

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-STP-030-1(27)	2000	4	19

LEGEND

NEW

	STANDARD TRAFFIC AND PEDESTRIAN SIGNAL HEADS MOUNTED ON TYPE I SIGNAL STANDARD, HEIGHT=10'
	PROGRAMMED VISIBILITY HEAD (PVH)
	12" R Y \uparrow TRAFFIC SIGNAL HEAD
	12" R Y G STANDARD TRAFFIC SIGNAL HEAD
	12" R Y G $\leftarrow \frac{Y}{G}$ FIBER OPTIC TRAFFIC SIGNAL HEAD
	PEDESTRIAN SIGNAL HEAD
	12" R Y \leftarrow TRAFFIC SIGNAL HEAD
	TRAFFIC SIGNAL HEADS MOUNTED ON TYPE II SIGNAL STANDARD 40' M.A. : 10' BETWEEN HEADS
	YELLOW BEACON AT RAILROAD CROSSING
	MICROWAVE SENSOR
	SPREAD SPECTRUM RADIO (SSR)
	EVP DETECTOR
	TYPE "A" PULLBOX
	TYPE "B" PULLBOX
	TYPE "C" PULLBOX
	MECO PULLBOX
	MODEL 170 CONTROLLER ON EXISTING BASE
	MODEL 170 CONTROLLER ON NEW BASE
	METER PEDESTAL
	SIGN
	NEW TRAFFIC SIGNAL STANDARD
	LOOP DETECTOR, SERIES-PARALLEL CONNECTED
	LOOP DETECTOR, SERIES CONNECTED
	TRAFFIC SIGNAL CONDUITS
	NEW CABLES IN EXISTING CONDUIT
	EXISTING PAVEMENT MARKING TO BE REMOVED
	EXISTING UTILITY LINES AND SIZES AS INDICATED W = WATER S = SEWER D = DRAIN
	POWER POLE
	UTILITY POLE
	GUY ANCHOR
	WATER VALVE
	SEWER MANHOLE

NEW CONDUIT(S) WITH SIZE & NUMBER AND TYPE OF NEW CABLES AS INDICATED ON SCHEDULE. THE NUMBER DESIGNATION WITHIN THE TRIANGLE SHALL APPLY ONLY TO THE PARTICULAR INTERSECTION OR DRAWING ON WHICH IT APPEARS.

EXISTING CONDUIT(S) WITH SIZE & NUMBER AND TYPE OF NEW CABLES AS INDICATED ON SCHEDULE. THE NUMBER DESIGNATION WITHIN THE TRIANGLE SHALL APPLY ONLY TO THE PARTICULAR INTERSECTION OR DRAWING ON WHICH IT APPEARS.

REMOVE AND/OR DEMOLISH ENCLOSED STRUCTURE, SIGN OR SIGNAL HEADS

EXISTING TO REMAIN

TRAFFIC SIGNAL NOTES

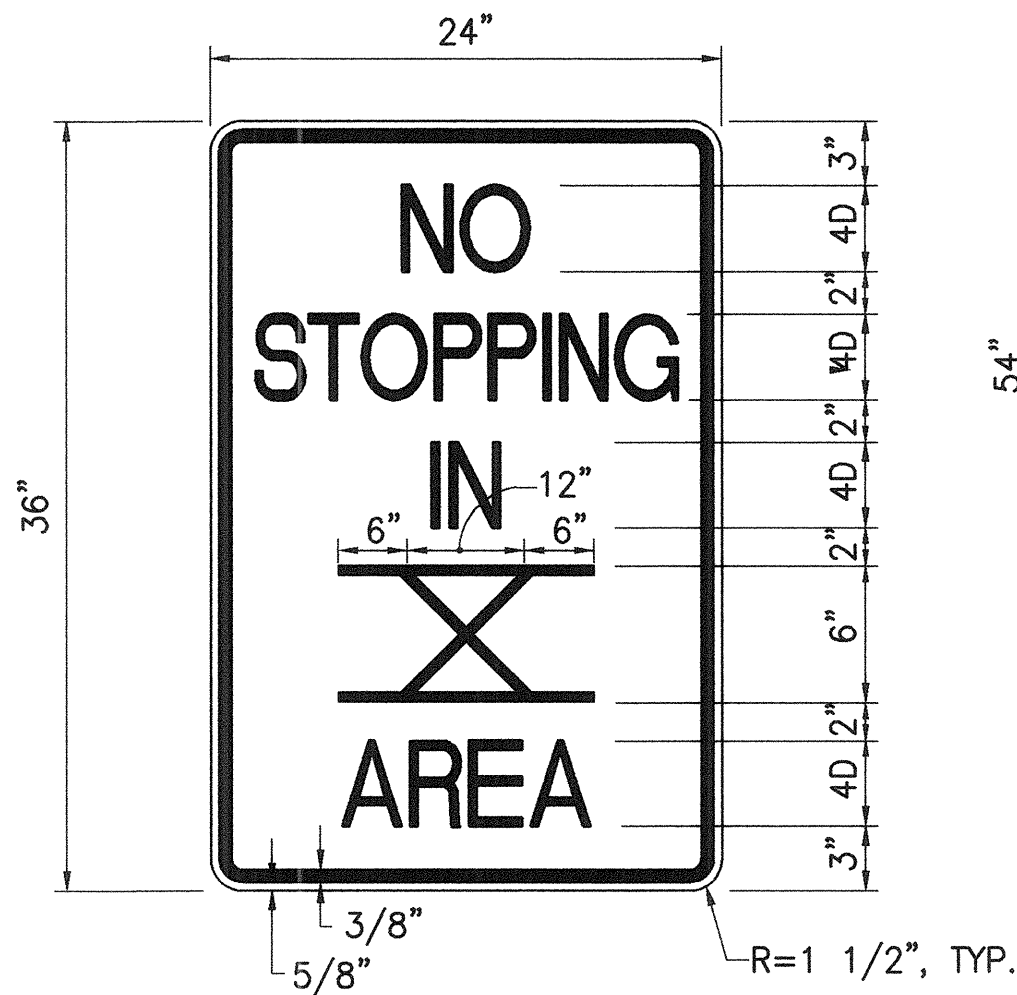
- ALL TRAFFIC SIGNAL CONTROLLER EQUIPMENT SHALL BE COMPLETELY WIRED IN THE CABINET AND SHALL CONTROL THE TRAFFIC SIGNALS AS CALLED FOR IN THE PLANS.
- SIGNAL INDICATIONS DURING CLEARANCE INTERVAL:
 - IF A SIGNAL IS G OR $\leftarrow G$ AND WILL REMAIN G OR $\leftarrow G$ DURING THE NEXT PHASE, IT SHALL BE G OR $\leftarrow G$ DURING THE CLEARANCE INTERVAL.
 - IF A SIGNAL IS G OR $\leftarrow G$ AND WILL BECOME R OR EXTINGUISHED DURING THE NEXT PHASE, IT SHALL BE Y OR $\leftarrow Y$ 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. COST FOR THE LOOP AMPLIFIER SHALL BE INCIDENTAL TO THE INSTALLATION OF THE LOOP DETECTOR.
- FOR EACH CONDUIT RUN (DESIGNATION) WITHOUT AN EXISTING #8 GROUND WIRE, 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.
- CONDUITS AND PULLBOX LOCATIONS AS SHOWN ON THE PLANS ARE SCHEMATIC. THEY MAY BE MODIFIED BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL INSTALL NEW CONTROLLER AND CABINET IN THE INDICATED LOCATION.
- ALL WORK FOR THE INSTALLATION OR MODIFICATION OF THE TRAFFIC SIGNAL SYSTEM SHALL CONFORM TO THE LATEST REVISIONS OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1994" AND THE "STANDARD PLANS" OF THE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION AND AS SHOWN ON THESE DRAWINGS.
- ALL SPlicing SHALL BE DONE IN THE PULLBOXES.
- FURNISHING AND INSTALLING THE CONDUIT STUBOUTS (PULLBOXES TO EDGE OF PAVEMENT) WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS.
- THE CONCRETE JACKET FOR THE CONDUIT BY-PASS DETAIL SHOWN ON SHEET 5, SHALL NOT BE PAID FOR SEPARATELY BUT CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS. THE ENGINEER SHALL DETERMINE IF A CONCRETE JACKET IS REQUIRED.
- ALL CABLE AND ELEMENTS FOR GROUNDING SHALL BE NEW.
- CABLES BETWEEN SIGNAL FACES, PEDESTRIAN HEADS, AND EVP DETECTORS AND THE NEAREST PULLBOX ARE NOT CALLED OUT ON THE PLAN, BUT SHALL BE FURNISHED AND INSTALLED IN SUFFICIENT NUMBERS AND LENGTHS AS REQUIRED. COST SHALL BE INCIDENTAL TO VARIOUS TRAFFIC SIGNAL CONTRACT ITEMS.
- CONDUITS BETWEEN THE TRAFFIC SIGNAL STANDARD AND THE PULLBOX SHALL BE IN SUFFICIENT NUMBER AS REQUIRED. COST SHALL BE INCIDENTAL TO THE INSTALLATION OF THE TRAFFIC SIGNAL STANDARD FOUNDATION.
- ALL EXISTING CABLES AND HEADS SHALL REMAIN, UNLESS SPECIFIED OTHERWISE ON PLANS.
- COST OF SALVAGING EXISTING HEADS AND CONTROLLERS NOT USED IN THE NEW SYSTEM SHALL BE INCIDENTAL TO THE VARIOUS CONTRACT ITEMS.

TYPES OF SIGNAL FACES

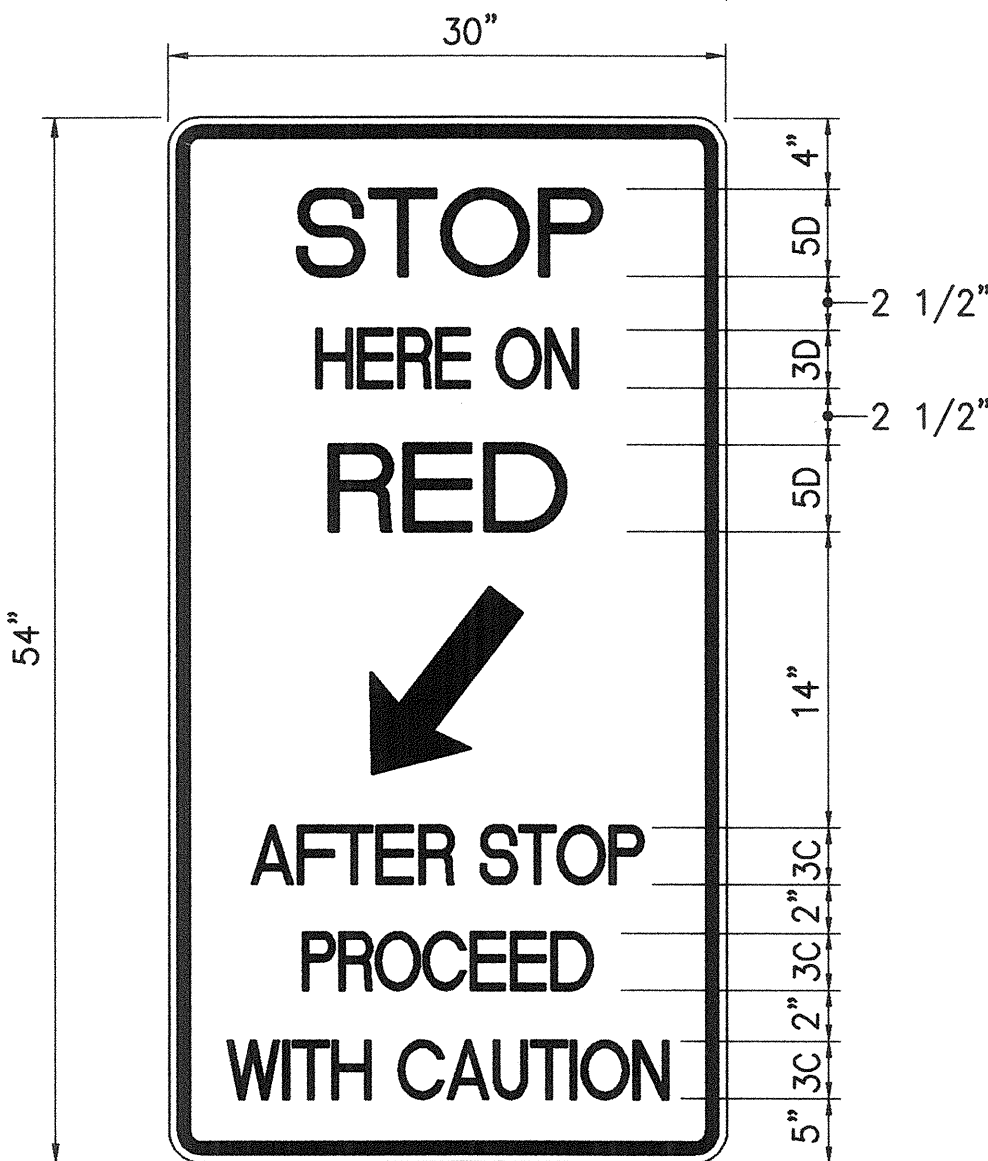
H + M	PEDESTRIAN SIGNAL ("HAND" AND "MAN")
R + Y + G	12 INCH, 3-SECTION: RED, YELLOW AND GREEN
R + Y + G + $\leftarrow Y$	12 INCH, 4-SECTION: RED, YELLOW, GREEN AND DUAL YELLOW AND GREEN ARROW
R + Y + \leftarrow	12 INCH, 3-SECTION: RED, YELLOW AND GREEN ARROW
R + Y + G (PVH)	12 INCH, PROGRAMMED VISIBILITY, 3-SECTION: RED, YELLOW AND GREEN

TYPES OF CABLES

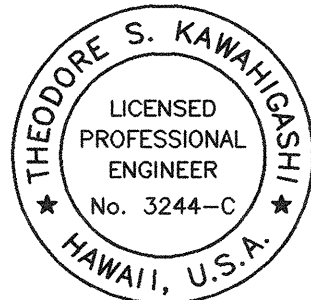
TYPE 1	SIGNAL LOOP CABLE: STANDARD NO. 14, 26 CONDUCTORS OR AS NOTED ON PLAN
TYPE 2	DETECTOR LEAD-IN CABLE AND PEDESTRIAN PUSH BUTTON CIRCUITCABLE: STRANDED, NO. 14, 2 CONDUCTORS
TYPE 3	INTERCONNECT CABLE: SOLID NO. 19, 12 PAIRS, CONFORMING TO IMSA SPEC. 19-2
TYPE 4	LOOP SENSOR CABLE: STRANDED NO. 12, SINGLE CONDUCTOR, CONFORMING TO IMSA SPEC. 51-5.
TYPE 5	CABLE FROM SIGNAL LOOP TO SIGNAL HEAD: STRANDED, NO. 14, SINGLE CONDUCTOR
TYPE 6	SERVICE CABLE: SOLID NO. 6, 3 CONDUCTORS
TYPE 7	OPTICOM DETECTOR CABLE FROM OPTICOM DETECTOR TO OPTICOM DISCRIMINATOR IN CONTROLLER CABINET: 3 CONDUCTOR #20 AWG STRANDED COPPER IN BERKTEK TYPE B SHIELDED JACKET AND ONE #20 AWG BARE STRANDED GROUND.
TYPE 9	SPREAD SPECTRUM RADIO CABLE: 3 CONDUCTOR #14 AND 24 CONDUCTOR #19
TYPE 10	COMMUNICATION CABLE FROM TELEPHONE SERVICE DEMARCATION TO MASTER CONTROLLER: TWISTED PAIRS, SOLID COPPER, #19 AWG, 6 CONDUCTORS
TYPE 11	MICROWAVE SENSOR CABLE: 4C #18



R8-20 SIGN DETAIL
NOT TO SCALE



R10-6d SIGN DETAIL
NOT TO SCALE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
Theodore S. Kawahigashi
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL NOTES
LEGEND AND DETAILS
HONOAPIILANI HIGHWAY
TRAFFIC SIGNAL MODERNIZATION,
KAANAPALI TOWARDS LAHAINA
FED. AID PROJECT NO. NH-STP-030-1(27)
SCALE: AS NOTED DATE: MAY 1999