

TEST DRIVING PILES A THROUGH J
(TEST DRIVING MUST BE DONE BEFORE
INSTRUMENTING AND CASTING OF PILES
1 THROUGH 5 IN AREA 1A.)

AREA 1A

INSTRUMENTATION AND CASTING OF PILES 1 THROUGH 5

1. INSTALL STRAIN GAGES AT SPECIFIED LOCATIONS ON STEEL REINFORCING CAGE AND BUNDLE CABLES WITHIN CONCRETE AREA TO 7 FEET FROM TOP END OF PILE SEGMENT. CABLES TO EXIT FROM TOP FACE OF FORM AT THIS POINT.
2. CAST PILE WITH CENTRAL HOLE.
- *3. COIL STRAIN GAGE CABLES.

CLEAR AND GRUB

LEVEL AREA TO SPECIFIED GRADE: ELEVATION +5.0.

STAKE OUT

ESTABLISH BASELINE AND LOCATION OF PILES.

TEST AUGER HOLES A AND B

TWO - 20" DIA. HOLES TO BE AUGERED IN CRUST.

TEST PILES 1 THROUGH 5, & Pile G

1. INSTALL STEEL SLEEVES
 - *2. DRIVE FIRST PILE SEGMENT OF PILE 1.
 3. SPLICE SECOND SEGMENT TO FIRST SEGMENT.
 - *4. CONTINUE DRIVING WHILE ATTACHING STRAIN GAGE CABLES TO FRONT FACE(S) OF PILES.
 5. CUT OFF IF SPECIFIED.
 6. REPEAT WITH REMAINING SEGMENTS.
 7. REPEAT STEPS 1 THROUGH 6 FOR PILES 2 THROUGH 5. FOR PILE 3, INSERT SPACER PIPES AFTER INSTALLING SLEEVE. PILES ARE TO BE DRIVEN IN NUMERICAL ORDER.
 - *8. INSERT INCLINOMETER CASING AND ROD EXTENSOMETERS AND GROUT SPACE BETWEEN CASING AND CENTRAL HOLE.
 - *9. TERMINATE STRAIN GAGE CABLES.
 - *10. TAKE INITIAL INSTRUMENT READINGS.
 11. COMPLETE STEPS 8 THROUGH 10 FOR EACH PILE.
 12. BUILD UP LOADING FRAME, PILE 1.
 - *13. PERFORM LOAD TEST, PILE 1.
 - *14. MONITOR ALL INSTRUMENTS, INCLUDING ELEVATION OF PILE TOP FROM BENCHMARK. ACCOMPLISHED BY ENGINEER.
 15. DEMOUNT LOADING FRAME.
 16. REPEAT STEPS 12 THROUGH 15 FOR REMAINING PILES. (except for Pile G)
PILES ARE TO BE LOAD TESTED IN NUMERICAL ORDER.
- * ENGINEER WILL PARTICIPATE IN THESE ACTIVITIES.

AREA 1B

TEST DRIVE PILES A THROUGH J
(TEST DRIVING MUST BE DONE BEFORE INSTRUMENTING AND
CASTING OF PILES 1 THRU 5 IN AREA 1A.)

1. CAST TEST DRIVE PILES A THROUGH J.
 2. CLEAR, GRUB, ESTABLISH BASELINE AND STAKE OUT FOR PILES A THROUGH J. CONSTRUCT FIELD OFFICES, SECURITY FENCE AND PROVIDE INSTRUMENT STORAGE UNIT IN AREA 1.
 - *3. INSTALL TWO PIEZOMETERS IN TEST DRIVE PILE AREA. ~~INSTALL TWO PIEZOMETERS, BENCHMARK BM1, A MDSP AND A GW IN AREA 1A.~~
 4. INSTALL STEEL SLEEVES.
 5. DRIVE AND SPLICE PILES IN ALPHABETICAL ORDER, CUTTING OFF IF SPECIFIED.
 - *6. EVALUATE TEST DRIVE PILES AND AMEND PROGRAM AS REQUIRED.
 - *7. INSERT INCLINOMETER CASING AND GROUT ANNULAR SPACES.
- INSTRUMENTING AND CASTING OF PILES 6 THROUGH 9

- *1. INSTALL STRAIN GAGES AT SPECIFIED LOCATIONS ON STEEL REINFORCING CAGE, INSTALL EARTH PRESSURE CELLS AND PIEZOMETERS AT SPECIFIED LOCATIONS ON PILE FORM AND BUNDLE CABLES AND TUBES WITHIN CONCRETE AREA TO 7 FEET FROM TOP END OF PILE SEGMENT. CABLES AND TUBES TO EXIT FROM TOP FACE OF FORM AT THIS POINT.
2. CAST PILE WITH CENTRAL HOLE.
- *3. COIL INSTRUMENT CABLES AND TUBES.

CLEAR AND GRUB

LEVEL AREA TO SPECIFIED GRADE.

STAKE OUT PILES 6 THROUGH ¹⁰~~9~~ AND ALL SOIL INSTRUMENTS

INSTALL FIRST STAGE SOIL INSTRUMENTS

- *1. ALL SOIL INSTRUMENTS EXCEPT ONE MDSP WITHIN PILE GROUP, 1 CLUSTER OF 6 PIEZOMETERS, BM2, 3 DSP AND 5 SP
2. INSTALL THREE NORTHERN CONTROL STAKES.

TEST PILES 6 THROUGH ¹⁰~~9~~.

1. APPLY BITUMEN COAT TO PILES 7, ~~AND~~ 9, and 10.
2. INSTALL STEEL SLEEVES, FIRST SEGMENT.
- *3. DRIVE PILES ATTACHING INSTRUMENT CABLES AND TUBES, SPLICING PILES AND CUTTING OFF AS DESCRIBED FOR TEST AREA 1A. ADD STEEL SLEEVE EXTENSIONS. PLACE WOOD CAPS OVER PILES TO REST ON STEEL SLEEVES.
4. PROVIDE WORKING PLATFORM FOR INSTRUMENT INSTALLATION IN PILES.
- *5. INSERT INCLINOMETER CASING AND ROD EXTENSOMETERS IN EACH PILE, AND GROUT ANNULAR SPACE.
- *6. INSTALL WIRE EXTENSOMETERS.

- *7. TERMINATE STRAIN GAGE CABLES, EARTH PRESSURE CELL CABLES, AND PIEZOMETER TUBES.
- *8. TAKE INITIAL PILE INSTRUMENT READINGS.

INSTALL SECOND STAGE SOIL INSTRUMENTS

* ONE MDSP WITHIN PILE GROUP, 1 CLUSTER OF SIX PIEZOMETERS, BM2, THREE DSP AND 5 SP.

PLACE EMBANKMENT

EXTEND ALL APPROPRIATE SOIL INSTRUMENTS UP THROUGH EMBANKMENT AND MONITOR ALL INSTRUMENTS AS FILLING PROGRESSES. PLACE REMAINING CONTROL STAKES.

* MONITOR ALL INSTRUMENTS
(SOIL AND PILE)

* REDUCE AND ANALYZE DATA

CLEAR AND RESTORE AREA

- *1. RECOVER PNEUMATIC PIEZOMETERS.
- ~~2. REMOVE EMBANKMENT.~~
- 2 ~~3.~~ RECOVER STEEL SLEEVES IF DIRECTED.
- ~~4. CUT OFF PILES A THROUGH J AND 1 THROUGH 9 TO ORIGINAL GROUND ELEVATION (APPROX. EL. +5.0).~~
- 3 ~~5.~~ AFTER COMPLETION OF LOAD TEST ON PILE 5 IN AREA 1A, AREA MAY BE CLEARED AND RESTORED TO ORIGINAL GRADE (APPROX. EL. +5.0) BY RECOVERING PNEUMATIC PIEZOMETERS, RECOVERING STEEL SLEEVES IF DIRECTED AND CUTTING OFF PILES 1 THROUGH ⁵~~5~~, and Pile G.

* ENGINEER WILL PARTICIPATE IN THESE ACTIVITIES.

AREA 2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1 (85)	1970	20	38

CLEAR AND GRUB

1. RELOCATE TREES AND UTILITIES.
2. LEVEL SITE TO ELEVATION +4.0.
3. EXCAVATE SETTLEMENT PONDS AND ARRANGE DRAINAGE PATTERN TO THEM.
4. ESTABLISH WATER SUPPLY.

PREPARE FOR DRAIN AND INSTRUMENT INSTALLATIONS

1. STAKE OUT DRAIN LOCATIONS.
2. ERECT SECURITY FENCE.

INSTALL FIRST STAGE SOIL INSTRUMENTS

- *1. FIRST STAGE INSTRUMENT CLUSTERS.
- *2. REFERENCE INSTRUMENT CLUSTER.
- *3. BENCHMARKS.
- *4. TAKE INITIAL INSTRUMENT READINGS.

INSTALL DRAINS

1. JETTED DRAINS ARE TO BE INSTALLED THROUGH PIPES DRIVEN THROUGH THE CRUST AND TWO FEET INTO THE MUCK.
2. REMOVE THESE PIPES AS DRAIN INSTALLATION PROCEEDS.

INSTALL SECOND STAGE SOIL INSTRUMENTS

- *1. SECOND STAGE INSTRUMENT CLUSTERS.
- *2. INCLINOMETERS.
3. SETTLEMENT PLATFORMS.
4. CONTROL STAKES IN ORIGINAL GROUND.
- *5. TAKE INITIAL INSTRUMENT READINGS.

PLACE SAND BLANKET AND EMBANKMENT

- *1. EXTEND ALL APPROPRIATE INSTRUMENTS UP THROUGH EMBANKMENT AND MONITOR ALL INSTRUMENTS AS FILLING PROGRESSES.
2. PLACE REMAINING CONTROL STAKES.

SITE CLEANUP

CLEAN UP SITE ~~& DRAINAGE CHANNELS AND SETTLEMENT PONDS.~~
~~BACKFILL SETTLEMENT PONDS.~~

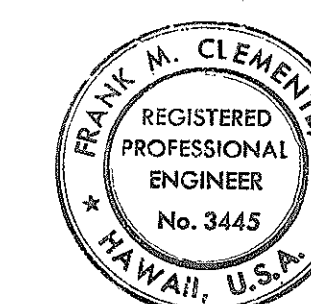
* MONITOR ALL INSTRUMENTS

* ENGINEER WILL PARTICIPATE IN
THESE ACTIVITIES.

* REDUCE AND ANALYZE DATA

LEAVE AREA AS BUILT

AREA TO FORM PART OF THE EVENTUAL CONSTRUCTION.
AREA TO BE EXTENDED BY OTHERS.



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Frank M. Clemente

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KEEHI INTERCHANGE
FIELD TESTING PROGRAM

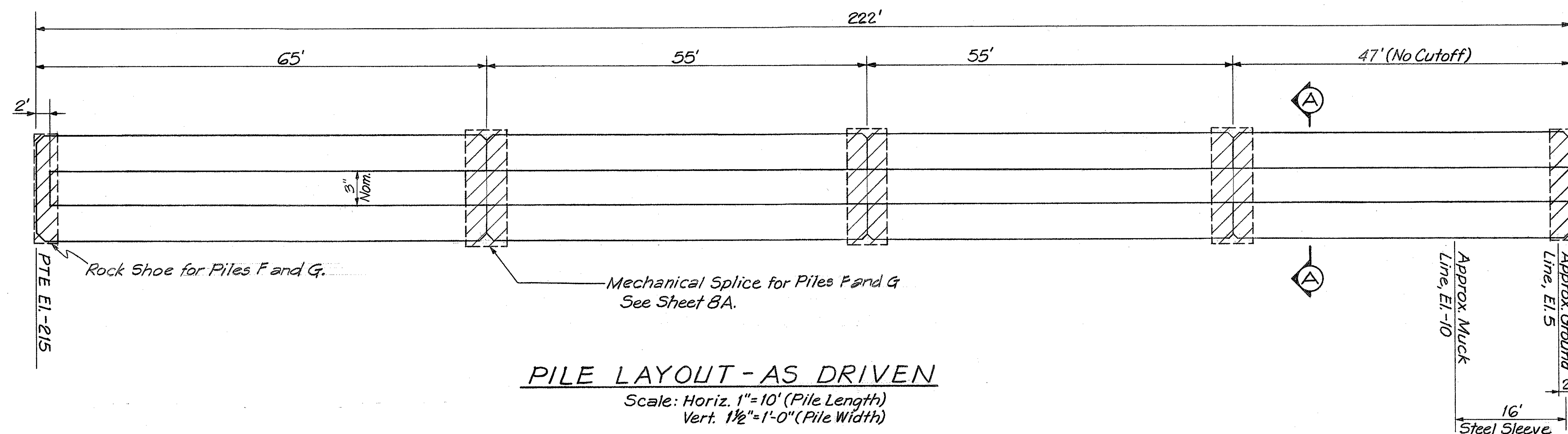
SEQUENCE OF
OPERATIONS

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1 (85)
DATE: 3/31/70

SHEET No. 20 OF 35 SHEETS

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

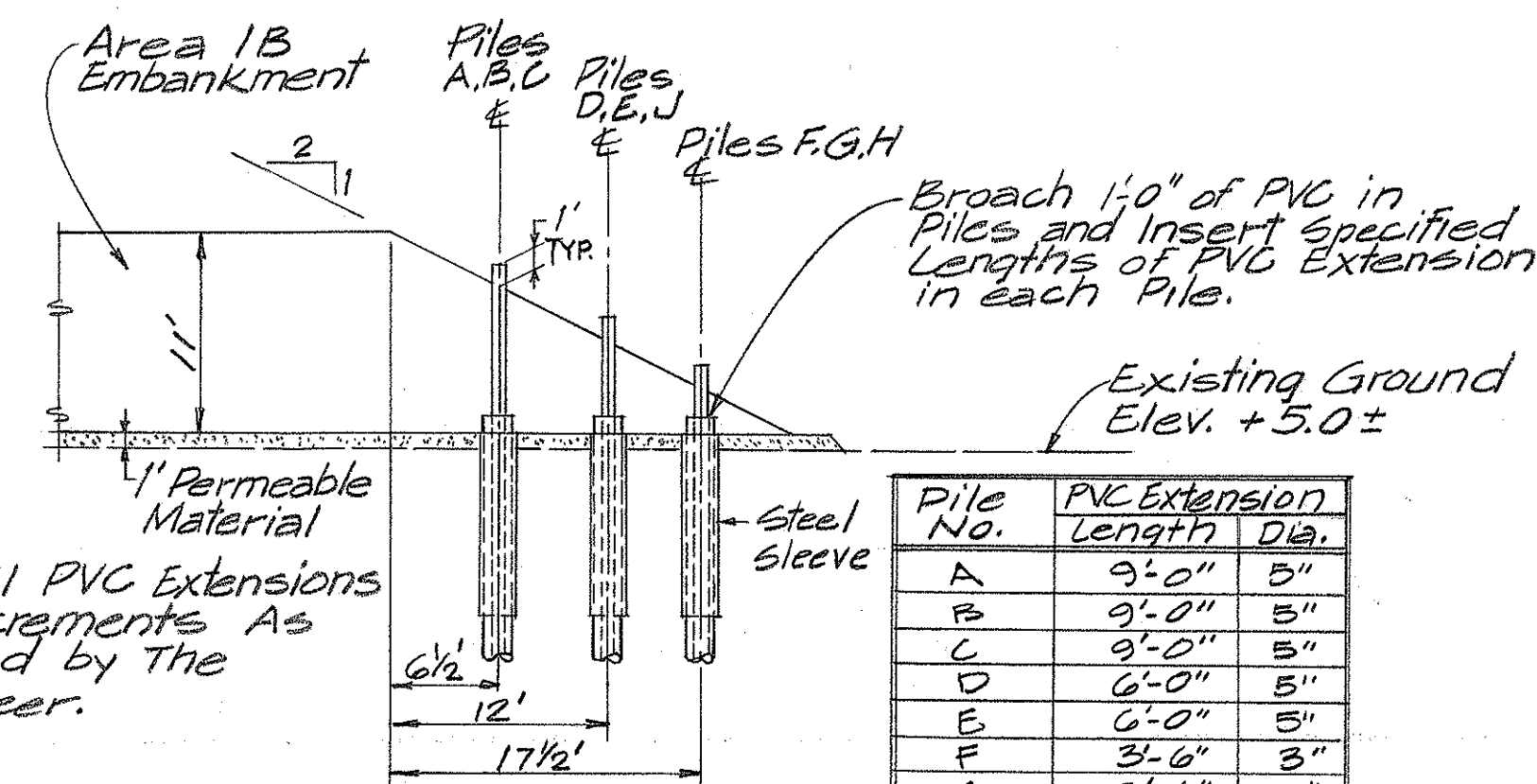
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(85)	1970	21	38



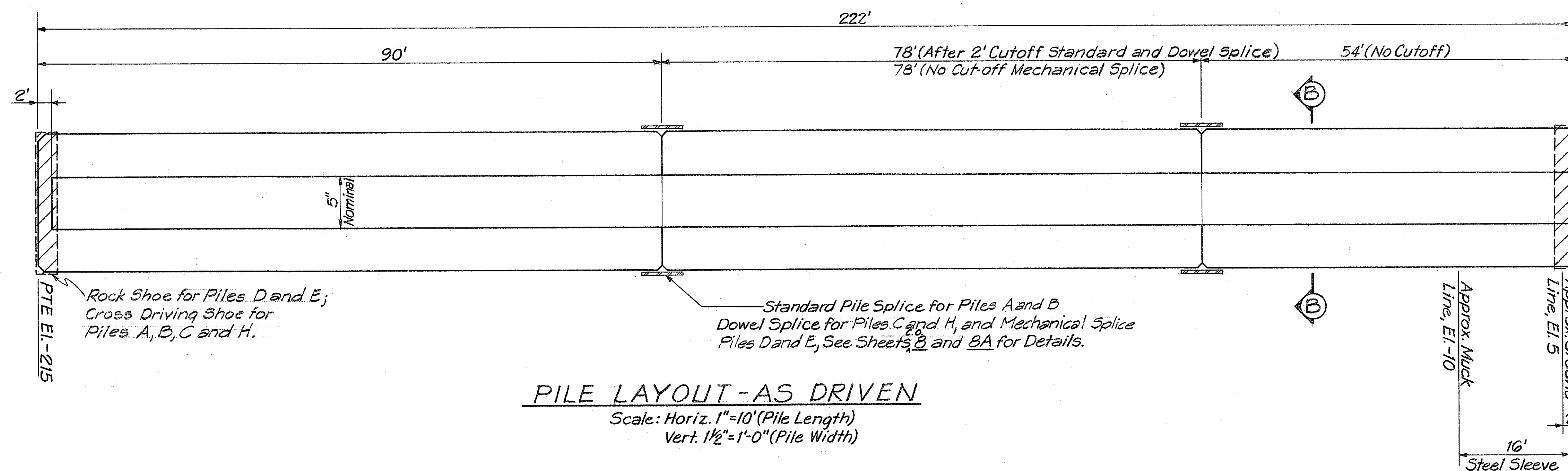
PILE LAYOUT - AS DRIVEN
Scale: Horiz. 1"=10' (Pile Length)
Vert. 1 1/2"=1'-0" (Pile Width)

12" SQUARE PILES F and G in AREA 1B

SECTION A-A
Scale: 1 1/2"=1'-0"



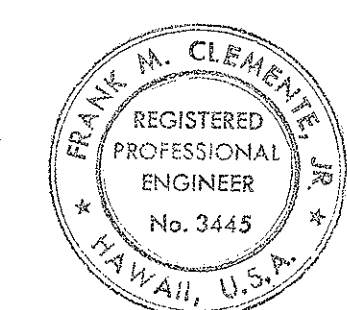
PVC EXTENSION DETAIL
Scale: 1"=10'-0"



PILE LAYOUT - AS DRIVEN
Scale: Horiz. 1"=10' (Pile Length)
Vert. 1 1/2"=1'-0" (Pile Width)

16 1/2" OCTAGONAL PILES A thru E and H in AREA 1B

SECTION B-B
Scale: 1 1/2"=1'-0"



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION,
Frank M. Clemente, Jr.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KEEHI INTERCHANGE
FIELD TESTING PROGRAM
TEST DRIVING PILES
A thru H IN AREA 1B
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1 (85)
SCALE: AS SHOWN
DATE: 3/31/70
SHEET NO. 21 OF 35 SHEETS

DATE	_____
SURVEY PLOTTED BY	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____