DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	37C-02-23	2024	46	115

GENERAL TRAFFIC SIGNAL NOTES:

- 1. All Traffic Signal work shall conform to the requirements of the Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highways Administration, 2009 Edition, and Amendments.
- 2. The locations of the traffic signal standards, traffic signal standards with mast arm, traffic controller, transformer, pullboxes, conduits, \$ loop detectors shall be staked out in the field by the Contractor and locations accepted by the Engineer prior to construction and installation. Locations shown on plans shall be adjusted as necessary to prevent conflict with existing or new facilities.
- 3. All direct-buried conduits shall be PVC Schedule 80.
- 4. Loop detectors shall be installed according to Loop Detector Details shown on the Plans.
- 5. Lead-in wires in pullbox near loops shall be tagged with Loop Number(s).
- 6. See sheet TS-3 for Restoration of Non-Roadway Areas and Restoration of Existing Pavement Details due to Trench Excavation.
- 7. Steel plates for covering trenches shall have skid resistant surface.
- 8. All structures, pavements, utilities, landscaping, and other topographical features shown on the Plans are existing and shall remain unless noted or indicated otherwise. All grassed areas damaged by construction activities shall be top soiled and grassed.
- 9. A solid #8 bare copper wire shall be pulled in all conduits with the traffic control cable for equipment ground.
- 10. All splicing shall be done in the pullboxes.
- 11. All traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signal as called for in the Plans.
- 12. The loop amplifier units furnished for this project shall be capable of operating the loop detector configurations shown on the Plans.
- 13. The Contractor shall verify with the respective utility companies and government agencies, the locations of all electric, telephone, traffic signal, street light, cable television, fire alarm, ga's, water, sewer, drain and other lines crossing the excavation path or in excavation areas.
- 14. All work and materials for the traffic signal system shall conform to Special Provisions Section 623 - Traffic Signal System, except as otherwise provided on the Plans.
- 15. Provide ground rod in all pullboxes, pullboxes adjacent to signal standards, pedestals, controller cabinets, and other locations ordered by the Engineer. Ground rod connectors shall be copper welded and shall meet ground to earth resistance as specified by the National Electric Code or local inspecting agency.
- 16. All conduits between pullboxes and Traffic Signal/Highway Lighting Standards shall not be paid for separately but shall be considered incidental to the various contract items.

- 17. Underground pipes, cables, or ductlines known to exist are indicated on the Plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities to existing utilities are shown on the Plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
- 18. During non-working hours, the Contractor shall ensure all lanes are open for through traffic. During non-working hours, all trenches shall be covered with a safe, non-skid, traffic-bearing bridging material and all lanes shall be open to traffic.
- 19. Where pedestrian walkways exist, they shall be maintained in passable condition or other facilities for pedestrians shall be provided, Passage between walkways at intersections shall likewise be provided.
- 20. Driveways shall be kept open unless the owners of the property using these rights-of-way are otherwise provided for satisfactorily.
- 21. No material and/or equipment shall be stockpiled or otherwise stored within street rights-of-way except at locations designated in writing and accepted by the Engineer.
- 22. For Traffic Signal Supports and Foundation design requirements refer to Structural Plans (including Sheets S0.2 and S0.3).
- 23. The Contractor shall notify the State of Hawaii Department of Transportation Highways Division, Maui District Office three (3) working days prior to commencing work on the Traffic signal system. (Phone: (808) 873-3535)
- 24. Louvered back plates with a 5-inch border containing a 1-inch wide retro-reflective tape shall be installed on all mast arm mounted traffic heads as indicated on the plans.
- 25. Prior to ordering the traffic signal posts, the Contractor shall probe the location of the traffic signal drilled shafts for conflicts with utilities. If there is a utility conflict, the Engineer shall be notified, and the traffic signal posts shall not be ordered until the conflict is alleviated and accepted by the Engineer. Payment for probing shall be considered incidental to the various contract items.
- 26. The contractor shall select poles, mast arm standards, anchor bolts, etc., based on the footing details for Type II traffic signal standards shown in these plans and shall verify all dimensions, anchor bolt spacing and reinforcing prior to fabrication.
- 27. Should the contractor encounter issues during trenching or the construction of foundations that require the support of a geotechnical or structural engineer, contractor shall consider these costs as incidental to the various contract items.
- 28. After installing the Traffic Signal System, the contractor shall apply grease to all parts of the Traffic Signal System (i.e. fittings, brackets, nipples, elbows, screws, signal head assemblies, bolts, hinges, etc.) as directed by the Traffic Signal Inspector, to prevent rust and corrosion. The grease material shall be approved by the Signal Inspector.
- 29. For Type II Traffic Signal Standards, the Contractor shall be responisble to coordinate the foundation with the Traffic Signal Standard provided; any changes required to the foundation due to the Traffic Signal Standard provided shall be designed by a licensed Structural engineer. All design and construction cost for these changes will be borne by the Contractor.

30. After installing all the traffic signal cables, the Contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the Traffic Signal Inspector/Engineer and shall not be paid for separately by considered incidental to the direct buried and/or concrete encased conduits.

TRAFFIC SIGNAL LEGEND AND ABBREVIATIONS:

Conduits and Cables, Conduit Run X



12" R-Y-G Traffic Signal Head 12" ←-←-← Traffic Signal Head



12" R-Y-G Traffic Signal Head with Back Plate 12" ←-←-← Traffic Signal Head with Back Plate



Pedestrian Signal Head



Signal Standard with Mast Arm Type II, or Type III L=Length of Mast arm, Pole X, Footing Type C



Signal Standard Type I, Pole X, H=3', 7' or 10', Footing Type A



Loop Detectors



Pullbox Type A Pullbox Type B



Pullbox Type C

1⊕, 1⊕

Pedestrian Push Button Assembly (Arrow denotes direction on Push Button Sign)

C

Traffic Controller Model 170E and 332A Cabinet with Type D Concrete Base for Controller Cabinet

Street Sign Mounted to Mast Arm



Opticom, EVP Detector



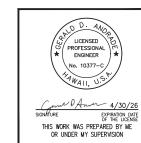
Detection Camera



Existina Pullbox



Existing Overhead Wire Camera Detection Zone



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION TRAFFIC SIGNAL NOTES AND LEGEND KULA HIGHWAY, INTERSECTION IMPROVEMENTS AT OMAOPIO ROAD Project No. 37C-02-23 None Scale: Date: April 2024



