

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 37C-01-89 | 1989        | 3         | 10           |

#### LEGEND

|  |   |
|--|---|
|  | TRAFFIC SIGNAL HEADS MOUNTED ON TYPE II SIGNAL STANDARD, ARM SPREAD SHOWN IS 25' AND DISTANCE BETWEEN SIGNAL HEADS SHOWN IS 12' |
|  | 12" RYG STANDARD TRAFFIC SIGNAL HEAD  |
|  | STANDARD TRAFFIC AND PEDESTRIAN SIGNAL HEADS MOUNTED ON TYPE I SIGNAL STANDARD, HEIGHT = 10'                                    |
|  | 12" RYG -G / -Y 4-SECTION DUAL INDICATION TRAFFIC SIGNAL HEAD   |
|  | CONTROLLER  |
|  | TYPE "A" PULLBOX  |
|  | TYPE "B" PULLBOX  |
|  | TYPE "B" PULLBOX WITH MODIFIED COVER  |
|  | LOOP DETECTOR, SERIES-PARALLEL CONNECTED  |
|  | LOOP DETECTOR, SERIES CONNECTED   |
|  | POWER POLE  |
|  | WATER VALVE   |
|  | EXISTING STRIPING   |
|  | EXISTING PAVEMENT MARKING TO BE REMOVED   |
|  | NEW STRIPING  |
|  | NEW PAVEMENT ARROW  |
|  | NEW CROSSWALK MARKINGS  |
|  | EXISTING UTILITY LINES AS SHOWN<br>W = WATER  |

#### CONSTRUCTION NOTES

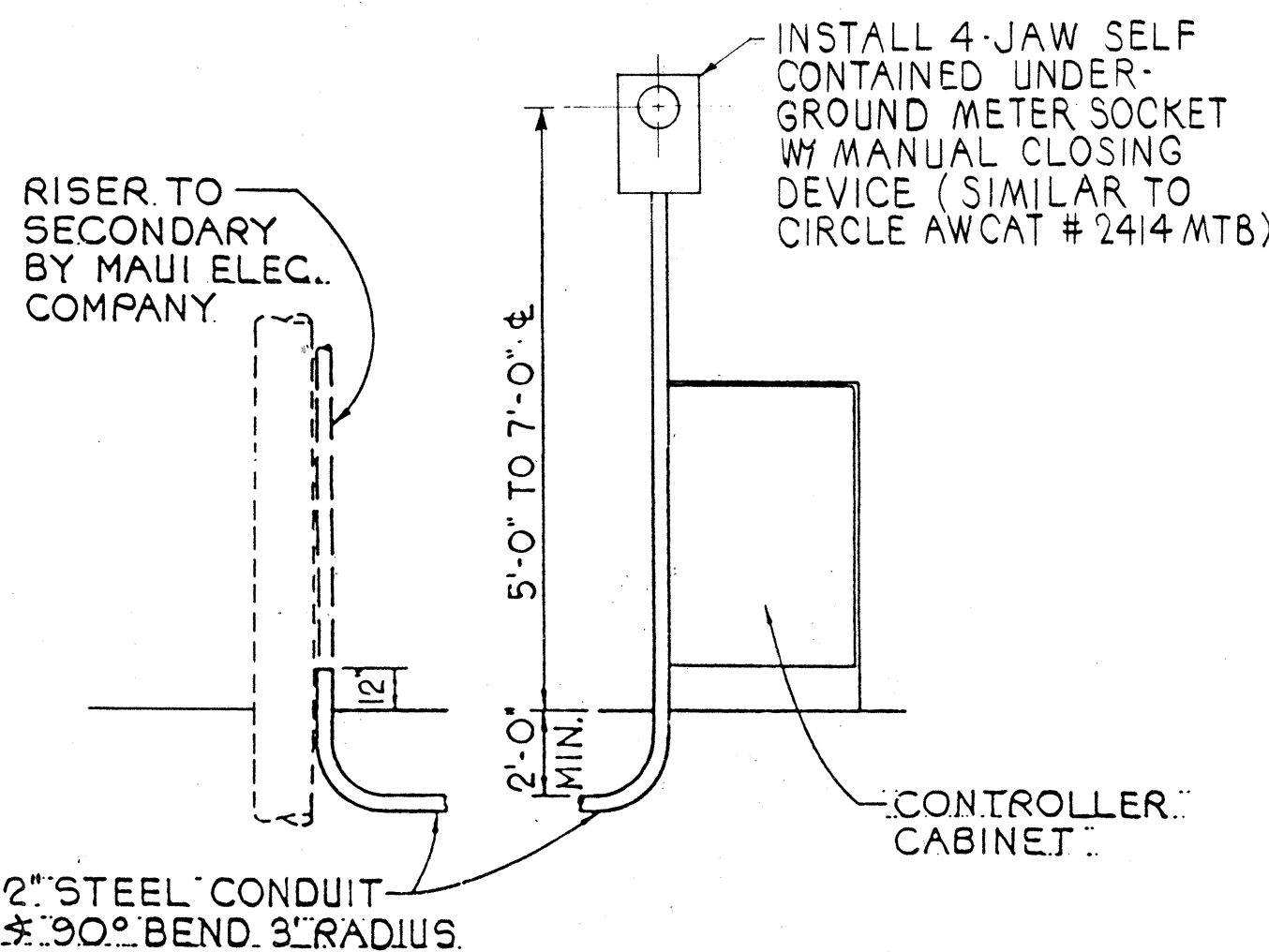
- LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES SUCH AS PIPELINES, CONDUITS, CABLES, ETC., SHOWN ON PLANS ARE APPROXIMATE ONLY. IT IS NOT THE INTENT OF THESE PLANS TO SHOW THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES WITH THE RESPECTIVE OWNERS. EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN COST.
- THE LOCATIONS OF THE TRAFFIC SIGNAL STANDARDS, TRAFFIC SIGNAL STANDARDS WITH MAST-ARM, PEDESTRIAN PUSH BUTTONS, TRAFFIC CONTROLLER, PULLBOXES, CONDUITS AND LOOP DETECTORS SHALL BE STAKED OUT IN THE FIELD BY THE CONTRACTOR AND APPROVAL OF THE LOCATIONS SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION AND INSTALLATION.
- ALL TRAFFIC SIGNAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", FEDERAL HIGHWAY ADMINISTRATION (1984) AND AMENDMENTS.
- LOCATIONS OF PAVEMENT STRIPING, MARKERS, AND MARKINGS (PAVEMENT ARROWS, STOP LINES, CROSSWALK, ETC.) SHOWN ON THE PLANS SHALL BE VERIFIED WITH THE ENGINEER PRIOR TO THE INSTALLATION OF THE TRAFFIC SIGNAL SYSTEM.
- MAINTENANCE OF TRAFFIC THROUGH THE CONSTRUCTION AREA SHALL BE IN ACCORDANCE WITH PART VI OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", FEDERAL HIGHWAY ADMINISTRATION (1984) AND AS SPECIFIED IN THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ADEQUATE BARRICADES, BLINKERS, CONSTRUCTION SIGNS, ETC. FOR THE SAFETY OF THE MOTORING PUBLIC.
- ADJUST ALL UTILITY BOXES AND COVERS AFFECTED BY THIS PROJECT.

#### WATER NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY IN WRITING ONE WEEK PRIOR TO COMMENCEMENT OF WORK.
- MINIMUM COVER OVER WATER MAINS 6" OR LARGER = 3'-0"; MINIMUM COVER FOR 4" OR LESS = 2'-6", OR AS NOTED ON PLANS.
- CONCRETE FOR REACTION BLOCKS SHALL BE DWS 2500.
- ALL MATERIALS USED AND METHOD OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST DEPARTMENT OF WATER SUPPLY STANDARDS, AS AMENDED. CONTRACTOR TO OBTAIN LATEST D.W.S. STANDARD DETAILS BEFORE COMMENCING CONSTRUCTION.
- THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINE, SERVICE LATERALS AND OTHER FACILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING OF NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINE SERVICE LATERALS (UNLESS OTHERWISE NOTED) AND OTHER UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE NEW WATERLINE AND WILL NOT BE PAID FOR SEPARATELY. FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT HIS OWN EXPENSE.
- CONNECTION TO DEPARTMENT OF WATER SUPPLY SYSTEM:
  - THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOKUP. HOWEVER, HE SHALL CHECK WITH THE DEPARTMENT OF WATER SUPPLY BEFORE EXCAVATING FOR VERIFICATION PURPOSES. HE SHALL BE RESPONSIBLE FOR FURNISHING THE CORRECT FITTINGS, ADAPTORS, NIPPLES AND OTHER MATERIALS, AS REQUIRED FOR THE HOOKUP.
  - WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED.
  - AUTHORIZED DEPARTMENT OF WATER SUPPLY PERSONNEL WILL MAKE THE FINAL CONNECTION TO THE EXISTING LINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY THE DEPARTMENT OF WATER SUPPLY FOR SAID WORK, INCLUDING THE COST OF PRESSURE TESTING.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR FOR CHLORINATION, TRENCH EXCAVATION, BACKFILLING, PAVING AND OTHER WORK NECESSARY TO COMPLETE THE HOOKUP, AS DIRECTED BY, AND TO THE SATISFACTION OF, THE DEPARTMENT OF WATER SUPPLY.
- THE MAXIMUM DISTANCE BETWEEN THE VALVE NUT TO THE TOP OF MANHOLE SHALL BE 4 FEET.
- THE CONTRACTOR SHALL SUBMIT MATERIALS LIST TO DEPARTMENT OF WATER SUPPLY FOR APPROVAL PRIOR TO CONSTRUCTION.
- CONTRACTOR WILL SUBMIT AS-BUILT PLANS VIA CONSULTANT PRIOR TO ACCEPTANCE OF WATER SYSTEM.
- ALL BURIED METAL TO BE WRAPPED WITH POLY-WRAP.
- ALL NUTS AND BOLTS TO BE COATED WITH PAINT (ASPHALTUM).
- ALL SALVAGED WATER SYSTEM MATERIALS SHALL BE DELIVERED TO THE DEPARTMENT OF WATER SUPPLY BASE YARD.
- NO TRENCHING SHALL BE LEFT OPEN WHEN WORK IS NOT BEING DONE.
- THE CONTRACTOR SHALL SUBMIT A COST LIST, ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM, PRIOR TO ACCEPTANCE.

#### TRAFFIC SIGNAL NOTES

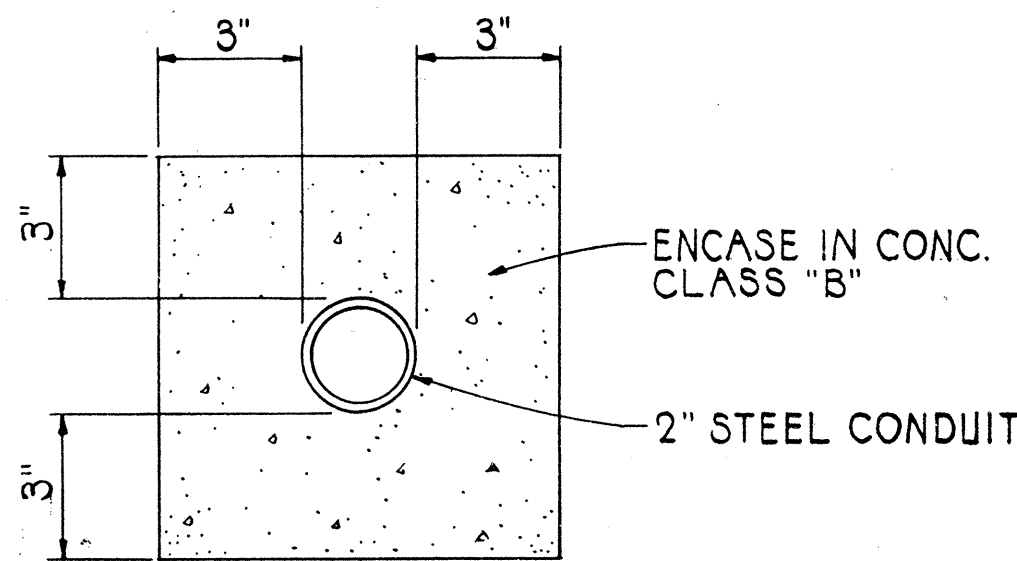
- ALL TRAFFIC SIGNAL CONTROLLER EQUIPMENT SHALL BE COMPLETELY WIRED IN THE CABINET AND SHALL CONTROL THE TRAFFIC SIGNALS AS CALLED FOR ON THE PLANS.
- SIGNAL INDICATIONS DURING CLEARANCE INTERVAL:
  - IF A SIGNAL IS G OR -G AND WILL REMAIN G OR -G DURING THE NEXT PHASE, IT SHALL BE G OR -G DURING THE CLEARANCE INTERVAL.
  - IF A SIGNAL IS G OR -G AND WILL BECOME R OR EXTINGUISHED DURING THE NEXT PHASE, IT SHALL BE Y OR -Y DURING THE CLEARANCE INTERVAL.
  - IF A SIGNAL IS R AND WILL REMAIN R OR BECOMES G DURING THE NEXT PHASE, IT SHALL REMAIN R DURING THE CLEARANCE INTERVAL.
- THE LOOP AMPLIFIER UNITS FURNISHED FOR THIS PROJECT SHALL BE CAPABLE OF OPERATING THE LOOP DETECTOR CONFIGURATIONS SHOWN ON THE PLANS.
- DETECTOR ASSIGNMENT SHALL BE PER CALIFORNIA DEPARTMENT OF TRANSPORTATION "TRAFFIC SIGNAL CONTROL LOCAL INTERSECTION PROGRAM", JULY, 1978.
- CONTRACTOR SHALL FURNISH 50-AMP. CIRCUIT BREAKERS.
- A SOLID #8 BARE COPPER WIRE SHALL BE PULLED WITH THE TRAFFIC CONTROL CABLE FOR EQUIPMENT GROUND. COST SHALL BE INCIDENTAL TO THE INSTALLATION OF THE CONTROL CABLE.
- SHOULD ANY DEFECT BE ENCOUNTERED DURING THE WARRANTY PERIOD, THE MANUFACTURER WILL BE NOTIFIED AND HE SHALL PROMPTLY CORRECT SUCH DEFECT. SERVICE CALL (BY FACTORY QUALIFIED REPRESENTATIVE) DURING THE WARRANTY PERIOD FOR REPAIRS OR OTHER MAINTENANCE SHALL BE ANSWERED WITHIN 24 HOURS AND SHALL BE DONE AT NO EXPENSE WHATSOEVER TO THE STATE. ALL REPAIRS SHALL BE DONE AS SOON AS POSSIBLE.



#### NOTES:

- MAUI ELECTRIC CO. SHALL FURNISH AND INSTALL CABLE BETWEEN SECONDARY AND METER SOCKET.
- CONTRACTOR SHALL MAKE ALL ELECTRICAL CONNECTIONS TO CONTROLLER, PROVIDE BREAKER, GROUND AND CONCRETE ENCASED 2" STEEL CONDUIT
- CONTRACTOR SHALL PROVIDE MAUI ELECTRIC CO. ONE WEEK ADVANCE NOTICE FOR ANY WORK BY MAUI ELECTRIC CO.

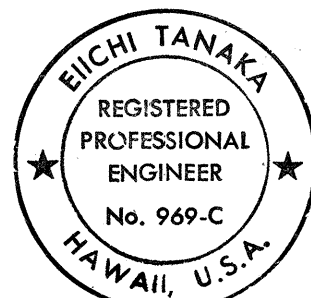
#### ELECTRICAL SERVICE DETAIL NOT TO SCALE



#### MECO CONDUIT DETAIL NOT TO SCALE

APPROVED BY:

*Don Mason* 5/26/89  
DIRECTOR, DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI  
(APPROVAL LIMITED TO IMPROVEMENTS  
TO WATER SYSTEM TO BE DEDICATED  
TO THE DEPARTMENT)



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Eishi Tanaka*

| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION            |                 |
|---|-----------------|
| LEGEND AND NOTES  |                 |
| HALEAKALA HIGHWAY<br>TRAFFIC SIGNALS AT MAKAWAO AVENUE<br>PROJECT NO. 37C-01-89 |                 |
| SCALE: NONE   | DATE: JAN. 1989 |
| SHEET No. 1 OF 1 SHEETS   |                 |