

Grading Notes:

1. All grading shall be done in accordance with grading ordinances of Kauai County and soils report by Ernest K. Hirata and Associates, Inc., dated August 19, 1993.
2. The Contractor shall remove all silt and debris resulting from his work and deposited in drainage facilities, roadways, and other areas. The costs incurred for any necessary remedial action shall be payable by the Contractor.
3. The Contractor shall, at his own expense, keep the project area and surrounding area dust free. Dust control measures shall be provided in accordance with Title 11, Chapter 11-60.1, Air Pollution Control, Hawaii Administrative Rules, to minimize or prevent fugitive dust emission generated by construction work including off-site roadways used to access the project site from impacting the surrounding areas.
4. The underground pipes, cables or ductlines known to exist by the Engineer from his search of records are indicated on the plans. The Contractor shall verify the location and depth 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.
5. All slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area, within which work has been interrupted or delayed, shall be planted.
6. Fills on slopes steeper than 5:1 shall be keyed.
7. The Engineer shall be informed of the location of the borrow/disposal site for the project when the application for a grading permit is made. The borrow/disposal site must also fulfill the requirements of the grading ordinance of the County of Kauai.
8. No grading work shall be done on Saturdays, Sundays, and Holidays at any time without prior notice to the District Engineer.
9. The limits of the area to be graded shall be flagged before the commencement of the grading work.
10. Temporary erosion controls shall not be removed until permanent erosion controls are in-place and established.
11. All grading operations shall be performed in conformance with the applicable provisions of Chapter 54, Water Quality Standards, and Chapter 55, Water Pollution Control, of Title 11, Administrative Rules of the State Department of Health (over 1 acre).
12. Adequate provisions shall be made to prevent surface waters from damaging the cut face of an excavation or sloped surfaces of a fill. Furthermore, adequate provisions shall be made to prevent sediment laden runoff from leaving the site.
13. The bench mark for this project is shown on sheet 10.
14. Prior to placement of any fill, the existing ground shall be scarified to a depth of six inches and compacted to a minimum of 95 percent compaction as determined by ASTM D-1557.

15. Cut and fill slopes shall be 2:1 (horizontal to vertical) or flatter, unless otherwise indicated on the drawing.
16. After clearing and grubbing, additional roots and other vegetation found in the upper 6 to 8 inches shall be removed.
17. Construction observation and field density testing shall be performed by the State. Where tests and/or observations indicate that the density of uniformity of any portion of the fill is inadequate, that portion shall be removed and reworked until the required density or uniformity has been satisfactorily obtained.
18. The project site may harbor rodents which may be dispersed when the site is cleared. The Contractor shall, in accordance with Title 11, Chapter 11-26, Vector Control, Hawaii Administrative Rules, ascertain if rodents are present on the site and eradicate the rodents prior to clearing the site.
19. The Contractor shall, in accordance with Title 11, Chapter 11-58.1, Solid Waste Disposal, Hawaii Administrative Rules, ensure that grub material, demolition and construction wastes, generated by the project shall be disposed of at a State Department of Health disposal site. Disposal by burning is prohibited.
20. All work shall conform to Hawaii Administrative Rules Chapter 11-43, "Community Noise Control for Kauai."
21. All slopes and exposed areas shall be grassed by hydromulching as soon as final grades have been established. Grassing shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area, within which work has been interrupted or delayed, shall be grassed.
22. If grading work involves contaminated soil, then all work shall be done in conformance with applicable State and Federal requirements.
23. Where applicable and feasible, erosion control and anti-pollution measures shall be in place before any earth moving phase of the grading is initiated.
24. Silt fences shall be installed along the top banks of Lawai stream, bottom banks of existing and new fill slopes in order to filter sediment from runoff, before runoff enters Lawai stream.
25. Non-compliance to any of the above requirements shall cause immediate suspension of work and remedial work should commence immediately. all costs incurred shall be billed to the Contractor. Furthermore, violators are subject to administrative, civil or criminal penalties.

Water Notes:

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the "Water System Standards", Volume 1 and Volume 2, 1985, as adopted by the Department of Water Supply County of Kauai; Board of Water Supply, City and County of Honolulu; Department of Water Supply, County of Maui and, Department of Water Supply, County of Hawaii, and all subsequent amendments and additions for use in the design and construction of the department's water system facilities.

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2. The Contractor shall notify Department of Water Supply, County of Kauai in writing one week prior to commencing of work on the main.
3. Unless specified, connections to existing water main, cleaning and chlorination of new mains shall be done by the Contractor with the Department of Water inspector coordinating the work. Disinfection of the water line shall be done in conformance with "Standard Specifications for Water Works Construction," except microbiological lab analysis shall be performed by a certified testing laboratory. All sample bottles shall be supplied by a certified laboratory.
4. The Contractor shall verify in the field the location of the existing water mains and appurtenances. The Contractor shall expose the existing water main prior to trenching. Excavation around existing water mains shall be done by hand.
5. The Contractor shall whenever necessary, properly sheet and brace all excavations to render it secure and shall remove all such sheeting and bracing before completions of the backfill for all water mains, the minimum cover requirement (from top of pipe to finished grade over pipe) is 3 feet.
6. Plastic pipes shall be PVC 1120, or PVC 1220 SDR 2-, Class 200 PR with NSF seal of approval. Plastic pipes 1-1/2" & smaller may be of the solvent-welded type. All solvent-welded joints shall be made doublecheck using "color-guard" fittings as manufactured by the R & G Sloane Manufacturing Co., Inc. or approved equal.
7. Trench excavation, backfilling in lifts and repaving shall conform to the "Standard Specifications for Water Works Construction", dated September 1986.
8. The Contractor shall submit the name of its authorized superintendent of the job.
9. The Contractor shall arrange a pre-construction conference at least 10 days before construction and shall notify the Department at least 3 working days prior to the start of construction.
10. The Contractor shall notify Department of Water Supply, County of Kauai at least 24 hours prior to any pipe laying, backfilling, testing, or chlorination to insure the inspectional services will be available.

DELETED

FOR WATER NOTES SEE SHEET C-2a.

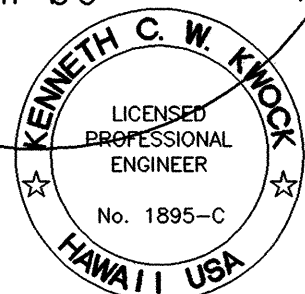
APPROVED:

Edward Pecheny
MANAGER AND CHIEF ENGINEER
DEPARTMENT OF WATER
COUNTY OF KAUAI

DATE	1/18/02
DATE	12/29/02
DATE	10/8/99

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
NOTES
KAUMUALII HIGHWAY INTERSECTION IMPROVEMENTS AT KOLOA ROAD
FED. AID PROJ. No. STP-050-(117)
DATE 10/8/99

SHEET No. C-1 OF 38 SHEETS



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Kenneth C. W. Kio

RE-CERTIFIED:

Edward Pecheny
MANAGER AND CHIEF ENGINEER
DEPARTMENT OF WATER
COUNTY OF KAUAI

1/29/02

DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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Water Notes: (Continued)

DELETED

11. In order to prevent unapproved materials from being ordered, the Contractor is invited to submit his material list description to the Department of Water Supply for cross-check before ordering any material from the supplier.
12. Prior to the connection of any pipeline installed under this job to the existing main, the pipeline installed shall be thoroughly cleaned, flushed and chlorinated.
13. All materials (pipe, pipe lubricants, paints, sealants, form oil, concrete admixtures, etc.) in direct contact with the potable water shall obtain National Sanitation Foundation (NSF) approvals. The Contractor shall submit these approvals to the Department of Water Supply for review and approval prior to its application.

Notes for Construction within County Right-of-Way:

1. All pavement shall be restored to it's original condition in accordance with County of Kauai. Hawaii Standard Specifications for Roads, Bridges and Public Works Construction (1994) with 2" min. A.C. and 8" base course.
2. The Contractor shall provide, install, maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities and shall take all necessary precautions for the protection and for the convenience and safety of public traffic. All such protective facilities and precautions to be taken shall conform with rules and regulations governing the use of traffic control devices at work sites on or adjacent to public streets and highways adopted by the Highway Safety Coordinator and U.S. Federal Highway Administration Manual on Uniform Traffic Control Devices for Streets and Highways Part VI, Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility, and Incident Management Operations, dated September 3, 1993 and its amendments.
3. The Contractor shall, whenever necessary, properly sheet and brace all excavations to render it secure and shall remove all such sheeting and bracing before completion of the backfill. For water mains, the minimum cover requirements (from top of pipe to finished grade over pipe) is 3 feet.
4. Signs shall be erected prior to commencement of work.
5. During working hours, the contractor shall provide at least one traffic lane that is open for traffic.

Temporary Dust Control Notes:

1. The graded or project site that is cleared of vegetation shall be damp for seven (7) days a week. At the end of each day, the site shall be sufficiently dampened so the site will remain moistened during the night.
2. The Contractor shall conduct his operations so that excavation, embankment, and imported material shall be dampened to prevent dust problems.
3. In applying for grading permit, the Contractor shall submit plans, schedules, and/or written measures which provide for dust control. The dust control measures shall contain positive statements which require actions or work that prevent dust problems. No permits will be issued unless the County is assured that dust problems will be minimized.

Notes for Construction within State Right-of-Way:

1. Work may be performed only between the hours of 8:30 a.m. and 3:30 p.m., Monday through Friday, except holidays, unless otherwise permitted by the District Engineer.
2. The Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades, markers, cones, and other protective facilities, and shall take all necessary precautions for the protection, convenience, and safety of public traffic. All such protective facilities and precautions to be taken shall conform with the "Administrative Rules Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways", adopted by the Director of Transportation, and the current U.S. Federal Highways Administration "Manual on Uniform Traffic Control Devices for Streets and Highways, Part VI- Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility and Incident Management Operations", dated September 3, 1993 and its amendments.
3. No material and/or equipment shall be stockpiled or otherwise stored within the Highway Right-of-Way, except at locations designated in writing and approved by the District Engineer.
4. Existing drainage systems shall be functional at all times.
5. The Contractor shall exercise care to minimize damages to existing highway improvements. All damages shall be repaired by the Contractor, at his expense, to the satisfaction of the District Engineer.
6. The Contractor shall inform the State Highways' Area Engineer (274-3111) at least two (2) days prior to closing any lanes. (refer to note 2)

7. Driveways shall be kept open unless owners of the properties using these Rights-of-Way are otherwise provided for satisfactorily.
8. Where pedestrian walkways exist, they shall be maintained in a safe and passable condition, or other facilities for pedestrians shall be provided. Passages between walkways at intersections shall likewise be provided.
9. The Contractor shall reference to the satisfaction of the District Engineer, all existing traffic signs, posts, and pavement markings prior to the commencement of construction. The Contractor shall replace or repair all traffic signs, posts, and pavement markings disturbed by his activities, at his expense, unless directed otherwise by the District Engineer or his Representative.
10. The Contractor shall exercise care when performing work in or adjacent to the State Highway Right-of-Way. Damages to existing facilities shall be immediately reported to the respective utility companies, and/or City or State agencies. The repair work shall be done at the Contractor's expense.
11. The Contractor shall notify the State Highway's Area Engineer (274-3111), three (3) working days prior to commencing work.
12. The Contractor shall comply with the requirements of Section 401 Water Quality Certification Nationwide Permit, Section 404 and SCAP permits.

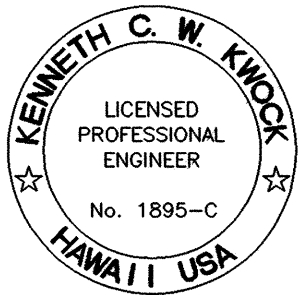
APPROVED:

Springa
COUNTY ENGINEER
DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (For work within County R/W)

4/28/00
DATE

Schmidt Schupp
MANAGER AND CHIEF ENGINEER
DEPARTMENT OF WATER
COUNTY OF KAUAI

12/20/99
DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Kenneth C. W. Knock

RE-CERTIFIED:

Edward T. Schupp
MANAGER AND CHIEF ENGINEER
DEPARTMENT OF WATER
COUNTY OF KAUAI

1/29/02
DATE

1/18/02	DOW RE-CERTIFICATION
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
NOTES	
KAUMUALII HIGHWAY INTERSECTION IMPROVEMENTS AT KOLOA ROAD	
FED. AID PROJ. No. STP-050-1(17)	
DATE 10/8/99	
SHEET No. C-2 OF 38 SHEETS	

Water Notes

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- Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the "Water System Standards" Volume I and Volume II, 1985, as adopted by the Department of Water, County of Kauai, including all subsequent amendments and additions.
- The Contractor shall arrange a pre-construction conference at least 10 days before construction and shall notify the Department of Water at least 3 working days prior to the start of construction.
- The Contractor shall submit the name of its Authorized Superintendent on the job. The Contractor shall also submit the names and telephone numbers of at least three (3) persons to contact in case of emergency during non-working hours.
- The Contractor shall notify the Department of Water at least 24 hours prior to any trenching, pipe laying, backfilling, testing or chlorination to insure that inspectional services will be available.
- All materials (pipe, pipe lubricants, paints, sealants, form oil, concrete admixtures, etc.) in direct contact with the potable water shall have National Sanitation Foundation (NSF) approvals. The Contractor shall submit these approvals to the Department of Water for review and approval prior to its application.
- The Contractor shall verify in the field the location of the existing water mains and appurtenances. The Contractor shall expose the existing water main prior to trenching. Excavation around any existing water main shall be done by hand.
- Where a utility is found to be in conflict with the waterline, the Contractor shall notify the Engineer prior to making any adjustment. Any damage to any existing utility not in conflict with the installation of the waterline shall be repaired by the Contractor at his own expense.
- Access to existing fire hydrants, valves and water meters shall not be hindered by the Contractor at anytime.
- The Contractor shall whenever necessary, properly sheet and brace all excavations to render it secure and shall remove all such sheeting and bracing before completion of the backfill.
- There shall be no physical connection between a public or private potable water system and a non-potable water system, sewer, or appurtenance thereto which could permit the passage of any sewage or polluted water into the potable water supply.
- Trench excavation, backfilling in lifts, and repaving shall conform to the "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994."
- Metallized tape shall be placed above all installed water mains. Metallized tape shall be installed a maximum of 24" and a minimum of 12" below finished grade. In no instance will the tape be installed in the roadway structure including select borrow, subbase, base course or wearing surface. The tape shall be installed on top of a compacted layer of trench backfill material and placed as close to practical to a position directly above the installed pipeline.

- Metallized tape shall be blue and imprinted with the following: "Caution Water Line Below". Tape shall be two inches in width and shall be readily detectable with any standard pipe or cable locator.
- All fire hydrants shall be cleaned after installation and painted with two coats of paint. Paint shall be DuPont Dolox High Visibility Yellow, KEM Lustre Enamel Light Yellow #F65Y12 or equal.
- Unless otherwise directed, prior to the connection to any pipeline to the existing main, the pipeline installed shall be pressure tested, cleaned, chlorinated, flushed, and sampled in accordance with the "Water System Standards" and/or in accordance with the procedures outlined below in Notes 17 through 22.
- All water mains and appurtenances including service laterals, fire hydrants and service connections shall be subjected to a 150 psi hydrostatic pressure test for either:
 - One (1) hour with a drop in pressure no more than three (3) psi. Pipe and joints may be backfilled.
 - Thirty (30) minutes with a drop in pressure of no more than ten (10) psi. All joints and pipe must be exposed during the test.
- Cleaning shall be by the use of "pigs" introduced into the pipeline and run completely through all installed pipelines excluding branch lines for fire hydrants and service laterals. "Pigs" shall consist of a cylindrical piece of polyurethane foam with a density range from 1.25 to 1.45 pounds per cubic foot. For waterlines up to 8" in diameter, the diameter of the pig shall be 2" larger than the pipe to be cleaned and 18" long. For 12" diameter waterlines, the pig shall be 16" in diameter and 30" long. For 16" diameter waterlines, the pig shall be 20" in diameter and 36" long.
- Chlorination of the installed pipeline shall be in accordance with Part III Section 1.12.17 of the "Water System Standards." The Contractor shall be in responsible for the proper disposal of chlorinated water to safeguard public health and environment in accordance with applicable state department of health requirements.
 - The Contractor shall contact the Department of Health to determine if a National Pollution Discharge Elimination System (NPDES) permit is required for the disposal of water used for hydrotesting and chlorination.
 - If a NPDES permit is required, the Contractor shall be responsible for obtaining the permit from the Department of Health.
- The installed pipeline shall be flushed after chlorination. Water samples shall be tested with a low range chlorine test kit to evidence flushing.
- Microbiological samples shall be taken in all cases after all chlorine has been flushed. Sampling shall be done by the Contractor in coordination with the Department's Inspector with sampling bottles furnished by a certified laboratory. The Department shall determine the locations of the sampling point(s) along the new water main. Under no circumstances shall the sampling bottles be rinsed out.

- Testing of the water samples shall be made by an approved laboratory certified by the State Department of Health. The Contractor shall collect two water samples, 24 hours apart, at each sample point. The disinfection procedure shall be considered acceptable after the laboratory test results show the absence of Coliform and the non-coliform bacteria count is less than 200 colonies per 100 mil for each sample collected.
- All connections shall be scheduled in coordination with the Department of Water.
 - An advance deposit is required for operating valves, flushing lines and notifying consumers affected by a water shutdown during connections. The Contractor will be charged the actual cost.
 - The Contractor shall place a deposit a minimum of 48-hours prior to the scheduled connection date.
 - Connections shall be scheduled on Tuesdays through Thursdays. No connections shall be scheduled on Mondays, Fridays and weekends.
 - All materials shall be on hand and approved by the Engineer prior to scheduling the connection date.
 - Pumps used to de-water the connection area shall be operated in the presence of the Engineer prior to scheduling the connection date.
 - All connections shall be performed in the presence of the Engineer.
- In order to prevent damage to the polyethylene encasement from excessive handling, the polywrap shall be installed around the barrel of the ductile iron pipe at its final location along the trenchline. The polyethylene encased pipe shall be lifted using a fabric type sling or al suitably padded cable or chain to prevent damage to the polyethylene.

APPROVED:

Eduard Belong
for **MANAGER AND CHIEF ENGINEER**
DEPARTMENT OF WATER
COUNTY OF KAUAI

1/29/02
DATE



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

Kenneth C. W. Knox

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
NOTES
KAUMUALII HIGHWAY INTERSECTION IMPROVEMENTS AT KOLOA ROAD
FED. AID PROJ. No. STP-050-1(17)
DATE: 1/22/02