FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-063-1(22)	2003	49	69

NEW DESIGN REQUIREMENTS FOR LUMINAIRES, POLE STANDARDS AND TRAFFIC SIGNAL STANDARDS

(Highway Lighting Luminaires, Pole Standards, Bracket Arms and Traffic Signal Standards and Mast Arms Being Furnished for this Project shall Conform with the New Design Requirements Noted Below)

1. Equipment Manufacturers Providing Structural Supports for Luminaires and Traffic Signals, the Following Design Parameters to be Included in the Design of the Project Materials.

2. Modifications to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition, 2002 Interim Revisions, Published by the American Association of State Highway and Transportation Officials.

3. Basic Wind Speed [Article 3.8.2] to Determine the Design Wind Pressure shall be 105 mph. For Unusual or Differing Exposure Conditions, the Basic Wind Speed should be Increased using Rational Procedures and Sound Engineering Judgement. Alternatively, the Design Wind Pressure may be Increased by using a Higher Wind Importance Factor [Table 3-2] Corresponding to a Recurrence Interval of at least One Level greater than Recommended.

4. Wind Importance Factor [Article 3.8.3] noted in Table 3-2 used to Determine the Design Wind Pressure for Overhead Cantilevered Support Structures Over:

   a. Freeways shall be Based on a Recurrence Interval of 100 Years

   b. Ramps and other Highways with "High" ADT shall be Based on a Recurrence Interval of 100 Years unless otherwise Directed.

5. Height and Exposure Factor [Article 3.8.4]. For Sign and Luminaire Support Structures on Bridges, the Height and Exposure Factor shall be Determined based on the Maximum Height they are above the Surrounding Ground. For Severe Exposure Conditions such as Along the Coastline, the Factor shall be Increased Based on the Latest ANSI/ASCE Standard No. 7, Minimum Design Loads for Buildings and Other Structures.

6. Fatigue Importance Factors [Article 11.6] noted in Table 11-1 for Overhead Cantilevered Sign, Traffic Signal and Luminaire Support Structures shall be Based on the Following:

   a. Fatigue Category I - For all Structures where Failure would Result in the Structure Falling onto the Travel Way.

   b. Fatigue Category II - For all others.

7. Galloping [Article 11.7.1]. Overhead Cantilevered Sign and Traffic Signal Support Structures shall be Designed for Galloping - Induced Cyclic Loads unless Approved Vibration Mitigation Devices are Installed.

8. Vortex Shedding [Article 11.7.2]. Nontapered Lighting Structures shall be Designed to Resist Vortex Shedding - Induced Loads Including Cantilevered Mast Arms and Lighting Structures that have Tapers Less than 0.14 in/ft.

9. Natural Wind Gust [Article 11.7.3]. Overhead Cantilevered Sign, Traffic Signal and High-Level Lighting Support Structures shall be Designed to Resist an Equivalent Static Natural Wing Gust Pressure. For Unusual or Differing Exposure Conditions, the Equivalent Static Natural Wind Gust Pressure should be Increased using References noted in the Specifications.

10. Truck-Induced Gust [Article 11.7.4, Interim 2002]. Overhead Cantilevered Sign and Traffic Signal Support Structures shall be Designed to Resist an Equivalent Static Truck Gust Pressure Range Based on a Truck Speed of 65 MPH. At the Option of the State of Hawaii, Department of Transportation, a Lower Truck Speed Maybe used in Areas with Design Speeds not Exceeding 45 MPH.

11. Equipment Manufacturers Providing Structural Supports for Luminaires and Traffic Signals, Is Responsible to Provide the Engineer with any Information that will Impact the Current Foundation Design.

STREET LIGHTING NOTES

1. Contractor Shall Maintain One Set Of Approved Plans At The Project Site At All Times During Construction Work.

2. Contractor Shall Provide Temporary Lighting During Construction. Illumination Level Provided by Temporary Lighting Shall Be of the Same Intensity or Better than the Permanent Lighting System.

3. Contractor Shall Arrange Energize Street Lights A Minimum of Six Hours For Final Inspection And Acceptance. Contractor Shall Pay For All Testing Costs.

4. Final Acceptance of the Project Will Be Granted Only After All Work Has Been Completed And The "As-Built" Tracings Have Been Submitted To The State Of Hawaii Department Of Transportation Highways Division.

5. The Contractor Shall Measure And Record The Ground Resistance the Street Light Standard With No External Ground Wires Connected To The Ground Rod. Contractor Shall Schedule Ground Resistance Measurements 48 Hours In Advance And Shall Not Proceed Wth Measurements Until Approval Is Granted. Schedules Are Subject To Change Depending Upon Weather Conditions. Reports Shall Include Name Of Personnel Conducting The Test, Meter Type And Serial Number, Date Of Test And Soil Conditions. Test Results Shall Be Certified By The Contractor And Submitted To The Contracting Officer.

6. Contractor Shall Not Backfill Trenches Until Approval Is Granted By The Engineer.

7. All Concrete Work Shall Be Scheduled At Least 24 Hours In Advance. Concrete Shall Not Be Poured Until Approval Is Granted By The Engineer.

8. All Work Shall Be Performed By A Duly Licensed Electrician.

9. Trench Dirt And Material Will Not Be Allowed To Be Stored On Roadway Or Sidewalk.

10. Temporary Trench Patches Shall Match Grade.

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
PW2 PLOT SC: 1"=1'

LAST SAVE: 04/22/03 @ 15:05:01 BY: BG
Z:\ACAD\PROJECTS\2005A\2005A_sttnotes

SEAN K. SUGAI
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE 4/22/03 — April 30, 2004 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHT NOTES

LIKELIKE HIGHWAY
Wilson Tunnel Improvements
Leak and Crack Remediation
F. A. Project No. STP-063-1(22)

Scale: None Date: April 24, 2003

SHEET No. E-2 OF 17 SHEETS