

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 AND WILL REMAIN G OR \leftarrow DURING THE NEXT PHASE, IT SHALL BE G OR \leftarrow DURING THE CLEARANCE INTERVAL.
 - IF A SIGNAL IS G OR \leftarrow AND WILL BECOME R OR EXTINGUISHED DURING THE NEXT PHASE, IT SHALL BE Y OR \leftarrow 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.
- 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 48 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.
- TYPE 5 CABLE (SEE SPECIALS) BETWEEN SIGNAL FACE AND 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 THE INSTALLATION OF THE SIGNAL HEADS.
- TYPE 2 CABLE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PULLBOX ARE NOT CALLED OUT ON THE PLAN, BUT SHALL BE FURNISHED IN SUFFICIENT LENGTH AS REQUIRED. COST SHALL BE INCIDENTAL TO THE INSTALLATION OF THE PEDESTRIAN PUSH BUTTON.
- 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.

TYPES OF SIGNAL FACES

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

TYPES OF TRAFFIC SIGNAL STANDARD

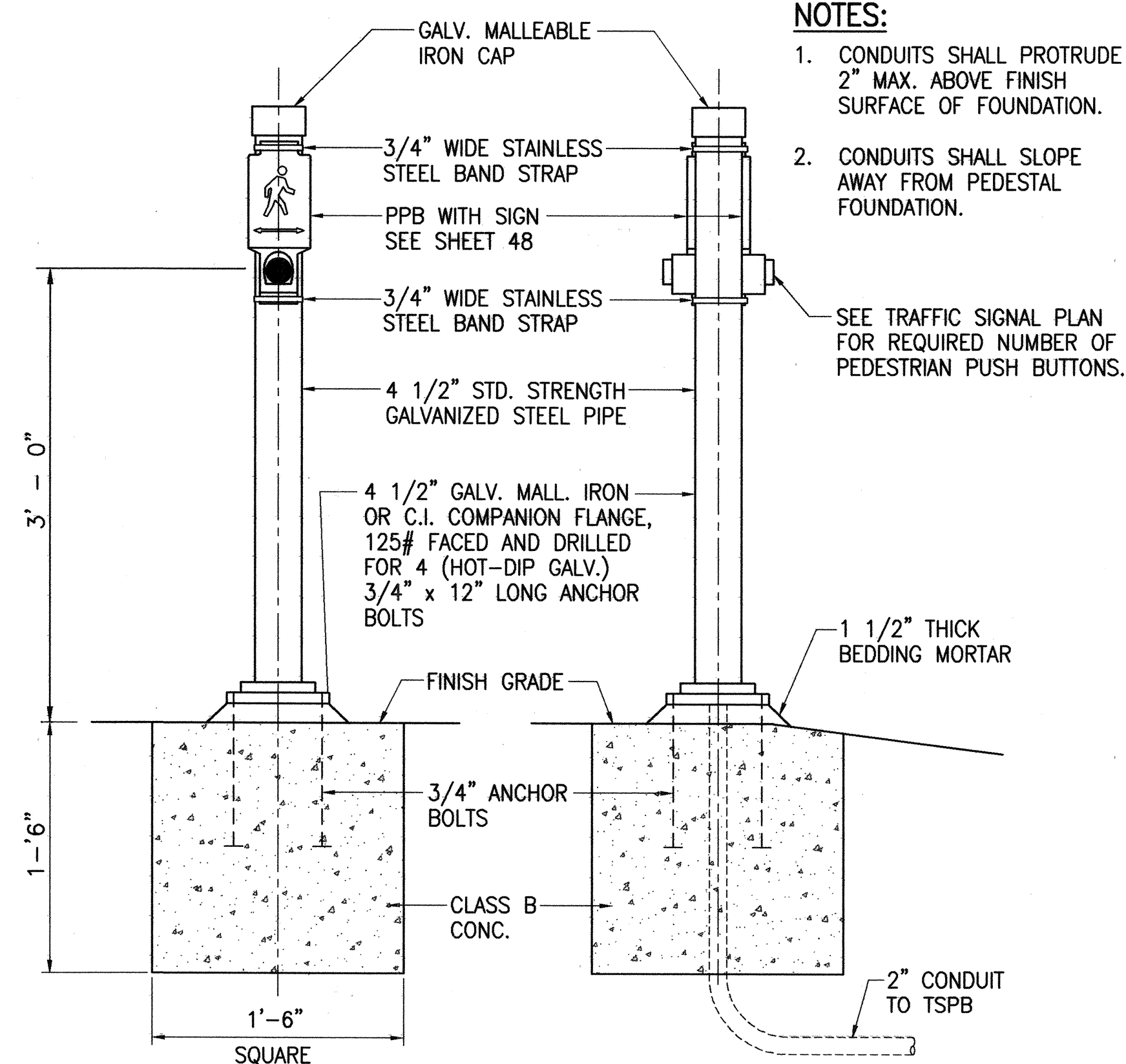
I-10	TYPE I STANDARD, 10 FEET HIGH
II-25	TYPE II STANDARD WITH 25 FOOT MAST ARM
III-30	TYPE III STANDARD WITH 30 FOOT MAST ARM

CONSTRUCTION NOTES

- LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES SUCH AS PIPE-LINES, 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 CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR SHALL NOTIFY ALL AGENCIES TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES IN THE PROJECT AREA PRIOR TO EXCAVATING. THE CONTRACTOR SHALL COORDINATE ALL WORK.
- THE CONTRACTOR SHALL TONE AND LOCATE EXISTING UTILITIES ALONG DUCTLINE PRIOR TO EXCAVATION.
- THE LOCATIONS OF THE NEW 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 (1988) AND AMENDMENTS.
- LOCATIONS OF NEW PAV'T. STRIPING, MARKERS, AND MARKINGS (PAVEMENT ARROW, 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 (1988) AS AMENDED 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.
- AT THE END OF EACH DAY'S WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND OTHER OBSTRUCTIONS TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC.

NOTES:

- CONDUITS SHALL PROTRUDE 2" MAX. ABOVE FINISH SURFACE OF FOUNDATION.
- CONDUITS SHALL SLOPE AWAY FROM PEDESTAL FOUNDATION.



SIDE VIEW

FRONT VIEW

PEDESTRIAN PUSH BUTTON PEDESTAL

NOT TO SCALE

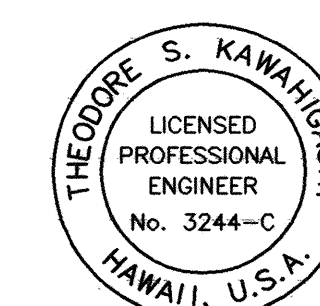
LEGEND

NEW	EXISTING

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-STP-032-1(6)	2000	35	53

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 CIRCUIT CABLE: 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 RADIOCABLE: 3 CONDUCTOR #14 AND 6 CONDUCTOR #19



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Theodore S. Kawaihishii
Signature

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
TRAFFIC SIGNAL NOTES AND LEGEND
KAAHUMANU AVENUE TRAFFIC SIGNAL MODERNIZATION HIGH STREET TO WHARF STREET FEDERAL AID PROJECT NO. NH-STP-032-1(6)
SCALE: AS NOTED DATE: AUG. 1999

SHEET No. 1 OF 1 SHEETS