

ORIGINAL PLAN	SURVEY DRAWN BY NOTED BY DESIGNED BY CHECKED BY	DATE
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GENERAL NOTES:

- The scope of work includes construction and installation of drainage facilities; pavement reconstruction; cold planing; relocation of roadway signs; restoration of pavement markings; restoration of surface roadway improvements such as pavement, curb, sidewalk, etc.; water pollution control; and all incidental work. Cost of the incidental work, if not specified in the proposal, shall be considered incidental to various contract items.
- The Contractor's attention is directed to Subsection 107.13 - Public Convenience and Safety: Section 645 - Traffic Control and Subsection 104.04 Maintenance of Traffic.
- 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.
- The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
- The exact locations and limits or areas to be filled with leveling course, reconstructed and cold planed shall be determined in the field by the Engineer.
- Prior to resurfacing, the existing surface shall be cleaned as described in Section 310 of the Standard Specifications and as amended. Payment shall be considered incidental to Item No. 401.0400- AC Pavement, Mix No. IV.
- The Contractor shall notify the State in writing, two (2) weeks prior to starting paving operations.
- The Contractor shall remove and dispose of all existing raised pavement markers prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to Asphalt Concrete Pavement, Mix No. IV and will not be paid for separately.
- Dressing shoulder, shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items. Shoulder areas without guardrails shall be dressed at 6:1 slope (max.) unless shown on plans or directed by the Engineer. All dressing materials shall be free of all rocks.
- The contractor shall provide for safe access to and from all existing driveways and streets at all times.
- All saw cutting of existing pavement shall not be measured or paid for separately, but shall be considered incidental to various contract items.
- Smooth riding connections shall be constructed at all pavement connections as shown on the plans and/or as directed by the Engineer.
- The Contractor's attention is directed to the requirements of Section 105.06 of the Standard Specifications. The Department anticipates letting out one or more contracts within the limit of this project. These projects include the installation of traffic signal system at the intersection of Hana Highway and Kamehameha Avenue/Hobron Avenue and the resurfacing and widening of Kaahumanu Avenue between Wakea Avenue and Kane Street.
- All construction work along the roadway shall be done between the hours of 8:30 am to 3:30 pm unless noted otherwise in these plans. Construction work must be clear from roadway by 3:30 pm. Contractor shall submit traffic control plan to the Engineer.
- During non-working hours no construction equipment shall be parked within the road right-of-way in such a manner that the equipment will obstruct the normal movement and sight distance of the driving motorist.
- Except during actual working hours, all signs which do not pertain to the construction activity, such as "MEN WORKING" and "FLAGMEN AHEAD" shall be covered or laid down. However, all signs necessary for the safety of the public shall be maintained.
- The Contractor shall employ a Hawaii Licensed Professional Land Surveyor to perform all construction stakeouts, the cost of which shall be borne by the contractor.
- The contractor shall make his own arrangements for, and pay for all temporary utilities required for his work.

CONTRACTOR'S RESPONSIBILITY FOR UTILITY LINES, PIPES AND SERVICES:

- The Contractor shall contact the owners of the various utilities (electrical, telephone, water, CATV, etc.) prior to construction to obtain from them any information pertaining to existing utilities that will either supplement the information shown on the plans or will correct any such information that may be in error.
- Existing utility structures (manholes, valve boxes, etc.) whether shown or not on the plans shall be adjusted to match the new finish grades. Unless otherwise specified in the proposal, the cost shall be considered incidental to the various items of work.
- In the event the utilities are damaged or disturbed by the Contractor, the Contractor shall be held liable for the damages or disturbed utilities and be responsible for the repair thereof.

NPDES GENERAL NOTES:

- Discharge into receiving waters (streams, rivers, ocean channels, drainage systems, etc.) from dewatering activities require NPDES Permits from the Department of Health (DOH). If the Contractor options to discharge dewatering effluent into receiving waters, the Contractor shall be responsible in obtaining the NPDES permits from DOH. See sub-section 107.08 of the specifications.
- No dewatering activities will be authorized until the receipt of the NPDES Permit(s) from DOH.
- Progress payment will not be authorized until receipt of the BMP's and the Quality of Discharge Test Results.
- Any citation (fine) received by the State for noncompliance of the NPDES Permit requirements shall be deducted from the progress payment.

DRAINAGE NOTES:

- Existing drainage system will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract Items.
- The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
- Only non-pneumatic type of drill as approved by the Engineer will be permitted for drilling holes in concrete. Where indicated on Plans, the approximate diameter of drilled holes for installation of dowels shall be 5/8", and voids after installing dowels shall filled with epoxy grout as directed by the Engineer.
- Demolishing, removing, and disposing portions of existing culverts shall not be paid for separately, but shall be considered incidental to the various Contract Items.
- Concrete shall be 3000 psi @ 28 days unless otherwise noted.
- Exact invert elevations of existing culverts which the new drainage system will connect to shall be verified by the Contractor in the field or as directed by the Engineer prior to construction.
- Unless otherwise noted in the proposal, furnishing and providing backfill materials for the new drainlines and drainage structures will not be paid for but shall be considered incidental to various Contract Items.
- Prior to trenching and installation of new drainage system, the Contractor shall verify the locations and elevations of all existing various underground utilities, drainlines, etc., whether shown or not on the plans, which the new drainline will cross over or under, or connect to. Any interference to the new drainlines or any discrepancy from that shown on the plans shall be immediately brought to the attention of the Engineer, and any changes shall be made in accordance with his instructions.
- When trench excavation is adjacent to or under existing structures or facilities, the contractor shall be responsible for properly sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure from possible slides, cave-ins and settlements, and properly support existing structures and facilities with beams, struts or underpinning to fully protect it from damage. Contractor shall be aware that water will be encountered on most all of the trenching operations and tie-in to existing drainage facilities.

CHLORINATION OF WATER SYSTEMS:

- Liquid Chlorine or Calcium Hypochlorite, conforming to AWWA Standards shall be used for the chlorination of the project.
- Prior to Chlorination, the project shall be thoroughly flushed.
- The interior surfaces of the project shall be exposed to the chlorinating solution for a minimum of 24 hours and the chlorine residual shall not be less than 10 ppm after such time.
- Should Calcium Hypochlorite be used, no solid and/or undissolved portion of the compound shall be introduced into any section of the project to be chlorinated.
- At the end of the 24-hour disinfection period, representative samples shall be taken and analyzed to assure a chlorine residual of at least 10 ppm.
- Should the results indicated adequate chlorination, the project shall be thoroughly flushed and filled with water from the existing system and again tested for chlorine residual. The flushing shall be considered adequate if the test results indicate that the water in the project has a comparable chlorine residual as the water in the existing system.
- Following the acceptable flushing of the project, two consecutive sets of acceptable samples, taken at 24 hours apart, from representative point in the project shall be taken and subjected to microbiological tests. At least one set of sample shall be collected from every 1,200 feet of the new water main, plus one from the end of the line and at least one set from each branch. Positive results will not be acceptable and the process will be repeated.
- Analysis for residula chlorine shall be made in accordance with "standard Methods for the Examination of Water and Wastewater", American Public Health Association, 18th Edition.
- Microbiological tests shall be made in accordance with "Standard Methods for the Examination of Water and Wastewater", American Public Health Association, 18th Edition.
- All measurements for chlorine residual and microbiological tests shall be performed by a laboratory approved by the Director.
- The Contractor shall be responsible for all costs associated with all of the foregoing.

GENERAL NOTES FOR NIGHT WORK:

TRAFFIC CONES

Cones for night work shall be 28" in height and shall be predominantly orange in color. They shall be kept clean and bright for maximum target value. For nighttime use they shall be reflectorized or equipped with lighting devices for maximum visibility. Reflectorized material shall have a smooth, sealed outer surface that will display the same approximate color day or night. Reflectorization of tubular markers shall be a minimum of two, three inch wide white bands placed a maximum of two inches from the the top with a maximum of six inches between the bands. Retroreflection of cones shall be provided by a minimum six inch wide white band placed a minimum of three inches but no more than four inches from the top. When the 28 inch or larger size cones are used, the standard six inch band shall be supplemented with an additional four inch white band spaced a minimum of two inches below the six band.

NOISE VARIANCE:

Contractor shall be responsible in obtaining "Noise Variance" permit from the Department of Health. See sub-section 107.08 of the specification.

LEGEND:

	Grading and/or Dressing Area		Existing Water Manhole
	Pavement Reconstruction Area		Existing Water Valve Box
	Resurfacing Area		Existing Water Meter
	Existing Fire Hydrant		Existing Traffic Sign With 1 Post
	RCP Reinforced Concrete Pipe		Existing Traffic Sign With 2 Posts
	CAP Corrugated Aluminum Pipe		Relocated Sign
	SRAP Spiral Rib Aluminum Pipe		Existing Monument
	CMP Corrugated Metal Pipe		
	Edge A. C. Pavement		

WATER SYSTEM:

- The Contractor shall notify the Department of Water Supply (DWS), in writing, one week prior to commencement of work.
- All materials used and methods of construction of water system facilities shall be in accordance with the latest revisions of DWS Standards. Contractor shall obtain the latest revisions of the DWS Standard Details before commencing construction.
- The exact depth and location of existing waterlines, service laterals and other utilities are not known. It shall be the Contractor's responsibility to locate same prior to trenching for the new waterline. The cost of lowering, relocating or adjusting existing waterlines, service laterals and other utilities shall be considered incidental to the cost of the new waterline, unless noted otherwise, and will not be paid for separately.
- Concrete for reaction blocks and anchor blocks shall be DWS Class 2500.
- The maximum distance between valve nut and top of manhole shall be three (3) feet.
- The Contractor shall submit a materials list to DWS for approval prior to construction.
- Connection to DWS system:
 - The Contractor shall verify the exact location, depth, type and condition of the existing line before ordering materials for the hook-up. He shall, however, check with DWS before excavating for verification purposes. He shall be responsible for furnishing all necessary fittings and other materials required for the hook-up.
 - Whenever feasible, Mechanical Joint Fittings shall be used.
 - Authorized DWS personnel will make the final connection to the existing line. The Contractor shall be responsible for all costs incurred by DWS for said work, including the cost of pressure testing.
 - The Contractor shall be responsible for furnishing all material, equipment and labor for chlorination, trench excavation, backfilling, paving and other work necessary to complete the hook-up, as directed by and to the satisfaction of DWS.
- The Developer shall submit a cost list along with an affidavit for the water system prior to acceptance.
- The Contractor shall submit Record Drawings via a consultant prior to acceptance of the water system.
- Minimum cover over water main, 6" diameter or larger, shall be 3'-0". Minimum cover for 4" diameter shall be 2'-6". Minimum cover for diameters less than 4" shall be 1'-6".
- All buried metals shall be wrapped with Poly-Wrap. For Ductile Iron pipe installation, Poly-Wrap shall be required.
- All nuts and bolts shall be painted with asphaltic paint.
- The Contractor shall be responsible for maintaining water service to consumers at all times. If water service disruption is necessary, the Contractor shall coordinate all disruptions of service with the consumers.
- Any items to be removed and salvaged shall be taken to the Department of Water Supply Baseyard at all times at Contractor's expense.
- The Contractor shall be responsible for restoration of all existing improvement disturbed or damaged during construction to the satisfaction of the Department of Water Supply, Department of Public Works and/or the State Department of Transportation.
- Water mains and appurtenances shall be subject to hydrostatic testing in accordance with AWWA C600 Section 4.1 to pressure of at least 1.5 times the working pressure. Unless otherwise stated in the construction documents, the pressure test and leakage test shall be performed at 225 pounds per square inch pressure.

SOLID WASTE CONSTRUCTION NOTES:

- Unless otherwise specified, the Contractor is responsible for the proper handling, storage and/or disposal of all waste generated by the construction including grubbing and excess excavated materail. Any material brought to the County landfills will be subjected to the instituted tipping fee system, with no exceptions or exemptions.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES AND LEGEND

KAAHUMANU AVENUE DRAINAGE IMPROVEMENTS
S. WAKE AVENUE TO KAHULUI BEACH ROAD
AND
HANA HIGHWAY DRAINAGE IMPROVEMENTS
HOBRON AVENUE TO DAIRY ROAD
FED. AID PROJ. NO. NH-STP-0900(54)

SCALE: AS NOTED DATE: MARCH 2000

CONSTRUCTION NOTES WITHIN
COUNTY RIGHT-OF-WAY:

- Contractor shall obtain a permit to Perform Work on County Highways from the Division of Land Use & Codes Administration two weeks prior to the commencement of work.
- Standard detail drawings and standard specifications of the Dept. of Public Works shall be included as part of the construction plans.
- All construction work shall strictly conform to the applicable sections of the 1994 Hawaii Standard Specifications for Road, Bridge and Public Works Construction, and the September 1984 "Standard Details" for Public Works Construction of the Dept. of Public Works.
- If existing utilities, whether or not shown on plans, are damaged during construction, the Contractor shall at his own expense be required to repair such utilities.
- Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades and other protective devices for the protection, safety and convenience of the public according to the "Manual on Uniform Traffic Control Device for Streets and Highways", 1988 and to the rules and regulations governing the use of traffic control devices at worksites and/or adjacent to public streets and highways adopted by the Highway Safety Coordinator and the U.S. Federal Highway Administration "Manual on Uniform Traffic Control Devices for Highway Construction and Maintenance Operations," dated 1980.
- The Director of Public Works and/or the Director of the Dept. of Water Supply has the right to stop construction should any work be found contrary to the approved construction plan or detrimental to the public's interest.
- The Contractor shall schedule a pre-construction meeting with the Land Use & Codes Administration five (5) days prior to commencement of construction.
- The Contractor shall, at his own expense, keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with Air Pollution Control Standards and Regulations of the State Dept. of Health and County Grading Ordinance.
- The Contractor shall remove all silt and debris resulting from his work and deposited in drainage facilities, roadways and other areas. The cost incurred for any necessary remedial action ordered by the Director of Public Works shall be paid by the Contractor.
- Construction debris and wastes shall be deposited at an appropriate work site. The Contractor shall inform the Director of Public Works of the location of the disposal sites. The disposal site must fulfill the requirements of the Grading Ordinance.
- The contractor shall submit a microfilm copy and five (5) copies of the "As-Built" drawings prior to the final approval of the improvements.
- If the clearance between a wastewater line and a new or existing waterline is eighteen inches (18") or less, the wastewater line shall be concrete-jacketed in accordance with the Standard Details of Public Works Construction dated September 1984.
- Should historic sites such as walls, platforms, pavements or mounds, or remains such as artifacts burials, concentration of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find and the find shall be protected from further damage. The Contractor and/or Landowner shall immediately contact the State Historic Preservation Division (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.
- Pursuant to Maui County Code Section 3.44.015(C), the County of Maui is not responsible for any park, roadway, easement (including but not limited to drainage, sewer, access, reclaimed water, or avigation easement), or any other interest in real property shown on this map or shown on these plans, unless the Maui County Council has accepted its dedication by a resolution approved by a majority of Council's members at a regular or special meeting of the Maui County Council.

Compaction Requirements

- Testing of materials shall be conducted by an approved independent testing agency in accordance with ASTM standard methods, or as specified by the Dept. of Public Works, Engineering Division, as follows:
 - Embankment/Select Borrow and Subgrade Materials: One (1) compaction test per 600 square yards per lift;
 - Aggregate Subbase Course: One (1) compaction test per 400 square yards; one (1) gradation and sand equivalent test per lift per project ;
 - Aggregate Base Course: One (1) compaction test per 300 square yards; one (1) gradation and sand equivalent test per lift per project;
 - Asphalt Concrete Pavement or Asphalt Treated Base Course: Three (3) A.C. cores for thickness and density tests per project;
 - Trench Backfill Material: One (1) test for each 300 lineal feet of trench per lift of material.
- Contractor shall submit all testing reports including results to the County's inspection agency for review and approval prior to County's acceptance of work.
- The Contractor shall be required to notify the County of any testing failures and correct each failure prior to proceeding to the next phase of construction.

TEMPORARY EROSION CONTROL MEASURES:

- Temporary vegetative cover shall be planted within a period of 30 calendar days after the site has been graded, or bared of vegetation, or if final grading of the site will be suspended for more than 30 calendar days. Any cost for temporary erosion control measures will be borne by the Contractor.
- Temporary vegetative cover shall consist of 40 lbs. common rye grass seed per acre, 400 lbs. per acre 10-10-10 or equivalent fertilizer worked into the seed bed before planting. Watering and maintenance of grass shall conform to the "Standard Specifications for Road, Bridge and Public Works Construction", dated 1994, of the State of Hawaii.

PERMANENT EROSION CONTROL MEASURES:

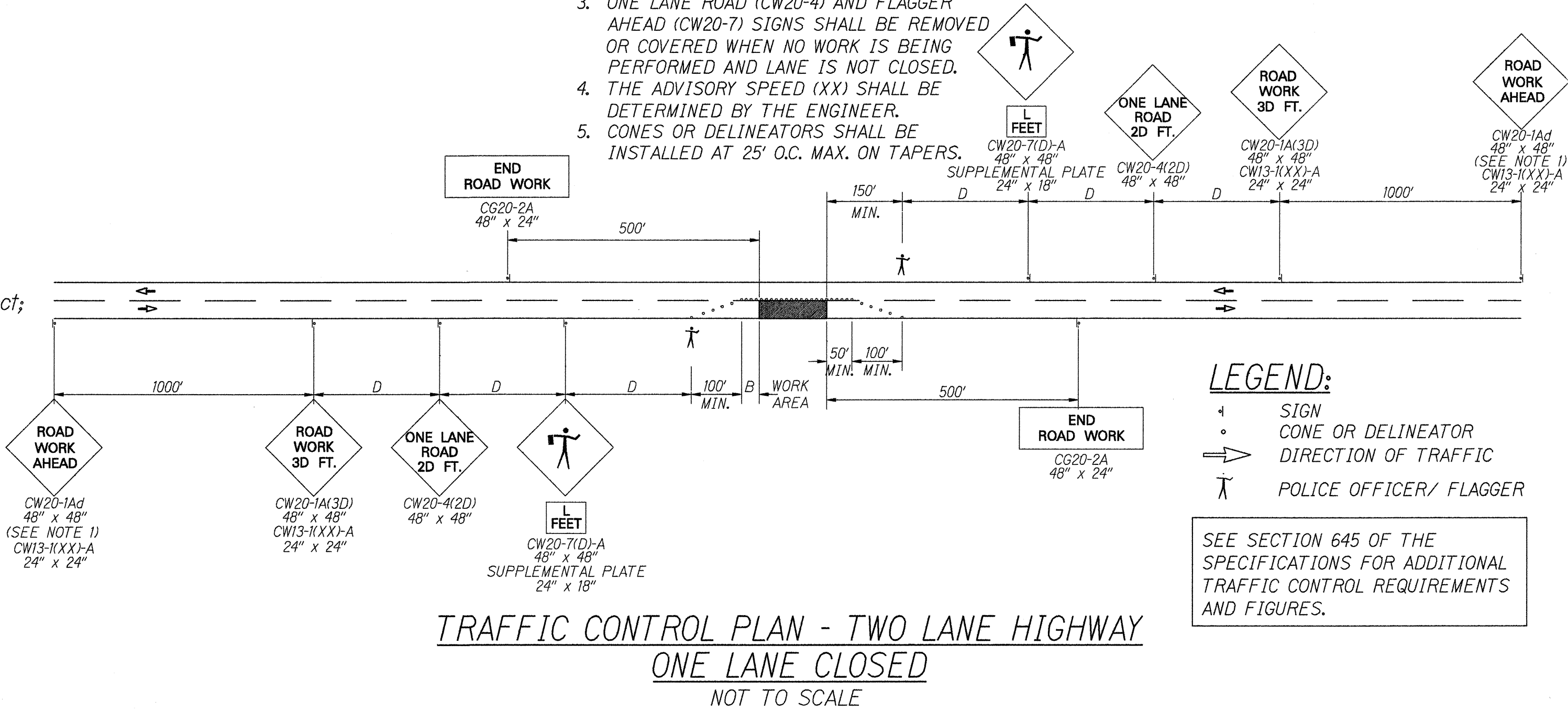
- The Contractor shall plant vegetative cover over the entire project site as indicated in the plans. The vegetative cover shall be planted, fertilized and maintained in accordance with the "Standard Specifications for Road, Bridge and Public Works Construction", dated 1994, of the State of Hawaii.
- The Contractor shall grass all exposed areas that have been constructed to final grades within a period of 30 calendar days. Any cost for permanent erosion control measures will be borne by the Contractor.
- In lieu of grass sprigs (Note 1) the Contractor may use hydro-mulch with seedings, and irrigation system capable of irrigating all of the hydro-mulched area.

PUBLIC HEALTH, SAFETY & CONVENIENCE:

- The Contractor shall observe and comply with all Federal, State and local laws required for the protection of public health and safety and environmental quality.
 - The Contractor, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards and Regulations of the State Department of Health. The County of Maui may require supplementary measures as necessary.
- The Contractor shall be responsible for the cleaning and removal of all silt and debris generated by his work and deposited and accumulated within downstream waterways, ditches and drain pipes and on public and private roadways. The Contractor agrees to reimburse the State for all costs expended in performance of the above work if required for public health and safety, or made necessary by non-performance by the Contractor.
- The Contractor shall obtain a Community Noise Permit from the State Department of Health prior to any construction activities.

NOTES:

- CW20-1Ad SIGN REQUIRED FOR POSTED SPEED LIMIT OF 45 MPH OR GREATER.
- SEE TABLE 1 FOR ADDITIONAL DIMENSIONS.
- ONE LANE ROAD (CW20-4) AND FLAGGER AHEAD (CW20-7) SIGNS SHALL BE REMOVED OR COVERED WHEN NO WORK IS BEING PERFORMED AND LANE IS NOT CLOSED.
- THE ADVISORY SPEED (XX) SHALL BE DETERMINED BY THE ENGINEER.
- CONES OR DELINEATORS SHALL BE INSTALLED AT 25' O.C. MAX. ON TAPERS.



GENERAL NOTES FOR TRAFFIC CONTROL PLAN

- The permittee shall make minor adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions. Cones or delineators shall be extended to a point where they are visible to approaching traffic.
- Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area. Regulatory and warning signs within the construction zone that are in conflict with the Traffic Control Plans shall be removed or covered.
- All signs shall be restored upon completion of the work.
- Flaggers and/or police officers shall be in sight of each other or in direct communication at all times.
- When required by the issuing office, the permittee shall install a flashing arrow signal as shown on the Traffic Control Plans.
- Signs spacing (L), taper lengths (T) and spacings of cones or delineators shall be as shown in Table 1, unless otherwise noted on the Traffic Control Plans.
- All traffic lanes shall be a minimum of 10 feet wide.
- All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
- The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
- At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation. Replace permanent pavement markings and traffic signs upon completion of work.

APPROVED BY:

DIRECTOR, DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
COUNTY OF MAUI
(Approval is for work within County Right-of-way Only)

DIRECTOR, DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
(Approval is limited to water improvements which will be dedicated to the Department of Water Supply Only)

DATE

DATE

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-STP-0900(54)	2000	4	15

TABLE 1 FOR TRAFFIC CONTROL PLAN							
POSTED SPEED LIMIT (M.P.H.)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONE OR DELINEATORS (FEET)		
		W = 12' OR LESS	W = GREATER THAN 12'		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GENERAL NOTES AND LEGEND	
KAAHUMANU AVENUE DRAINAGE IMPROVEMENTS S. WAKEA AVENUE TO KAHULUI BEACH ROAD AND HANA HIGHWAY DRAINAGE IMPROVEMENTS HOBORN AVENUE TO DAIRY ROAD FED. AID PROJ. NO. NH-STP-0900(54)	
SCALE: AS NOTED	DATE: MARCH 2000