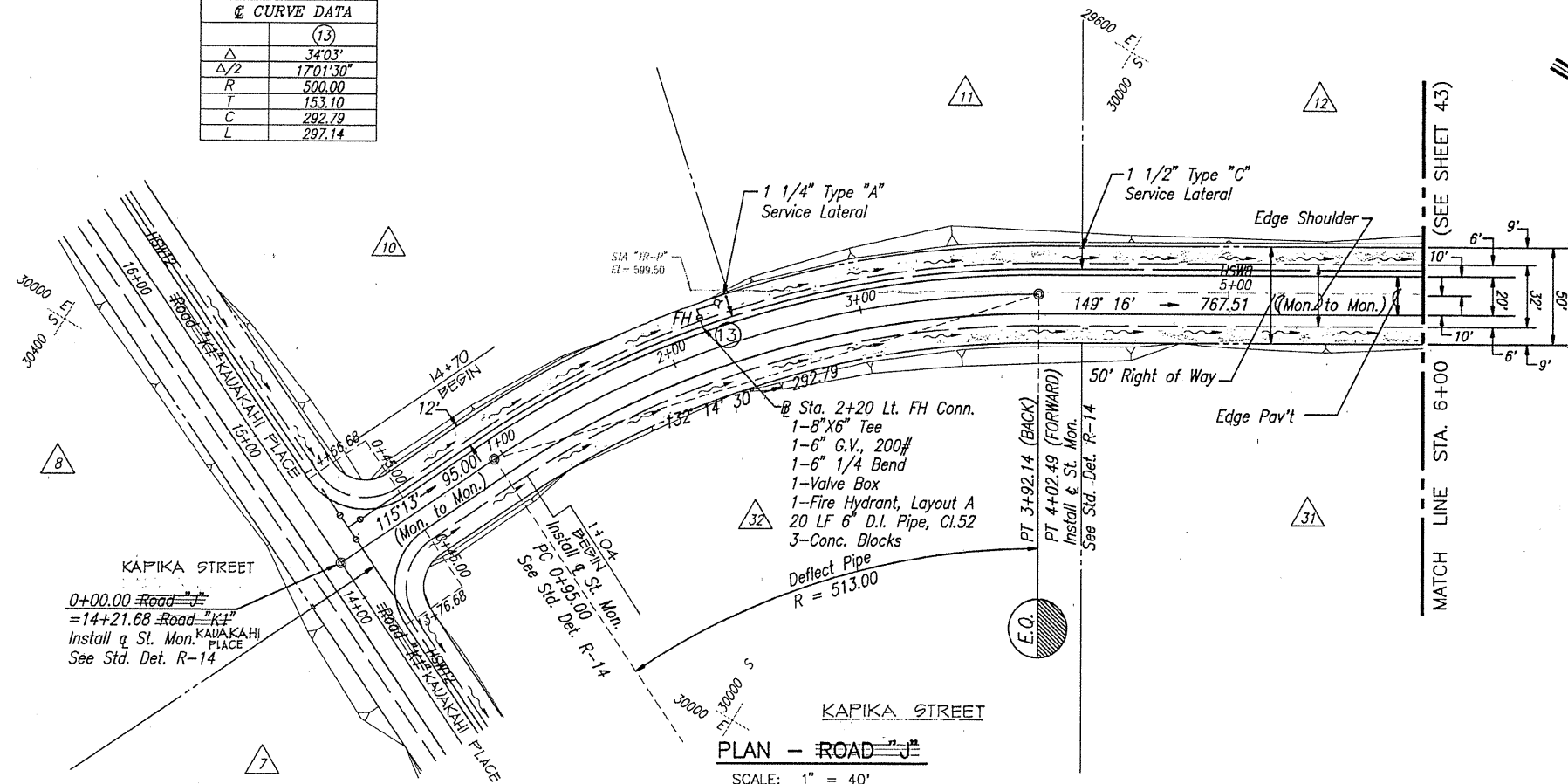
DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

**PLAN & PROFILE**  
 N'AU LANI STREET  
 STA. 8+00 TO STA. 16+52

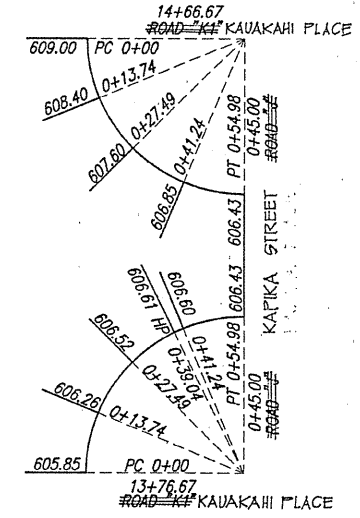
Job:85-180.2 File:PP-B2B.DWG Disk:MAKUU(7) Plot:1=40 Date:06/03/95 JN

C CURVE DATA	
	(13)
$\Delta$	34°03'
$\Delta/2$	17°01'30"
R	500.00
T	153.10
C	292.79
L	297.14

EDGE PAVT RET. DATA	
$\Delta$	90°00'
$\Delta/2$	45°00'
R	35.00
T	35.00
C	49.50
L	54.98

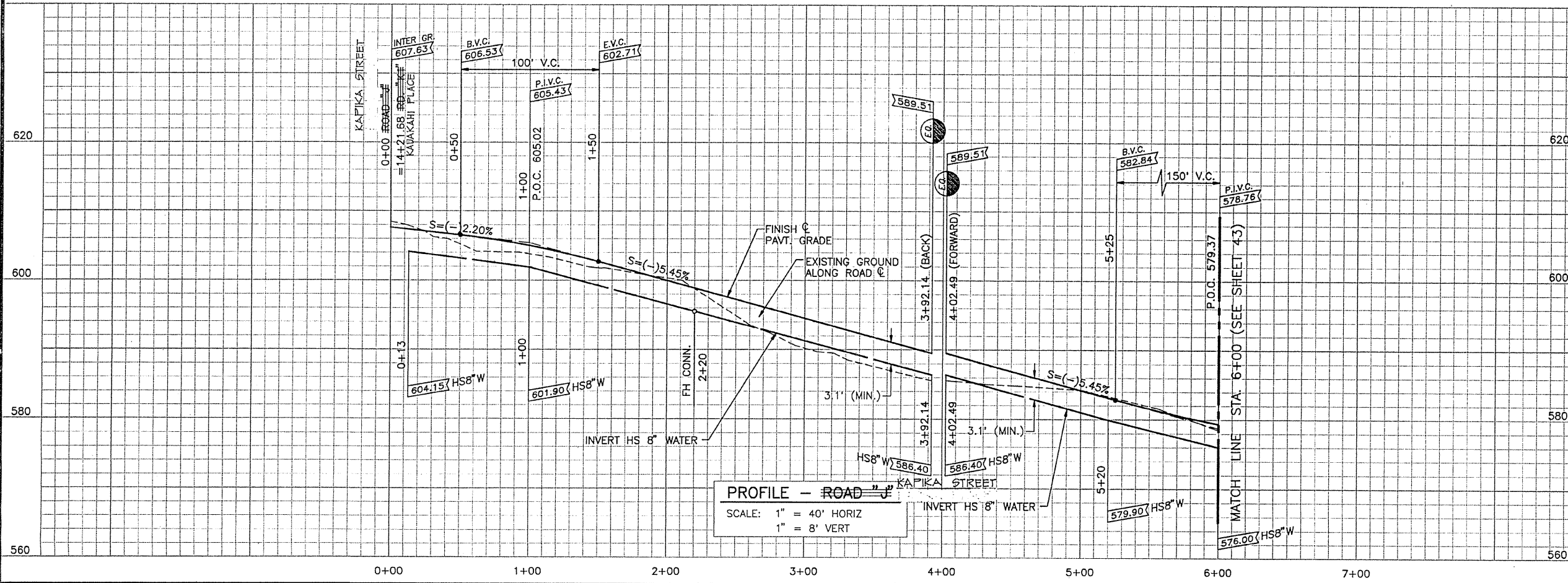


PLAN - ROAD J  
SCALE: 1" = 40'

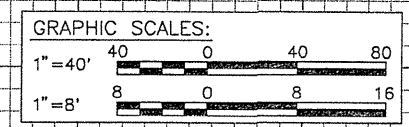


PAV'T RETURN GRADES  
SCALE: 1" = 20'

LEGEND  
 9 Agricultural Lot No. (Unit 1)



PROFILE - ROAD J  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

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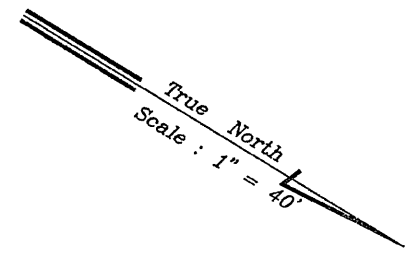
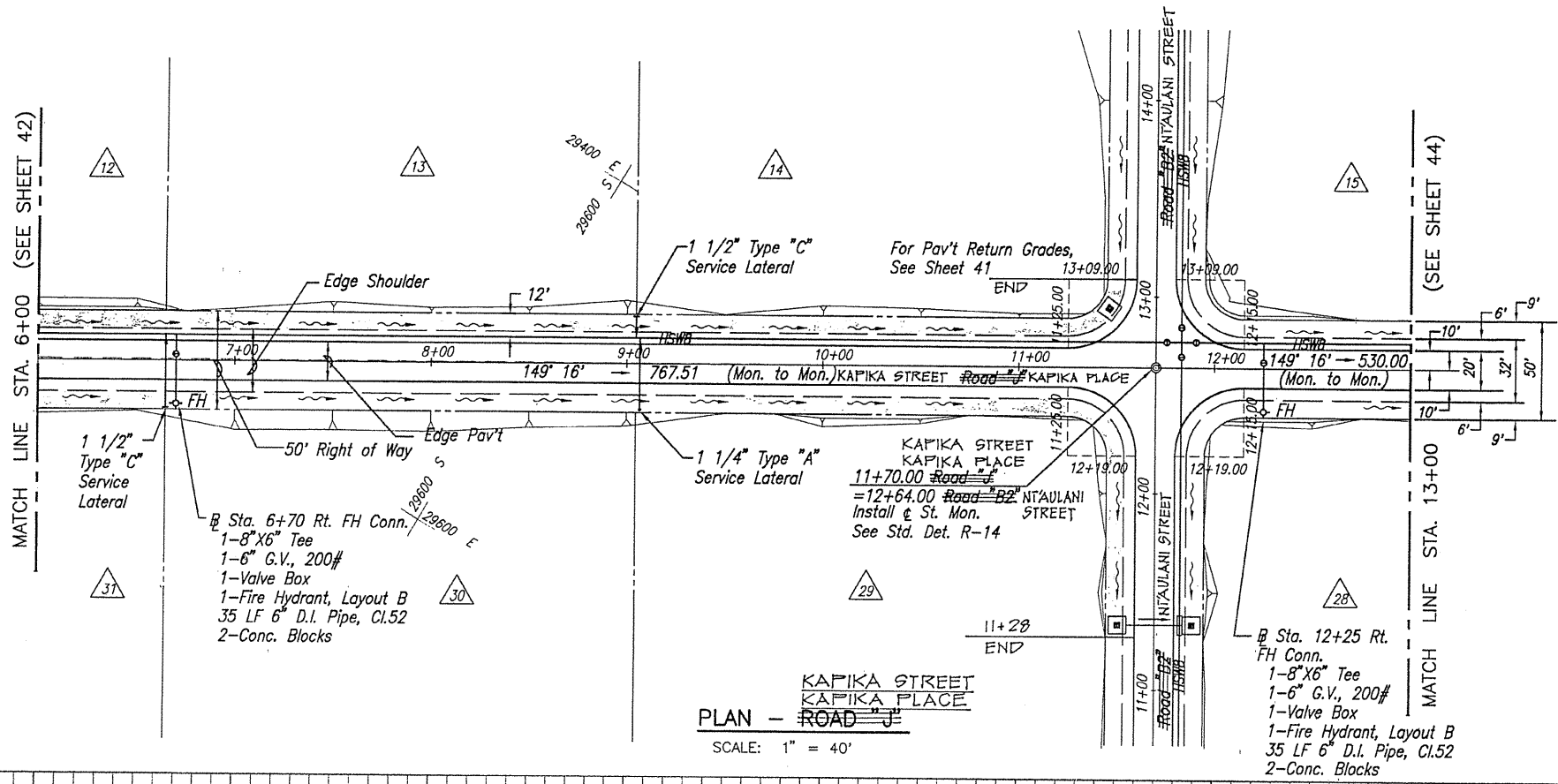
ENGINEERS SURVEYORS HAWAII, INC.  
*John Ch. Wilson* 6/2/95  
 DATE

**ESHI** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALAHI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 885-4590 KAMUELA

DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: JRD DIV. 1-5-10: 4 & 1-5-8: 3

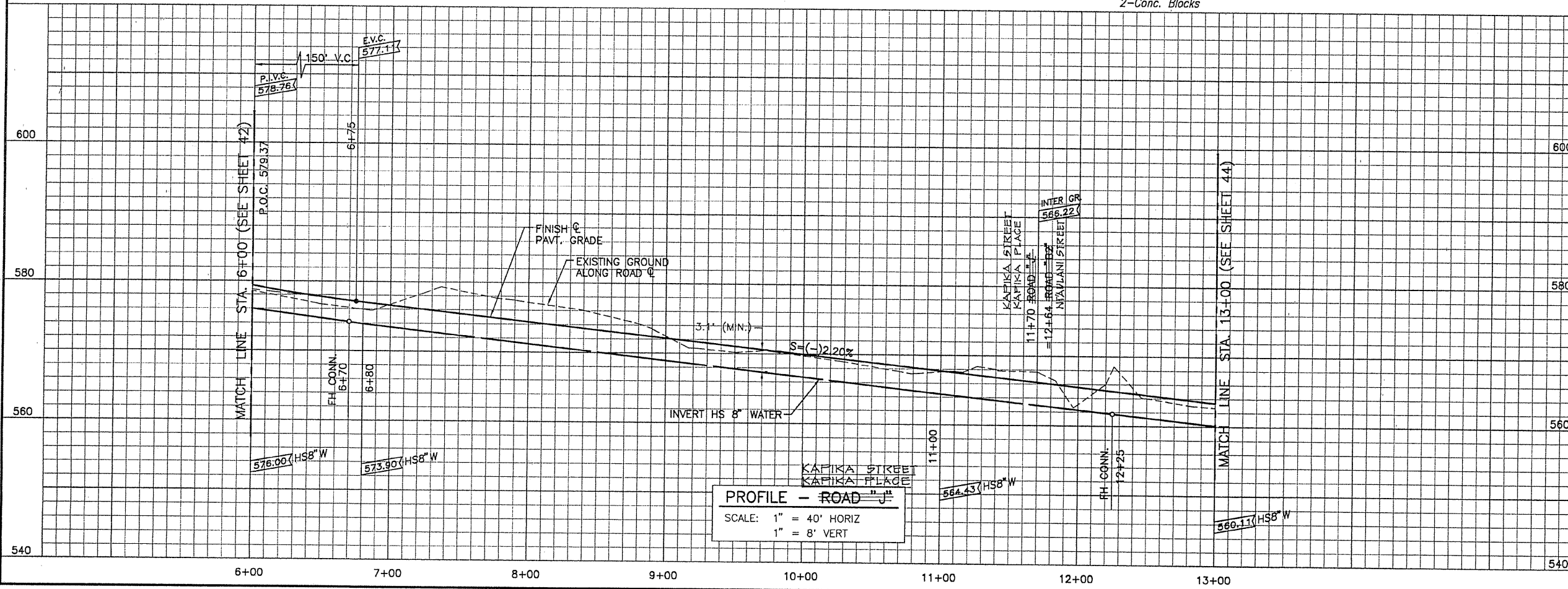
**PLAN & PROFILE**  
 KAPIKA ROAD STREET  
 STA. 0+00 TO STA. 6+00

Job: 85-180.2 File: PP-11.DWG Desc: MAKUU(8) Plot: 1=40 Date: 05/30/95 SRA

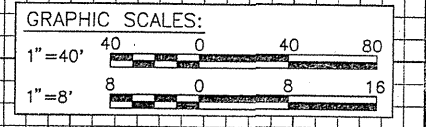


PLAN - ROAD #J  
SCALE: 1" = 40'

LEGEND  
 13 Agricultural Lot No. (Unit 1)



PROFILE - ROAD #J  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
580		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES.		

ENGINEERS SURVEYORS HAWAII, INC.  
*John O. Whama* 5/5/75  
 LICENSED PROFESSIONAL ENGINEER  
 No. 5796-C  
 HAWAII, U.S.A.

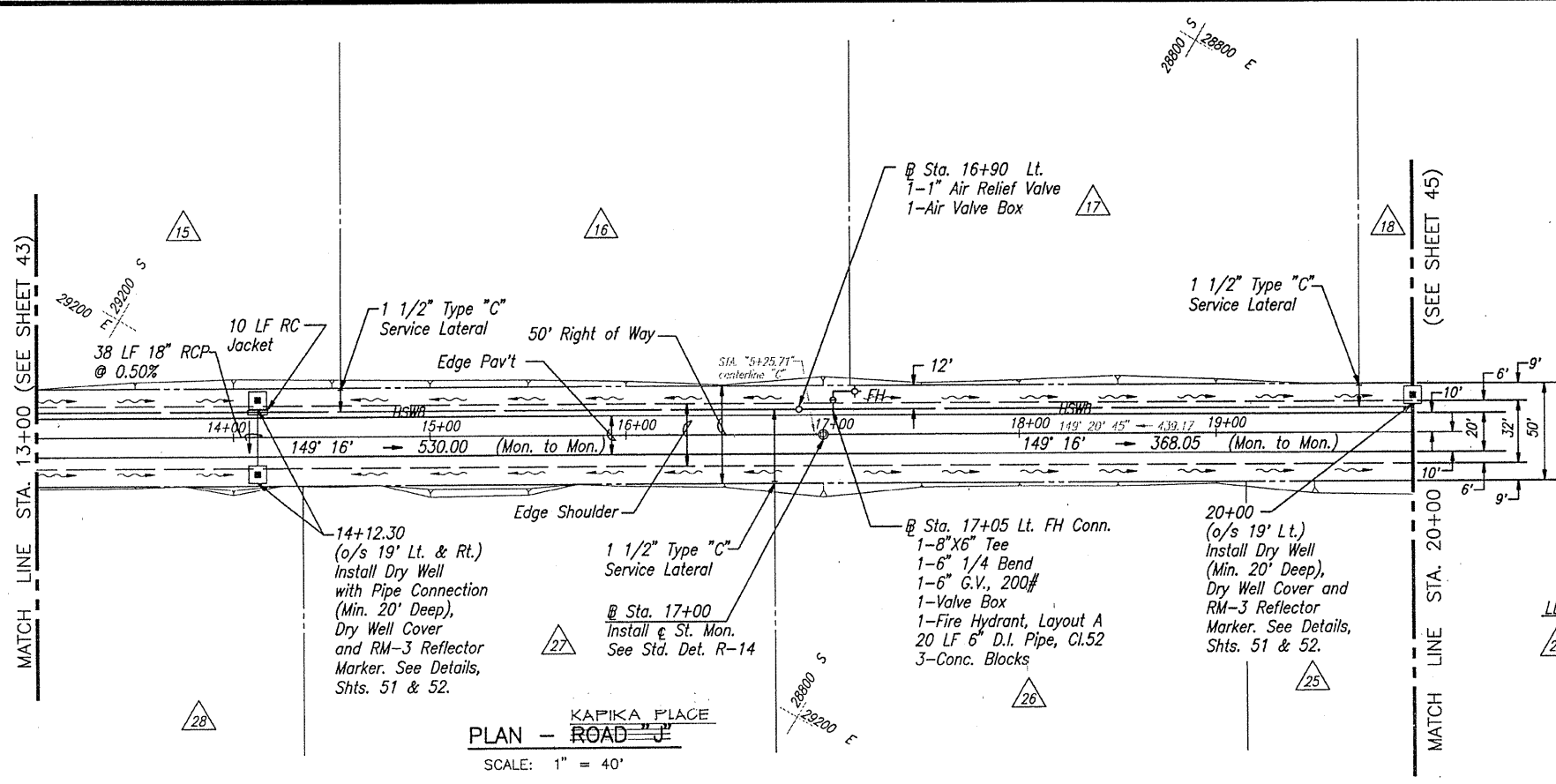
**ESI** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALAHI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 885-4590 KAMUELA

DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

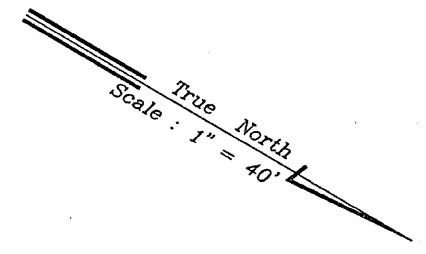
**PLAN & PROFILE**  
 KAPIKA STREET  
 KAPIKA PLACE  
 STA. 6+00 TO STA. 13+00

Job: 85-180.1 File: PP-12.DWG Date: 05/08/95 bl Plot: 1=40 Date: 05/08/95 bl

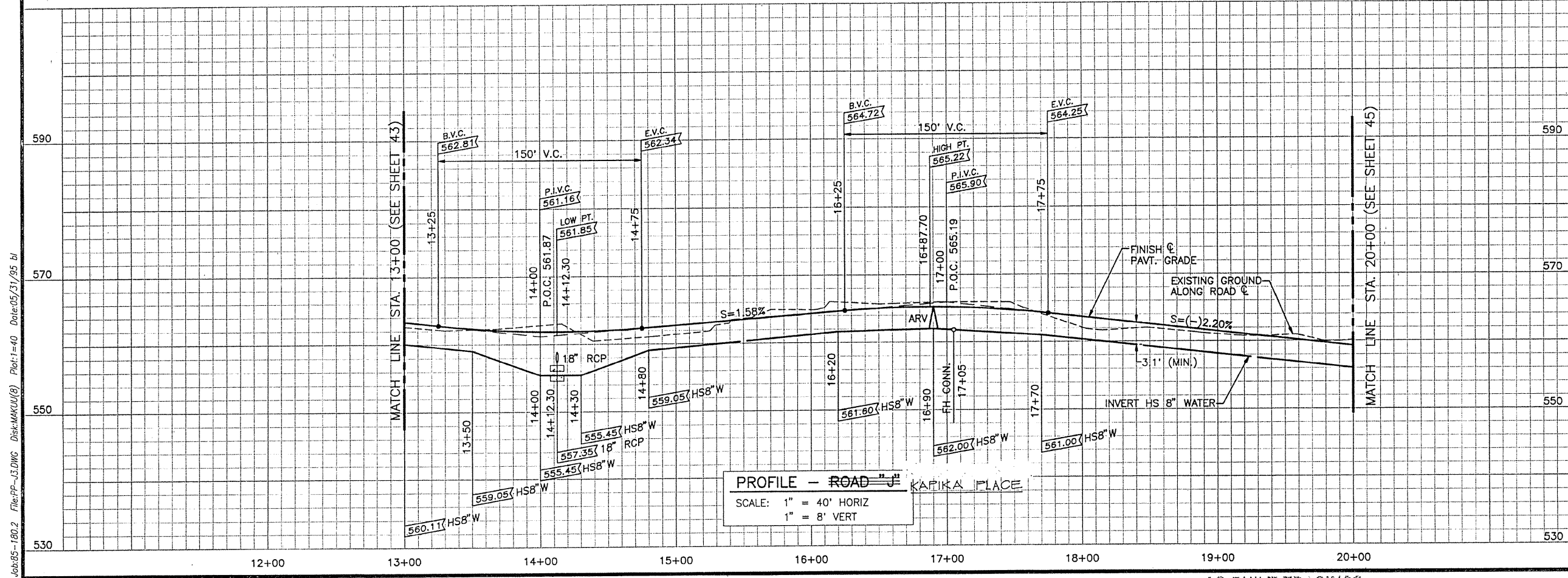




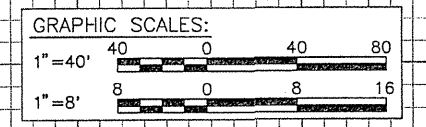
**LEGEND**  
 △ Agricultural Lot No. (Unit 1)



**PLAN - ROAD "J"**  
 SCALE: 1" = 40'



**PROFILE - ROAD "J"**  
 SCALE: 1" = 40' HORIZ  
 1" = 8' VERT



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

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ENGINEERS SURVEYORS HAWAII, INC.  
*Joanne M. Nakamura* 6/2/95  
 DATE

**ESHI** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALIPI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 855-4590 KAMUELA

DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

**PLAN & PROFILE**  
 KAPIKA ROAD "J" PLACE  
 STA. 13+00 TO STA. 20+00

Job: 85-180.2 File: PP-13.DWG Date: 05/31/95 bl Plot: 1=40 Date: 05/31/95 bl

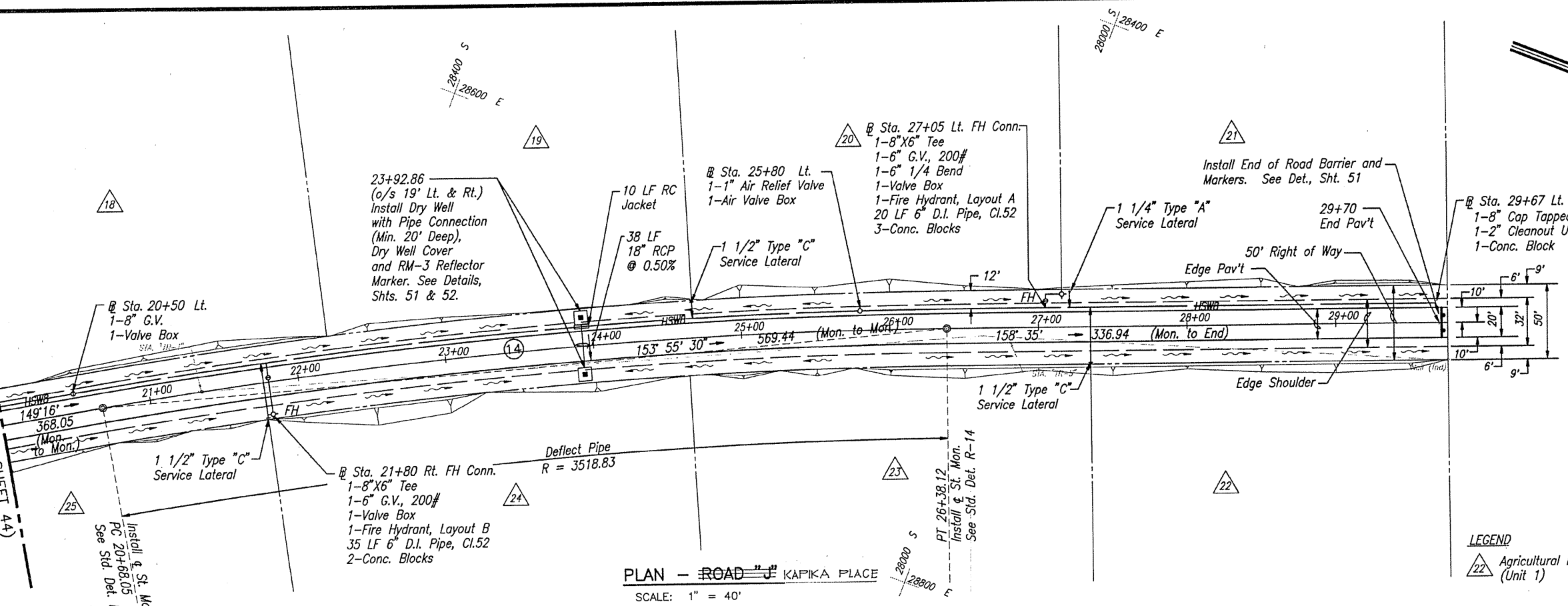


True North  
Scale: 1" = 40'

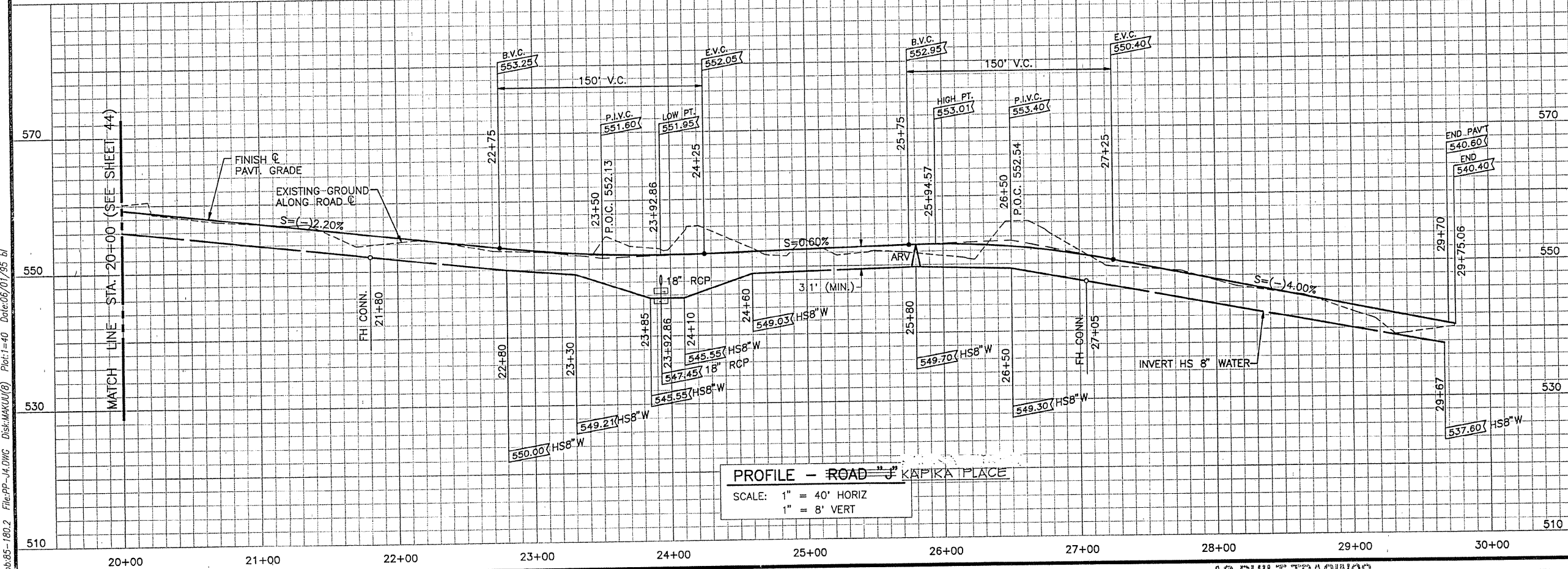
CURVE DATA	
Δ	9'19"
Δ/2	4'39'30"
R	3505.83
T	285.67
C	569.44
L	570.07

LEGEND  
 Agricultural Lot No. (Unit 1)

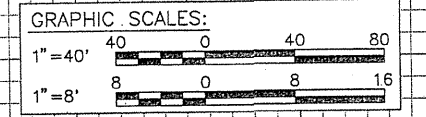
MATCH LINE STA. 20+00 (SEE SHEET 44)



PLAN - ROAD "J" KAPIKA PLACE  
SCALE: 1" = 40'



PROFILE - ROAD "J" KAPIKA PLACE  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES. ENGINEERS SURVEYORS HAWAII, INC. <i>John M. Nakanima</i> 6/2/95				

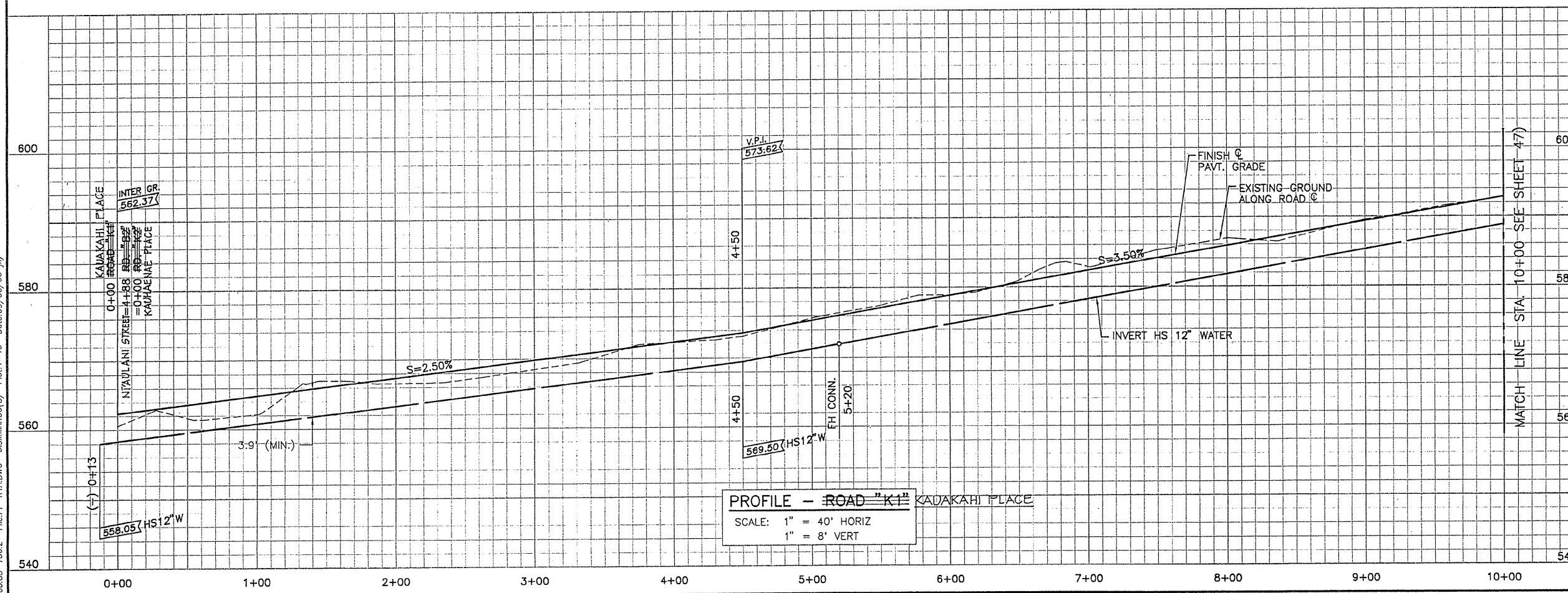
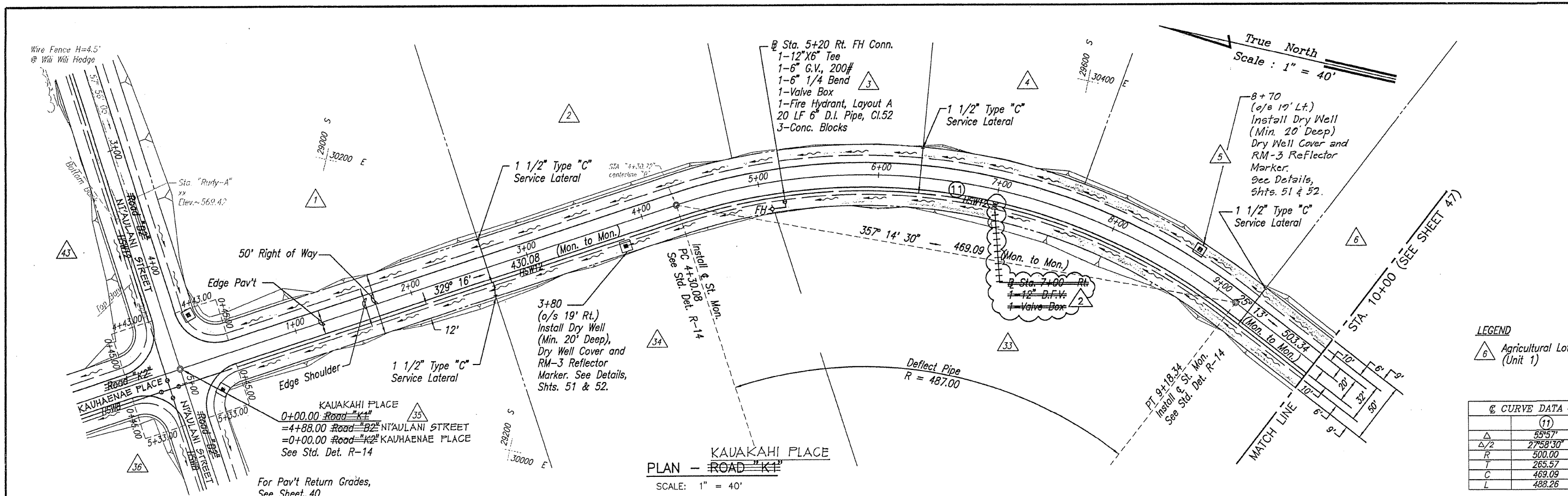
**ESHI** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALAHI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 885-4590 KAMUELA

DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

PLAN & PROFILE  
 KAPIKA ROAD "J" PLACE  
 STA. 20+00 TO STA. 29+75.06

Job: 95-180.2 File: PP-14.DWG Disk: MAKUU(8) Plot: 1-40 Date: 06/01/95 bl

FILE	POCKET	FOLDER	NO.
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9/6/95 DELETED 12" BY FROM STA. 7+00 RT.

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ENGINEERS SURVEYORS HAWAII, INC.  
 JOHANN M. NAKAMURA  
 LICENSED PROFESSIONAL ENGINEER  
 No. 6798-C  
 HAWAII, U.S.A.

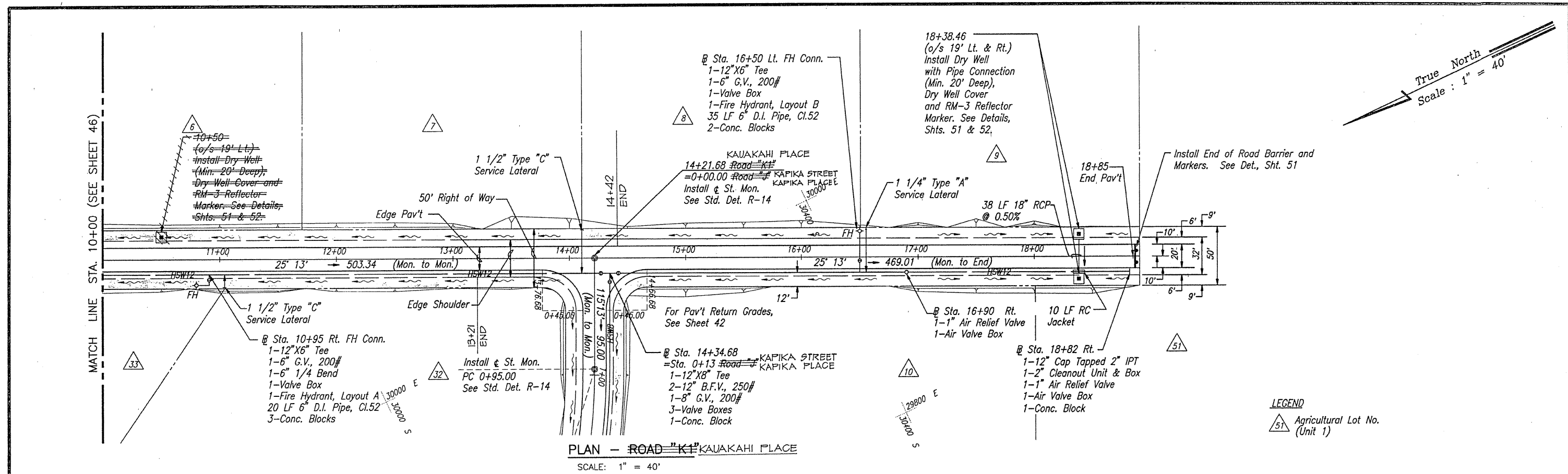
ENGINEERS SURVEYORS HAWAII, INC.  
 1020 MAJAH ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3118 HON. 885-4590 KAMUELA

DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA, ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

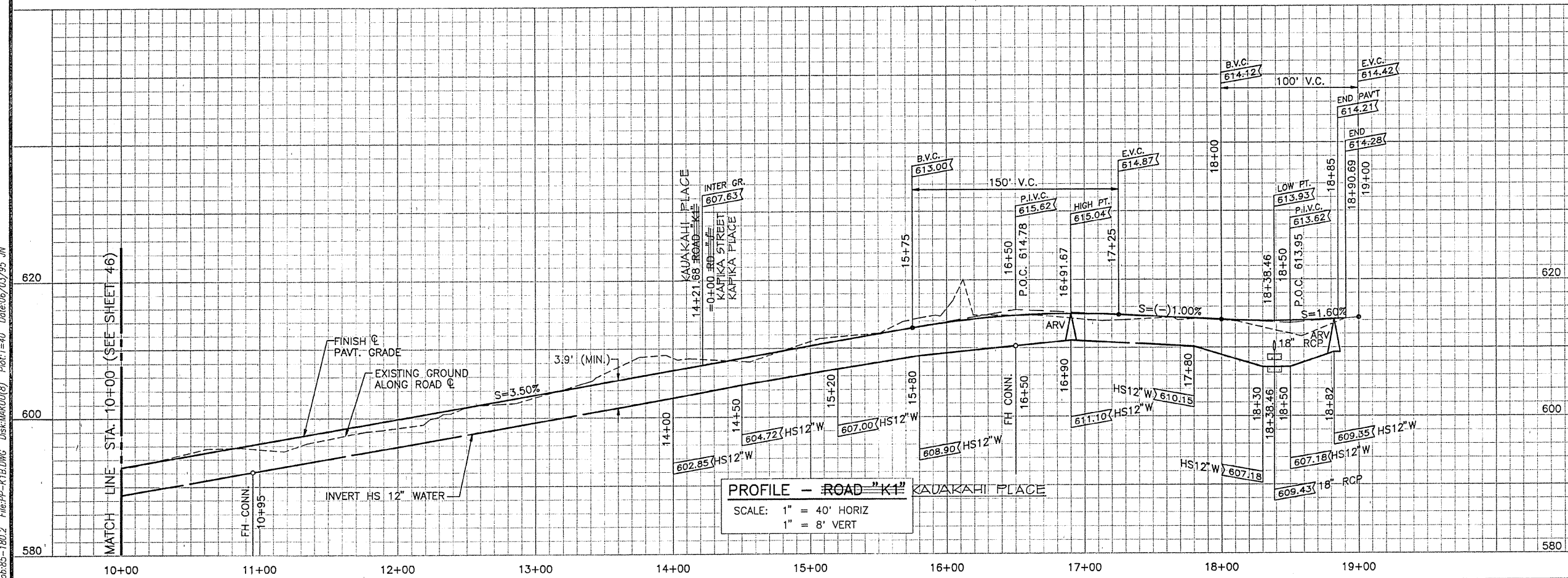
**PLAN & PROFILE**  
**KAUAKAHI ROAD "K1" PLACE**  
 STA. 0+00 TO STA. 10+00

FILE POCKET FOLDER NO.

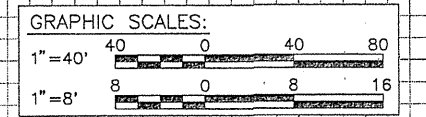
Job: 85-180.2 File: PP-K1A.DWG Disk: MAKUU(8) Plot: 1=40 Date: 09/06/95 .jby



PLAN - ROAD "K1" KAUAKAHI PLACE  
SCALE: 1" = 40'



PROFILE - ROAD "K1" KAUAKAHI PLACE  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
620				

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ENGINEERS SURVEYORS HAWAII, INC.  
*Joanne M. Nakamura* 6/2/95  
 DATE

**ESHI** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALAHI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 885-4590 KAMUELA

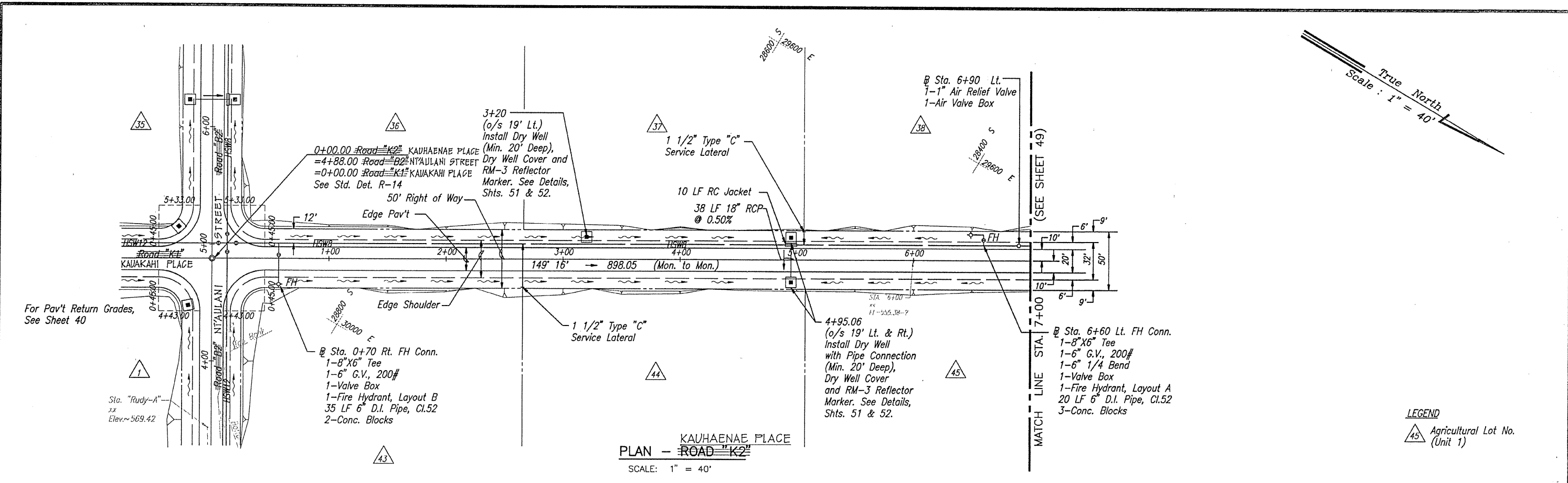
DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

**PLAN & PROFILE**  
 KAUAKAHI ROAD "K1" PLACE  
 STA. 10+00 TO STA. 18+90.99

Job: 65-180.2 File: PP-K1B.DWG Disk: MAKUU(18) Plot: 1=40 Date: 06/03/95 JN

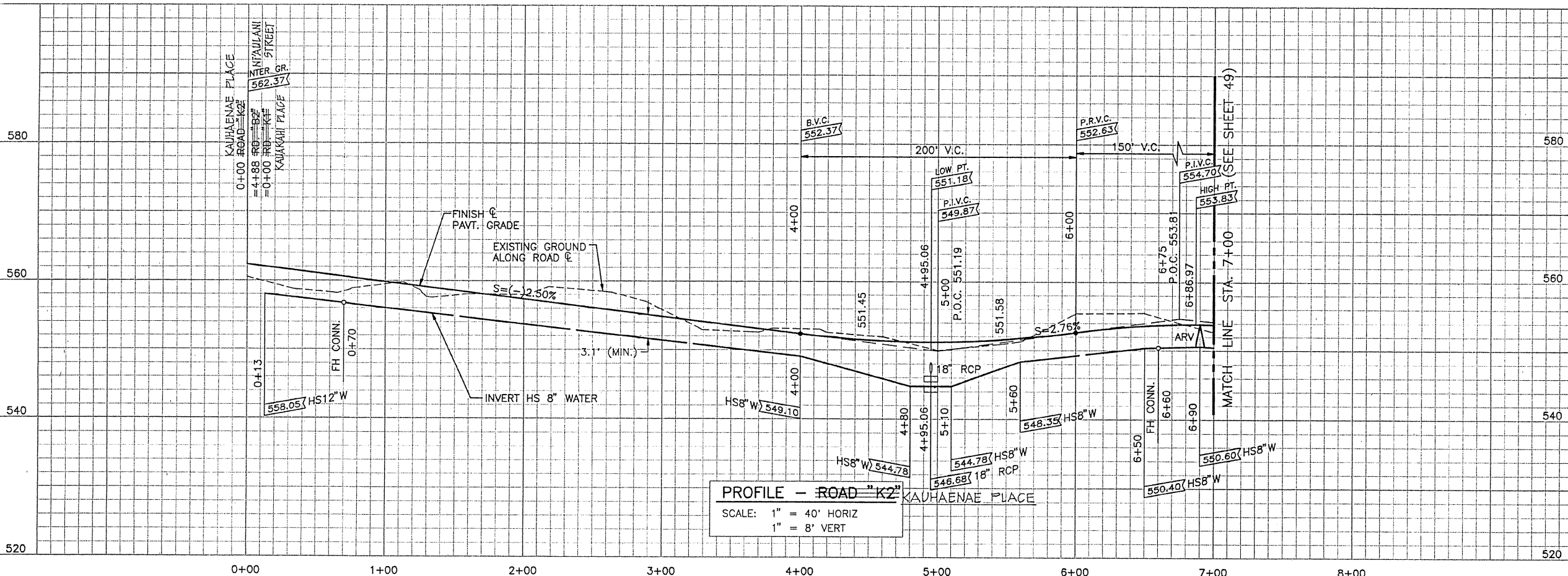


True North  
Scale: 1" = 40'

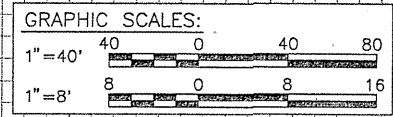


KAUHAENAE PLACE  
PLAN - ROAD "K2"  
SCALE: 1" = 40'

LEGEND  
45 Agricultural Lot No. (Unit 1)



PROFILE - ROAD "K2"  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



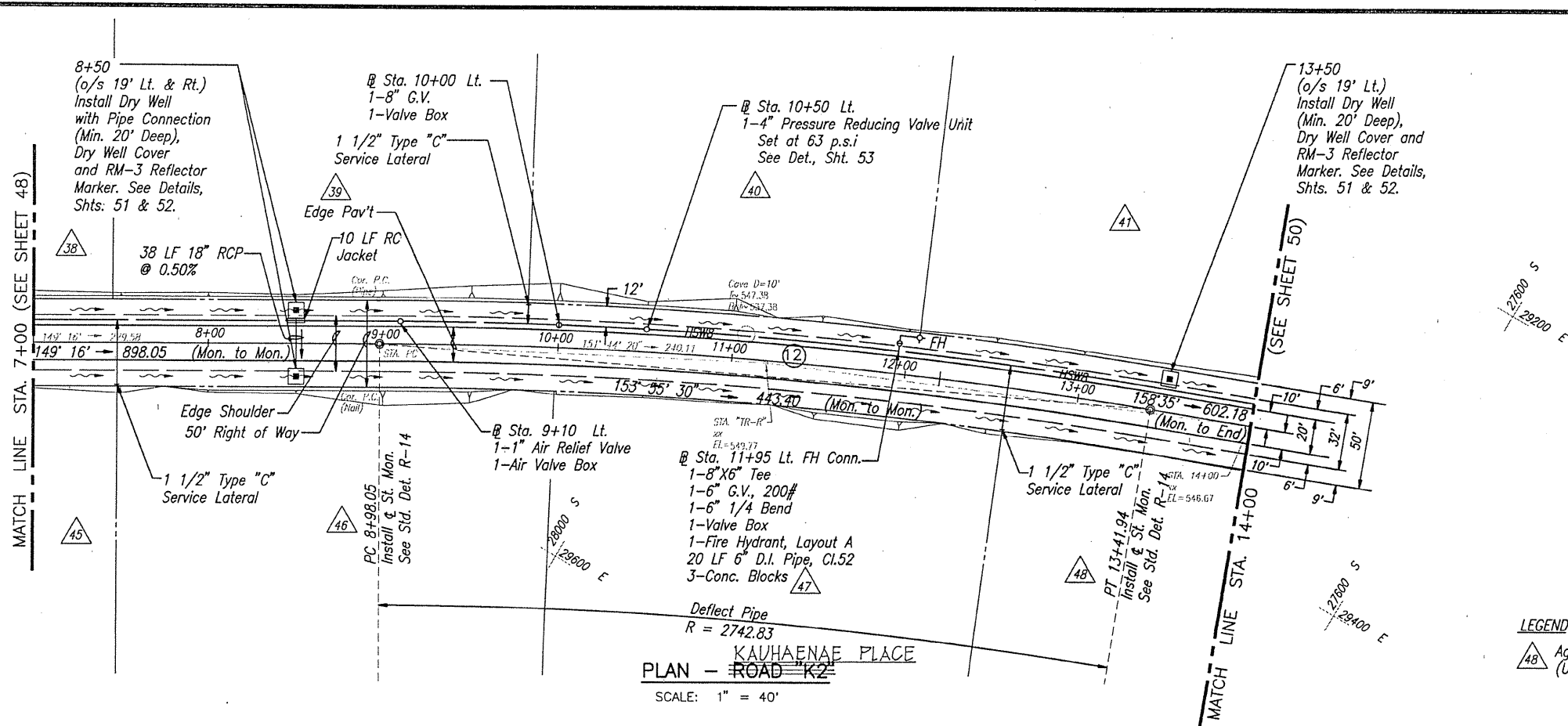
REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES. ENGINEERS SURVEYORS HAWAII, INC. <i>John M. Nakamura</i> 6/2/95 DATE				
ENGINEERS SURVEYORS HAWAII, INC. 1020 ALAHI ST., BLDG. 6, RM. 1 HONOLULU, HAWAII 96814 531-3116 HON. 885-4590 KAMUELA				
DEPARTMENT OF HAWAIIAN HOME LANDS <b>MAKUU FARM AND AGRICULTURAL LOTS</b> <b>PHASE 1</b> AT MAKUU, POPOKI AND HALONA, PUNA, ISLAND OF HAWAII, HAWAII TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3				
<b>PLAN &amp; PROFILE</b> <b>KAUHAENAE ROAD "K2" PLACE</b> <b>STA. 0+00 TO STA. 7+00</b>				

Job: 85-180.2 File: PP-K2A.DWG Disk: MAKUU(9) Plot: 1-40 Date: 05/31/95 bl

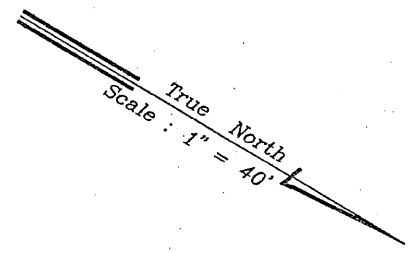
AS BUILT TRACINGS

FILE	PROJECT	FOLDER	NO.



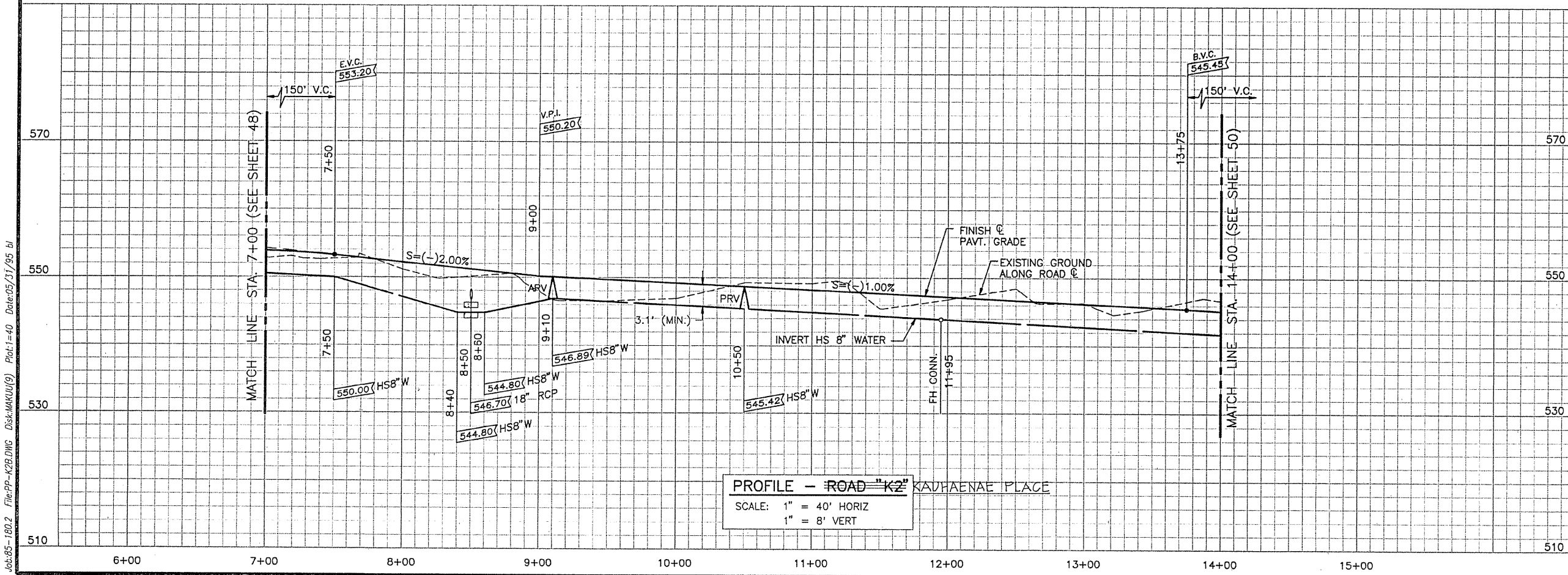


KAUHAENAË PLACE  
 PLAN - ROAD "K2"  
 SCALE: 1" = 40'

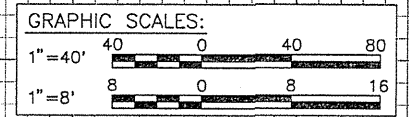


CURVE DATA	
(12)	
Δ	9'19"
Δ/2	4'39.30"
R	2729.83
T	222.43
C	443.40
L	443.89

LEGEND  
 Δ Agricultural Lot No. (Unit 1)



KAUHAENAË PLACE  
 PROFILE - ROAD "K2"  
 SCALE: 1" = 40' HORIZ  
 1" = 8' VERT

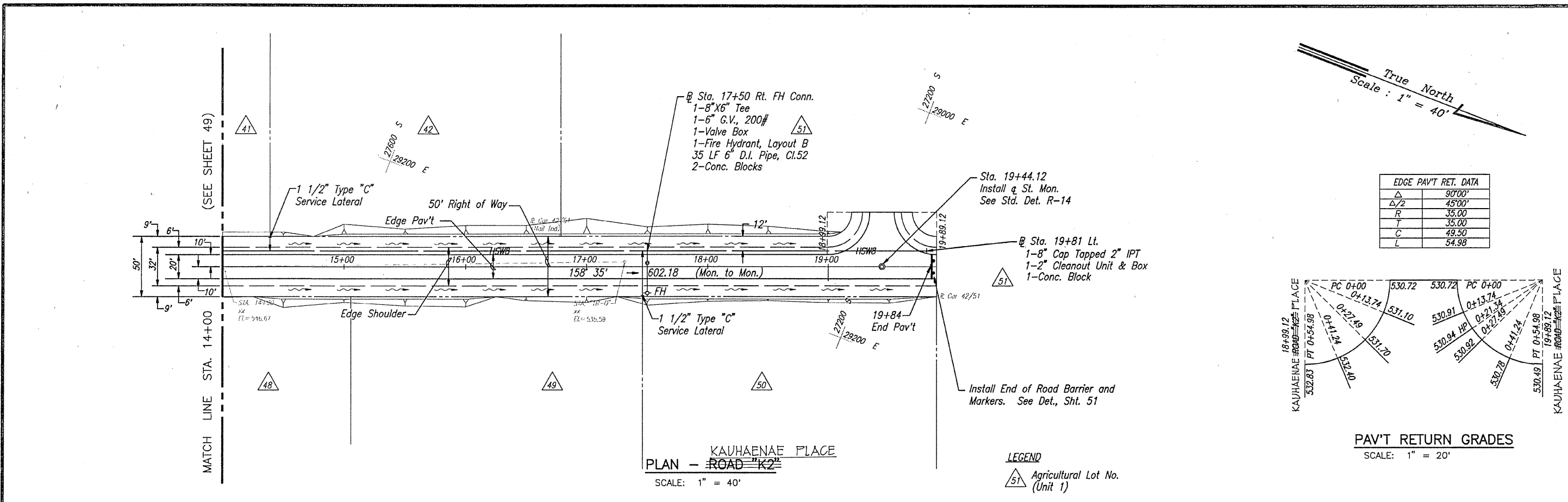


REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES. ENGINEERS SURVEYORS HAWAII, INC. <i>John M. Nakamura</i> 6/2/95 DATE				
ENGINEERS SURVEYORS HAWAII, INC. 1020 ALAHI ST., BLDG. 6, RM. 1 HONOLULU, HAWAII 96814 531-3116 HON. 885-4590 KAMUELA				
DEPARTMENT OF HAWAIIAN HOME LANDS <b>MAKUU FARM AND AGRICULTURAL LOTS</b> PHASE 1 AT MAKUU, POPOKI AND HALONA, PUNA, ISLAND OF HAWAII, HAWAII TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3				
<b>PLAN &amp; PROFILE</b> <b>KAUHAENAË PLACE</b> <b>STA. 7+00 TO STA. 14+00</b>				

Job: 85-180.2 File: PP-K2B.DWG Disk: MAKUU(9) Plot: 1=40 Date: 05/31/95 bl

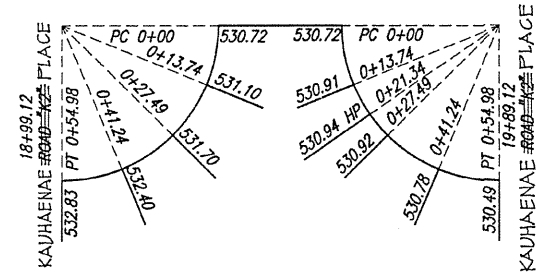
AS BUILT TRACKING

FILE	POCKET	FOLDER	NO.
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EDGE PAV'T RET. DATA

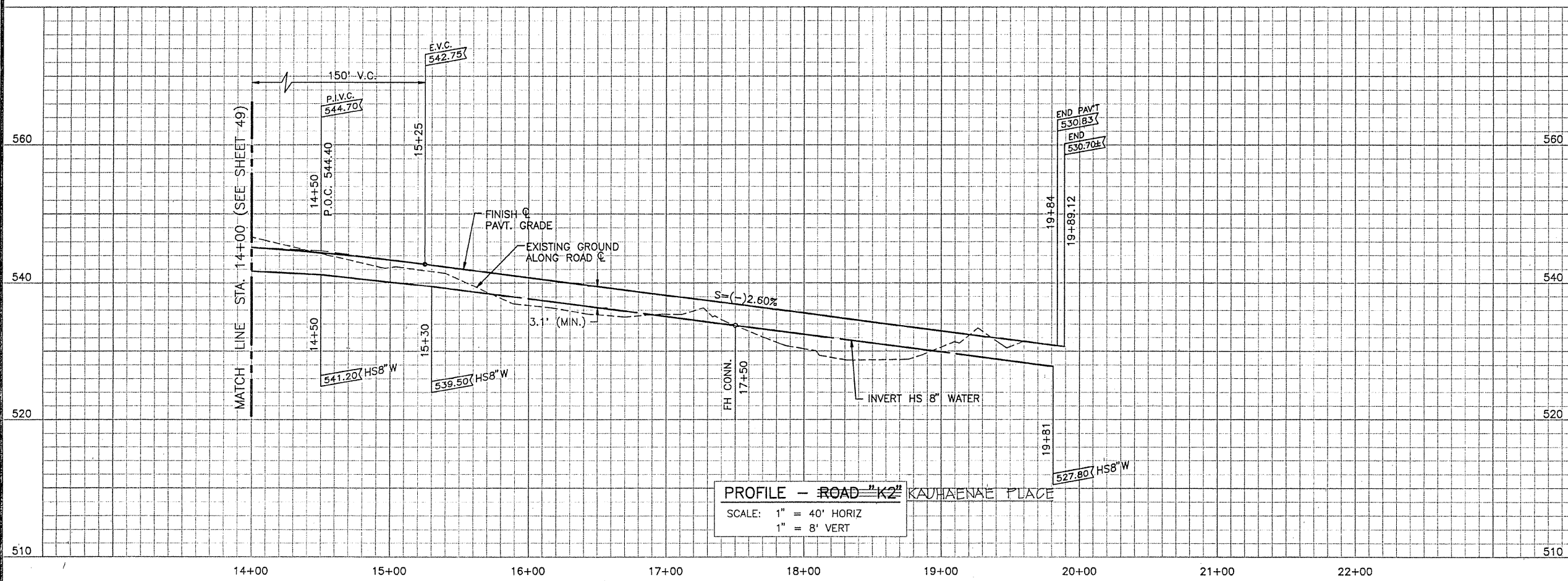
Δ	90'00"
Δ/2	45'00"
R	35.00
T	35.00
C	49.50
L	54.98



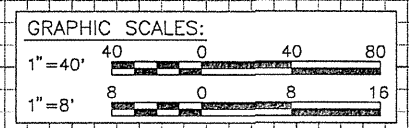
PAV'T RETURN GRADES  
SCALE: 1" = 20'

PLAN - ROAD "K2" KAUHAENAE PLACE  
SCALE: 1" = 40'

LEGEND  
 Agricultural Lot No. (Unit 1)



PROFILE - ROAD "K2" KAUHAENAE PLACE  
SCALE: 1" = 40' HORIZ  
1" = 8' VERT



REVISION DATE DESCRIPTION MADE BY APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES.

ENGINEERS SURVEYORS HAWAII, INC.  
*Joanne M. Nakamura* 6/2/88  
 DATE

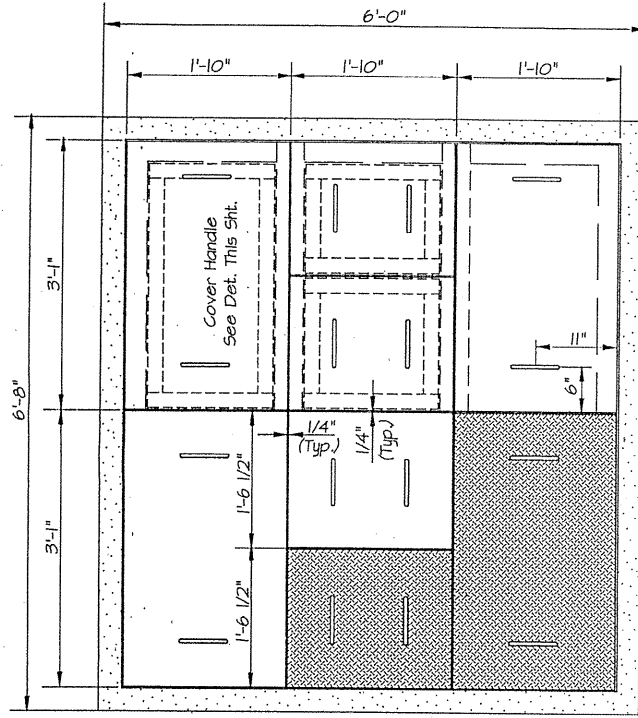
JOANNE M. NAKAMURA  
 LICENSED PROFESSIONAL ENGINEER  
 No. 5796-C  
 HAWAII, U.S.A.

**ESH** ENGINEERS SURVEYORS HAWAII, INC.  
 1020 ALAHI ST., BLDG. 6, RM. 1  
 HONOLULU, HAWAII 96814  
 531-3116 HON. 885-4590 KAMUELA

DEPARTMENT OF HAWAIIAN HOME LANDS  
**MAKUU FARM AND AGRICULTURAL LOTS**  
 PHASE 1  
 AT MAKUU, POPOKI AND HALONA, PUNA,  
 ISLAND OF HAWAII, HAWAII  
 TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3

**PLAN & PROFILE**  
 KAUHAENAE ROAD "K2" PLACE  
 STA. 14+00 TO STA. 19+89.12

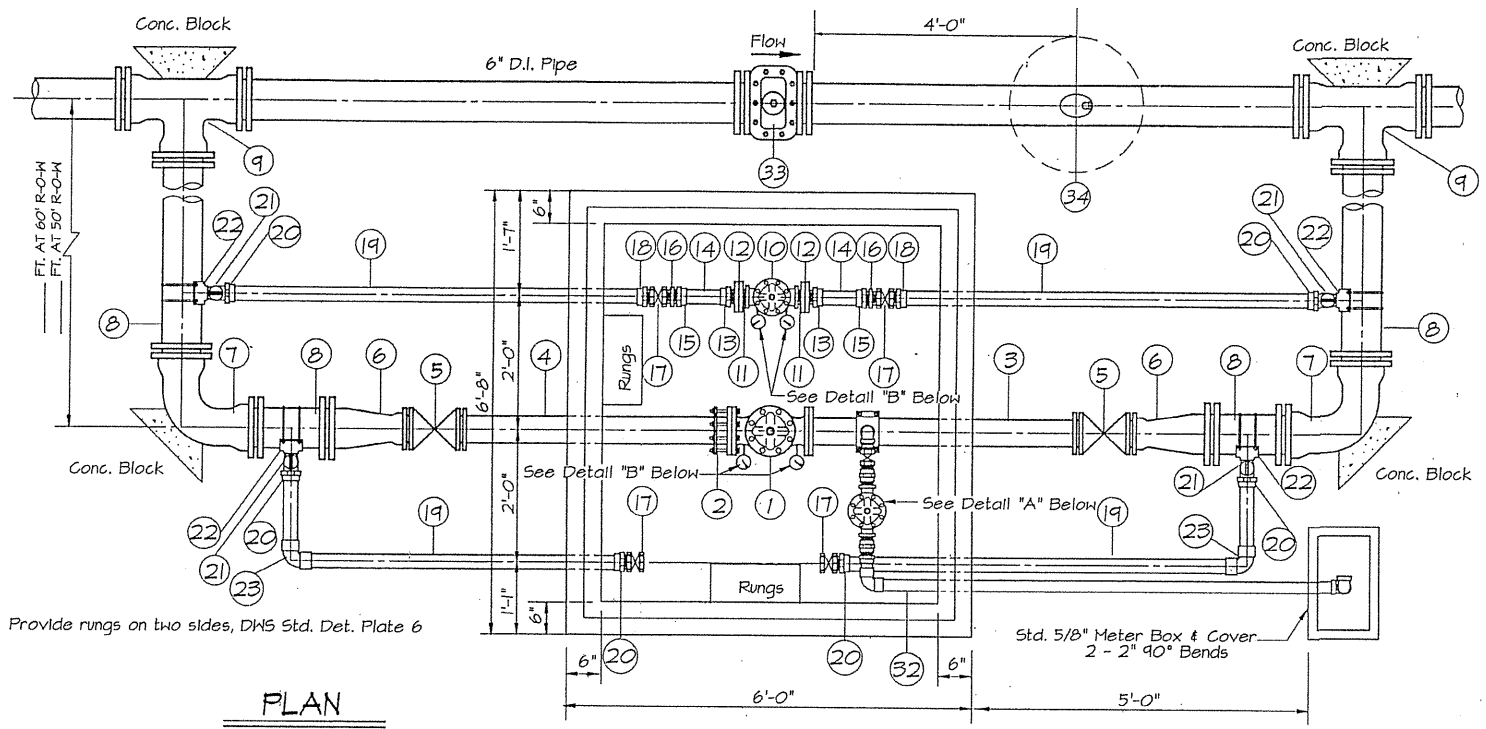
Job:85-180.2 File:FP-K2C.DWG Disk:MAKUU(9) Plot:1=40 Date:06/03/95 JN



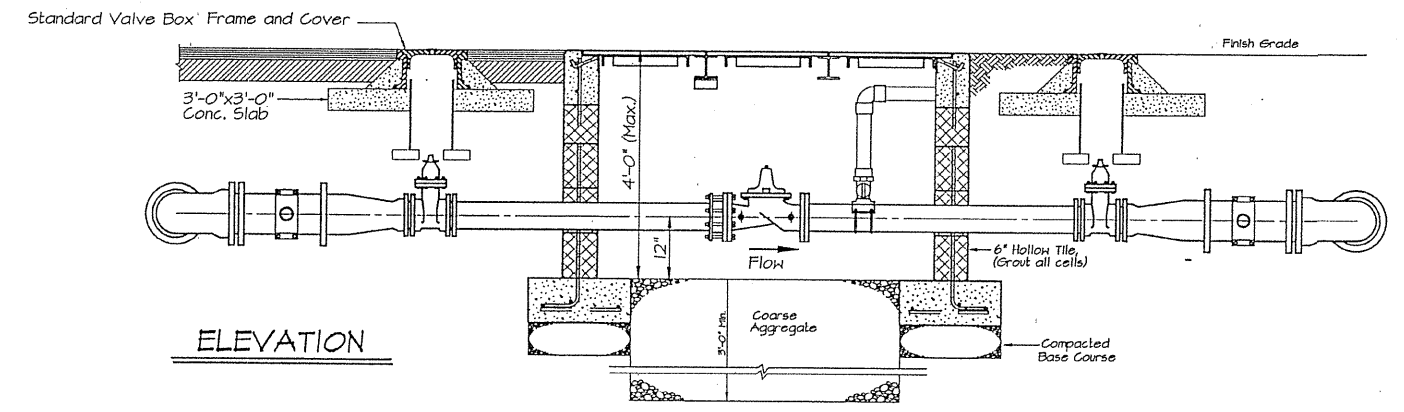
**COVER PLAN** Scale: 1" = 1'-0"

MATERIAL SCHEDULE	
ITEM	DESCRIPTION
1	4" Pressure Reducing & Sustaining Valve, FE, Clayton #42-01(6) C5B, KC
2	Rockwell Flange Coupling Adapter, #412-048004-000 w/Stainless Steel or Silicon Bronze nuts & Bolts
3	4" Adapter, P.E. X F.E.
4	4" D.I. Pipe, Cut to Fit.
5	4" Gate Valve, M.J., w/Retainer Glands & w/Valve Box & Cover
6	6"x4" D.I. Reducer, M.J., S.E.P.E. w/Retainer Glands
7	6" 90° C.I. Bend, M.J., w/Retainer Glands & Conc. Block
8	6" D.I. Pipe, Cut to Fit.
9	6"x6"x6" Tee, M.J. w/ Retainer Glands and Conc. Blocks
10	2" Pressure Reducing & Sustaining Valve, SCRD, Clayton #42-01(6) C5B, KC
11	2" Brass Close Nipple
12	2" Brass Meter Flange, FORD NO. CF 31-TT.
13	2" FORD LOCK PACK NO. CF. 35-TT
14	2" Copper Pipe 7" long, Provide clearance for adjustment.
15	2" Male Adapter, C-F
16	2 1/2" X 2" Brass Bushing
17	2 1/2" Gate Valve, Screwed
18	2 1/2" Male Adapter, C-F
19	2 1/2" Copper Pipe, Cut to Fit
20	2 1/2" Female Adapter, C-F
21	2" x 2 1/2" Corp. Stop
22	6" X 2" Double Strap Service Saddle
23	2 1/2" 90° Copper Elbow
24	2" Pressure Relief Valve, Clayton #506-01, KG, KC, Range 20-200
25	2" Brass Union, Scr'd
26	2" Gate Valve, Screwed
27	2" Brass Street Elbow
28	2"x2"x1" Brass Tee w/ 1" Hose Bib
29	1 1/2" x 2" Corp. Stop
30	4" X 1 1/2" Double Strap Service Saddle
31	2" Copper Elbow, C-C
32	2" Copper Pipe, Cut to Fit
33	6" Gate Valve, M.J., w/Valve Box & Cover, Class 200
34	1" Combination Air Relief Valve Unit & Box. See Std. Det. Plate 22

- NOTES:
- Clayton Valves shall be equipped with epoxy coating internally and externally and with valve position indicators. (x10)
  - Pressure reducer settings: 4" = \_\_\_\_\_ P.S.I.  
2" = \_\_\_\_\_ P.S.I.
  - CRD Range: \_\_\_\_\_ to \_\_\_\_\_ P.S.I.  
CRL Range: \_\_\_\_\_ to \_\_\_\_\_ P.S.I.

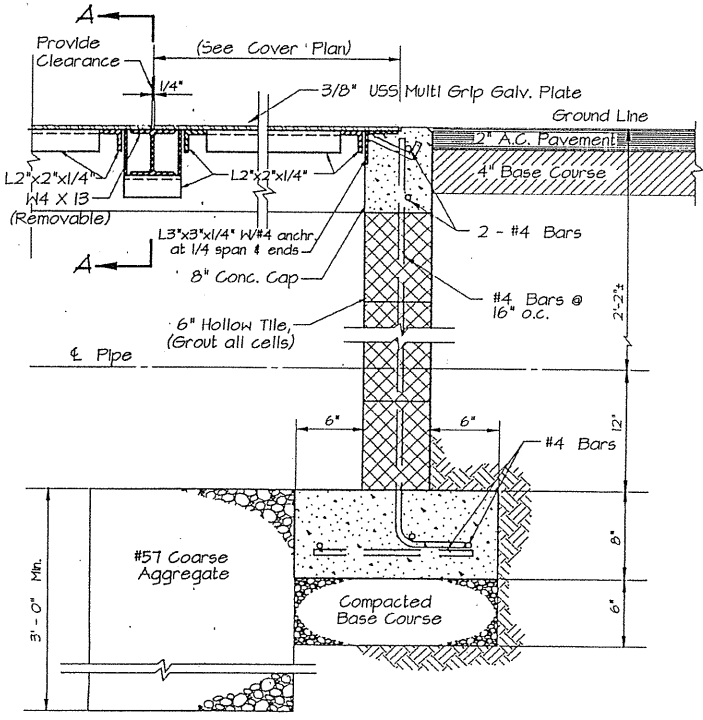


**PLAN**

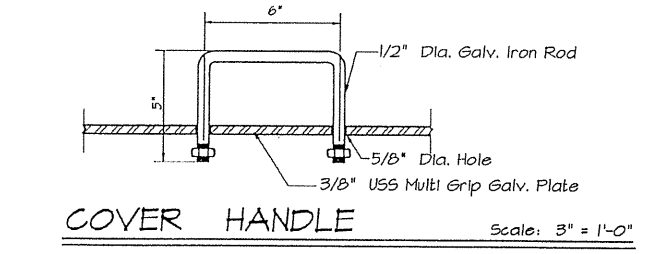


**ELEVATION**

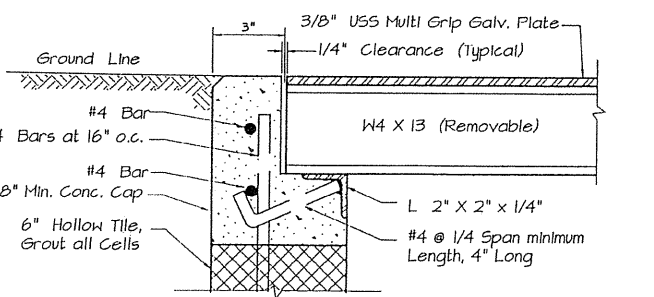
**2" AND 4" PRESSURE REDUCING VALVE UNIT** Scale: 3/4" = 1'-0"



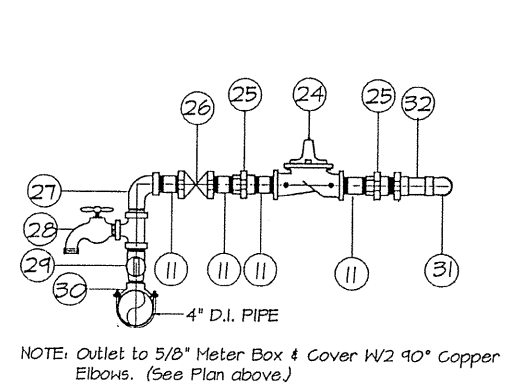
**TYPICAL BOX SECTION** Scale: 1 1/2" = 1'-0"



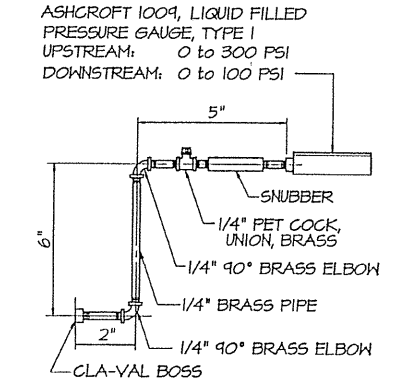
**COVER HANDLE** Scale: 3" = 1'-0"



**SECTION "A-A"** Scale: 3" = 1'-0"



**DETAIL "A"** Not to Scale  
**2" A.R.V. WHOSE BIB DETAIL**

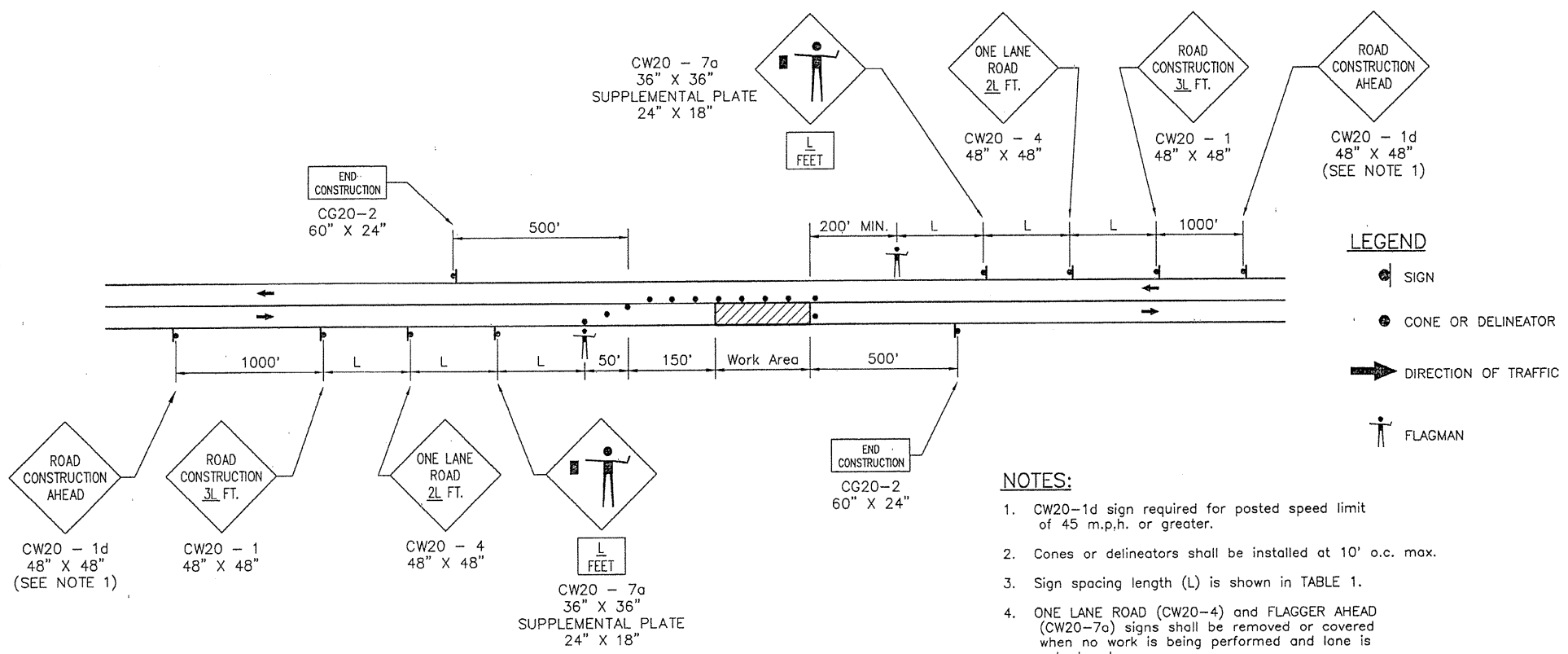


**DETAIL "B"** Not to Scale  
**PRESSURE GAUGE**

ASHCROFT 1009, LIQUID FILLED PRESSURE GAUGE, TYPE I  
UPSTREAM: 0 to 300 PSI  
DOWNSTREAM: 0 to 100 PSI

		DEPARTMENT OF WATER SUPPLY COUNTY OF HAWAII	
		PROJECT <b>2" AND 4" PRESSURE REDUCING VALVE UNIT</b>	SHEET NO. OF SHEETS
JOB NO.			

DATE PLOTTED: REV. 11/10/94 DWG. SC: 1=12 G:\WATER\STPRV4\2.DWG



**TWO-LANE HIGHWAY - ONE LANE CLOSED**

FIGURE 1 - TRAFFIC CONTROL PLAN

Not to Scale

- NOTES:**
- CW20-1d sign required for posted speed limit of 45 m.p.h. or greater.
  - Cones or delineators shall be installed at 10' o.c. max.
  - Sign spacing length (L) is shown in TABLE 1.
  - ONE LANE ROAD (CW20-4) and FLAGGER AHEAD (CW20-7a) signs shall be removed or covered when no work is being performed and lane is not closed.

**GENERAL NOTES FOR TRAFFIC CONTROL PLAN**

- THE PERMITEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
- CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
- TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
- REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
- FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
- WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
- SIGN SPACINGS, TAPER LENGTHS AND SPACINGS OF CONES OR DELINEATORS ARE NOTED ON THE TRAFFIC CONTROL PLANS.
- ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
- ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
- THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
- AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
- REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.

POSTED SPEED LIMIT ① (M.P.H.)	SIGN SPACING (L) (FEET)	TAPER LENGTH (T) (FEET)		SPACING OF CONES OR DELINEATORS (FEET) ③		
		W = 12' OR LESS ②	W = GREATER THAN 12' ②	TAPER	TANGENT	WORK AREA
20	250	200	W x 17	20	20	10
25	250	200	W x 17	25	25	10
30	250	250	W x 20	30	30	10
35	250	250	W x 20	35	35	10
40	500	350	W x 30	40	40	10
45	500	550	W x 45	45	45	10
50	1000	600	W x 50	50	50	10
55	1000	700	W x 55	55	55	10

- NOTES:**
- Use advisory speeds when posted
  - W = width of lane or offset
  - not applicable for two-lane highways

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS STIPULATED IN CHAPTER 464 OF THE HAWAII REVISED STATUTES.				
ENGINEERS SURVEYORS HAWAII, INC. <i>John D. Wilson</i> 5/5/95 DATE				
ENGINEERS SURVEYORS HAWAII, INC. 1020 AJAHI ST., BLDG. 6, RV. 1 HONOLULU, HAWAII 96814 531-3116 HON. 885-4590 KAMUELA				
DEPARTMENT OF HAWAIIAN HOME LANDS <b>MAKUU FARM AND AGRICULTURAL LOTS</b> PHASE 1 AT MAKUU, POPOKI AND HALONA, PUNA, ISLAND OF HAWAII, HAWAII TMK: 3RD DIV. 1-5-10: 4 & 1-5-8: 3				
<b>TRAFFIC CONTROL PLAN</b>				

JOB:85-180.2 FILE:TRAFFIC.DWG DISK:MAKUU(15) PLOT:1-1 DATE:05/08/95 bl